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As filed with the Securities and Exchange Commission on November 17, 2017

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Casa Systems, Inc.

(Exact name of registrant as specified in its charter)

Delaware	3663	75-3108867
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

100 Old River Road
Andover, Massachusetts 01810
(978) 688-6706
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Jerry Guo
President, Chief Executive Officer and Chairman
Casa Systems, Inc.
100 Old River Road
Andover, Massachusetts 01810
(978) 688-6706
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement is declared effective.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☑	Smaller reporting company	☐
(Do not check if a smaller reporting company)		Emerging growth company	☑

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(2)
Common Stock, $0.001 par value per share	$150,000,000	$18,675.00

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.
(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PROSPECTUS (Subject to Completion)
Issued November 17, 2017

Shares

Common Stock

Casa Systems, Inc. is offering shares of our common stock. This is our initial public offering, and no public market currently exists for our shares of common stock. We anticipate that the initial public offering price of our common stock will be between $ and $ per share.

We have applied to list our common stock on the Nasdaq Global Market under the symbol "CASA."

We are an "emerging growth company" under applicable federal securities laws and will be subject to reduced public company reporting requirements. Investing in our common stock involves risks. See "Risk Factors" beginning on page 12.

PRICE $ A SHARE

	Price to Public	***Underwriting Discounts and Commissions(1)***	***Proceeds to Casa Systems***
Per Share	*$*	*$*	*$*
Total	*$*	*$*	*$*

(1) See "Underwriters" beginning on page 138 for additional information regarding underwriting compensation.

We have granted the underwriters the right to purchase up to an additional shares of common stock.

The Securities and Exchange Commission and state securities regulators have not approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares on , 2017.

MORGAN STANLEY *BARCLAYS*

RAYMOND JAMES *STIFEL*

, 2017

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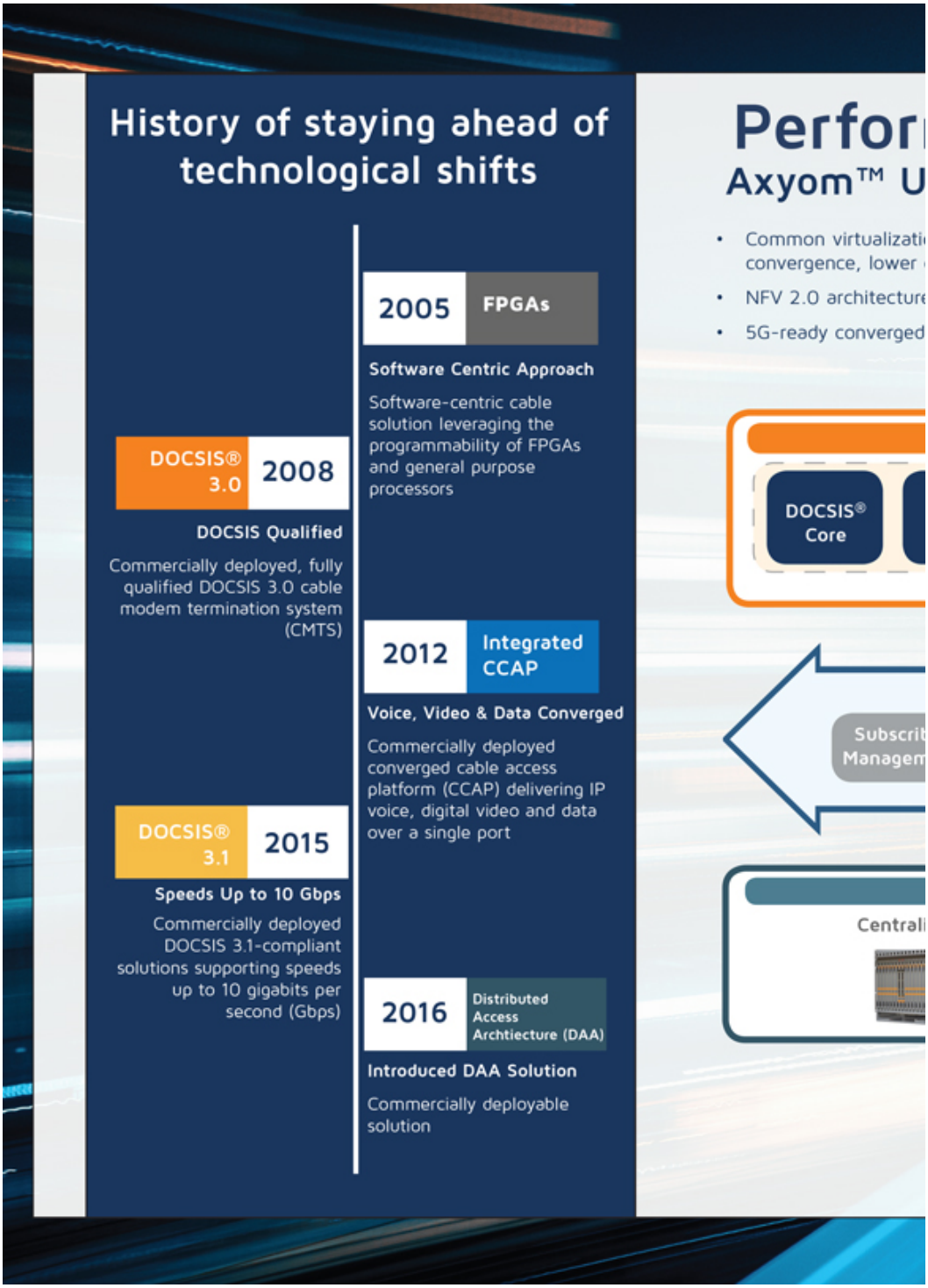

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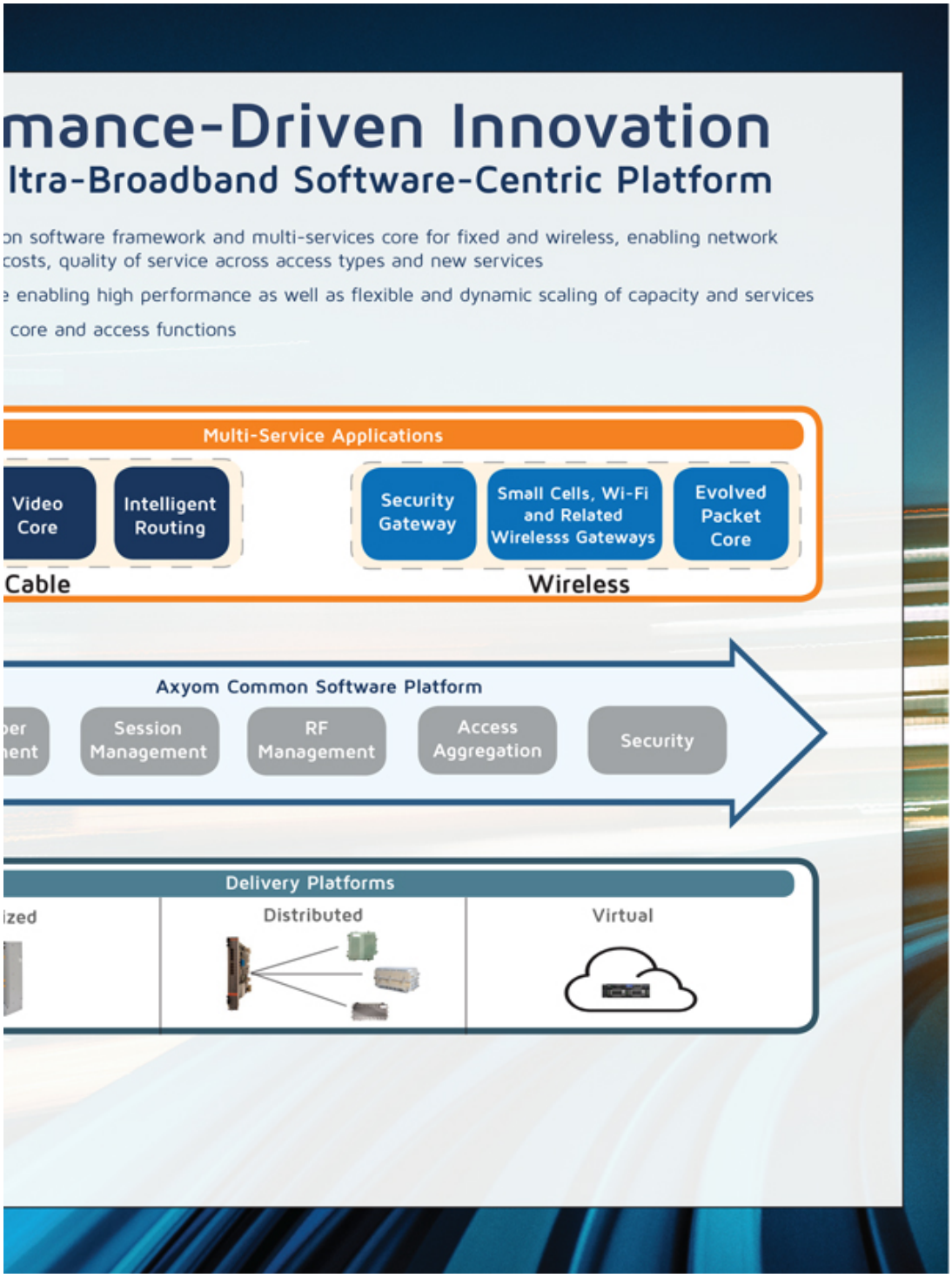

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You should rely only on the information contained in this prospectus or in any free writing prospectus we file with the Securities and Exchange Commission, or SEC. We and the underwriters have not authorized anyone to provide you with additional information or information different from that contained in this prospectus or any free writing prospectus. We and the underwriters are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date on the front cover of this prospectus, or other earlier date stated in this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

Through and including , 2018 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

For investors outside the United States: Neither we nor the underwriters have done anything that would permit our initial public offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of our common stock and the distribution of this prospectus outside of the United States.

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Terms Used in this Prospectus

Concept	Abbreviation	Definition
Cable Modem Termination System	CMTS	A CMTS is a critical element of a cable service provider's network. A CMTS is typically located either on the cable service provider's premises or at a remote hub in the field and is used to provide high-speed data services such as Internet Protocol, or IP, or Voice over Internet Protocol, or VoIP, to cable subscribers. A CMTS enables IP data and IP voice communication between a cable service provider's networks and subscribers' modems through coaxial cable. A CMTS performs several network services, including subscriber and access management, data security and service provisioning for cable subscribers. A CMTS communicates with subscribers' cable modems using DOCSIS protocol. DOCSIS is a cable industry standard defined by CableLabs, a consortium of cable service providers.
Converged Cable Access Platform	CCAP	A CCAP is a part of a cable service provider's network that enables the delivery of IP voice, digital video and data over a single port. A CCAP combines CMTS functions that enable data and IP voice communication with edge-quadrature amplitude modulation, or Edge-QAM, functionality to enable video delivery over cable networks in one integrated chassis.
Field Programmable Gate Array	FPGA	An FPGA is an integrated circuit designed to be configured by a customer after manufacturing. FPGAs can be reprogrammed in the field to desired application or functionality requirements through the use of custom software. This feature distinguishes FPGAs from Application Specific Integrated Circuits (ASICs), which are custom manufactured for specific tasks and are not able to be modified after manufacturing.
Remote-PHY	R-PHY	R-PHY refers to remotely deployable hardware that is typically located at the edge of a cable service provider's network, near where the customers are located. R-PHY is capable of radio frequency signal generation that provides connectivity from where the customers are located to the data center via an optical network. R-PHY is typically connected to a CMTS or a CCAP system at a data center. By placing R-PHY equipment closer to subscribers, cable service providers are able to move fiber closer to the network edge. This allows for cable service providers to serve more subscribers at higher speed, resulting in overall increased network throughput.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. You should read the following summary together with the more detailed information appearing in this prospectus, including our consolidated financial statements and related notes, and the risk factors beginning on page 12, before deciding whether to purchase shares of our common stock. Unless the context otherwise requires, we use the terms "Casa Systems," "Casa," "our company," "we," "us" and "our" in this prospectus to refer to Casa Systems, Inc. and its subsidiaries.

CASA SYSTEMS, INC.

Our Vision

Our products help our customers provide and manage broadband connectivity. We believe consumers and enterprises should be able to enjoy ultra-fast speeds and enhanced digital content experiences through their phones, tablets, computers, TVs and other connected devices at home or on the go. We believe that connectivity should be ubiquitous and seamless; it should not matter whether the user is accessing the Internet through wireless or fixed connections, and it should not matter whether that service is being provided by a cable operator, fixed telecom carrier or wireless services provider. Our innovative, software-centric products are designed to help achieve this vision.

Overview

We provide a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds. In addition, we offer solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom and wireless networks. Our innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures.

We focus our development efforts on innovation and being the first to market with new products at each generational shift in cable network technology. We pioneered the use of a software-centric approach to leverage the programmability of FPGAs and general purpose processors for use in the cable industry. In addition, we believe we were the first to provide each of the following to our customers: a solution enabling cable service providers to deliver IP voice, digital video and data over a single port; a solution enabling cable service providers to deliver multi-gigabit speeds to their subscribers; and a remote node solution to enable distributed broadband cable access at gigabit speeds.

We have created a software-centric, multi-service portfolio that enables a broad range of core and access network functions for fixed and wireless networks. These networks share a common set of core and access network functions that enable network services, such as subscriber management, session management, transport security and radio frequency, or RF, management. Our Axyom™ software architecture allows each of these network functions to be provided and controlled by a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time. While we initially focused on providing solutions for cable service providers due to our founders' experience in the cable industry, the commonalities between fixed and wireless network architectures have allowed us to expand our solutions into the wireless market as cable service providers have increasingly sought to add wireless capabilities to their service offerings.

We offer a scalable solution that can meet the evolving bandwidth needs of our customers and their subscribers. Our first installation in a cable service provider's network frequently involves deploying our broadband products in only a portion of the provider's network and with only a fraction of the capacity of our products enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to increase network capacity. Capacity expansions are accomplished either by deploying additional systems or line cards, or by our remote enablement of additional channels through the use of software. Sales of additional line cards and software-based capacity expansions generate higher gross margins than our initial hardware-based deployments.

Our solutions are commercially deployed in over 70 countries by more than 400 customers, including regional service providers as well as some of the largest Tier 1 broadband service providers, serving millions of subscribers. Our principal customers include Charter/Time Warner Cable, Rogers and Mediacom in North America; Televisa/IZZI Mexico, Megacable Mexico and Claro Telmex Colombia in Latin America; Liberty Global, Vodafone and DNA Oyj in Europe; and Jupiter Communications and Beijing Gehua CATV Networks in Asia-Pacific.

One of our largest customers, Time Warner Cable, launched its flagship "TWC Maxx" initiative in the New York City metropolitan area in 2014 using our solution. By deploying our C100G CCAP solution, Time Warner Cable was able to triple the maximum speed offered to its customers and reduce power consumption by nearly 30%, or approximately 11GWh per year, which we estimate is enough power for over 1,800 residential homes. Our solution also enabled Time Warner Cable to reduce facility space and remove over 140 miles of coaxial copper cable.

We have achieved significant growth and profitability. For the year ended December 31, 2015, we generated revenue of $272.5 million, net income of $67.9 million and adjusted EBITDA[1] of $115.5 million, representing increases of 29.0%, 13.8% and 22.1%, respectively, from the corresponding amounts for the year ended December 31, 2014. For the year ended December 31, 2016, we generated revenue of $316.1 million, net income of $88.7 million and adjusted EBITDA of $129.1 million, representing increases of 16.0%, 30.5% and 11.7%, respectively, from the corresponding amounts for the year ended December 31, 2015. For the nine months ended September 30, 2017, we generated revenue of $233.6 million, net income of $59.6 million and adjusted EBITDA of $93.3 million, representing increases of 7.7%, 22.2% and 25.2%, respectively, from the corresponding amounts for the nine months ended September 30, 2016.

Industry Background

We believe broadband service providers are facing several key challenges, including:

- ***Rapidly increasing bandwidth demand.*** Bandwidth demand has grown substantially and is expected to continue to increase, caused by more users with more connected devices and applications, increased use of bandwidth-intensive streaming media services, and the increasing prevalence of Internet of Things, or IoT, solutions, among other factors.
- ***Competition fueled by increasing breadth of service offerings.*** With increased consumer and enterprise choice for access to broadband, broadband service providers are increasingly coming into competition with each other, and must develop differentiated service offerings with higher levels of performance at lower cost.

[1] Adjusted EBITDA is a non-GAAP financial measure. Please see "Selected Consolidated Financial Data—Non-GAAP Financial Measures" for information regarding the limitations of using adjusted EBITDA and for a reconciliation of adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

- ***Increasing network complexity.*** As the diversity of service offerings has grown, network complexity has increased.
- ***Need to control operating and capital expenditures.*** The operation of network infrastructure is space, power and personnel intensive. In addition, broadband service providers are frequently required to incur significant capital expenditures to upgrade existing equipment.

Opportunity to Transform Broadband Networks

Given the challenges they face, broadband service providers are undertaking three key technology initiatives to help build next-generation networks:

- ***Densification.*** Broadband service providers are shifting from centralized to more distributed architectures, a process referred to as densification. Densification requires extending network connectivity and distributing access aggregation solutions closer to end users.
- ***Network convergence.*** As fixed and wireless providers continue to consolidate and integrate their service offerings, which is referred to as convergence, these service providers are seeking to integrate their separate delivery modes with all-IP architectures, shared transport and a common suite of software-centric core and access network functions.
- ***Virtualization.*** Software-enabled architectures that are decoupled from underlying hardware allow for increased efficiencies, upgradability, configuration flexibility, service agility and scalability not feasible with hardware-centric approaches.

Our Solutions

We offer solutions for fixed and wireless networks. Our software-centric, multi-service broadband platform, Axyom, enables ultra-broadband delivery and convergence. We engineered our platform from the ground-up to be high performance, flexible and adaptable, and to allow our customers to seamlessly address the growing demand for bandwidth and connectivity and competitive need for service agility.

Our platform provides the following key benefits to broadband service providers:

- ***Addition of critical bandwidth capacity.*** Our solutions enable broadband service providers to offer multi-gigabit speeds and to expand capacity seamlessly to meet the growing demand for bandwidth.
- ***Flexibility to add new and expand existing services.*** Our platform provides us with the flexibility to adapt to changing industry standards and customer needs.
- ***Ability to upgrade networks remotely.*** Our programmable architecture allows us to deploy technology updates to our customers remotely without the expense, disruption or network downtime caused by hardware replacements or field visits by personnel.
- ***Reduced network complexity, operating costs and capital expenditures.*** Our converged software platform allows broadband service providers to significantly reduce the complexity and costs of their networks by reducing parallel and otherwise redundant network architectures.
- ***Ability to densify networks.*** Our products help broadband service providers deploy more capacity at the network edge, closer to where end users and devices are accessing the network, increasing available bandwidth and reducing latency to improve quality of service.
- ***Common platform capabilities to address the needs of both fixed and wireless networks***. Our software-centric, multi-service platform enables a broad range of network services for fixed and wireless networks allowing for the delivery of diverse consumer and enterprise applications.

Our primary product line is our portfolio of converged cable access platform, or CCAP, solutions, which enable the provision of voice, video and data over a single port.

Our Competitive Strengths

The following competitive strengths have helped us become a market leader:

- ***Highly flexible, software-centric architecture.*** We have designed our product portfolio from the ground up to be software-centric and modular in nature. Our proprietary software is at the heart of our products. Our software allows us to leverage the programmability of FPGAs and general purpose processors in our solutions. Our software-centric architecture enables us to virtualize core network and access functions allowing these functions to be decoupled from underlying hardware, which is not feasible with hardware-centric approaches and allows for increased efficiencies, upgradability, configuration flexibility, service agility and scalability.
- ***Proven engineering and product development track record***. We have a proven history of anticipating network evolutions and developing solutions that enable next-generation networks. Our forward-looking design and investment approach, coupled with our proven product development track record, has enabled us to deliver fully featured next-generation solutions in advance of competitors. For example, we believe we were first to market with (1) a software-centric cable solution leveraging the programmability of FPGAs and general purpose processors, (2) a commercially deployed, fully qualified DOCSIS 3.0 CMTS, (3) a commercially deployed CCAP delivering IP voice, digital video and data over a single port, (4) commercially deployed DOCSIS 3.1-compliant solutions supporting speeds of up to 10 gigabits per second and (5) a commercially deployable remote-PHY solution.
- ***Strong management and engineering team with a culture of innovation***. We pride ourselves on our culture of innovation, which is driven by our management team of experienced executives and engineers with deep industry expertise. As of October 31, 2017, approximately 85% of our employees were engineers or had other technical backgrounds.
- ***Customer focus***. We have a passion to serve our customers and the agility and flexibility to offer solutions to meet their evolving requirements.
- ***Diversified and established customer base***. Our solutions are commercially deployed in over 70 countries by more than 400 customers, including some of the world's largest Tier 1 broadband service providers.

Market Opportunity

We believe that the shift to software-centric ultra-broadband networks and fixed and wireless network convergence presents us with a compelling market opportunity. We believe the global CCAP market, which currently accounts for the majority of our revenue, is $2.0 billion in 2017. In addition, we believe that new wireless communications and network infrastructure segments that we have entered offer substantial additional market opportunities.

Our Growth Strategy

The key elements of our growth strategy are:

- Continue to innovate and extend technology leadership through R&D investment.
- Further penetrate existing customers.
- Expand our customer base.

- Expand the breadth of solutions sold to customers, with particular focus on the development of new software-based and virtualized products.
- Leverage our core technology for the cable industry into adjacent wireless markets.
- Invest in our platform through selective acquisitions.

Risks Associated with Our Business

You should consider carefully the risks described under the "Risk Factors" section beginning on page 12 and elsewhere in this prospectus. These risks, which include the following, could materially and adversely affect our business, financial condition, operating results, cash flow and prospects, which could cause the trading price of our common stock to decline and could result in a partial or total loss of your investment:

- If we do not successfully anticipate technological shifts, market needs and opportunities, and develop new products and product enhancements that meet those technological shifts, needs and opportunities, we may not be able to compete effectively.
- Our success depends in large part on broadband service providers' continued deployment of, and investment in, ultra-broadband network capabilities that make use of our solutions.
- We expect certain of our customers will continue to account for a substantial portion of our revenue.
- Timing of large orders and seasonality in our revenue may cause our quarterly revenue and results of operations to fluctuate and possibly decline materially from quarter to quarter.
- Our sales to the broadband service provider market are volatile and our sales cycles can be long and unpredictable. As a result, our sales and revenue are difficult to predict and may vary substantially from period to period, which may cause our revenue and results of operations to fluctuate and possibly decline significantly.
- We may not generate positive returns on our research and development investments.
- Our CCAP solutions currently represent a significant majority of our product sales; this concentration may limit our ability to increase our revenue.
- We have invested heavily in developing wireless solutions, and we face risks in seeking to expand our platform into the wireless market.
- We believe the broadband service provider industry is in the early stages of a major architectural shift toward the virtualization of networks and the use of networks with distributed architectures. If the architectural shift does not occur, if it does not occur at the pace we predict, or if the products and services we have developed are not attractive to our customers after such shift takes place, our revenues could decline.
- We face intense competition, including from larger, well-established companies, and we may lack sufficient financial or other resources to maintain or improve our competitive position.
- If we are unable to sell additional products to our existing customers, our revenue growth will be adversely affected and our revenue could decline.
- We may have difficulty attracting new large customers or acquiring new customers due to the high costs of switching broadband equipment.
- Our results of operations are likely to vary significantly from period to period and be unpredictable. If we fail to meet the expectations of analysts or investors, the market price of our common stock could decline substantially.

Our Corporate Information

We were incorporated in the State of Delaware on February 28, 2003. Our principal executive offices are located at 100 Old River Road, Andover, Massachusetts 01810, and our telephone number at that address is (978) 688-6706. Our website address is www.casa-systems.com. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus or in deciding whether to purchase shares of our common stock.

"Casa Systems," "Casa," our logo and other trademarks or tradenames of Casa Systems, Inc. appearing in this prospectus are our property. This prospectus also contains trademarks and trade names of other companies, which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this prospectus may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable licensor to these trademarks and trade names.

THE OFFERING

Common stock offered	shares
Common stock to be outstanding after this offering	shares
Option to purchase additional shares	We have granted the underwriters an option, exercisable for 30 days after the date of this prospectus, to purchase up to an additional shares from us.
Use of proceeds	The principal purposes of this offering are to create a public market for our common stock, facilitate access to the public equity markets, increase our visibility in the marketplace and obtain additional capital. We estimate that we will receive net proceeds from this offering of $ million, based upon an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering for working capital and general corporate purposes. In addition, we believe that opportunities may exist from time to time to expand our current business through acquisitions of or investments in complementary products, technologies or businesses. While we have no agreements, commitments or understandings for any specific acquisitions at this time, we may use a portion of our net proceeds for these purposes. See “Use of Proceeds” for more information.
Dividend policy	Although we have declared a special dividend on four separate occasions since our inception and may declare an additional special dividend of $ million prior to the effective date of the registration statement of which this prospectus forms a part, we do not anticipate declaring cash dividends following this offering. See “Dividend Policy” for more information.
Risk factors	See “Risk Factors” for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Proposed Nasdaq Global Market symbol	“CASA”

The number of shares of our common stock to be outstanding after this offering is based on 6,743,101 shares of common stock outstanding as of October 31, 2017 and 8,076,394 additional shares of our common stock issuable upon the automatic conversion of all outstanding shares of our convertible preferred stock upon the closing of this offering and excludes:

- 29,166 shares of common stock issuable upon the exercise of stock options outstanding under our 2003 Stock Incentive Plan as of October 31, 2017, with a weighted-average exercise price of $1.25 per share;
- 2,979,832 shares of common stock issuable upon the exercise of stock options outstanding under our 2011 Stock Incentive Plan as of October 31, 2017, with a weighted-average exercise price of $21.16 per share;
- 172,348 shares of common stock issuable upon the vesting of restricted stock units outstanding under our 2011 Stock Incentive Plan as of October 31, 2017;
- 567,863 shares of common stock reserved for future issuance under our 2011 Stock Incentive Plan as of October 31, 2017, which plan will terminate as to new awards upon the closing of this offering; and
- 1,432,137 additional shares of common stock that will become available for issuance in connection with this offering under our 2017 Stock Incentive Plan.

Except as otherwise noted, all information in this prospectus assumes:

- the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,076,394 shares of our common stock upon the closing of this offering; and
- no exercise by the underwriters of their option to purchase up to an additional shares.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following tables present summary consolidated financial and other financial data for our business. The summary consolidated statement of operations data presented below for the years ended December 31, 2014, 2015 and 2016 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The summary consolidated statement of operations data for the nine months ended September 30, 2016 and 2017 and the summary consolidated balance sheet data as of September 30, 2017 have been derived from our unaudited condensed consolidated financial statements included elsewhere in this prospectus and have been prepared on a basis consistent with our audited consolidated financial statements. In the opinion of management, the unaudited data reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the financial information in those statements. Our historical results are not necessarily indicative of the results to be expected in the future, and the results for any interim period are not necessarily indicative of results to be expected in any full year. You should read this summary consolidated financial data in conjunction with the section of this prospectus titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere in this prospectus.

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands, except per share amounts)				
Consolidated Statement of Operations Data:					
Revenue:					
Product	$ 194,358	$ 247,588	$ 279,223	$191,763	$205,155
Service	16,920	24,862	36,905	25,139	28,458
Total revenue	211,278	272,450	316,128	216,902	233,613
Cost of revenue(1):					
Product	59,088	74,349	89,340	68,793	62,865
Service	5,917	5,265	8,477	5,983	3,637
Total cost of revenue	65,005	79,614	97,817	74,776	66,502
Gross profit	146,273	192,836	218,311	142,126	167,111
Operating expenses:					
Research and development(1)	25,481	37,155	49,210	37,213	43,912
Sales and marketing(1)	21,409	36,157	36,114	27,289	26,983
General and administrative(1)	10,346	16,453	18,215	13,532	14,387
Total operating expenses	57,236	89,765	103,539	78,034	85,282
Income from operations	89,037	103,071	114,772	64,092	81,829
Other income (expense), net	(2,942)	(1,408)	921	953	(9,858)
Income before provision for income taxes	86,095	101,663	115,693	65,045	71,971
Provision for income taxes	26,387	33,742	27,025	16,228	12,334
Net income	$ 59,708	$ 67,921	$ 88,668	$ 48,817	$ 59,637
Cash dividends declared per common share or common share equivalent	$ 1.9173	$ —	$ 14.5984	$ 2.9455	$ 5.8872
Net income (loss) attributable to common stockholders(2):					
Basic	$ 23,287	$ 27,302	$ (35,119)	$ 19,928	$ 7,689
Diluted	$ 23,843	$ 30,402	$ (35,119)	$ 20,006	$ 7,689

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands, except per share amounts)				
Net income (loss) per share attributable to common stockholders(2):					
Basic	$ 3.88	$ 4.30	$ (5.34)	$ 3.04	$ 1.14
Diluted	$ 3.65	$ 3.92	$ (5.34)	$ 2.37	$ 0.89
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders(2):					
Basic	5,997	6,348	6,573	6,564	6,731
Diluted	6,537	7,761	6,573	8,427	8,639
Pro forma net income per share attributable to common stockholders (unaudited)(2):					
Basic			$		$
Diluted			$		$
Weighted-average shares used to compute pro forma net income per share attributable to common stockholders (unaudited)(2):					
Basic					
Diluted					
Other Financial Data:					
Non-GAAP net income(3)	$ 62,145	$ 72,812	$ 95,032	$53,301	$64,520
Adjusted EBITDA(3)	$ 94,632	$ 115,541	$ 129,084	$74,517	$93,298

(1) Includes stock-based compensation expense related to stock options, stock appreciation rights and restricted stock units granted to employees and non-employee consultants as follows:

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Cost of revenue	$ 161	$ 143	$ 237	$ 178	$ 202
Research and development expense	852	1,843	2,306	1,637	1,535
Sales and marketing expense	598	775	1,147	846	801
General and administrative expense	380	4,560	4,614	3,313	3,355
Total stock-based compensation expense	$1,991	$7,321	$8,304	$ 5,974	$ 5,893

(2) See Note 14 to our audited consolidated financial statements and Note 12 to our unaudited condensed consolidated financial statements, both included elsewhere in this prospectus, for an explanation of the calculations of basic and diluted net income (loss) per share attributable to common stockholders and pro forma basic and diluted net income per share attributable to common stockholders.

(3) These financial measures are not calculated in accordance with GAAP. See “Selected Consolidated Financial Data—Non-GAAP Financial Measures” for information regarding our use of these non-GAAP financial measures and a reconciliation of such measures to their nearest comparable financial measures calculated and presented in accordance with GAAP.

	As of September 30, 2017		
	Actual	Pro Forma(2)	Pro Forma As Adjusted(3)
		(in thousands)	
Consolidated Balance Sheet Data:			
Cash and cash equivalents	$ 183,519		$
Working capital(1)	247,182		
Total assets	392,235		
Long-term debt, including current portion, net of unamortized debt issuance costs	298,147		
Total liabilities	402,962		
Convertible preferred stock	97,479	—	
Total stockholders' equity (deficit)	(108,206)		

(1) We define working capital as current assets less current liabilities.

(2) The pro forma balance sheet data gives effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock into 8,076,394 shares of common stock upon the closing of this offering and (ii) the accrual of an additional special dividend of $ million, which was declared by our board of directors on , 2017, and cash payments of $ million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments approved by our board of directors in connection with such dividend.

(3) The pro forma as adjusted balance sheet data gives further effect to our sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

RISK FACTORS

Risks Related to Our Business and Our Industry

If we do not successfully anticipate technological shifts, market needs and opportunities, and develop new products and product enhancements that meet those technological shifts, needs and opportunities, we may not be able to compete effectively.

The broadband service provider market, including fixed and wireless, is characterized by rapid technological shifts and increasingly complex customer requirements to achieve scalable networks that accommodate rapidly increasing consumer demand for bandwidth. To compete effectively, we must continue to develop new technologies and products that address emerging technological trends and changing customer needs. The process of developing new technology is complex and uncertain, and the development of new offerings requires significant upfront investment that may not result in material improvements to existing products or result in marketable new products or costs savings or revenue for an extended period of time, if at all.

We believe that our culture of innovation is a significant factor in our ability to develop new products. If we are not able to attract and retain employees that are able to contribute to our culture of innovation, our ability to identify emerging technological trends and changing customer needs and successfully develop new products to address them could be adversely impacted.

The success of new products and enhancements also depends on many other factors, including timely completion and introduction, differentiation from products offered by competitors and previous versions of our own products and, ultimately, market acceptance of these new products and enhancements. In addition, new technologies or standards could render our existing products obsolete or less attractive to customers. If we are unable to successfully introduce new products and enhancements, we would not be able to compete effectively and our business, financial condition, results of operations and prospects could be materially adversely affected.

Our success depends in large part on broadband service providers' continued deployment of, and investment in, ultra-broadband network capabilities that make use of our solutions.

A significant portion of our product and solution suite is dedicated to enabling cable service providers to deliver voice, video and data services over newer and faster ultra-broadband networks. As a result, our success depends significantly on these cable service providers' continued deployment of, and investment in, their networks, which depends on a number of factors outside of our control. These factors include capital constraints, the presence of available capacity on legacy networks, perceived subscriber demand for ultra-broadband networks, competitive conditions within the broadband service provider industry and regulatory issues. If broadband service providers do not continue deploying and investing in their ultra-broadband networks in ways that involve our solutions, for these or other reasons, our business, financial condition, results of operations and prospects could be materially adversely affected.

We expect certain of our customers will continue to represent a substantial portion of our revenue.

Historically, certain of our customers have accounted for a significant portion of our revenue. For example, sales to Time Warner Cable accounted for 41%, 14%, 23% and 36% of our revenue for the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, respectively; sales to Liberty Global accounted for 17%, 10% and 11% of our revenue for the years ended December 31, 2015 and 2016 and the nine months ended September 30, 2017, respectively; sales to Rogers accounted for 19% of our revenue for the year ended December 31, 2016; and sales to SCSK Corporation accounted for 13% of our revenue for the year ended December 31, 2014. Based on their historical purchasing patterns, we expect that our large customers will continue to account for a substantial portion of our revenue in future periods. However, our customers generally make purchases from us on a purchase-order basis rather than pursuant to long-term contracts, and those that do enter long-term contracts typically have the right to terminate their contracts for

convenience, and as a result, we generally have no assurances that these large customers will continue to purchase our solutions. We may also see consolidation of our customer base, which could result in loss of customers. In addition, some of our large customers have used, and may in the future use, the sizes and relative importance of their orders to our business to require that we enter into agreements with more favorable terms than we would otherwise agree to and obtain price concessions. The loss of a significant customer, a significant delay or reduction in purchases by large customers or significant price concessions to one or more large customers, could have a material adverse effect on our business, financial condition, results of operations and prospects.

Timing of large orders and seasonality in our revenue may cause our quarterly revenue and results of operations to fluctuate and possibly decline materially from quarter to quarter.

Our customers tend to make large purchases from us when initiating or upgrading services based on our solutions, followed by smaller purchases for maintenance and ongoing support. In addition, purchases by existing customers of capacity expansions can also involve large individual orders that may represent a significant portion of our revenue for a fiscal quarter, which may also have a significant impact on our quarterly gross margin due to these capacity expansions generating higher gross margins than our initial hardware-based deployments. As a result of all of these factors, our quarterly revenue and results of operations, including our gross margin, may be significantly impacted by one or a small number of large individual orders. For example, any cancellation of orders or any acceleration or delay in anticipated product purchases or the acceptance of shipped products by a large customer could materially affect our revenue and results of operations in any quarterly period. We may be unable to sustain or increase our revenue from other new or existing customers to offset the discontinuation of purchases by one of our larger customers. As a result, our quarterly revenue and results of operations are difficult to estimate and may fluctuate or decline materially from quarter to quarter.

In addition, we believe that there are significant seasonal factors which may cause revenue to be greater for the first and fourth quarters of our fiscal year as compared to the second and third quarters. We believe that this seasonality results from a number of factors, including the procurement, budgeting and deployment cycles of many of our customers. These seasonal variations may cause our quarterly revenue and results of operations to fluctuate or decline materially from quarter to quarter.

Our sales to the broadband service provider market are volatile and our sales cycles can be long and unpredictable. As a result, our sales and revenue are difficult to predict and may vary substantially from period to period, which may cause our revenue and results of operations to fluctuate and possibly decline significantly.

Our sales to the broadband service provider market have been characterized by large and sporadic purchases and long sales cycles. Sales activity often depends upon the stage of completion of expanding network infrastructures, the availability of funding and the extent to which broadband service providers are affected by regulatory, economic and business conditions in the countries in which they operate.

In addition, the timing of our sales and revenue recognition is difficult to forecast because of the unpredictability of our products' sales cycles. A sales cycle is the period between initial contact with a prospective customer and the sale of our products to that customer. Customer orders often involve the purchase of multiple products. These orders are complex and difficult to obtain because prospective customers generally consider a number of factors over an extended period of time before committing to purchase the products and solutions we sell. Customers, especially in the case of our large customers, often view the purchase of our products as a significant and strategic decision and require considerable time to evaluate, test and qualify our products prior to making a purchase decision and placing an order. The length of time that customers devote to their evaluation, contract negotiation and budgeting processes varies significantly, but can often exceed 24 months. During the sales cycle, we expend significant time and money on sales and marketing activities and make investments in evaluation equipment, all of which are included in our sales and marketing expenses and lower our operating margins, particularly if no sale occurs.

Even if a customer decides to purchase our products, there are many factors affecting the timing of our recognition of revenue, which makes our revenue difficult to forecast. For example, the sale of our products may be subject to acceptance testing or there may be unexpected delays in a customer's internal procurement processes, particularly for some of our larger customers, for whom our products represent a very small percentage of their total procurement activity. These factors may result in our inability to recognize revenue for months or years following a sale. In addition, other factors that are specific to particular customers can affect the timing of their purchases and the variability of our revenue recognition, including the strategic importance of a particular project to a customer, budgetary constraints and changes in their personnel. For all of these reasons, it is difficult to predict whether a sale will be completed, the particular period in which a sale will be completed and the period in which revenue from a sale will be recognized. If our sales cycles lengthen, our revenue could be lower than expected, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may not generate positive returns on our research and development investments.

Developing our products is expensive, and the investment in product development may involve a long payback cycle or may result in investments in technologies or standards that do not get adopted in the timeframe we anticipate, or at all. For the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, our research and development expenses were $25.5 million, or approximately 12.1% of our revenue, $37.2 million, or approximately 13.6% of our revenue, $49.2 million, or approximately 15.6% of our revenue, and $43.9 million, or approximately 18.8% of our revenue, respectively. We expect to continue to invest heavily in software development in order to expand the capabilities of our broadband and wireless infrastructure solutions, introduce new products and features and build upon our technology leadership, and we expect that our research and development expenses will continue to increase in absolute dollars and as a percentage of revenue from 2016 to 2017. Our investments in research and development may not generate positive returns in a timely fashion or at all.

Our converged cable access platform, or CCAP, solutions currently represent a significant majority of our product sales; this concentration may limit our ability to increase our revenue, and our business would be adversely affected in the event we are unable to sell one or more of our products.

We are heavily dependent upon the sales of our CCAP solutions. In the event we are unable to market and sell these products or any future product that represents a substantial amount of our revenue, our business, financial condition, results of operations and prospects could be materially adversely affected.

We have invested heavily in developing wireless solutions, and we face risks in seeking to expand our platform into the wireless market.

We have invested heavily in developing wireless solutions that have yet to generate revenue. We cannot guarantee that these investments, or any of our other investments in research and development will ever generate revenue or become profitable for us, and the failure of these investments to generate positive returns may adversely impact our business, financial condition, results of operations and prospects. The wireless market makes up a substantial portion of our total potential addressable market. In addition, expanding our offerings into the wireless market presents other significant risks and uncertainties, including potential distraction of management from other business operations that generate more substantial revenue, the dedication of significant research and development, sales and marketing, and other resources to this new business line at the expense of our other business operations and other risks that we may not have adequately anticipated.

We believe the broadband service provider industry is in the early stages of a major architectural shift toward the virtualization of networks and the use of networks with distributed architectures. If the architectural shift does not occur, if it does not occur at the pace we predict, or if the products and services we have developed are not attractive to our customers after such shift takes place, our revenues could decline.

We believe the broadband service provider industry is in the early stages of transitioning to the virtualization of networks and the use of networks with distributed architectures. We are developing products and

services that we believe will be attractive to our customers and potential customers who make that shift. Our strategy depends in part on our belief that the industry shift to a software-centric cloud-based architecture and increasing densification will continue. In our experience, fundamental changes like this often take time to accelerate and the adoption rates of our customers may vary. As our customers determine their future network architectures and how to implement them, we may encounter delayed timing of orders, deferred purchasing decisions and reduced expenditures. These longer decision cycles and reduced expenditures may negatively impact our revenues, or make it difficult for us to accurately predict our revenues, either of which could materially adversely affect our business, financial condition, results of operations and prospects. Moreover, it is possible that our customers may reverse or fail to expand upon current trends toward virtualization and distributed architectures, which could result in significantly reduced demand for the products that we have developed and currently plan to develop.

We face intense competition, including from larger, well-established companies, and we may lack sufficient financial or other resources to maintain or improve our competitive position.

The market for broadband infrastructure solutions is intensely competitive, and we expect competition to increase in the future from established competitors and new market entrants. This competition could result in increased pricing pressure, reduced profit margins, increased sales and marketing expenses and our failure to increase, or the loss of, market share, any of which could materially adversely affect our business, financial condition, results of operations and prospects.

In the broadband service provider market, we primarily compete with larger and more established companies, such as Arris and Cisco. As we seek to enter the wireless market, we expect to encounter additional competition from large, established providers of wireless communication networks, including Ericsson and Nokia.

Many of our existing and potential competitors enjoy substantial competitive advantages, such as:

- greater name recognition and longer operating histories;
- larger sales and marketing budgets and resources;
- broader distribution and established relationships with customers;
- greater access to larger customer bases;
- greater customer support resources;
- greater manufacturing resources;
- the ability to leverage their sales efforts across a broader portfolio of products;
- the ability to leverage purchasing power with vendor subcomponents;
- the ability to incorporate additional functionality into their existing products;
- the ability to bundle offerings with other products and services;
- the ability to set more aggressive pricing policies;
- the ability to offer greater amounts of equity and more valuable equity as incentives for purchases of their products and services;
- lower labor and development costs;
- greater resources to fund research and development or otherwise acquire new product offerings;
- larger intellectual property portfolios; and
- substantially greater financial, technical, research and development or other resources.

Our ability to compete will depend upon our ability to provide a better solution than our competitors at a price that offers superior value. We may be required to make substantial additional investments in research, development, sales and marketing in order to respond to competition.

We also expect increased competition if our market continues to expand. Conditions in our market could change rapidly and significantly as a result of technological advancements or other factors. Current or potential competitors may be acquired by third parties that have greater resources available than we do. Our current or potential competitors might take advantage of the greater resources of the larger organization resulting from these acquisitions to compete more vigorously or broadly with us. In addition, continued industry consolidation might adversely affect customers' perceptions of the viability of smaller and even medium-sized companies, such as us, consequently, customers' willingness to purchase from us. Further, certain large customers may develop broadband infrastructure solutions for internal use and/or to broaden their portfolios of internally developed resources, which could allow these customers to become new competitors in the market.

If we are unable to sell additional products to our existing customers, our revenue growth will be adversely affected and our revenue could decline.

To increase our revenue, we must sell additional products to our existing customers and add new customers and we expect that a substantial portion of our future sales will be follow-on sales to existing customers. For example, one of our sales strategies is to target sales of capacity expansions and implementation of wireless solutions at our current cable customers because they are familiar with the operational and economic benefits of our solutions. However, our existing customers may choose to use other providers for their infrastructure needs. If we fail to sell additional products to our existing customers, our business, financial condition, results of operations and prospects could be materially adversely affected.

We may have difficulty attracting new large customers or acquiring new customers due to the high costs of switching broadband equipment.

Broadband service providers typically need to make substantial investments when deploying network infrastructure, which can delay a purchasing decision. Once a broadband service provider has deployed infrastructure for a particular portion of its network, it is often difficult and costly to switch to another vendor's infrastructure. Unless we are able to demonstrate that our products offer significant performance, functionality or cost advantages that outweigh a customer's expense of switching from a competitor's product, it will be difficult for us to generate sales once that competitor's equipment has been deployed. Accordingly, if a customer has already deployed a competitor's product for its broadband infrastructure, it may be difficult for us to sell our products to that customer. If we fail to attract new large customers or acquire new customers, our business, financial condition, results of operations and prospects could be materially adversely affected.

We are exposed to the credit risk of some of our customers and to credit exposures in the event of turmoil in the credit markets, which could result in material losses.

Due to our reliance on significant customers, we are dependent on the continued financial strength of these customers. If one or more of our significant customers experience financial difficulties, it could result in uncollectable accounts receivable and our loss of such customers and anticipated revenue.

The majority of our sales are on an open credit basis, with typical payment terms of one year or less. We monitor individual customer payment capability in granting such open credit arrangements, seeking to limit such open credit to amounts we believe our customers can pay and maintain reserves we believe are adequate to cover exposure for doubtful accounts. However, there can be no assurance that our open credit customers will pay the amounts they owe to us or that the reserves we maintain will be adequate to cover such credit exposure. Our customers' failure to pay and/or our failure to maintain sufficient reserves could have a material adverse effect on our consolidated financial statements. In addition, in the event that turmoil in the credit markets makes it more

difficult for some customers to obtain financing, those customers' ability to pay could be adversely impacted, which in turn could have a material adverse impact on our business and operations.

A portion of our sales is also derived through our resellers, which tend to have more limited financial resources than other customers and to present increased credit risk. Our resellers also typically have the ability to terminate their agreements with us for any reason upon advance written notice.

We are exposed to fluctuations in currency exchange rates, which could adversely affect our business, financial condition, results of operations and prospects.

Our sales agreements are primarily denominated in U.S. dollars. Therefore, a strengthening U.S. dollar could increase the real cost of our products to our customers outside of the U.S., and alternatively a decrease in the value of the U.S. dollar relative to foreign currencies could increase our product and operating costs in foreign locations. If we are not able to successfully hedge against the risks associated with the currency fluctuations, our business, financial condition, results of operations and prospects could be materially adversely affected.

We generate a significant amount of revenue from sales to customers outside of the United States, and we are therefore subject to a number of risks associated with international sales and operations.

We have extensive international operations and generate a significant amount of revenue from sales to customers in Asia-Pacific, Europe and the Latin America. Our ability to grow our business and our future success will depend to a significant extent on our ability to continue to expand our operations and customer base worldwide.

As a result of our international reach, we must hire and train experienced personnel to staff and manage our foreign operations. To the extent that we experience difficulties in recruiting, training, managing and retaining an international staff, and specifically staff related to sales management and sales personnel, we may experience difficulties in sales productivity in foreign markets. We also enter into strategic relationships with resellers and sales agents in certain international markets where we do not have a local presence. If we are not able to maintain these relationships internationally or to recruit additional companies to enter into reseller and sales agent relationships, our future success in these international markets could be limited. Business practices in the international markets that we serve may differ from those in the U.S. and may require us in the future to include terms other than our standard terms in customer contracts. To the extent that we may enter into customer contracts in the future that include non-standard terms related to payment, warranties or performance obligations, our business, financial condition, results of operations and prospects could be materially adversely affected.

Our international sales and operations are subject to a number of risks, including the following:

- greater difficulty in enforcing contracts and accounts receivable collection and longer collection periods;
- increased expenses incurred in establishing and maintaining our international operations;
- fluctuations in exchange rates between the U.S. dollar and foreign currencies where we do business;
- greater difficulty and costs in recruiting local experienced personnel;
- wage inflation in certain growing economies;
- general economic and political conditions in these foreign markets;
- economic uncertainty around the world as a result of sovereign debt issues;
- communication and integration problems resulting from cultural and geographic dispersion;
- limitations on our ability to access cash resources in our international operations;

- ability to establish necessary business relationships and to comply with local business requirements;
- risks associated with trade restrictions and foreign legal requirements, including the importation, certification and localization of our products required in foreign countries;
- greater risk of unexpected changes in regulatory practices, tariffs and tax laws and treaties;
- the uncertainty of protection for intellectual property rights in some countries;
- delays resulting from our need to comply with foreign cybersecurity laws;
- greater risk of a failure of our operations and employees to comply with both U.S. and foreign laws and regulations, including antitrust regulations, the FCPA, privacy and data protection laws and regulations and any trade regulations ensuring fair trade practices; and
- heightened risk of unfair or corrupt business practices in certain geographies and of improper or fraudulent sales arrangements that may impact financial results and result in restatements of, or irregularities in, financial statements.

These and other factors could harm our ability to gain future international revenue and, consequently, materially adversely affect our business, financial condition, results of operations and prospects. Expanding our existing international operations and entering into additional international markets will require significant management attention and financial commitments. Our failure to successfully manage our international operations and the associated risks effectively could limit our future growth or materially adversely affect our business, financial condition, results of operations and prospects.

We are subject to anti-corruption laws such as the U.S. Foreign Corrupt Practices Act of 1977, as amended.

We are subject to anti-corruption laws such as the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, which generally prohibits U.S. companies and their employees and intermediaries from making corrupt payments to foreign officials for the purpose of obtaining or keeping business, securing an advantage or directing business to another, and requires companies to maintain accurate books and records. Under the FCPA, U.S. companies may be held liable for the corrupt actions taken by directors, officers, employees, agents, or other strategic or local partners or representatives. We rely on non-employee third-party representatives and other intermediaries to develop international sales opportunities, and generally have less direct control over such third parties' actions taken on our behalf. If we or our intermediaries fail to comply with the requirements of the FCPA or similar legislation, governmental authorities in the United States and elsewhere could seek to impose civil and/or criminal fines and penalties, which could have a material adverse effect on our business, reputation, results of operations and financial condition. We intend to increase our international sales and business and, as such, the cost of complying with such laws, and the potential harm from our noncompliance, are likely to increase.

Failure to comply with anti-corruption laws, such as the FCPA and the United Kingdom Bribery Act 2010, or the Bribery Act, and similar laws associated with our activities outside the U.S., could subject us to penalties and other adverse consequences. Any violation of the FCPA, Bribery Act or similar laws could result in whistleblower complaints, adverse media coverage, investigations, loss of export privileges, severe criminal or civil sanctions suspension or debarment from U.S. government contracts, all of which could have a material adverse effect on our reputation, business, results of operations and prospects. In addition, responding to any enforcement action or related investigation may result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees.

We are subject to governmental export and import controls that could impair our ability to compete in international markets or subject us to liability if we violate these controls.

Our products may be subject to various export controls and because we incorporate encryption technology into certain of our products, certain of our products may be exported from various countries only with the required export license or through an export license exception. Furthermore, certain export control and economic

sanctions laws prohibit the shipment of certain products, technology, software and services to embargoed countries and sanctioned governments, entities, and persons. If we fail to comply with the applicable export control laws, customs regulations, economic sanctions or other applicable laws, we could be subject to monetary damages or the imposition of restrictions which could materially adversely affect our business, financial condition, results of operations and prospects and could also harm our reputation. Further, there could be criminal penalties for knowing or willful violations, including incarceration for culpable employees and managers. Obtaining the necessary export license or other authorization for a particular sale may be time-consuming and may result in the delay or loss of sales opportunities. We recently discovered that we may have inadvertently violated certain technical provisions of the U.S. export control laws and regulations by failing to inform customers of their export control obligations and failing to make certain submissions to the Commerce Department's Bureau of Industry and Security, or BIS, in a timely and complete manner. However, we believe that the exports of our products were all to destinations and end users that would not have required licensing under the U.S. export control and sanctions laws. We have voluntarily disclosed the potential technical violations to BIS, and, although BIS may impose a penalty, we do not expect any such penalty to be material to our business, financial condition, results of operations and prospects.

In addition, various countries regulate the import of certain encryption technology and products, including through import permit and license requirements, and have enacted laws that could limit our ability to distribute our products or could limit our customers' ability to implement our products in those countries. Any change in export or import regulations, economic sanctions or related legislation, shift in the enforcement or scope of existing regulations or change in the countries, governments, persons or technologies targeted by such regulations could result in decreased use of our products by, or in our decreased ability to export or sell our products to, existing or potential customers with international operations or create delays in the introduction of our products into international markets. Any decreased use of our products or limitation on our ability to export or sell our products could materially adversely affect our business, financial condition, results of operations and prospects.

Our revenue growth rate in recent periods may not be indicative of our future performance.

Our revenue growth rate in recent periods may not be indicative of our future performance. Our revenue grew 29.0% from the year ended December 31, 2014 to the year ended December 31, 2015, grew 16.0% from the year ended December 31, 2015 to the year ended December 31, 2016 and grew 7.7% from the nine months ended September 30, 2016 to the nine months ended September 30, 2017. We may not achieve similar revenue growth rates in future periods. You should not rely on our revenue for any prior quarterly or annual period as any indication of our future revenue or revenue growth. If we are unable to maintain consistent revenue or revenue growth, our business, financial condition, results of operations and prospects could be materially adversely affected.

The majority of the growth in our revenue and income from operations has occurred since 2013, making it difficult to evaluate our future prospects.

We were founded in 2003 and booked our first revenue in 2006. The majority of the growth in our revenue and income from operations has occurred since 2013, making it difficult to evaluate our future prospects, including our ability to plan for and manage future growth. Our revenue and income from operations were $67.0 million and $10.0 million, respectively, for the year ended December 31, 2013, and $316.1 million and $114.8 million, respectively, for the year ended December 31, 2016. We have encountered and will continue to encounter risks and difficulties frequently experienced by rapidly growing companies in constantly evolving industries, including the risks described in this prospectus. If we do not address these risks successfully, our business, financial condition, results of operations and prospects could be materially adversely affected, and the market price of our common stock could decline.

Our products are necessary for the operation of our customers' broadband service operations. Product quality problems, warranty claims, services disruptions, or other defects, errors or vulnerabilities in our products or services could harm our reputation and materially adversely affect our business, financial condition, results of operations and prospects.

We assist our customers in the operation of their broadband service operations. Failures of our products could result in significant interruptions in our customers' capabilities to maintain their networks and operations. Further, unsatisfactory performance could cause us to lose revenue or market share, increase our service costs, cause us to incur substantial costs in analyzing, correcting or redesigning our products, cause us to lose significant customers, subject us to liability for damages and divert our resources from other tasks, any one of which could materially adversely affect our business, financial condition, results of operations and prospects.

Additionally, errors, failures or bugs in our products could result in warranty claims or claims by customers for losses that they sustain or, in some cases, could allow customers to claim damages. In addition, in the past, we have had to replace certain components of products that we had shipped or provide remediation in response to the discovery of defects or bugs from failures in software protocols.

Limitation of liability provisions in our standard terms and conditions of sale, and those of our resellers and sales agents, may not be enforceable under some circumstances or may not fully or effectively protect us from end-customer claims and related liabilities and costs. In some cases, including with respect to indemnification obligations under many of our agreements with customers and resellers, our contractual liability may be uncapped. The sale and support of our products also entail the risk of product liability claims. We maintain insurance to protect against certain types of claims associated with the use of our products, but our insurance coverage may not adequately cover any such claims. In addition, even claims that ultimately are unsuccessful could result in expenditures of funds in connection with litigation and divert management's time and other resources.

Our products must interoperate with operating systems, software applications and hardware, and comply with industry standards, that are developed by others, and if we are unable to devote the necessary resources for our products to interoperate with such software and hardware and comply with such standards, we may lose or fail to increase market share and experience a weakening demand for our products.

Generally, our products comprise only a part of and must interoperate with our customers' existing infrastructure, specifically their networks, servers, software and operating systems, which may be manufactured by a wide variety of vendors and original equipment manufacturers. Our products must also comply with industry standards, such as Data Over Cable Service Interface Specification, or DOCSIS, 3.0 and 3.1, which are established by third parties, in order to interoperate with such servers, storage, software and other networking equipment such that all systems function efficiently together. We may depend on other vendors to support prevailing industry standards. Also, some industry standards may not be widely adopted or implemented uniformly, and competing standards and other approaches may emerge that may be preferred by our customers.

In addition, when new or updated versions of these industry standards, software systems or applications are introduced, we must sometimes develop updated versions of our software so that our products will interoperate properly. We may not accomplish these development efforts quickly, cost-effectively or at all. These development efforts require capital investment and the devotion of engineering resources. If we fail to maintain compatibility with these systems and applications, our customers may not be able to adequately utilize our products, and we may lose or fail to increase market share and experience a weakening in demand for our products, among other consequences, which could materially adversely affect our business, financial condition, results of operations and prospects.

Our ability to sell our products is highly dependent on the quality of our support and services offerings, and our failure to offer high-quality support and services could have a material adverse effect on our business, financial condition, results of operations and prospects.

Once our products are deployed within our customers' networks, our customers depend on our support organization to resolve any issues relating to our products. Our provision of high-quality support is critical for the successful marketing and sale of our products. If we do not assist our customers in deploying our products effectively, do not succeed in helping our customers resolve post-deployment issues quickly or do not provide adequate ongoing support, it could adversely affect our ability to sell our products to existing customers and could harm our reputation with potential customers. In addition, our standard sales contracts require us to provide minimum service requirements to our customers on an ongoing basis and our failure to satisfy these requirements could expose us to claims under these contracts. Our failure to maintain high-quality support and services, including compliance with our contractual minimum service obligations, could have a material adverse effect on our business, financial condition, results of operations and prospects.

We base our inventory requirements on our forecasts of future sales. If these forecasts are materially inaccurate, we may procure inventory that we may be unable to use in a timely manner or at all.

We and our contract manufacturers procure components and build our products based on our forecasts. These forecasts are based on estimates of future demand for our products, which are in turn based on historical trends and analyses from our sales and marketing organizations, adjusted for overall market conditions. To the extent our forecasts are materially inaccurate or if we otherwise do not need such inventory, we may under- or over-procure inventory, and such inaccuracies in our forecasts could subject us to contractual damages and otherwise materially adversely affect our business, financial condition, results of operations and prospects.

Because we depend on third-party manufacturers to build our hardware, we are susceptible to manufacturing delays and pricing fluctuations that could prevent us from delivering customer orders on time, if at all, or on a cost-effective basis, which may result in the loss of sales and customers.

We depend on third-party contract manufacturers to manufacture our product hardware. A significant portion of our cost of revenue consists of payments to these third-party contract manufacturers. Our reliance on these third-party contract manufacturers reduces our control over the manufacturing process, quality assurance, product costs and product supply and timing, which exposes us to risk. To the extent that our products are manufactured at facilities in foreign countries, we may be subject to additional risks associated with complying with local rules and regulations in those jurisdictions. If we are unable to manage our relationships with our third-party contract manufacturers effectively, or if these third-party manufacturers suffer delays or disruptions for any reason, experience increased manufacturing lead times, capacity constraints or quality control problems in their manufacturing operations or fail to meet our future requirements for timely delivery, our ability to ship products to our customers would be severely impaired, and our business, financial condition, results of operations and prospects could be materially adversely affected.

Our contract manufacturers typically fulfill our supply requirements on the basis of individual orders. We do not have long-term contracts with our third-party manufacturers that guarantee capacity, the continuation of particular pricing terms or the extension of credit limits. Accordingly, they are not obligated to continue to fulfill our supply requirements, which could result in supply shortages, the prices we are charged for manufacturing services could be increased on short notice and we may not be able to develop alternate or second contract manufacturers in a timely manner. If we add or change contract manufacturers, or change any manufacturing plant locations within a contract manufacturer network, we would add additional complexity and risk to our supply chain management.

In addition, we may be subject to significant challenges in ensuring that quality, processes and costs, among other issues, are consistent with our expectations and those of our customers. A new contract manufacturer or

manufacturing location may not be able to scale its production of our products at the volumes or quality we require. This could also adversely affect our ability to meet our scheduled product deliveries to our customers, which could damage our customer relationships and cause the loss of sales to existing or potential customers, late delivery penalties, delayed revenue or an increase in our costs which could adversely affect our gross margins. This could also result in increased levels of inventory subjecting us to increased excess and obsolete charges that could have a negative impact on our results of operations.

Because some of the key components in our products come from limited sources of supply, we are susceptible to supply shortages or supply changes, which could disrupt or delay our scheduled product deliveries to our customers and may result in the loss of sales and customers.

Our products rely on key components that our contract manufacturers purchase on our behalf from a limited number of suppliers, including Altera, Analog Devices, Bell Power, Broadcom, Maxim, Mini-Circuits, Qorvo, TTM Technologies and Xilinx. We do not have guaranteed supply contracts with any of our component suppliers, and our suppliers could delay shipments or cease manufacturing such products or selling them to us at any time. The development of alternate sources for those components is time-consuming, difficult and costly. If we are unable to obtain a sufficient quantity of these components on commercially reasonable terms or in a timely manner, sales of our products could be delayed or halted entirely or we may be required to redesign our products. Any of these events could result in lost sales and damage to our customer relationships, which would adversely impact our business, financial condition, results of operations and prospects. In the event of a shortage or supply interruption from our component suppliers, we may not be able to develop alternate or second sources in a timely manner, on commercially reasonable terms or at all. In addition, certain of our customer contracts require us to notify our customers of any discontinuation of the products that we supply to them and to provide support for discontinued products, and lack of supply from our suppliers could leave us unable to fulfill our customer support obligations. Adverse changes to our relationships with our sole suppliers could result in lost sales and damage to our customer relationships, which would adversely impact our business, financial condition, results of operations and prospects.

We rely on resellers and sales agents to sell our products into certain international markets, and the loss of such resellers and sales agents could delay or harm our ability to deliver our products to our customers.

We rely upon resellers and sales agents to coordinate sales and distribution of our products in certain international markets. We provide our resellers and sales agents with specific training and programs to assist them in selling our products, but these steps may not be effective. In addition, our resellers and sales agents may be unsuccessful in marketing, selling and supporting our products and services. If we are unable to develop and maintain effective sales incentive programs for our resellers and sales agents, we may not be able to incentivize these resellers and sales agents to sell our products to customers. Any of our resellers and sales agents could elect to consolidate or enter into a strategic partnership with one of our competitors, which could reduce or eliminate our future opportunities with that reseller or sales agent. Our agreements with our resellers and sales agents may generally be terminated for any reason by either party with advance notice. We may be unable to retain these resellers and sales agents or secure additional or replacement resellers and sales agents. The replacement of one or more of our significant resellers or sales agents requires extensive training, and any new or expanded relationship with a reseller or sales agent may take several months or more to achieve productivity. Any of these events could materially adversely affect our business, financial condition, results of operations and prospects.

Our business and operations have experienced rapid growth in recent years, and if we do not appropriately manage any future growth or are unable to improve our systems and processes, our business, financial condition, results of operations and prospects will be adversely affected.

We have experienced rapid growth and increased demand for our products in recent years, which have placed a strain on our management, administrative, operational and financial infrastructure. For example, our revenue increased from $211.3 million for the year ended December 31, 2014 to $272.5 million for the year

ended December 31, 2015 to $316.1 million for the year ended December 31, 2016 and from $216.9 million for the nine months ended September 30, 2016 to $233.6 million for the nine months ended September 30, 2017. To handle this growth and increase in demand, we have significantly expanded our headcount, from 352 as of December 31, 2014 to 604 as of December 31, 2016 and to 664 as of October 31, 2017, and expect to continue to increase our headcount. As we have grown, we have had to manage an increasingly larger and more complex array of internal systems and processes to scale with all aspects of our business, including our software development, contract manufacturing and purchasing, logistics and fulfillment and sales, maintenance and support. Our success will depend in part upon our ability to manage our growth effectively. To do so, we must continue to increase the productivity of our existing employees and continue to hire, train and manage new employees as needed. To manage domestic and international growth of our operations and personnel, we will need to continue to improve our operational, financial and management controls and our reporting processes and procedures and implement more extensive and integrated financial and business information systems. We may not be able to successfully implement these or other improvements to our systems and processes in an efficient or timely manner, and we may discover deficiencies in their capabilities or effectiveness. Our failure to improve our systems and processes, or their failure to operate effectively and in the intended manner, may result in disruption of our current operations and customer relationships, our inability to manage the growth of our business and our inability to accurately forecast our revenue, expenses and earnings.

If we are unable to hire, retain, train and motivate qualified personnel and senior management, including in particular our founders, our business, financial condition, results of operations and prospects could be adversely affected.

Our future success depends, in part, on our ability to continue to attract and retain highly skilled personnel, particularly software engineering and sales personnel. Competition for highly skilled personnel is often intense, particularly in the greater Boston region where we are headquartered, and we may not be able to attract and retain the highly skilled employees that we need to support our business. Many of the companies with which we compete for experienced personnel have greater resources than we have to provide more attractive compensation packages and other amenities. Research and development personnel are aggressively recruited by startup and growth companies, which are especially active in many of the technical areas and geographic regions in which we conduct product development. In addition, in making employment decisions, particularly in the high-technology industry, job candidates often consider the value of the stock-based compensation they are to receive in connection with their employment. Declines in the market price of our stock could adversely affect our ability to attract, motivate or retain key employees. If we are unable to attract or retain qualified personnel, or if there are delays in hiring required personnel, our business, financial condition, results of operations and prospects could be materially adversely affected.

Also, to the extent we hire personnel from competitors, or from certain customers or other third parties whose employees we have agreed not to solicit, we may be subject to allegations that such personnel have been improperly solicited, that such personnel have divulged proprietary or other confidential information or that former employers own certain inventions or other work product. Such claims could result in litigation.

Our future performance also depends on the continued services and continuing contributions of our founders and senior management to execute our business plan and to identify and pursue new opportunities and product innovations. Our employment arrangements with our employees do not require that they continue to work for us for any specified period, and therefore, they could terminate their employment with us at any time. In particular, the loss of Jerry Guo, our President and Chief Executive Officer, and Weidong Chen, our Chief Technology Officer, could have a material adverse impact on our business. Further, the loss of other members of our senior management team, sales and marketing team or engineering team, or any difficulty attracting or retaining other highly qualified personnel in the future, could significantly delay or prevent the achievement of our development and strategic objectives, which could materially adversely affect our business, financial condition, results of operations and prospects. Except with respect to Mr. Guo, we do not maintain “key person” life insurance on our officers, directors or key employees.

If we do not effectively expand and train our direct sales force, we may be unable to increase sales to our existing customers or add new customers, and our business will be adversely affected.

We depend on our direct sales force to increase sales with existing customers and to obtain new customers. As such, we have invested and will continue to invest substantially in our sales organization. In recent periods, we have been adding personnel to our sales function as we focus on growing our business, entering new markets and increasing our market share, and we expect to incur significant additional expenses in expanding our sales personnel in order to achieve revenue growth. There is significant competition for sales personnel with the skills and technical knowledge that we require. Our ability to achieve significant revenue growth will depend, in large part, on our success in recruiting, training, retaining and integrating sufficient numbers of sales personnel to support our growth, particularly in international markets. In addition, we have significantly increased the number of personnel in our sales and marketing departments in recent periods, with headcount growing from 67 as of December 31, 2014 to 116 as of October 31, 2017. New hires require significant training and may take significant time before they achieve full productivity. Our recent hires and planned hires may not become productive as quickly as we expect, and we may be unable to hire, retain or integrate into our corporate culture sufficient numbers of qualified individuals in the markets where we do business or plan to do business. If we are unable to hire, integrate and train a sufficient number of effective sales personnel, or the sales personnel we hire are not successful in obtaining new customers or increasing sales to our existing customer base, our business, financial condition, results of operations and prospects could be materially adversely affected.

Adverse economic conditions or reduced broadband infrastructure spending may adversely affect our business, financial condition, results of operations and prospects.

Our business depends on the overall demand for broadband connectivity. Weak domestic or global economic conditions, fear or anticipation of such conditions or a reduction in broadband infrastructure spending even if economic conditions improve, could materially adversely affect our business, financial condition, results of operations and prospects in a number of ways, including longer sales cycles, lower prices for our products and services, reduced sales and lower or no growth. Continued turmoil in the geopolitical environment in many parts of the world may also affect the overall demand for our products and services. Deterioration in global economic or political conditions could materially adversely affect our business, financial condition, results of operations and prospects in the future. A prolonged period of economic uncertainty or a downturn may also significantly affect the availability of capital and the terms and conditions of financing arrangements, including the overall cost of financing as well as the financial health or creditworthiness of our customers. Circumstances may arise in which we need, or desire, to raise additional capital, and such capital may not be available on commercially reasonable terms, or at all.

Breaches of our cybersecurity systems and measures could degrade our ability to conduct our business operations and deliver products and services to our customers, delay our ability to recognize revenue, compromise the integrity of our products, result in significant data losses and the theft of our intellectual property, damage our reputation, expose us to liability to third parties and require us to incur significant additional costs to maintain the security of our networks and data.

We increasingly depend upon our IT systems to conduct virtually all of our business operations, ranging from our internal operations and product development activities to our marketing and sales efforts and communications with our customers and business partners. Certain persons and entities may attempt to penetrate our network, or of the systems hosting our website, or our other networks and systems, and may otherwise seek to misappropriate our proprietary or confidential information or cause interruptions of our service. Because the techniques used by such persons and entities to access or sabotage networks and systems change frequently and may not be recognized until launched against a target, we may be unable to anticipate these techniques. In addition, sophisticated hardware and operating system software and applications that we produce or procure from third parties may contain defects in design or manufacture, including “bugs” and other problems that could unexpectedly interfere with the operation of our networks, system, or products. We have also outsourced a

number of our business functions to third-parties, including our manufacturers and logistics providers, and our business operations also depend, in part, on the success of these third parties' own cybersecurity measures. Additionally, we depend upon our employees and independent contractors to appropriately handle confidential data and deploy our IT resources in a safe and secure fashion that does not expose our network systems to security breaches and the loss of data. Accordingly, if any of our cybersecurity systems, processes or policies, or those of any of our manufacturers, logistics providers, customers or independent contractors fail to protect against unauthorized access, sophisticated hacking or terrorism and the mishandling, misuse, or misappropriation of data by employees, contractors or other persons or entities, our ability to conduct our business effectively could be damaged in a number of ways, including:

- sensitive data regarding our business, including intellectual property, personal information and other confidential and proprietary data, could be stolen;
- our electronic communications systems, including email and other methods, could be disrupted, and our ability to conduct our business operations could be seriously damaged until such systems can be restored;
- our ability to process customer orders and electronically deliver products and services could be degraded, and our distribution channels could be disrupted, resulting in delays in revenue recognition, damage to our relationships with customers and prospective customers and damage to our reputation;
- defects and security vulnerabilities could be introduced into our software, products, network and systems, thereby damaging our reputation and perceived reliability and security of our products and potentially making the systems of our customers vulnerable to data loss and cyber incidents; and
- personally identifiable data relating to various parties, including end users, employees and business partners could be compromised.

Should any of the above events occur, we could be subject to significant claims for liability from our customers, employees or others and regulatory investigations or actions from governmental agencies. In addition, our ability to protect our intellectual property rights could be compromised and our reputation and competitive position could be significantly harmed. Any regulatory, contractual or other actions, litigations, investigations, fines, penalties and liabilities relating to any actual or alleged misuse or misappropriation of personal data or other confidential or proprietary information could be significant in terms of monetary exposure and reputational impact and necessitate changes to our business operations that may be disruptive to us. Additionally, we could incur significant costs in order to upgrade our cybersecurity systems, processes, policies and procedures and remediate damages. Consequently, our financial performance and results of operations could be materially adversely affected.

If we are unable to obtain, maintain or protect our intellectual property rights, our competitive position could be harmed or we could be required to incur significant expenses to enforce our rights.

Our success depends, in part, on our ability to protect our proprietary technology. We rely on trade secret, patent, copyright and trademark laws and confidentiality agreements with employees and third parties to protect and enforce our rights to our proprietary technology, all of which offer only limited protection.

In order to protect our trade secrets and proprietary information, we rely in significant part on confidentiality arrangements with our employees, licensees, independent contractors, advisers and customers. These arrangements may not be effective to prevent disclosure of confidential information, including trade secrets, and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, if others independently discover trade secrets and proprietary information, we would not be able to assert trade secret rights against such parties. Effective trade secret protection may not be available in every country in which our services are available or where we have employees or independent contractors. The loss or unavailability of trade secret protection could make it easier for third parties to compete with our products

by copying functionality. In addition, any changes in, or unexpected interpretations of, the trade secret and employment laws in any country in which we operate may compromise our ability to enforce our trade secret and intellectual property rights. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

We also rely on patents to protect certain aspects of our proprietary technology in the United States. The process of obtaining patent protection is expensive and time-consuming, and we may not be able to prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. We may choose not to seek patent protection for certain innovations and may choose not to pursue patent protection in certain jurisdictions. Further, we cannot guarantee that any of our pending patent applications will result in the issuance of patents or that any patents that do issue from such applications will have adequate scope to provide us with a competitive advantage. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found. To the extent that additional patents are issued from our patent applications, which is not certain, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed or invalidated. If third parties have prepared and filed patent applications in the United States that also claim technology to which we have rights, we may have to participate in interference proceedings in the United States Patent and Trademark Office to determine priority of invention for patent applications filed before March 16, 2013, or in derivation proceedings to determine inventorship for patent applications filed after such date. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after its effective filing date. Even if patents covering our products are obtained by us or by our licensors, once such patents expire, we may be vulnerable to competition from similar products. Moreover, the rights granted under any issued patents may not provide us with adequate protection or competitive advantages, and, as with any technology, competitors may be able to develop similar or superior technologies to our own now or in the future.

Despite our efforts, the steps we have taken to protect our proprietary rights may not be adequate to preclude misappropriation of our proprietary information or infringement of our intellectual property rights, and our ability to police such misappropriation or infringement is uncertain, particularly in countries outside of the United States. Competitors may use our technologies in jurisdictions where we have not obtained or are unable to adequately enforce intellectual property protection to develop their own products. We are also restricted from asserting our intellectual property rights against certain customers under our contracts with them.

Detecting and protecting against the unauthorized use of our products, technology and proprietary rights is expensive, difficult and, in some cases, impossible. Litigation may be necessary in the future to enforce or defend our intellectual property rights, to protect our trade secrets or to determine the validity and scope of the proprietary rights of others. Such litigation could result in substantial costs and diversion of management resources, either of which could materially adversely affect our business, financial condition, results of operations and prospects, and there is no guarantee that we would be successful. Furthermore, many of our current and potential competitors have the ability to dedicate substantially greater resources to protecting their technology or intellectual property rights than we do. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property, which could result in a substantial loss of our market share. Even if we did succeed in enforcing our intellectual property through litigation, this may be costly and divert management resources.

Finally, certain of our license agreements with our third-party licensors provide for joint ownership of developments or inventions that we create that are related to the subject matter of the license. Other agreements to which we are subject, including member agreements with standards bodies and research and development consortia, may require us to disclose and/or grant licenses to technology that is related to the subject matter of the standards body or the consortium and included in our contributions to specifications established by these bodies. These agreements could result in third parties having ownership or license rights to important intellectual property that we otherwise may have elected to maintain exclusive ownership of.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

We have not applied for trademark registration for our name and logo in all geographic markets. In those markets where we have applied for trademark registration, failure to secure those registrations could adversely affect our ability to enforce and defend our trademark rights and result in indemnification claims. Our registered or unregistered trademarks or trade names, as well as the registered or unregistered trademarks or trade names used by our resellers or distributors associated with our products, may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. Any claim of infringement by a third party, even those claims without merit, could cause us to incur substantial costs defending against such claim, could divert management attention from our business and could require us to cease use of such intellectual property in certain geographic markets. Over the long term, if we, or our resellers or distributors, are unable to establish name recognition based on our trademarks and trade names, then our business may be adversely affected.

Assertions by third parties of infringement or other violations by us of their intellectual property rights, or other lawsuits asserted against us, could result in significant costs and materially adversely affect our business, financial condition, results of operations and prospects.

Patent and other intellectual property disputes are common in the broadband infrastructure industry and have resulted in protracted and expensive litigation for many companies. Many companies in the broadband infrastructure industry, including our competitors and other third parties, as well as non-practicing entities, own large numbers of patents, copyrights, trademarks and trade secrets, which they may use to assert claims of patent infringement, misappropriation or other violations of intellectual property rights against us. From time to time, they have or may in the future also assert such claims against us, our customers whom we typically indemnify against claims that our products infringe, misappropriate or otherwise violate the intellectual property rights of third parties.

As the number of products and competitors in our market increases and overlaps occur, claims of infringement, misappropriation and other violations of intellectual property rights may increase. Any claim of infringement, misappropriation or other violations of intellectual property rights by a third party, even those without merit, could cause us to incur substantial costs defending against the claim, distract our management from our business and require us to cease use of such intellectual property, which may impact important elements of our business. In addition, some claims for patent infringement may relate to subcomponents that we purchase from third parties. If these third parties are unable or unwilling to indemnify us for these claims, we could be substantially harmed.

The patent portfolios of most of our competitors are larger than ours. This disparity may increase the risk that our competitors may sue us for patent infringement and may limit our ability to counterclaim for patent infringement or settle through patent cross-licenses. In addition, future assertions of patent rights by third parties, and any resulting litigation, may involve patent holding companies or other adverse patent owners who have no relevant product revenue and against whom our own patents may therefore provide little or no deterrence or protection. We cannot guarantee that we are not infringing or otherwise violating any third-party intellectual property rights.

The third-party asserters of intellectual property claims may be unreasonable in their demands, or may simply refuse to settle, which could lead to expensive settlement payments, prolonged periods of litigation and related expenses, additional burdens on employees or other resources, distraction from our business, supply stoppages and lost sales. Moreover, in recent years, individuals and groups that are non-practicing entities, commonly referred to as “patent trolls”, have purchased patents and other intellectual property assets for the purpose of making claims of infringement in order to extract settlements. In the past, we have received threatening letters or notices and have been the subject of claims that our solutions and underlying technology infringe or violate the intellectual property rights of others. Responding to such claims, regardless of their merit,

can be time consuming, costly to defend in litigation, divert management's attention and resources, damage our reputation and brand, and cause us to incur significant expenses.

An adverse outcome of a dispute may require us to pay substantial damages including treble damages if we are found to have willfully infringed a third party's patents; cease making, licensing or using solutions that are alleged to infringe or misappropriate the intellectual property of others; expend additional development resources to attempt to redesign our products or services or otherwise to develop non-infringing technology, which may not be successful; enter into potentially unfavorable royalty or license agreements in order to obtain the right to use necessary technologies or intellectual property rights; and indemnify our partners and other third parties. Any damages or royalty obligations we may become subject to as a result of an adverse outcome, and any third-party indemnity we may need to provide, could materially adversely affect our business, financial condition, results of operations and prospects. Royalty or licensing agreements, if required or desirable, may be unavailable on terms acceptable to us, or at all, and may require significant royalty payments and other expenditures. Further, there is little or no information publicly available concerning market or fair values for license fees, which can lead to overpayment of license or settlement fees. In addition, some licenses may be non-exclusive, and therefore our competitors may have access to the same technology licensed to us. Suppliers subject to third-party intellectual property claims also may choose or be forced to discontinue or alter their arrangements with us, with little or no advance notice to us. Any of these events could materially adversely affect our business, financial condition, results of operations and prospects.

Unavailability, termination or breach of licenses to third-party software and other intellectual property could materially harm our business.

Many of our products and services include software or other intellectual property licensed from third parties, and we otherwise use software and other intellectual property licensed from third parties in our business. We exercise no control over our third-party licensors, and the failure or unsuitability of their software or other intellectual property exposes us to risks that we will have little ability to control. For example, a licensor may have difficulties keeping up with technological changes or may stop supporting the software or other intellectual property that it licenses to us; our licensors may also have the ability to terminate our licenses if the licensed technology becomes the subject of a claim of intellectual property infringement. Also, it will be necessary in the future to renew licenses, expand the scope of existing licenses or seek new licenses, relating to various aspects of these products and services or otherwise relating to our business, which may result in increased license fees. Any new licenses may not be available on acceptable terms, if at all. In addition, a third party may assert that we or our customers are in breach of the terms of a license, which could, among other things, give such third party the right to terminate a license or seek damages from us, or both. The inability to obtain or maintain certain licenses or other rights or to obtain or maintain such licenses or rights on favorable terms, or the need to engage in litigation regarding these matters, could result in delays in releases of products and services and could otherwise disrupt our business, until equivalent technology can be identified, licensed or developed, if at all, and integrated into our products and services or otherwise in the conduct of our business. Moreover, the inclusion in our products and services of software or other intellectual property licensed from third parties on a nonexclusive basis may limit our ability to differentiate our products from those of our competitors. Any of these events could have a material adverse effect on our business, financial condition, results of operations and prospects.

Our products contain third-party open source software components, and failure to comply with the terms of the underlying open source software licenses could restrict our ability to sell our products.

Our products contain software modules licensed to us by third-party authors under "open source" licenses. Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. Some open source licenses contain requirements that we make available source code for modifications or derivative works we create based upon the type of open source software that we use. If we combine our software with open source software in a certain manner, we could, under

certain open source licenses, be required to release portions of the source code of our software to the public. This would allow our competitors to create similar products with lower development effort and time and ultimately could result in a loss of product sales for us.

Although we monitor our use of open source software to avoid subjecting our products to undesirable conditions, we do not have a formal open source policy in place that gives our developers written guidance on what open source licenses we deem "safe." Further, even where we believe an open source license may have acceptable conditions, the terms of many open source licenses have not been interpreted by U.S. courts, and these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our products. Moreover, we cannot assure you that our informal processes for controlling our use of open source software in our products will be effective or that our compliance with open source licenses, including notice and attribution requirements, are adequate. If we are held to have breached the terms of an open source software license, we could be required to seek licenses from third parties to continue offering our products on terms that are not economically feasible, to re-engineer our products, to discontinue the sale of our products if re-engineering could not be accomplished on a timely basis or to make generally available, in source code form, our proprietary code. We also could face infringement claims. Any of the foregoing could materially adversely affect our business, financial condition, results of operations and prospects.

Our failure to adequately protect personal data and to comply with related laws and regulations could result in material liability.

A wide variety of provincial, state, national, foreign, and international laws and regulations apply to the collection, use, retention, protection, disclosure, transfer (including across national boundaries), and other processing of personal data. These data protection and privacy-related laws and regulations are evolving and being tested in courts and may result in ever-increasing regulatory and public scrutiny and escalating levels of enforcement and sanctions.

Any failure by us to comply with applicable laws and regulations, or to protect such data, could result in enforcement action against us, including fines, imprisonment of company officials and public censure, claims for damages by end-customers and other affected persons and entities, damage to our reputation and loss of goodwill, and other forms of injunctive or operations-limiting relief, any of which could have a material adverse effect on our operations, financial performance, and business.

Definitions of personal data and personal information, and requirements relating to the same under applicable laws and regulations within the European Union, the United States, and elsewhere, change frequently and are subject to new and different interpretations by courts and regulators. Because the interpretation and application of laws and other obligations relating to privacy and data protection are uncertain, it is possible that existing or future laws, regulations, and other obligations may be interpreted and applied in a manner that is inconsistent with our data management practices. We may be required to expend significant resources to modify our products and otherwise adapt to these changes, which we may be unable to do on commercially reasonable terms or at all, and our ability to develop new products and features could be limited. These developments could harm our business, financial condition and results of operations. Even if not subject to legal challenge, the perception of privacy concerns, whether or not valid, may harm our reputation and inhibit adoption of our products by current and prospective customers.

Failure to comply with governmental laws and regulations could materially adversely affect our business, financial condition, results of operations and prospects.

Our business is subject to regulation by various federal, state, local and foreign governmental agencies, including agencies responsible for monitoring and enforcing employment and labor laws, workplace safety, product safety, environmental laws, consumer protection laws, anti-bribery laws, import/export controls, federal securities laws and tax laws and regulations. In certain jurisdictions, these regulatory requirements may be more

stringent than those in the United States. From time to time, we may receive inquiries from such governmental agencies or we may make voluntary disclosures regarding our compliance with applicable governmental regulations or requirements. Noncompliance with applicable government regulations or requirements could subject us to sanctions, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties or injunctions. If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, financial condition, results of operations and prospects could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management's attention and resources and an increase in professional fees. Enforcement actions and sanctions could materially adversely affect our business, financial condition, results of operations and prospects.

We may invest in or acquire other businesses, which could require significant management attention, disrupt our business, dilute stockholder value and adversely affect our business, financial condition, results of operations and prospects.

As part of our growth strategy, we may make investments in or acquire complementary companies, products or technologies. We do not have experience in making investments in other companies nor have we made any acquisitions to date, and as a result, our ability as an organization to evaluate and/or complete investments or acquire and integrate other companies, products or technologies in a successful manner is unproven. We may not be able to find suitable investment or acquisition candidates, and we may not be able to complete such investments or acquisitions on favorable terms, if at all. If we do complete investments or acquisitions, we may not ultimately strengthen our competitive position or achieve our goals, and any investments or acquisitions we complete could be viewed negatively by our customers, investors and securities analysts.

In addition, investments and acquisitions may result in unforeseen operating difficulties and expenditures. For example, if we are unsuccessful at integrating any acquisitions or retaining key talent from those acquisitions, or the technologies associated with such acquisitions, into our company, the business, financial condition, results of operations and prospects of the combined company could be materially adversely affected. Any integration process may require significant time and resources, and we may not be able to manage the process successfully. We may not successfully evaluate or utilize the acquired technology or personnel or accurately forecast the financial effects of an acquisition transaction, including accounting charges. We may have to pay cash, incur debt or issue equity securities to pay for any such investment or acquisition, each of which could adversely affect our financial condition or the market price of our common stock. The sale of equity or issuance of debt to finance any such acquisitions could result in dilution to our stockholders. The incurrence of indebtedness would result in increased fixed obligations and could also include covenants or other restrictions that would impede our ability to manage our operations. Moreover, if the investment or acquisition becomes impaired, we may be required to take an impairment charge, which could adversely affect our financial condition or the market price of our common stock.

Our international operations may give rise to potentially adverse tax consequences.

We are expanding our international operations and staff to better support our growth into the international markets. We generally conduct our international operations through wholly owned subsidiaries and report our taxable income in various jurisdictions worldwide based upon our business operations in those jurisdictions. Our corporate structure and associated transfer pricing policies contemplate the business flows and future growth into the international markets, and consider the functions, risks and assets of the various entities involved in the intercompany transactions. The amount of taxes we pay in different jurisdictions may depend on the application of the tax laws of the various jurisdictions, including the United States, to our international business activities, changes in tax rates, new or revised tax laws or interpretations of existing tax laws and policies and our ability to operate our business in a manner consistent with our corporate structure and intercompany arrangements. The taxing authorities of the jurisdictions in which we operate may challenge our methodologies for pricing intercompany transactions, which are required to be computed on an arm's-length basis pursuant to the intercompany arrangements or disagree with our determinations as to the income and expenses attributable to

specific jurisdictions. If such a challenge or disagreement were to occur, and our position was not sustained, we could be required to pay additional taxes, interest and penalties, which could result in one-time tax charges, higher effective tax rates, reduced cash flows and lower overall profitability of our operations. Our financial statements could fail to reflect adequate reserves to cover such a contingency.

Current U.S. tax laws could impact the tax treatment of our foreign earnings by creating limits on the ability of taxpayers to claim and utilize foreign tax credits and deferring certain tax deductions until earnings outside of the United States are repatriated to the United States. Due to our existing, and anticipated expansion of, our international business activities, any changes in the U.S. taxation of such activities may increase our worldwide effective tax rate and adversely affect our financial condition and operating results.

Taxing authorities may successfully assert that we should have collected or in the future should collect sales and use, value added or similar taxes, and we could be subject to liability with respect to past or future sales, which could adversely affect our operating results.

We do not collect sales and use, value added or similar taxes in all jurisdictions in which we have sales, and we have been advised that such taxes are not applicable to our products and services in certain jurisdictions. Sales and use, value added and similar tax laws and rates vary greatly by jurisdiction. Certain jurisdictions in which we do not collect such taxes may assert that such taxes are applicable, which could result in tax assessments, penalties and interest, to us or our end-customers for the past amounts, and we may be required to collect such taxes in the future. If we are unsuccessful in collecting such taxes from our end-customers, we could be held liable for such costs. Such tax assessments, penalties and interest, or future requirements may adversely affect our operating results.

If we needed to raise additional capital to expand our operations and invest in new products, our failure to do so on favorable terms could reduce our ability to compete and could materially adversely affect our business, financial condition, results of operations and prospects.

We expect that our existing cash and cash equivalents, together with our net proceeds from this offering, will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, if we need to raise additional funds to expand our operations and invest in new products, we may not be able to obtain additional debt or equity financing on favorable terms, if at all. If we raise additional equity financing, our stockholders may experience significant dilution of their ownership interests, and the market price of our common stock could decline.

Our business is subject to the risks of fire, power outages, floods and other catastrophic events and to interruption by manmade problems such as terrorism.

Our corporate headquarters and the operations of our key manufacturing vendors, as well as many of our customers, are located in areas exposed to risks of natural disasters such as fires and floods. A significant natural disaster, such as a fire, flood or other catastrophic events such as a disease outbreak, could have a material adverse effect on our or their business, which could in turn materially adversely affect our business, financial condition, results of operations and prospects. For example, in the event our manufacturing or logistics abilities are hindered by any of the events discussed above, shipments could be delayed, which could result in missed financial targets, such as revenue and shipment targets, for a particular quarter. Further, if a natural disaster occurs in a region from which we derive a significant portion of our revenue, customers in that region may delay or forego purchases of our products, which could materially adversely affect our business, financial condition, results of operations and prospects. In addition, acts of terrorism could cause disruptions in our business or the business of our manufacturers, logistics providers, partners or customers or the economy as a whole. All of the aforementioned risks may be compounded if our disaster recovery plans and those of our manufacturers, logistics providers or partners prove to be inadequate. To the extent that any of the above results in delays or cancellations of customer orders, or delays in the manufacture, deployment or shipment of our products, our business, financial condition, results of operations and prospects would be adversely affected.

Regulations affecting broadband infrastructure could reduce demand for our products.

Laws and regulations governing the Internet and electronic commerce are emerging but remain largely unsettled, even in the areas where there has been some legislative action. Regulations may focus on, among other things, assessing access or settlement charges, or imposing tariffs or regulations based on the characteristics and quality of products, either of which could restrict our business or increase our cost of doing business. Government regulatory policies are likely to continue to have a major impact on the pricing of existing and new network services and, therefore, are expected to affect demand for those services and the communications products, including our products, supporting those services.

Any changes to existing laws or the adoption of new regulations by federal or state regulatory authorities or any legal challenges to existing laws or regulations affecting IP networks could materially adversely affect the market for our products. Moreover, customers may require us, or we may otherwise deem it necessary or advisable, to alter our products to address actual or anticipated changes in the regulatory environment. Our inability to alter our products or address any regulatory changes could have a material adverse effect on our consolidated financial position, results of operations or cash flows.

We have outstanding debt that could limit our ability to make expenditures and investments in the conduct of our business and adversely impact our ability to obtain future financing.

We have outstanding debt. Our indebtedness increases the possibility that we may be unable to generate cash sufficient to pay when due the principal of, interest on or other amounts due in respect of our indebtedness. We may be required to dedicate significant cash flows from operations to make such payments, which could limit our ability to make other expenditures and investments in the conduct of our business. Our indebtedness may also reduce our flexibility in planning for or reacting to changes in our business and market conditions. Our indebtedness also exposes us to interest rate risk, since our debt obligations generally bear interest at variable rates. In addition, we may incur additional indebtedness in the future to meet future financing needs. If we add new debt, the risks described above could increase.

Our credit facility contains restrictive and financial covenants that may limit our operating flexibility.

Our credit facility contains certain restrictive covenants that either limit our ability to, or require a mandatory prepayment in the event we, incur additional indebtedness and liens, merge with other companies or consummate certain changes of control, acquire other companies, engage in new lines of business, change business locations, make certain investments, make any payments on any subordinated debt, transfer or dispose of assets, amend certain material agreements, and enter into various specified transactions. We, therefore, may not be able to engage in any of the foregoing transactions unless we obtain the consent of our lender or prepay the outstanding amount under the credit facility. The credit facility also contains certain financial covenants and financial reporting requirements. Our obligations under the credit facility are secured by substantially all of our assets, excluding intellectual property and investments in foreign subsidiaries. We may not be able to generate or sustain sufficient cash flow or sales to meet the financial covenants or pay the principal and interest under the credit facility. Furthermore, our future working capital, borrowings or equity financing could be unavailable to repay or refinance the amounts outstanding under the credit facility. In the event of a liquidation, our lender would be repaid all outstanding principal and interest prior to distribution of assets to unsecured creditors, and the holders of our common stock would receive a portion of any liquidation proceeds only if all of our creditors, including our lender, were first repaid in full.

Risks Related to Our Common Stock and this Offering

Our results of operations are likely to vary significantly from period to period and be unpredictable. If we fail to meet the expectations of analysts or investors, the market price of our common stock could decline substantially.

Our results of operations have historically varied from period to period, and we expect that this trend will continue. As a result, you should not rely upon our past financial results for any period as indicators of future

performance. Our results of operations in any given period can be influenced by a number of factors, many of which are outside of our control and may be difficult to predict, including the factors described above as well as:

- changes in our pricing policies, whether initiated by us or as a result of competition;
- the amount and timing of operating costs and capital expenditures related to the operation and expansion of our business;
- changes in the growth rate of the broadband services market;
- the actual or rumored timing and success of new product and service introductions by us or our competitors or any other change in the competitive landscape of our industry, including consolidation among our competitors or customers;
- our ability to successfully expand our business geographically;
- insolvency or credit difficulties confronting our customers, which could adversely affect their ability to purchase or pay for our products and services, or confronting our key suppliers, including our sole source suppliers, which could disrupt our supply chain;
- our inability to fulfill our customers' orders due to supply chain delays, access to key commodities or technologies or events that impact our manufacturers or their suppliers;
- the cost and possible outcomes of any potential litigation matters;
- our overall effective tax rate, including impacts caused by any changes in the valuation of our deferred tax assets and any new legislation or regulatory developments;
- increases or decreases in our expenses caused by fluctuations in foreign currency exchange rates; and
- general economic conditions, both domestically and in foreign markets.

Any one of the factors above or the cumulative effect of several of the factors described above may result in significant fluctuations in our financial and other results of operations. This variability and unpredictability could result in our failure to meet expectations of securities analysts or investors for a particular period. If we fail to meet or exceed such expectations for these or any other reasons, the market price of our common stock could decline substantially, and we could face costly lawsuits, including securities class action suits.

An active trading market for our common stock may not develop, and you may not be able to resell your shares of our common stock at or above the initial offering price.

Before this offering, there was no public trading market for our common stock. If a market for our common stock does not develop or is not sustained, it may be difficult for you to sell your shares of common stock at an attractive price, at the time that you would like to sell them, or at all. The initial public offering price of our common stock was determined through negotiations between us and the underwriters. This initial public offering price may not be indicative of the market price of our common stock after the offering. We cannot predict the prices at which our common stock will trade. It is possible that in one or more future periods our results of operations may be below the expectations of public market analysts and investors and, as a result of these and other factors, the price of our common stock may fall.

The market price of our common stock may be volatile, which could result in substantial losses for investors purchasing shares in this offering.

The market price of our common stock could be subject to significant fluctuations after this offering, and it may decline below the initial public offering price. Some of the factors that may cause the market price of our common stock to fluctuate include:

- price and volume fluctuations in the overall stock market from time to time;

- volatility in the market price and trading volume of comparable companies;
- actual or anticipated changes in our earnings or fluctuations in our results of operations or in the expectations of securities analysts;
- announcements of technological innovations, new products, strategic alliances, or significant agreements by us or by competitive vendors;
- announcements by our customers regarding significant increases or decreases in capital expenditures;
- departure of key personnel;
- litigation involving us or that may be perceived as having an impact on our business;
- changes in general economic, industry and market conditions and trends;
- investors' general perception of us;
- sales of large blocks of our stock; and
- announcements regarding further industry consolidation.

In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been brought against that company. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future. Securities litigation could result in substantial costs and divert management's attention and resources from our business.

We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion to use the net proceeds from this offering, and you will be relying on the judgment of our management regarding the application of these proceeds. We intend to use the net proceeds from this offering for working capital and general corporate purposes. Because we will have broad discretion in the application of the net proceeds from this offering, our management may fail to apply these funds effectively, which could adversely affect our ability to operate and grow our business. You will not have the opportunity to influence our decisions on how to use our net proceeds from this offering.

If securities or industry analysts do not publish, or cease publishing, research or reports about us, our business or our market, or if they publish negative evaluations of our stock or the stock of other companies in our industry, the price of our stock and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market or our competitors. We do not currently have and may never obtain research coverage by industry or financial analysts. If no analysts or few analysts commence coverage of us, the trading price of our stock would likely decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our stock or the stock of other companies in our industry, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline.

Purchasers in this offering will incur immediate and substantial dilution in the book value of their investment as a result of this offering.

If you purchase common stock in this offering, you will incur immediate and substantial dilution of $ per share, representing the difference between the assumed initial public offering price of $ per share,

which is the midpoint of the price range set forth on the cover page of this prospectus, and our pro forma as adjusted net tangible book value per share after giving effect to this offering and the other adjustments described in detail under “Dilution”. Moreover, to the extent outstanding options are exercised, you will incur further dilution. See “Dilution”.

Because we do not expect to declare any dividends on our common stock for the foreseeable future following this offering, investors in this offering may never receive a return on their investment.

Although we have paid special dividends in the past, you should not rely on an investment in our common stock to provide dividend income. Following this offering, we do not anticipate that we will declare any cash dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our common stock.

Insiders will continue to have substantial control over us after this offering, which could limit your ability to influence the outcome of key transactions, including a change of control.

After this offering, our directors and executive officers and their affiliates will beneficially own, in the aggregate, approximately % of our outstanding common stock, assuming no exercise of the underwriters’ option to purchase additional shares of our common stock in this offering. As a result, these stockholders could have significant influence over the outcome of matters submitted to our stockholders for approval, including the election of directors and any merger, consolidation or sale of all or substantially all of our assets, and over the management and affairs of our company. This concentration of ownership may have the effect of delaying or preventing a change in control of our company and might affect the market price of our common stock.

Some of these persons or entities may have interests different than yours. For example, because many of these stockholders purchased their shares at prices substantially below the price at which shares are being sold in this offering and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors or may want us to pursue strategies that deviate from the interests of other stockholders.

A significant portion of our total outstanding shares may be sold into the public market in the near future, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time after the expiration of the lock-up agreements described in the “Underwriters” section of this prospectus. These sales, or the market perception that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. After this offering and after giving effect to the conversion of all outstanding shares of our convertible preferred stock into 8,076,394 shares of our common stock upon the closing of this offering, we will have shares of common stock outstanding based on the number of shares outstanding as of October 31, 2017. This includes the shares that we are selling in this offering, which may be resold in the public market immediately. The remaining 14,819,495 shares, or % of our outstanding shares after this offering, are currently, and will be following the closing of this offering, restricted as a result of securities laws or lock-up agreements but will be able to be sold, subject to any applicable volume limitations under federal securities laws with respect to affiliate sales, in the near future as described in the “Shares Eligible for Future Sale” and “Underwriters” sections of this prospectus.

In addition, as of October 31, 2017, there were 3,008,998 shares subject to outstanding options, 172,348 shares subject to outstanding restricted stock unit awards, or RSUs, and an additional 567,863 shares reserved for future issuance under our equity incentive plans that will become eligible for sale in the public market to the

extent permitted by any applicable vesting requirements, lock-up agreements and Rules 144 and 701 under the Securities Act of 1933, as amended. Moreover, after this offering, holders of an aggregate of approximately 6,743,101 shares of our common stock as of October 31, 2017, will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We also intend to register all shares of common stock that we may issue under our equity incentive plans. Once we register these shares, they can be freely sold in the public market upon issuance, subject to the lock-up agreements and the restrictions imposed on our affiliates under Rule 144.

Anti-takeover provisions in our restated certificate of incorporation and our amended and restated bylaws, as well as provisions of Delaware law, might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Our restated certificate of incorporation and amended and restated bylaws and Delaware law contain provisions that may discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares of our common stock. These provisions may also prevent or delay attempts by our stockholders to replace or remove our management. Our corporate governance documents include provisions:

- establishing a classified board of directors with staggered three-year terms so that not all members of our board are elected at one time;
- providing that directors may be removed by stockholders only for cause and only with a vote of the holders of at least 75% of the issued and outstanding shares of common stock;
- limiting the ability of our stockholders to call and bring business before special meetings and to take action by written consent in lieu of a meeting;
- requiring advance notice of stockholder proposals for business to be conducted at meetings of our stockholders and for nominations of candidates for election to our board of directors;
- authorizing blank check preferred stock, which could be issued with voting, liquidation, dividend and other rights superior to our common stock; and
- limiting the liability of, and providing indemnification to, our directors and officers.

As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders holding more than 15% of our outstanding common stock from engaging in certain business combinations with us. Any provision of our restated certificate of incorporation or amended and restated bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

The existence of the foregoing provisions and anti-takeover measures could limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our company, thereby reducing the likelihood that you could receive a premium for your common stock in an acquisition.

Our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders. Our restated certificate of incorporation further provides that the federal district courts of the United States of America are the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions could limit our stockholders' ability to obtain a more favorable judicial forum for disputes with us or our directors, officers or employees.

Our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of

fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our certificate of incorporation or our bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. Our restated certificate of incorporation further provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and other employees. Alternatively, if a court were to find the choice of forum provisions contained in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could materially adversely affect our business, financial condition, results of operations and prospects.

We are an "emerging growth company," and the reduced disclosure requirements applicable to emerging growth companies may make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and may remain an emerging growth company until the last day of our fiscal year following the fifth anniversary of this offering, subject to specified conditions. For so long as we remain an emerging growth company, we are permitted, and intend, to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include being permitted to provide reduced disclosure regarding executive compensation and exemptions from the requirements to hold non-binding advisory votes on executive compensation and golden parachute payments, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 related to our internal control over financial reporting, and not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding a supplement to the auditor's report providing additional information about the audit and the financial statements. In this prospectus, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

Further, Section 102(b)(1) of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, companies that have not filed a pending registration statement under the Securities Act, had a Securities Act registration statement declared effective or do not have a class of securities registered under the Securities Exchange Act of 1934, as amended, or the Exchange Act) are required to comply with the new or revised financial accounting standards. The JOBS Act provides that a company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies, but any such an election to opt out is irrevocable. We have elected not to opt out of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised standard at the time private companies adopt the new or revised standard, provided that we continue to be an emerging growth company. This may make comparison of our financial statements with the financial statements of another public company that is not an emerging growth company, or an emerging growth company that has opted out of using the extended transition period, difficult or impossible because of the potential differences in accounting standards used.

We will remain an emerging growth company until the last day of the fiscal year following the fifth anniversary of this offering or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company if we have more than $1.07 billion in annual revenue, we have more than $700 million in market value of our stock held by non-affiliates (and we have been a public company for at least 12 months and have filed one annual report on Form 10-K) or we issue more than $1 billion of non-convertible debt securities over a three-year period.

We have elected to rely on certain phase-in provisions of the Nasdaq Stock Market rules, and, as a result, we will not immediately be subject to certain corporate governance requirements otherwise required of Nasdaq-listed companies.

We are currently relying on the phase-in provisions of the Nasdaq rules for certain corporate governance requirements, including the requirements that we have:

- a majority of independent directors on our board of directors;
- an audit committee that is composed entirely of independent directors; and
- a compensation committee that is composed entirely of independent directors.

Under the phase-in provisions of the Nasdaq rules, a majority of the members of our board of directors must be independent within one year of the date of this offering, and we must comply with the following independence requirements with respect to our audit committee and our compensation committee: (1) one independent member of each committee at the time of this offering, (2) a majority of independent members of each committee within 90 days of the date of this offering and (3) all independent members of each committee within one year of the date of this offering. As of the date of this offering, only members of our board of directors have been determined to be independent, only members of our audit committee have been determined to be independent and only members of our compensation committee have been determined to be independent. During the phase-in periods, our stockholders will not have the same protections afforded to stockholders of companies that comply with Nasdaq's independence requirements without reliance on the phase-in periods. We will be required to recruit new directors in order to comply with Nasdaq's independence requirements, and the resultant changes in our board and committee membership may influence our future corporate strategy and operating philosophies and may result in deviations from our current strategy. Additionally, if, during the phase-in periods, we are unable to recruit a sufficient number of new directors who qualify as independent or otherwise comply with Nasdaq rules, we may be subject to delisting by Nasdaq.

Our management team has limited experience managing a public company.

Most members of our management team have limited experience managing a publicly traded company, interacting with public company investors and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage our transition to being a public company subject to significant regulatory oversight and reporting obligations under the federal securities laws and the scrutiny of securities analysts and investors. These new obligations and constituents will require significant attention from our management team and could divert their attention away from the day-to-day management of our business, which could materially adversely affect our business, financial condition, results of operations and prospects.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified board members.

As a public company, we will be subject to the reporting requirements of the Exchange Act, the listing requirements of the Nasdaq Stock Market and other applicable securities rules and regulations. Compliance with these rules and regulations will increase our legal and financial compliance costs, make some activities more difficult, time-consuming or costly, and increase demand on our systems and resources, particularly after we are no longer an emerging growth company. Among other things, the Exchange Act requires that we file annual, quarterly and current reports with respect to our business and results of operations and maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could harm our business and results of operations. Although we have already hired additional employees to comply with these requirements, we may need to hire even more employees in the future, which will increase our costs and expenses.

We are currently evaluating our internal controls, including to identify and remediate any deficiencies in those internal controls. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting that we are unable to remediate before the end of the same fiscal year in which the material weakness is identified, we will be unable to assert that our internal controls are effective. If we are unable to assert that our internal control over financial reporting is effective, or if our auditors are unable to attest to management's report on the effectiveness of our internal controls, which will be required after we are no longer an emerging growth company, we could lose investor confidence in the accuracy and completeness of our financial reports, which would cause the price of our common stock to decline.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are increasing legal and financial compliance costs and making some activities more time-consuming. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expense and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

We also expect that being a public company will make it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors and qualified executive officers.

Within the initial twelve months of becoming a publicly traded company, we estimate that we will incur approximately $2.0 to $3.0 million of incremental annual costs associated with being a publicly traded company, which we expect will be included in general and administrative expenses. However, it is possible that our actual incremental costs of being a publicly traded company will be higher than we currently estimate. In estimating these costs, we took into account expenses related to insurance, legal, accounting and compliance activities.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. All statements other than statements of historical fact contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “should,” “expects,” “plans,” “anticipates,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described in the “Risk Factors” section and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Some of the key factors that could cause actual results to differ from our expectations include:

- our ability to anticipate technological shifts;
- our ability to generate positive returns on our research and development;
- changes in the rate of broadband service providers’ deployment of, and investment in, ultra-broadband network capabilities;
- the lack of predictability of revenue due to lengthy sales cycles and the volatility in capital expenditure budgets of broadband service providers;
- our ability to maintain and expand gross profit and net income;
- the sufficiency of our cash resources and needs for additional financing;
- our ability to further penetrate our existing customer base and obtain new customers;
- changes in our pricing policies, whether initiated by us or as a result of competition;
- the amount and timing of operating costs and capital expenditures related to the operation and expansion of our business;
- the actual or rumored timing and success of new product and service introductions by us or our competitors or any other change in the competitive landscape of our industry, including consolidation among our competitors or customers;
- our ability to successfully expand our business domestically and internationally;
- insolvency or credit difficulties confronting our customers, which could adversely affect their ability to purchase or pay for our products and services, or confronting our key suppliers, which could disrupt our supply chain;
- our inability to fulfill our customers’ orders due to supply chain delays, access to key commodities or technologies or events that impact our manufacturers or their suppliers;
- future accounting pronouncements or changes in our accounting policies;
- stock-based compensation expense;

- the cost and possible outcomes of any potential litigation matters;
- our overall effective tax rate, including impacts caused by the relative proportion of foreign to U.S. income, the amount and timing of certain employee stock-based compensation transactions, changes in the valuation of our deferred tax assets and any new legislation or regulatory developments;
- increases or decreases in our expenses caused by fluctuations in foreign currency exchange rates;
- general economic conditions, both domestically and in foreign markets;
- our ability to obtain and maintain intellectual property protection for our products; and
- our use of proceeds from this offering.

Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein until after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

INDUSTRY AND OTHER DATA

Information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, is based on information from independent industry analysts and third-party sources and management estimates. Management estimates are derived from publicly available information released by independent industry analysts and third-party sources, as well as data from our internal research, and are based on assumptions, which we believe to be reasonable, made by us based on such data, as well as our knowledge of our industry and solutions. This information involves a number of assumptions and limitations, and we caution you not to give undue weight to such estimates. Projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in “Risk Factors” and elsewhere in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties or us and contained in this prospectus.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of our common stock in this offering will be approximately $ million, based upon an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters fully exercise their option to purchase additional shares in this offering, we estimate that our net proceeds will be approximately $ million.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the net proceeds from this offering by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each 1,000,000 share increase (decrease) in the number of shares offered by us would increase (decrease) the net proceeds from this offering by $ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The principal purposes of this offering are to create a public market for our common stock, facilitate access to the public equity markets, increase our visibility in the marketplace and obtain additional capital.

We intend to use the net proceeds from this offering for working capital and general corporate purposes. In addition, we believe that opportunities may exist from time to time to expand our current business through acquisitions of or investments in complementary products, technologies or businesses. While we have no agreements, commitments or understandings for any specific acquisitions at this time, we may use a portion of the net proceeds from this offering for these purposes.

Our management will have broad discretion in the application of the net proceeds from this offering, and investors will be relying on the judgment of our management regarding the application of the net proceeds. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations, the anticipated growth of our business, and the availability and terms of alternative financing sources to fund our growth. Pending use of the net proceeds as described above, we intend to invest the proceeds in short-term, interest-bearing obligations, investment-grade securities, certificates of deposit or direct or guaranteed obligations of the U.S. government. The goal with respect to the investment of these net proceeds will be capital preservation and liquidity so that these funds are readily available to fund our operations.

DIVIDEND POLICY

We declared special dividends in November 2014, June 2016, December 2016 and May 2017. The November 2014 special dividend totaled $27.6 million in cash payments to our stockholders. In connection with the November 2014 special dividend, our board of directors also approved cash payments totaling $2.4 million to be made to holders of our stock options and stock appreciation rights as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans. The June 2016 special dividend totaled $43.1 million in cash payments to our stockholders. In connection with the June 2016 special dividend, our board of directors also approved cash payments totaling $6.9 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans. The December 2016 special dividend totaled $171.4 million in cash payments to our stockholders. In connection with the December 2016 special dividend, our board of directors also approved cash payments totaling $28.6 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans. The May 2017 special dividend totaled $87.1 million in cash payments to our stockholders. In connection with the May 2017 special dividend, our board of directors also approved cash payments totaling $12.9 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans.

Although we declared the special dividends described above and may declare an additional special dividend of $ million prior to the effective date of the registration statement of which this prospectus forms a part, we do not anticipate declaring cash dividends following this offering. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on a number of factors, including future earnings, capital requirements, financial conditions, future prospects, contractual restrictions and covenants and other factors that our board of directors may deem relevant. Our credit facility contains covenants that limit our ability to pay dividends on our capital stock.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of September 30, 2017:

- on an actual basis;
- on a pro forma basis, giving effect to:
  - the automatic conversion of all outstanding shares of our convertible preferred stock into 8,076,394 shares of common stock upon the closing of this offering;
  - the accrual of an additional special dividend of $ million, which was declared by our board of directors on , 2017, and cash payments of $ million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments approved by our board of directors in connection with such dividend; and
  - the filing and effectiveness of our restated certificate of incorporation; and
- on a pro forma as adjusted basis, giving further effect to our sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma as adjusted information set forth in the table below is illustrative only and will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. This information should be read in conjunction with our consolidated financial statements and related notes appearing at the end of this prospectus and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of and other financial information contained in this prospectus.

	As of September 30, 2017		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands, except per share amounts)		
Cash and cash equivalents	$ 183,519	$	$
Long-term debt, including current portion, net of unamortized debt issuance costs	$ 298,147	$	$
Convertible preferred stock (Series A, B and C), $0.001 par value; 6,000 shares authorized, 4,038 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	97,479	—	
Stockholders' equity (deficit):			
Preferred stock, $0.001 par value; no shares authorized, issued or outstanding, actual; 5,000 shares authorized, no shares issued or outstanding, pro forma and pro forma as adjusted	—	—	
Common stock, $0.001 par value; 20,000 shares authorized, 6,740 shares issued and outstanding, actual; 100,000 shares authorized, 14,817 shares issued and outstanding, pro forma; 100,000 shares authorized, shares issued and outstanding, pro forma as adjusted	7		
Additional paid-in capital	—		
Accumulated other comprehensive loss	(460)		
Accumulated deficit	(107,753)		
Total stockholders' equity (deficit)	(108,206)		
Total capitalization	$ 287,420	$	$

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by $ million, assuming that the number of shares offered by us, as set forth on the cover

page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each 1,000,000 share increase (decrease) in the number of shares offered by us would increase (decrease) the pro forma as adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by $ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The table above does not include:

- 29,166 shares of common stock issuable upon the exercise of stock options outstanding under our 2003 Stock Incentive Plan as of September 30, 2017, with a weighted-average exercise price of $1.25 per share;
- 2,994,116 shares of common stock issuable upon the exercise of stock options outstanding under our 2011 Stock Incentive Plan as of September 30, 2017, with a weighted-average exercise price of $21.24 per share;
- 172,348 shares of common stock issuable upon the vesting of restricted stock units outstanding under our 2011 Stock Incentive Plan as of September 30, 2017;
- 556,453 shares of common stock reserved for future issuance under our 2011 Stock Incentive Plan as of September 30, 2017, which plan will terminate as to new awards upon the closing of this offering; and
- 1,432,137 additional shares of common stock that will become available for issuance in connection with this offering under our 2017 Stock Incentive Plan.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the initial public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering.

Our historical net tangible book value (deficit) as of September 30, 2017 was $(110.3) million, or $(16.37) per share of our common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities and convertible preferred stock, which is not included within our stockholders' deficit. Historical net tangible book value (deficit) per share represents historical net tangible book value (deficit) divided by the 6,740,227 shares of our common stock outstanding as of September 30, 2017.

Our pro forma net tangible book value (deficit) as of September 30, 2017 was $ million, or $ per share of our common stock. Pro forma net tangible book value (deficit) represents the amount of our total tangible assets less our total liabilities, after giving effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock into 8,076,394 shares of our common stock upon the closing of this offering and (ii) the accrual of an additional special dividend of $ million, which was declared by our board of directors on , 2017, and cash payments of $ million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments approved by our board of directors in connection with such dividend. Pro forma net tangible book value (deficit) per share represents our pro forma net tangible book value divided by the total number of shares outstanding as of September 30, 2017, after giving effect to the automatic conversion of all outstanding shares of convertible preferred stock upon the closing of this offering.

After giving further effect to our sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of September 30, 2017 would have been $ million, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value per share of $ to existing stockholders and immediate dilution per share of $ to new investors purchasing common stock in this offering. Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the assumed initial public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value (deficit) per share as of September 30, 2017	$(16.37)	
Decrease per share attributable to the pro forma adjustments described above		
Pro forma net tangible book value per share as of September 30, 2017		
Increase in pro forma as adjusted net tangible book value per share attributable to new investors purchasing common stock in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors purchasing common stock in this offering		$

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value by $ million, our pro forma as adjusted net tangible book value per share after this offering by $ and the dilution per share to new investors purchasing shares in this offering by $, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase of 1,000,000 shares in the number of shares offered by us would increase our pro forma as adjusted net tangible book value per share after this offering by $ and

decrease the dilution per share to new investors participating in this offering by $, assuming no change in the assumed initial public offering price and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A decrease of 1,000,000 shares in the number of shares offered by us would decrease our pro forma as adjusted net tangible book value per share after this offering by $ and increase the dilution per share to new investors by $, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters fully exercise their option to purchase additional shares of common stock in this offering, our pro forma as adjusted net tangible book value per share after this offering would be $ per share, and the dilution per share to new investors purchasing common stock in this offering would be $ per share, in each case assuming an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The following table summarizes, on the pro forma as adjusted basis described above, the total number of shares of common stock purchased from us after giving effect to the conversion of our convertible preferred stock into common stock, the total consideration paid or to be paid, and the average price per share paid or to be paid by existing stockholders and by new investors in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders	14,816,621	%	$105,850,268	%	$ 7.14
New investors					$
Total		100.0%	$	100.0%	

The table above assumes no exercise of the underwriters' option to purchase additional shares in this offering. If the underwriters fully exercise their option to purchase additional shares in this offering, the number of shares of our common stock held by new investors purchasing common stock in this offering would be increased to % of the total number of shares of common stock outstanding after this offering, and the number of shares held by existing stockholders would be reduced to % of the total number of shares of common stock outstanding after this offering.

The table above does not include:

- 29,166 shares of common stock issuable upon the exercise of stock options outstanding under our 2003 Stock Incentive Plan as of September 30, 2017, with a weighted-average exercise price of $1.25 per share;
- 2,994,116 shares of common stock issuable upon the exercise of stock options outstanding under our 2011 Stock Incentive Plan as of September 30, 2017, with a weighted-average exercise price of $21.24 per share;
- 172,348 shares of common stock issuable upon the vesting of restricted stock units outstanding under our 2011 Stock Incentive Plan as of September 30, 2017;
- 556,453 shares of common stock reserved for future issuance under our 2011 Stock Incentive Plan as of September 30, 2017, which plan will terminate as to new awards upon the closing of this offering; and
- 1,432,137 additional shares of common stock that will become available for issuance in connection with this offering under our 2017 Stock Incentive Plan.

To the extent any of the outstanding options are exercised, you will experience further dilution, which may be significant. To the extent all of such outstanding options had been exercised as of September 30, 2017, the pro forma as adjusted net tangible book value per share after this offering would be $, and the total dilution per share to new investors purchasing common stock in this offering would be $.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or securities convertible into equity, the issuance of these securities may result in further dilution to our stockholders.

SELECTED CONSOLIDATED FINANCIAL DATA

The following tables present selected consolidated financial and other financial data for our business. The selected consolidated statement of operations data presented below for the years ended December 31, 2014, 2015 and 2016 and the selected consolidated balance sheet data as of December 31, 2015 and 2016 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The selected consolidated balance sheet data as of December 31, 2014 have been derived from our audited consolidated financial statements not included in this prospectus. The selected consolidated statement of operations data for the nine months ended September 30, 2016 and 2017 and the selected consolidated balance sheet data as of September 30, 2017 have been derived from our unaudited condensed consolidated financial statements included elsewhere in this prospectus and have been prepared on a basis consistent with our audited consolidated financial statements. In the opinion of management, the unaudited data reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the financial information in those statements. Our historical results are not necessarily indicative of the results to be expected in any future period, and the results for any interim period are not necessarily indicative of results to be expected in any full year. You should read the following selected consolidated financial data in conjunction with the section of this prospectus titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes appearing elsewhere in this prospectus.

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands, except per share amounts)				
Consolidated Statement of Operations Data:					
Revenue:					
Product	$ 194,358	$ 247,588	$ 279,223	$191,763	$205,155
Service	16,920	24,862	36,905	25,139	28,458
Total revenue	211,278	272,450	316,128	216,902	233,613
Cost of revenue(1):					
Product	59,088	74,349	89,340	68,793	62,865
Service	5,917	5,265	8,477	5,983	3,637
Total cost of revenue	65,005	79,614	97,817	74,776	66,502
Gross profit	146,273	192,836	218,311	142,126	167,111
Operating expenses:					
Research and development(1)	25,481	37,155	49,210	37,213	43,912
Sales and marketing(1)	21,409	36,157	36,114	27,289	26,983
General and administrative(1)	10,346	16,453	18,215	13,532	14,387
Total operating expenses	57,236	89,765	103,539	78,034	85,282
Income from operations	89,037	103,071	114,772	64,092	81,829
Other income (expense), net	(2,942)	(1,408)	921	953	(9,858)
Income before provision for income taxes	86,095	101,663	115,693	65,045	71,971
Provision for income taxes	26,387	33,742	27,025	16,228	12,334
Net income	$ 59,708	$ 67,921	$ 88,668	$ 48,817	$ 59,637
Cash dividends declared per common share or common share equivalent	$ 1.9173	$ —	$ 14.5984	$ 2.9455	$ 5.8872
Net income (loss) attributable to common stockholders(2):					
Basic	$ 23,287	$ 27,302	$ (35,119)	$ 19,928	$ 7,689
Diluted	$ 23,843	$ 30,402	$ (35,119)	$ 20,006	$ 7,689

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands, except per share amounts)				
Net income (loss) per share attributable to common stockholders(2):					
Basic	$ 3.88	$ 4.30	$ (5.34)	$ 3.04	$ 1.14
Diluted	$ 3.65	$ 3.92	$ (5.34)	$ 2.37	$ 0.89
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders(2):					
Basic	5,997	6,348	6,573	6,564	6,731
Diluted	6,537	7,761	6,573	8,427	8,639
Pro forma net income per share attributable to common stockholders (unaudited)(2):					
Basic			$		$
Diluted			$		$
Weighted-average shares used to compute pro forma net income per share attributable to common stockholders (unaudited)(2):					
Basic					
Diluted					
Other Financial Data:					
Non-GAAP net income(3)	$ 62,145	$ 72,812	$ 95,032	$53,301	$64,520
Adjusted EBITDA(3)	$ 94,632	$ 115,541	$ 129,084	$74,517	$93,298

(1) Includes stock-based compensation expense related to stock options, stock appreciation rights and restricted stock units granted to employees and non-employee consultants as follows:

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Cost of revenue	$ 161	$ 143	$ 237	$ 178	$ 202
Research and development expense	852	1,843	2,306	1,637	1,535
Sales and marketing expense	598	775	1,147	846	801
General and administrative expense	380	4,560	4,614	3,313	3,355
Total stock-based compensation expense	$1,991	$7,321	$8,304	$ 5,974	$ 5,893

(2) See Note 14 to our audited consolidated financial statements and Note 12 to our unaudited condensed consolidated financial statements, both included elsewhere in this prospectus, for an explanation of the calculations of basic and diluted net income (loss) per share attributable to common stockholders and pro forma basic and diluted net income per share attributable to common stockholders.

(3) See "—Non-GAAP Financial Measures" for information regarding our use of these non-GAAP financial measures and a reconciliation of such measures to comparable financial measures calculated and presented in accordance with GAAP.

	As of December 31,			As of September 30,
	2014	2015	2016	2017
	(in thousands)			
Consolidated Balance Sheet Data:				
Cash, cash equivalents and marketable securities	$ 77,155	$ 92,496	$343,946	$ 183,519
Working capital(1)	99,237	162,981	286,652	247,182
Total assets	230,815	283,097	583,035	392,235
Long-term debt, including current portion, net of unamortized debt issuance costs	—	7,795	299,751	298,147
Total liabilities	124,636	103,160	557,259	402,962
Convertible preferred stock	97,479	97,479	97,479	97,479
Total stockholders' equity (deficit)	8,700	82,458	(71,703)	(108,206)

(1)We define working capital as current assets less current liabilities.

Non-GAAP Financial Measures

To supplement our consolidated financial statements presented in accordance with generally accepted accounting principles, or GAAP, we monitor and consider non-GAAP net income and adjusted EBITDA. These non-GAAP financial measures are not based on any standardized methodology prescribed by GAAP and are not necessarily comparable to similarly titled measures presented by other companies.

Non-GAAP net income. We define non-GAAP net income as net income as reported in our consolidated statements of operations, excluding the impact of stock-based compensation expense and changes in the fair value of the warrant liability, both of which are non-cash charges, and the tax effect on those excluded items applied using our effective income tax rate for the period. We have presented non-GAAP net income because it is a key measure used by our management and board of directors to understand and evaluate our operating performance, to establish budgets and to develop operational goals for managing our business. The presentation of non-GAAP net income also allows our management and board of directors to make additional comparisons of our results of operations to other companies in our industry.

Adjusted EBITDA. We define adjusted EBITDA as our net income, excluding the impact of stock-based compensation expense; other income (expense), net, which includes changes in the fair value of the warrant liability; depreciation and amortization expense; and our provision for income taxes. We have presented adjusted EBITDA because it is a key measure used by our management and board of directors to understand and evaluate our operating performance, to establish budgets and to develop operational goals for managing our business. In particular, we believe that excluding the impact of these expenses in calculating adjusted EBITDA can provide a useful measure for period-to-period comparisons of our core operating performance.

We use these non-GAAP financial measures to evaluate our operating performance and trends and make planning decisions. We believe that each of these non-GAAP financial measures helps identify underlying trends in our business that could otherwise be masked by the effect of the expenses that we exclude in the calculations of each non-GAAP financial measure. Accordingly, we believe that these financial measures provide useful information to investors and others in understanding and evaluating our operating results, enhancing the overall understanding of our past performance and future prospects.

Our non-GAAP financial measures are not prepared in accordance with GAAP, and should not be considered in isolation of, or as an alternative to, measures prepared in accordance with GAAP. There are a number of limitations related to the use of these non-GAAP financial measures rather than net income, which is the most directly comparable financial measure calculated and presented in accordance with GAAP. Some of these limitations are:

- we exclude stock-based compensation expense from each of our non-GAAP financial measures as it has recently been, and will continue to be for the foreseeable future, a significant recurring non-cash expense for our business and an important part of our compensation strategy;

- we exclude the changes in the fair value of a warrant liability from our non-GAAP net income and adjusted EBITDA measures as it had been a recurring non-cash charge in our statement of operations until the warrant was exercised in March 2014;
- adjusted EBITDA excludes depreciation and amortization expense and, although this is a non-cash expense, the assets being depreciated and amortized may have to be replaced in the future;
- adjusted EBITDA does not reflect the cash requirements necessary to service interest on our debt or the cash received from our interest-bearing financial assets, both of which impact the cash available to us, and does not reflect foreign currency transaction gains and losses, all of which are reflected in other income (expense), net;
- adjusted EBITDA does not reflect income tax payments that reduce cash available to us; and
- the expenses and other items that we exclude in our calculations of non-GAAP net income and adjusted EBITDA may differ from the expenses and other items, if any, that other companies may exclude from non-GAAP net income and adjusted EBITDA when they report their operating results.

In addition, other companies may use other measures to evaluate their performance, all of which could reduce the usefulness of our non-GAAP financial measures as tools for comparison.

The following tables reconcile non-GAAP net income and adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Reconciliation of Net Income to Non-GAAP Net Income:					
Net income	$59,708	$67,921	$88,668	$48,817	$59,637
Stock-based compensation	1,991	7,321	8,304	5,974	5,893
Change in fair value of warrant liability	1,523	—	—	—	—
Tax effect of excluded items	(1,077)	(2,430)	(1,940)	(1,490)	(1,010)
Non-GAAP net income	$62,145	$72,812	$95,032	$53,301	$64,520

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Reconciliation of Net Income to Adjusted EBITDA:					
Net income	$59,708	$ 67,921	$ 88,668	$48,817	$59,637
Stock-based compensation	1,991	7,321	8,304	5,974	5,893
Depreciation and amortization	3,604	5,149	6,008	4,451	5,576
Other income (expense), net	2,942	1,408	(921)	(953)	9,858
Provision for income taxes	26,387	33,742	27,025	16,228	12,334
Adjusted EBITDA	$94,632	$115,541	$129,084	$74,517	$93,298

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read together with our consolidated financial statements and related notes and other financial information included elsewhere in this prospectus. The following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this prospectus, particularly in the section titled "Risk Factors." In this discussion, we use financial measures that are considered non-GAAP financial measures under Securities and Exchange Commission rules. These rules require supplemental explanation and reconciliation, which is included elsewhere in this prospectus. Investors should not consider non-GAAP financial measures in isolation from, or in substitution for, financial information presented in compliance with GAAP.

Overview

We provide a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds. In addition, we offer solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom and wireless networks. Our innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures.

We were founded in 2003 with the vision of enabling consumers and enterprises to enjoy ultra-fast speeds and enhanced digital content experiences through their phones, tablets, TVs and other connected devices at home or on the go with ubiquitous and seamless access, regardless of how the user is accessing the Internet. Our forward-looking design and investment approach, coupled with our proven product development track record, has enabled us to deliver fully featured next-generation solutions in advance of competitors. For example, we believe we were:

- the first to market (2005) with a software-centric cable solution leveraging the programmability of field programmable gate arrays, or FPGAs, and general purpose processors;
- the first to market (2008) with a commercially deployed, fully qualified Data Over Cable Service Interface Specification, or DOCSIS, 3.0 cable modem termination system;
- the first to market (2012) with a commercially deployed converged cable access platform, or CCAP, delivering IP voice, digital video and data over a single port;
- the first to market (2015) with commercially deployed DOCSIS 3.1-compliant solutions supporting speeds of up to 10 gigabits per second; and
- the first to market (2016) with a commercially deployable remote-PHY, or R-PHY, solution.

Our solutions are commercially deployed in more than 70 countries by more than 400 customers, including regional service providers as well as some of the world's largest Tier 1 broadband service providers, serving millions of subscribers.

We believe that the shift to software-centric ultra-broadband networks and fixed and wireless network convergence presents us with a compelling market opportunity. We intend to maintain our technological leadership through the enhancement of existing products and the development of new products in both our current and adjacent markets. By investing in research and development, we believe we will be well positioned to continue our rapid growth and take advantage of the large market opportunity across fixed and wireless networks. We also intend to continue to expand our sales and marketing initiatives in key geographies.

We have achieved significant growth and profitability. For the year ended December 31, 2015, we generated revenue of $272.5 million, net income of $67.9 million and adjusted EBITDA of $115.5 million, representing increases of 29.0%, 13.8% and 22.1%, respectively, from the corresponding amounts for the year ended December 31, 2014. For the year ended December 31, 2016, we generated revenue of $316.1 million, net income of $88.7 million and adjusted EBITDA of $129.1 million, representing increases of 16.0%, 30.5% and 11.7%, respectively, from the corresponding amounts for the year ended December 31, 2015. For the nine months ended September 30, 2017, we generated revenue of $233.6 million, net income of $59.6 million and adjusted EBITDA of $93.3 million, representing increases of 7.7%, 22.2% and 25.2%, respectively, from the corresponding amounts for the nine months ended September 30, 2016.

Our Business Model

We derive revenue from sales of our products and services. We generate product revenue primarily from sales of our broadband products. The majority of our product revenue is derived from sales of our CCAP solutions, particularly our C100G CCAP. We generate service revenue primarily from sales of maintenance and support services, which end customers typically purchase in conjunction with our products, and, to a lesser extent, from sales of professional services and extended warranty services.

Since shipping our first products in 2005, our cumulative end-customer base has grown significantly. Our revenue and installed base of equipment has increased significantly with the introduction of our CCAP solution in 2012 and our DOCSIS 3.1 capabilities in 2015, both of which run on our Axyom software platform.

We offer a scalable broadband solution that can meet the evolving bandwidth needs of our customers and their subscribers.

Our sales model focuses on the following key areas:

- ***Adding New Customers***. With several thousand broadband service providers existing globally, we believe that we have opportunities for growth by acquiring new customers in all of the geographic regions in which we compete. Potential new customers include broadband service providers that provide fixed or wireless services or both. We intend to add new customers over time by continuing to invest in our technology and our sales team to capitalize on these new opportunities. Our sales team works closely with prospective customers to educate them on and demonstrate to them the technical and business merits of our products, including the ability to capture new revenue opportunities and realize cost savings through the use of our broadband solutions. For example, our CCAP solutions converge delivery of voice, video and data services over a single port, resulting in increased capacity and scalability, reduced space and energy consumption and simplified operations and engineering, and the DOCSIS 3.1 capabilities of our CCAP solutions further improve network capacity and throughput by utilizing RF modulation techniques that leverage existing broadband spectrum more efficiently, freeing up spectrum on our customers' networks for other potential revenue-generating services. We build relationships with prospective customers at multiple levels and within numerous departments in a customer's organization and, through the sales process, we strive to be a strategic business partner for our customers. We believe that the technological strengths and capabilities of our broadband solutions and the introduction and implementation of next-generation standards, such as DOCSIS 3.1, have been, and will continue to be, an important factor in our ability to add new customers.
- ***Expanding Sales to Our Existing Customer Base***. Our first installation in a cable service provider's network frequently involves deploying our broadband products in only a portion of the provider's network and with only a fraction of the capacity of our products enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to increase network capacity. Capacity expansions are accomplished either by deploying additional systems or line cards, or by our remote enablement of additional channels through the use of software. Sales of additional line cards and software-based capacity expansions generate higher gross margins than our initial hardware-based deployments.

We work with our existing customers to identify expansion and cross selling opportunities. Existing customers are familiar with and have benefited from the operational and economic benefits of our broadband products, and therefore, sales cycles for existing customers are generally shorter. We believe expansion and cross selling opportunities with existing customers are significant given their existing and expected infrastructure spend as service providers leverage their investment in our platform to deliver new services to their customers. Our top 20 customers over the period from 2013 to September 30, 2017 made subsequent purchases of our products and services in a majority of the fiscal quarters following the quarter in which they made their initial purchases. The first quarter of purchases is typically the beginning of the deployment of our broadband products. This analysis is based on billings, which represent amounts invoiced to customers for products shipped, or for services performed or to be performed, which will be recorded as either revenue or deferred revenue depending on the nature of the arrangement.

Our solutions are commercially deployed in over 70 countries by more than 400 customers. We expect that a substantial portion of our future sales will be follow-on sales to existing customers. During the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, sales to existing customers represented 78%, 63%, 74% and 98% of our revenue, respectively. Our business and results of operations will depend on our ability to sell additional products to our existing customer base.

- ***Selling New Products.*** Our results of operations have been, and we believe will continue to be, affected by our ability to quickly and effectively design and sell products with improved performance and increased functionality. As networks and standards for broadband solutions evolve, we aim to deliver new products prior to our competition. For example, the introduction of our DOCSIS 3.0 broadband solution, our CCAP solution and our DOCSIS 3.1 capabilities allowed us to obtain new customers, increase our sales to existing customers, increase our revenue and capture market share. We aim to increase our revenue by enabling customers to transition from previously deployed data and video solutions to our integrated CCAP solutions, which can incorporate DOCSIS 3.1 standards as well as our remote-PHY distributed access solution. Over the last several years, we have made substantial investments to extend our Axyom software platform to serve the wireless market, and we expect to generate increased revenue in the future from sales of wireless solutions to new and existing customers. We have also developed solutions for telecommunications service providers. Our ability to sustain our revenue growth will depend, in part, upon our sales of new products.

We market and sell our products and services through our direct global sales force, supported by sales agents, and through resellers. A majority of our revenue is derived from direct sales, which generate higher gross margins than sales made through resellers. Our sales organization includes systems engineers with deep technical expertise that provide pre-sales technical support. These systems engineers also assist with post-sales support. Our resellers receive an order from an end customer prior to placing an order with us, and we confirm the identification of or are aware of the end customer prior to accepting such orders. We use sales agents to assist our direct global sales force in the sales process with certain customers primarily located in the Latin America and Asia-Pacific regions. If a sales agent is engaged in the sales process, we receive the order directly from and sell the products and services directly to the end customer, and we pay a commission to the sales agent, calculated as a percentage of the related customer payment.

Each of our sales teams is responsible for a geographic territory and/or has responsibility for a number of major direct end-customer accounts. We have a diverse, global customer base and our revenue by geographic region fluctuates from period to period based on the timing of customer projects. The percentages of our revenue derived from customers in each geographic region were as follows:

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
Revenue by geographic region:					
North America	50.8%	20.0%	58.2%	59.2%	53.7%
Latin America	14.2%	32.1%	15.0%	15.2%	13.5%
Europe, Middle East and Africa	15.3%	27.8%	14.3%	12.6%	19.2%
Asia-Pacific	19.7%	20.1%	12.5%	13.0%	13.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Non-GAAP Financial Measures

In addition to the measures presented in our consolidated financial statements, we use the following non-GAAP financial measures to evaluate our operating performance, to identify trends affecting our business, and to establish budgets and develop operational goals for managing our business.

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
			(in thousands)		
Non-GAAP net income	$62,145	$ 72,812	$ 95,032	$ 53,301	$ 64,520
Adjusted EBITDA	$94,632	$115,541	$129,084	$ 74,517	$ 93,298

These financial measures are non-GAAP financial measures. Please see “Selected Consolidated Financial Data—Non-GAAP Financial Measures” for information regarding the limitations of using these financial measures and for reconciliations of non-GAAP net income and adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

Key Components of Our Results of Operations

Revenue

We generate product revenue from sales of our software-centric broadband products, including our CCAP solution and our DOCSIS 3.1 capabilities. The majority of our revenue is derived from sales of our CCAP solutions, particularly our C100G CCAP. We also generate product revenue from sales of additional line cards and software-based capacity expansions.

Our product revenue consisted of the following:

	Year Ended December 31,								
	2014			2015			2016		
	Sales of Broadband Products	Capacity Expansions	Total Product Revenue	Sales of Broadband Products	Capacity Expansions	Total Product Revenue	Sales of Broadband Products	Capacity Expansions	Total Product Revenue
				(dollars in thousands)					
Product revenue	$187,218	$ 7,140	$194,358	$226,703	$ 20,885	$247,588	$209,751	$ 69,472	$279,223
Percentage of product revenue	96.3%	3.7%	100.0%	91.6%	8.4%	100.0%	75.1%	24.9%	100.0%

	Nine Months Ended September 30,					
	2016			2017		
	Sales of Broadband Products	Capacity Expansions	Total Product Revenue	Sales of Broadband Products	Capacity Expansions	Total Product Revenue
	(dollars in thousands)					
Product revenue	$ 160,711	$ 31,052	$ 191,763	$ 141,799	$ 63,356	$ 205,155
Percentage of product revenue	83.8%	16.2%	100.0%	69.1%	30.9%	100.0%

We generate service revenue from sales of initial maintenance and support services contracts, which are typically purchased by end customers in conjunction with our products, and from our customers' subsequent annual renewals of those contracts. We offer maintenance and support services under renewable, fee-based contracts, which include telephone support and unspecified software upgrades and updates provided on a when-and-if-available basis. To a lesser extent, we generate service revenue from sales of professional services, such as installation and configuration, and extended warranty services.

The sale of our software-centric broadband products generally includes a 90-day warranty on the software and a one-year warranty on the hardware component of the products, which includes repair or replacement of the applicable hardware. We record a warranty accrual for the initial software and hardware warranty included with our product sales and do not defer revenue. In addition, in conjunction with customers' renewals of maintenance and support services contracts, we offer an extended warranty for periods typically of one to three years for agreed-upon fees, which we record as service revenue.

Cost of Revenue

Our cost of product revenue consists primarily of the costs of procuring goods, such as chassis and line cards embedded with FPGAs, from our contract manufacturers and other suppliers. In addition, cost of product revenue includes salary and benefit expenses, including stock-based compensation, for manufacturing and supply-chain management personnel, allocated facilities-related costs, estimated warranty costs, third-party logistics costs, and estimated costs associated with excess and obsolete inventory.

Our cost of service revenue includes salary and benefit expenses, including stock-based compensation, for our maintenance and support services and professional services personnel, fees incurred for subcontracted professional services provided to our customers, and allocated facilities-related costs.

Gross Profit

Our product gross profit and gross margin have been, and may in the future be, influenced by several factors, including changes in the volume of our software-centric broadband products sold, product configuration, sales of capacity expansions, geographic location of our customers, pricing due to competitive pressure, estimated warranty costs, inventory obsolescence, and favorable and unfavorable changes in inventory production volume and component costs. As some products mature, the average selling prices of those products may decline. We expect that over time our product mix will move toward a higher percentage of sales of software-based capacity expansions, which generate higher gross margins than sales of our initial hardware-based deployments.

Our service gross profit and gross margin have been, and may in the future be, influenced by the amount and timing of renewals of maintenance and support services contracts by customers and, to a lesser extent, the amount of professional services ordered by customers and performed by us.

Operating Expenses

Our operating expenses consist of research and development, sales and marketing, and general and administrative expenses.

Research and Development Expenses

Research and development expenses consist primarily of salary and benefit expenses, including stock-based compensation, for our employees engaged in research, design and development activities. Research and development expenses also include project-specific engineering services purchased from external vendors, prototype costs, depreciation expense, amortization of purchased intellectual property, allocated facilities-related costs and travel expenses.

We expect that our research and development costs will continue to increase in absolute dollars and will increase as a percentage of revenue from 2016 to 2017 as we continue to make significant investments to enhance our software-centric broadband products and develop new software-centric broadband products and technologies, including our new wireless solutions.

Sales and Marketing Expenses

Sales and marketing expenses include salary and benefit expenses, including stock-based compensation, for employees and costs for contractors engaged in sales and marketing activities. Sales and marketing expenses also include commissions, calculated as a percentage of the related customer payment, to sales agents that assist us in the sales process with certain customers primarily located in the Latin America and Asia-Pacific regions. These sales agent commissions fluctuate from period to period based on the amount and timing of sales to the customers subject to sales agent commissions. Sales and marketing expenses also include marketing activities, such as trade shows, marketing programs and promotional materials, as well as allocated facilities-related costs. We are also establishing a new sales force to sell and undertake new marketing programs to promote our new wireless solutions.

We expect that our sales and marketing expenses will increase in absolute dollars from 2016 to 2017 as we continue to make investments in our sales and marketing organizations and expand our marketing programs and efforts to increase the market awareness and sales of our products and services.

General and Administrative Expenses

General and administrative expenses include salary and benefit expenses, including stock-based compensation, for employees engaged in general and administrative activities, as well as professional service fees, allocated facilities-related costs, insurance, travel and bad debt expenses related to accounts receivable.

We expect that our general and administrative expenses will increase in absolute dollars and will increase modestly as a percentage of revenue from 2016 to 2017 primarily due to our continued growth and the increased cost of compliance associated with being a public company.

Other Income (Expense), Net

Other income (expense), net consists of interest income from our investments in short-term financial instruments, such as certificates of deposit, money market mutual funds and commercial paper, and interest expense associated with our term loan facility, the mortgage on our corporate office and debt maintenance costs related to our revolving credit facility. Other income (expense), net also includes realized and unrealized gains and losses from foreign currency transactions. We hedge certain significant transactions denominated in currencies other than the U.S. dollar, and we expect to continue to do so to minimize our exposure to foreign currency fluctuations.

We classified warrants for the purchase of shares of our common stock as a liability on our consolidated balance sheets due to the anti-dilution provisions in those warrants. The warrants were initially recorded at fair value on date of issuance and were subsequently remeasured to fair value at each balance sheet date. Changes in

fair value of these warrants were recognized as a component of other income (expense), net in our consolidated statements of operations and comprehensive income, and we continued to adjust the liability for changes in fair value until the warrants were exercised on March 31, 2014.

We expect that our other income (expense), net for 2017 will include approximately $16.2 million of additional interest expense as compared to 2016 attributable to borrowings under our term loan facility entered into in December 2016. As a result of this expected increase, we expect that interest expense for 2017 will be higher than for 2016 both in absolute dollars and as a percentage of revenue.

Provision for Income Taxes

We are subject to income taxes in the United States and the foreign jurisdictions in which we do business. These foreign jurisdictions have statutory tax rates different from those in the United States. Our effective tax rates will vary depending on the relative proportion of foreign to U.S. income, the utilization of foreign tax credits and research and development tax credits, changes in corporate structure, the amount and timing of certain employee stock-based compensation transactions, changes in the valuation of our deferred tax assets and changes in tax laws and interpretations. We plan to regularly assess the likelihood of outcomes that could result from the examination of our tax returns by the U.S. Internal Revenue Service, or IRS, and other tax authorities to determine the adequacy of our income tax reserves and expense. Should actual events or results differ from our then-current expectations, charges or credits to our provision for income taxes may become necessary. Any such adjustments could have a significant effect on our results of operations.

In the third quarter of 2016, we began the process of restructuring our international operations, which over time is expected to reduce our effective tax rate; however, due to the timing of this restructuring program, the impact on our effective tax rate in 2016 was not fully realized. In addition, our 2016 effective tax rate and provision for income taxes reflected a non-recurring tax benefit for equitable adjustment payments to holders of our stock-based awards in connection with dividends declared by our board of directors. Our 2017 effective tax rate reflects the benefit of our international restructuring as well as a non-recurring tax benefit for equitable adjustment payments to holders of our stock based awards in connection with dividends declared by our board of directors. We expect that the favorable impact of the restructuring of our international operations on our effective tax rates will continue in future periods, subject to period to period variability related to the geographic distribution of earnings in foreign jurisdictions with statutory tax rates different from those in the United States.

Results of Operations

The following tables set forth our consolidated results of operations in dollar amounts and as percentage of total revenue for the periods shown:

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Revenue:					
Product	$194,358	$247,588	$279,223	$ 191,763	$ 205,155
Service	16,920	24,862	36,905	25,139	28,458
Total revenue	211,278	272,450	316,128	216,902	233,613
Cost of revenue(1):					
Product	59,088	74,349	89,340	68,793	62,865
Service	5,917	5,265	8,477	5,983	3,637
Total cost of revenue	65,005	79,614	97,817	74,776	66,502
Gross profit	146,273	192,836	218,311	142,126	167,111
Operating expenses:					
Research and development(1)	25,481	37,155	49,210	37,213	43,912
Sales and marketing(1)	21,409	36,157	36,114	27,289	26,983
General and administrative(1)	10,346	16,453	18,215	13,532	14,387
Total operating expenses	57,236	89,765	103,539	78,034	85,282
Income from operations	89,037	103,071	114,772	64,092	81,829
Other income (expense), net	(2,942)	(1,408)	921	953	(9,858)
Income before provision for income taxes	86,095	101,663	115,693	65,045	71,971
Provision for income taxes	26,387	33,742	27,025	16,228	12,334
Net income	$ 59,708	$ 67,921	$ 88,668	$ 48,817	$ 59,637

(1) Includes stock-based compensation expense related to stock options, stock appreciation rights and restricted stock units granted to employees and non-employee consultants as follows:

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Cost of revenue	$ 161	$ 143	$ 237	$ 178	$ 202
Research and development expense	852	1,843	2,306	1,637	1,535
Sales and marketing expense	598	775	1,147	846	801
General and administrative expense	380	4,560	4,614	3,313	3,355
Total stock-based compensation expense	$1,991	$7,321	$8,304	$ 5,974	$ 5,893

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(as a percentage of total revenue)				
Revenue:					
Product	92%	91%	88%	88%	88%
Service	8	9	12	12	12
Total revenue	100	100	100	100	100
Cost of revenue:					
Product	28	27	28	32	27
Service	3	2	3	3	2
Total cost of revenue	31	29	31	34	28
Gross profit	69	71	69	66	72
Operating expenses:					
Research and development	12	14	16	17	19
Sales and marketing	10	13	11	13	12
General and administrative	5	6	6	6	6
Total operating expenses	27	33	33	36	37
Income from operations	42	38	36	30	35
Other income (expense), net	(1)	(1)	—	—	(4)
Income before provision for income taxes	41	37	37	30	31
Provision for income taxes	12	12	9	7	5
Net income	28%	25%	28%	23%	26%

Percentages in the table above are based on actual values. As a result, some totals may not sum due to rounding.

Nine Months Ended September 30, 2016 Compared to Nine Months Ended September 30, 2017

	Nine Months Ended September 30,				Change	
	2016		2017			
	Amount	% of Total	Amount	% of Total	Amount	%
	(dollars in thousands)					
Revenue:						
Product	$191,763	88.4%	$205,155	87.8%	$13,392	7.0%
Service	25,139	11.6%	28,458	12.2%	3,319	13.2%
Total revenue	$216,902	100.0%	$233,613	100.0%	$16,711	7.7%
Revenue by geographic region:						
North America	$128,298	59.2%	$125,396	53.7%	$ (2,902)	(2.3)%
Latin America	33,043	15.2%	31,423	13.5%	(1,620)	(4.9)%
Europe, Middle East and Africa	27,377	12.6%	44,906	19.2%	17,529	64.0%
Asia-Pacific	28,184	13.0%	31,888	13.6%	3,704	13.1%
Total revenue	$216,902	100.0%	$233,613	100.0%	$16,711	7.7%

The increase in product revenue was due to an increase in sales of our software-centric broadband products in Europe, Middle East and Africa primarily due to an increase of $14.3 million in sales of our CCAP solutions to existing customers to increase the proportion of their networks using our products to provide their subscribers with greater bandwidth capacity, and an increase of $2.0 million in sales to new customers, which predominantly deployed our CCAP solution that includes DOCSIS 3.1 capabilities. These increases were partially offset by an

aggregate decrease of $2.9 million in product sales in all other regions resulting primarily from decreases in purchases by existing customers in those regions, which we believe was primarily due to the timing of customer expenditures on network upgrades.

The increase in service revenue was primarily due to a $4.4 million increase in maintenance and support services revenue due to an increase in our installed base of customers through the addition of new customers and from customers renewing their maintenance and support service contracts, partially offset by a $1.1 million decrease in professional services revenue due to a decrease in customer projects requiring our assistance.

Cost of Revenue and Gross Profit

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
Cost of revenue:				
Product	$68,793	$62,865	$(5,928)	(8.6)%
Service	5,983	3,637	(2,346)	(39.2)%
Total cost of revenue	$74,776	$66,502	$(8,274)	(11.1)%

The decrease in cost of product revenue was primarily due to a decrease in the proportion of our revenue derived from our hardware-based broadband products.

The decrease in cost of service revenue was primarily due to a $1.5 million decrease in personnel-related costs as a result of the transfer of certain personnel from our service and support department to our research and development department and a $1.0 million decrease in subcontracted professional services.

	Nine Months Ended September 30,				Change	
	2016		2017			
	Amount	Gross Margin	Amount	Gross Margin	Amount	Gross Margin (bps)
	(dollars in thousands)					
Gross profit:						
Product	$122,970	64.1%	$ 142,290	69.4%	$ 19,320	530
Service	19,156	76.2%	24,821	87.2%	5,665	1,100
Total gross profit	$142,126	65.5%	$ 167,111	71.5%	$ 24,985	600

The increase in product gross margin was primarily due to lower cost of goods sold as a result of an increase in sales of software-based capacity expansions and a decrease in sales of our hardware-based broadband products.

The increase in service gross margin was due to an increase in maintenance and support services revenue and a decrease in lower-margin professional services revenue.

Research and Development

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
Research and development	$37,213	$43,912	$6,699	18.0%
Percentage of revenue	17.2%	18.8%		

The increase in research and development expense was due to a $5.1 million increase in personnel-related costs (including the effect of a $0.1 million decrease in stock-based compensation expense) as a result of the increase in the headcount of our research and development personnel from 321 to 381 to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products, a $1.0 million increase in depreciation expense for research and development related assets, a $0.5 million increase in facilities and infrastructure expenses and a $0.1 million increase in prototype development costs for new broadband products.

Sales and Marketing

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
Sales and marketing	$27,289	$26,983	$ (306)	(1.1)%
Percentage of revenue	12.6%	11.6%		

The slight decrease in sales and marketing expense was due to a $0.9 million decrease in marketing costs related to trade shows and events to promote our solutions, a $0.5 million decrease in personnel-related costs and a $0.1 million decrease in facilities and infrastructure expenses, all partially offset by a $1.2 million increase in sales agent commissions.

General and Administrative

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
General and administrative	$13,532	$14,387	$ 855	6.3%
Percentage of revenue	6.2%	6.2%		

The increase in general and administrative expense was primarily due to a $0.6 million increase in personnel-related costs to support the continued growth in our business, a $0.2 million increase in professional service fees and a $0.1 million increase in facilities and infrastructure expenses.

Other Income (Expense), Net

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
Other income (expense), net	$ 953	$ (9,858)	$ (10,811)	(1,134.4)%
Percentage of revenue	0.4%	(4.2)%		

The change from a net other income of $0.9 million to a net other expense of $9.9 million was primarily due to a $12.7 million increase in interest expense attributable to our term loan facility entered into in December 2016, partially offset by a $0.9 million increase in interest income due to an increase in interest rates and an increase in our portfolio of cash equivalents and a $0.8 million increase in foreign currency gains due to appreciation of the Euro and the impact thereof on our foreign-denominated cash and receivables.

Provision for Income Taxes

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
Provision for income taxes	$16,228	$12,334	$ (3,894)	(24.0)%
Effective tax rate	24.9%	17.1%		

The 7.8% decrease in our effective tax rate resulted from the tax benefits of equitable adjustment payments to holders of our stock-based awards and the favorable benefit of the foreign rate differential due to the restructuring of our international operations.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2016

Revenue

	Year Ended December 31,					
	2015		2016		Change	
	Amount	% of Total	Amount	% of Total	Amount	%
	(dollars in thousands)					
Revenue:						
Product	$247,588	90.9%	$279,223	88.3%	$ 31,635	12.8%
Service	24,862	9.1%	36,905	11.7%	12,043	48.4%
Total revenue	$272,450	100.0%	$316,128	100.0%	$ 43,678	16.0%
Revenue by geographic region:						
North America	$ 54,518	20.0%	$183,941	58.2%	$129,423	237.4%
Latin America	87,382	32.1%	47,314	15.0%	(40,068)	(45.9)%
Europe, Middle East and Africa	75,767	27.8%	45,205	14.3%	(30,562)	(40.3)%
Asia-Pacific	54,783	20.1%	39,668	12.5%	(15,115)	(27.6)%
Total revenue	$272,450	100.0%	$316,128	100.0%	$ 43,678	16.0%

The increase in product revenue was due to an increase in sales of our software-centric broadband products in North America primarily due to an increase of $74.2 million in sales to new customers, which predominantly deployed our CCAP solution that includes DOCSIS 3.1 capabilities, and an increase of $45.7 million in sales of our CCAP solutions to existing customers to increase the proportion of their networks using our products to provide their subscribers with greater bandwidth capacity through capacity expansions. These increases were partially offset by an aggregate decrease of $88.3 million in product sales in all other regions resulting primarily from decreases in purchases by customers in those regions of capacity expansions from us, which we believe was primarily due to the timing of customer expenditures on network upgrades.

The increase in service revenue was primarily due to a $9.3 million increase in maintenance and support services revenue due to an increase in our installed base of customers through the addition of new customers and from customers renewing their maintenance and support service contracts as well as a $2.8 million increase in professional services revenue related to customer installations in North America to deploy our DOCSIS 3.1 capabilities.

Cost of Revenue and Gross Profit

	Year Ended December 31,		Change	
	2015	2016	Amount	%
	(dollars in thousands)			
Cost of revenue:				
Product	$74,349	$89,340	$14,991	20.2%
Service	5,265	8,477	3,212	61.0%
Total cost of revenue	$79,614	$97,817	$18,203	22.9%

The increase in cost of product revenue was primarily due to an increase in the quantity of our software-centric broadband products sold and an increase in personnel-related costs resulting from hiring additional employees.

The increase in cost of service revenue was primarily due to a $2.5 million increase in subcontracted professional services related to customer deployments of our DOCSIS 3.1 capabilities and a $0.7 million increase in personnel-related costs resulting from hiring additional employees.

	Year Ended December 31,				Change	
	2015		2016			
	Amount	Gross Margin	Amount	Gross Margin	Amount	Gross Margin (bps)
	(dollars in thousands)					
Gross profit:						
Product	$173,239	70.0%	$189,883	68.0%	$16,644	(200)
Service	19,597	78.8%	28,428	77.0%	8,831	(180)
Total gross profit	$192,836	70.8%	$218,311	69.1%	$25,475	(170)

The decrease in product gross margin was primarily due to higher cost of goods related to initial sales of our software-centric broadband products as a result of the significant amount of hardware in these sales.

Service gross margin declined due to an increase in professional services revenue as a percentage of total service revenue during the year ended December 31, 2016.

Research and Development

	Year Ended December 31,		Change	
	2015	2016	Amount	%
	(dollars in thousands)			
Research and development	$37,155	$49,210	$12,055	32.4%
Percentage of revenue	13.6%	15.6%		

The increase in research and development expense was due to a $9.6 million increase in personnel-related costs (including a $0.5 million increase in stock-based compensation expense) as a result of the increase in the headcount of our research and development personnel from 256 to 328 to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products, a $1.2 million increase in facilities and infrastructure expenses and a $1.2 million increase in prototype development costs for new broadband products.

Sales and Marketing

	Year Ended December 31,		Change	
	2015	2016	Amount	%
	(dollars in thousands)			
Sales and marketing	$36,157	$36,114	$ (43)	(0.1)%
Percentage of revenue	13.3%	11.4%		

The slight decrease in sales and marketing expense was due to a $7.8 million decrease in sales agent commissions related to a decrease in sales in Latin America, which was partially offset by a $6.8 million increase in personnel-related costs (including a $0.4 million increase in stock-based compensation expense) as a result of the increase in the headcount of our sales and marketing personnel from 94 to 114 in order to increase the sales force associated with our software-centric broadband products and to develop a new sales force assigned to our new wireless solutions and a $0.9 million increase in marketing costs related to trade shows and events to promote our solutions.

General and Administrative

	Year Ended December 31,		Change	
	2015	2016	Amount	%
	(dollars in thousands)			
General and administrative	$16,453	$18,215	$1,762	10.7%
Percentage of revenue	6.0%	5.8%		

The increase in general and administrative expense was primarily due to a $1.5 million increase in personnel-related costs (including a $0.1 million increase in stock-based compensation expense) to support the continued growth in our business and a $0.3 million increase in facilities and infrastructure expenses.

Other Income (Expense), Net

	Year Ended December 31,		Change	
	2015	2016	Amount	%
	(dollars in thousands)			
Other income (expense), net	$ (1,408)	$ 921	$2,329	165.4%
Percentage of revenue	0.5%	0.3%		

The change from a net other expense of $1.4 million to a net other income of $0.9 million was primarily due to a $2.7 million decrease in foreign currency losses resulting from a lower carrying value of foreign-denominated cash and receivables during the year ended December 31, 2016 as compared to the year ended December 31, 2015 and a $0.3 million increase in interest income due to an increase in our portfolio of cash equivalents and marketable securities, both partially offset by a $0.7 million increase in interest expense primarily attributable to $300.0 million of borrowings under the term loan facility we entered into in December 2016.

Provision for Income Taxes

	Year Ended December 31,		Change	
	2015	2016	Amount	%
	(dollars in thousands)			
Provision for income taxes	$33,742	$27,025	$(6,717)	(19.9)%
Effective tax rate	33.2%	23.4%		

The 9.8% decrease in our effective tax rate primarily resulted from the tax benefits from certain employee stock-based compensation transactions, including equitable adjustment payments to holders of our stock-based awards, during the year ended December 31, 2016 related to our adoption, effective as of January 1, 2016, of a new share-based payment accounting standard. In particular, the tax benefit of equitable adjustment payments in 2016 contributed to a 7.0% non-recurring reduction in our effective tax rate. The decrease in our effective tax rate was also due in part to an increase in the benefit of the foreign tax rate differential, reflecting the partial effect of a process we began in the third quarter of 2016 to restructure our international operations.

Year Ended December 31, 2014 Compared to Year Ended December 31, 2015

Revenue

	Year Ended December 31,					
	2014		2015		Change	
	Amount	% of Total	Amount	% of Total	Amount	%
	(dollars in thousands)					
Revenue:						
Product	$194,358	92.0%	$247,588	90.9%	$ 53,230	27.4%
Service	16,920	8.0%	24,862	9.1%	7,942	46.9%
Total revenue	$211,278	100.0%	$272,450	100.0%	$ 61,172	29.0%
Revenue by geographic region:						
North America	$107,376	50.8%	$ 54,518	20.0%	$(52,858)	(49.2)%
Latin America	29,915	14.2%	87,382	32.1%	57,467	192.1%
Europe, Middle East and Africa	32,407	15.3%	75,767	27.8%	43,360	133.8%
Asia-Pacific	41,580	19.7%	54,783	20.1%	13,203	31.8%
Total revenue	$211,278	100.0%	$272,450	100.0%	$ 61,172	29.0%

The increase in product revenue was primarily due to product sales to new customers that deployed our CCAP solution of $42.4 million in Latin America, $16.8 million in Europe, Middle East and Africa, and $13.8 million in Asia-Pacific; an increase in product sales of $8.9 million to existing customers in such regions; and recognition of previously deferred revenue of $23.1 million upon the product acceptance by a new customer in Europe that deployed our CCAP solution. These increases were partially offset by a decrease in product sales in North America of $51.9 million resulting primarily from decreases in purchases by customers in North America of capacity expansions from us, which we believe was primarily due to the timing of customer expenditures on network upgrades.

The increase in service revenue was primarily due to a $12.7 million increase in maintenance and support services revenue as a result of an increase in our installed base of customers through the addition of new customers and from customers renewing their maintenance and support service contracts, which was partially offset by a $4.7 million decrease in professional services revenue, which was primarily due to revenue recognized in 2014 in connection with one major professional services engagement.

Cost of Revenue and Gross Profit

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Cost of revenue:				
Product	$59,088	$74,349	$15,261	25.8%
Service	5,917	5,265	(652)	(11.0)%
Total cost of revenue	$65,005	$79,614	$14,609	22.5%

The increase in cost of product revenue was primarily due to an increase in the quantity of our software-centric broadband products sold and an increase in personnel-related costs resulting from hiring additional employees.

The decrease in cost of service revenue was primarily due to a $1.8 million decrease in subcontracted professional services related to new customer deployments of our CCAP solution, partially offset by a $0.9 million increase in personnel-related costs resulting from hiring additional employees.

	Year Ended December 31,					
	2014		2015		Change	
	Amount	Gross Margin	Amount	Gross Margin	Amount	Gross Margin (bps)
	(dollars in thousands)					
Gross profit:						
Product	$135,270	69.6%	$173,239	70.0%	$37,969	40
Service	11,003	65.0%	19,597	78.8%	8,594	1,380
Total gross profit	$146,273	69.2%	$192,836	70.8%	$46,563	160

The slight increase in product gross margin was primarily due to an increase in sales of software-based capacity expansions during the year ended December 31, 2015.

The increase in service gross margin was due to a decrease in sales of lower-margin professional services related to new customer deployments of our CCAP solution during 2015 as compared to 2014.

Research and Development

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Research and development	$25,481	$37,155	$11,674	45.8%
Percentage of revenue	12.1%	13.6%		

The increase in research and development expense was due to a $8.9 million increase in personnel-related costs (including a $1.0 million increase in stock-based compensation expense) as a result of the increase in headcount of our research and development personnel from 187 to 256 to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products, a $1.5 million increase in facilities and infrastructure expenses and a $1.1 million increase in hardware prototype development costs for new broadband products.

Sales and Marketing

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Sales and marketing	$21,409	$36,157	$14,748	68.9%
Percentage of revenue	10.1%	13.3%		

The increase in sales and marketing expense was due to a $7.5 million increase in sales agent commissions related to an increase in sales in Latin America, a $5.7 million increase in personnel-related costs (including a $0.2 million increase in stock-based compensation expense) as a result of the increase in the headcount of our

sales and marketing personnel from 67 to 94 in order to increase the sales force associated with our software-centric broadband products and to start the development of a new sales force assigned to our new wireless solutions, a $0.8 million increase in facilities and infrastructure expenses and a $0.5 million increase in marketing costs related to trade shows and events to promote our solutions.

General and Administrative

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
General and administrative	$10,346	$16,453	$6,107	59.0%
Percentage of revenue	4.9%	6.0%		

The increase in general and administrative expense was primarily due to a $4.0 million increase in stock-based compensation expense, a $1.3 million increase in personnel-related costs due to an increase in the headcount of personnel in our general and administrative functions due to the growth in our business and a $0.7 million increase in professional fees.

Other Income (Expense), Net

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Other income (expense), net	$(2,942)	$(1,408)	$1,534	52.1%
Percentage of revenue	1.4%	0.5%		

The change from a net other expense of $2.9 million to a net other expense of $1.4 million was due to a $1.5 million decrease in other expense associated with our revaluation in 2014 of a liability for a common stock warrant, which was exercised on March 31, 2014.

Provision for Income Taxes

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Provision for income taxes	$26,387	$33,742	$7,355	27.9%
Effective tax rate	30.6%	33.2%		

The increase in the effective tax rate of 2.6% primarily resulted from a decrease in the benefit of the foreign tax rate differential.

Consolidated Quarterly Results of Operations

The following table sets forth our unaudited quarterly consolidated statement of operations data, in both dollar amounts and as a percentage of total revenue, for each of the eleven fiscal quarters in the period ended September 30, 2017. In management's opinion, the quarterly statement of operations data has been prepared on the same basis as the audited consolidated financial statements included in this prospectus and reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of this data. This information should be read together with our consolidated financial statements and related notes appearing elsewhere in this prospectus. Our operating results may fluctuate due to a variety of factors. The results of historical periods are not necessarily indicative of the results of operations for a full year or any future period.

	Three Months Ended										
	Mar. 31, 2015	June 30, 2015	Sept. 30, 2015	Dec. 31, 2015	Mar. 31, 2016	June 30, 2016	Sept. 30, 2016	Dec. 31, 2016	Mar. 31, 2017	June 30, 2017	Sept. 30, 2017
	(in thousands)										
Revenue:											
Product	$55,884	$68,276	$42,007	$81,421	$76,433	$56,777	$58,553	$87,460	$65,209	$55,750	$84,196
Service	3,505	6,814	6,057	8,486	6,996	8,148	9,995	11,766	7,520	10,875	10,063
Total revenue	59,389	75,090	48,064	89,907	83,429	64,925	68,548	99,226	72,729	66,625	94,259
Cost of revenue:											
Product	16,379	18,783	13,322	25,865	27,103	22,427	19,263	20,547	19,132	19,909	23,824
Services	1,141	1,233	1,278	1,613	1,408	1,997	2,578	2,494	1,257	938	1,442
Total cost of revenue	17,520	20,016	14,600	27,478	28,511	24,424	21,841	23,041	20,389	20,847	25,266
Gross profit	41,869	55,074	33,464	62,429	54,918	40,501	46,707	76,185	52,340	45,778	68,993
Operating expenses:											
Research and development	8,270	9,284	9,854	9,747	12,189	12,573	12,451	11,997	14,468	14,227	15,217
Sales and marketing	7,129	7,155	9,592	12,281	8,644	9,125	9,520	8,825	10,080	8,156	8,747
General and administrative	3,600	4,671	4,287	3,895	4,347	4,665	4,520	4,683	4,995	4,526	4,866
Total operating expenses	18,999	21,110	23,733	25,923	25,180	26,363	26,491	25,505	29,543	26,909	28,830
Income from operations	22,870	33,964	9,731	36,506	29,738	14,138	20,216	50,680	22,797	18,869	40,163
Other income (expense), net	(3,464)	2,016	(113)	153	319	278	356	(32)	(3,540)	(2,766)	(3,552)
Income before provision for (benefit from) income taxes	19,406	35,980	9,618	36,659	30,057	14,416	20,572	50,648	19,257	16,103	36,611
Provision for (benefit from) income taxes	6,757	13,278	3,370	10,337	8,345	2,412	5,471	10,797	1,103	(1,057)	12,288
Net income	$12,649	$22,702	$ 6,248	$26,322	$21,712	$12,004	$15,101	$39,851	$18,154	$17,160	$24,323

	Three Months Ended										
	Mar. 31, 2015	June 30, 2015	Sept. 30, 2015	Dec. 31, 2015	Mar. 31, 2016	June 30, 2016	Sept. 30, 2016	Dec. 31, 2016	Mar. 31, 2017	June 30, 2017	Sept. 30, 2017
	(as a percentage of total revenue)										
Revenue:											
Product	94%	91%	87%	91%	92%	87%	85%	88%	90%	84%	89%
Service	6	9	13	9	8	13	15	12	10	16	11
Total revenue	100	100	100	100	100	100	100	100	100	100	100
Cost of revenue:											
Product	28	25	28	29	32	35	28	21	26	30	25
Service	2	2	3	2	2	3	4	3	2	1	2
Total cost of revenue	30	27	30	31	34	38	32	23	28	31	27
Gross profit	70	73	70	69	66	62	68	77	72	69	73
Operating expenses:											
Research and development	14	12	21	11	15	19	18	12	20	21	16
Sales and marketing	12	10	20	14	10	14	14	9	14	12	9
General and administrative	6	6	9	4	5	7	7	5	7	7	5
Total operating expenses	32	28	49	29	30	41	39	26	41	40	31
Income from operations	39	45	20	41	36	22	29	51	31	28	43
Other income (expense), net	(6)	3	—	—	—	—	1	—	(5)	(4)	(4)
Income before provision for (benefit from) income taxes	33	48	20	41	36	22	30	51	26	24	39
Provision for (benefit from) income taxes	11	18	7	11	10	4	8	11	2	(2)	13
Net income	21%	30%	13%	29%	26%	18%	22%	40%	25%	26%	26%

Percentages in the table above are based on actual values. As a result, some totals may not sum due to rounding.

Quarterly Revenue and Cost of Revenue

Our revenue has been influenced over the periods presented by demand for and sales of our software-centric broadband products, including our CCAP solution and DOCSIS 3.1 capabilities, an increase in our sales of software-based capacity expansions, and an increase in our maintenance and support services revenue due to an increase in the supported installed base of equipment. An overall increase in demand for our products over the periods presented, combined with the introduction of new products, has contributed to the overall increase in our revenue.

We believe that seasonality generally causes product revenue to be greater for the first and fourth quarters of our year as compared to the second and third quarters. We believe that this seasonality results primarily from the procurement, budgeting and deployment cycles of many of our customers.

Product revenue during the three months ended June 30, 2015 included the recognition of previously deferred product revenue of $23.1 million upon the product acceptance by a new customer in Europe that deployed our CCAP solution. The cost of product revenue for the same period also included the recognition of previously deferred inventory costs related to this product acceptance. The increase in product revenue for the three months ended September 30, 2017 was primarily attributable to sales of our CCAP solution with DOCSIS 3.1 capabilities to an existing customer in North America.

Quarterly Gross Profit

Our gross profit and gross margin are primarily driven by the mix of products sold, the amount of capacity expansions sold, and the amount of maintenance and support services revenue recognized for the period. The decreases in gross profit and gross margin for the three months ended March 31, 2016 and June 30, 2016 were primarily due to lower gross profit from the initial sales to new customers of our broadband products as a result of the amount of hardware in these sales. The increases in gross profit and gross margin for the three months ended December 31, 2016 were primarily due to an increase in sales of software-based capacity expansions to customers in North America.

Quarterly Operating Expenses

Our operating expenses have generally increased over the periods presented primarily related to the increase in personnel and the related salary and benefit costs to support the growth of our business and the development of new products. Our total headcount was 352, 481, 604 and 652 as of December 31, 2014, 2015 and 2016 and September 30, 2017, respectively. The increase in research and development costs was primarily attributable to increased personnel added throughout each of the quarters presented to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products. Sales and marketing expenses and general and administrative expenses have increased over the periods presented primarily due to increases in personnel to support the growth of our business.

Sales and marketing expenses during the three months ended September 30, 2015, December 31, 2015 and March 31, 2017 included sales agent commissions of $3.5 million, $4.4 million and $2.2 million, respectively, related to sales to certain customers in the Latin America and Asia-Pacific regions.

Quarterly Other Income (Expense), Net

On December 20, 2016, we entered into a credit agreement that included a term loan facility under which we borrowed $300.0 million. Borrowings under the term loan facility bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at our option, a base rate plus an applicable margin. As of December 31, 2016 and September 30, 2017, the interest rate for the term loan facility was 5.00% and 5.33% per annum, respectively, which was based on a one-month Eurodollar rate at the applicable floor of 1.00% and the three-month Eurodollar rate of 1.33% per annum, respectively, plus the applicable margin of 4.00% per annum

for Eurodollar rate loans. Other income (expense), net for the three months ended December 31, 2016, March 31, 2017, June 30, 2017 and September 30, 2017 included interest expense of $0.5 million, $4.0 million, $4.1 million and $4.3 million, respectively, related to the term loan facility.

Liquidity and Capital Resources

Since our inception, we have primarily funded our operations through issuances of shares of our convertible preferred stock and cash flows from operations. In addition, on December 20, 2016, we entered into a credit agreement that included a term loan facility under which we borrowed $300.0 million. The following tables set forth our cash, cash equivalents and marketable securities and working capital as of December 31, 2015 and 2016 and September 30, 2017 as well as our net cash flows for the years ended December 31, 2014, 2015 and 2016 and for the nine months ended September 30, 2016 and 2017:

	As of December 31,		As of September 30, 2017
	2015	2016	
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash, cash equivalents and marketable securities	$ 92,496	$343,946	$ 183,519
Working capital	162,981	286,652	247,182

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Consolidated Cash Flow Data:					
Net cash provided by operating activities	$ 60,348	$ 24,602	$110,780	$124,069	$ 49,054
Net cash provided by (used in) investing activities	(4,030)	(15,503)	(21,811)	(6,159)	9,886
Net cash provided by (used in) financing activities	(21,695)	7,304	149,368	(48,146)	(205,750)

As of September 30, 2017, we had cash and cash equivalents of $183.5 million and net accounts receivable of $103.1 million. We maintain a $25.0 million revolving credit facility under which $24.0 million was available and $1.0 million was used as collateral for a stand-by letter of credit as of September 30, 2017.

Of our total cash and cash equivalents of $183.5 million as of September 30, 2017, $32.7 million was held by our foreign subsidiaries. We intend to utilize the cash and cash equivalents held by our foreign subsidiaries to support our business growth in the regions in which they operate. If we were to repatriate to the U.S. the cash and cash equivalents held by these foreign subsidiaries, we would need to accrue and pay U.S. income taxes on the cash amounts repatriated.

We believe our existing cash and cash equivalents, anticipated cash flows from future operations and liquidity available from our revolving credit facility will be sufficient to meet our working capital and capital expenditure needs and debt service obligations for at least the next 12 months. Our future capital requirements may vary materially from those currently planned and will depend on many factors, including our rate of revenue growth, the timing and extent of spending on research and development efforts and other business initiatives, purchases of capital equipment to support our growth, the expansion of sales and marketing activities, expansion of our business through acquisitions or our investments in complementary products, technologies or businesses, the use of working capital to purchase additional inventory, the timing of new product introductions, market acceptance of our products and overall economic conditions. To the extent that current and anticipated future sources of liquidity are insufficient to fund our future business activities and requirements, we may be required to seek additional equity or debt financing. In the event additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us or at all.

From our inception through September 30, 2017, our board of directors has declared a special dividend on four separate occasions and has approved cash payments to the holders of our stock options, stock appreciation rights, or SARs, and restricted stock units, or RSUs, as equitable adjustments in connection with these special dividends. The dividend payments totaled $27.3 million, $0.3 million, $137.4 million and $164.3 million in the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, respectively. The equitable adjustment payments totaled $1.6 million, $0.4 million, $4.9 million and $33.9 million in the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, respectively. As of September 30, 2017, there were $9.2 million of equitable adjustment payments that had been approved by our board of directors that had not yet been paid to the holders of our stock options, SARs and RSUs. These equitable adjustment payments will be paid to the holders of the applicable equity awards as they vest through 2021. We do not anticipate declaring cash dividends following the closing of this offering. Any future determination to declare dividends will be subject to the discretion of our board of directors and applicable law, and will depend on various factors, including our results of operations, financial condition, prospects and any other factors deemed relevant by our board of directors.

Cash Flows

Operating Activities

Our primary source of cash from operating activities has been from cash collections from our customers. We expect cash inflows from operating activities to be affected by increases in sales and timing of collections and by purchases and shipments of inventory. Our primary uses of cash from operating activities have been for personnel costs and investment in sales and marketing and research and development. We expect cash outflows from operating activities to increase as a result of further investment in research and development and sales and marketing and increases in personnel costs as we continue to enhance our products and introduce new products in an effort to continue to expand our business.

During the nine months ended September 30, 2017, cash provided by operating activities was $49.1 million, primarily resulting from our net income of $59.6 million, net non-cash charges of $13.5 million and net cash used by changes in our operating assets and liabilities of $24.1 million. The net cash used by changes in our operating assets and liabilities during the nine months ended September 30, 2017 was primarily due to a $16.7 million decrease in accounts payable primarily attributable to timing of our payments for purchases of inventory; a $15.3 million decrease in deferred revenue primarily due to recognition of $8.5 million of revenue upon the expiration of trade-in rights for an existing customer in North America and recognition of $5.5 million of revenue upon the product acceptance of an existing customer in the Asia-Pacific region; a $4.6 million decrease in accrued income taxes due to the timing of tax payments; and a $2.3 million decrease in accrued expenses and other current liabilities. These uses of cash were partially offset by a $13.1 million decrease in inventory due to shipments of inventory to customers and a $1.7 million decrease in prepaid expenses and other current assets.

During the nine months ended September 30, 2016, cash provided by operating activities was $124.1 million, primarily resulting from our net income of $48.8 million, net non-cash charges of $6.4 million and net cash provided by changes in our operating assets and liabilities of $68.8 million. The net cash provided by changes in our operating assets and liabilities during the nine months ended September 30, 2016 was primarily due to a $24.6 million decrease in accounts receivable due to the timing of billings and collections during the period and a higher proportion of our sales in geographic regions with shorter payment terms, a $22.3 million increase in deferred revenue due to the deferral of the revenue recognition for certain sales transactions resulting from the customer acceptance provisions of those arrangements and an increase in sales of maintenance and support service contracts as a result of an increase in our installed base, a $15.6 million increase in accounts payable primarily attributable to the timing of our payments for the purchases of inventory and a $11.5 million increase in accrued expenses and other current liabilities, which included an increase of $13.9 million for accrued customer incentives, all partially offset by a $4.9 million decrease in accrued income taxes.

During the year ended December 31, 2016, cash provided by operating activities was $110.8 million, primarily resulting from our net income of $88.7 million, net non-cash charges of $9.1 million and net cash provided by changes in our operating assets and liabilities of $13.0 million. The net cash provided by changes in our operating assets and liabilities during the year ended December 31, 2016 was primarily due to a $17.3 million increase in deferred revenue due to the deferral of the revenue recognition for certain sales transactions due to customer acceptance provisions or future delivery obligations and an increase in sales of maintenance and support service contracts as a result of an increase in our installed base; a $15.8 million increase in accrued expenses and other current liabilities, which included an increase of $15.4 million for accrued customer incentives; a $14.5 million increase in accounts payable primarily attributable to timing of our payments for purchases of inventory; and a $6.9 million increase in accrued income taxes as a result of an increase in taxable income. These sources of cash were partially offset by a $22.8 million increase in inventory due to the anticipated growth in our business and a $16.3 million increase in accounts receivable due to an increase in sales and timing of the related collections.

During the year ended December 31, 2015, cash provided by operating activities was $24.6 million, primarily resulting from our net income of $67.9 million and net non-cash charges of $12.7 million, both partially offset by net cash used by changes in our operating assets and liabilities of $56.0 million. The net cash used by changes in our operating assets and liabilities during the year ended December 31, 2015 was primarily due to a $28.6 million decrease in deferred revenue primarily due to recognition of $23.1 million of revenue upon the product acceptance by a new customer in Europe that deployed our CCAP solution, a $10.8 million decrease in accrued income taxes due to the timing of tax payments, a $17.4 million increase in inventory for anticipated growth in our business and a $9.7 million increase in accounts receivable due to an increase in sales and timing of the related collections. These uses of cash were partially offset by a $2.7 million increase in accounts payable primarily attributable to the timing of our payments for the purchases of inventory and an $8.0 million increase in accrued expenses and other current liabilities, which included an increase of $3.4 million for personnel-related accrued liabilities, such as accrued salaries and bonuses, due to the growth in headcount.

During the year ended December 31, 2014, cash provided by operating activities was $60.3 million, primarily resulting from our net income of $59.7 million and net cash provided by changes in our operating assets and liabilities of $1.9 million, both partially offset by net non-cash gains of $1.2 million. The net cash provided by changes in our net operating assets and liabilities during the year ended December 31, 2014 was primarily due to a $59.4 million increase in deferred revenue due primarily to the deferral of the revenue recognition for several sales transactions resulting from the customer acceptance provisions of those arrangements, a $13.9 million increase in accrued income taxes and an $8.0 million increase in accrued expenses and other current liabilities, which included an increase of $6.6 million for personnel-related accrued liabilities, such as accrued salaries and bonuses, due to the growth in our headcount. These sources of cash were partially offset by a $46.6 million increase in accounts receivable as a result of an increase in sales and the timing of the related collections, a $22.1 million increase in inventory due to anticipated growth in our business, and a $6.6 million decrease in accounts payable primarily attributable to the timing of our payments for the purchases of inventory.

Investing Activities

Our investing activities have consisted primarily of expenditures for lab and computer equipment and software to support the development of new products and increase our manufacturing capacity to meet customer demand for our products. In addition, our investing activities include expansion of and improvements to our facilities. As our business expands, we expect that we will continue to invest in these areas. Our investing activities in 2015 also included the purchase of our corporate offices.

Net cash provided by investing activities during the nine months ended September 30, 2017 was $9.9 million and consisted of $14.6 million of proceeds from maturities of marketable securities, partially offset by $4.7 million for purchases of property and equipment.

Net cash used in investing activities during the nine months ended September 30, 2016 was $6.2 million for purchases of property and equipment.

Net cash used in investing activities during the year ended December 31, 2016 was $21.8 million and consisted of $14.4 million for purchases of marketable securities and $7.4 million for purchases of property and equipment.

Net cash used in investing activities during the year ended December 31, 2015 was $15.5 million for purchases of property and equipment, consisting primarily of the purchase of and improvements to our corporate offices totaling $10.4 million during that period.

Net cash used in investing activities during year ended December 31, 2014 was $4.0 million for purchases of property and equipment.

Financing Activities

Net cash used in financing activities during the nine months ended September 30, 2017 was $205.8 million and consisted of dividend and equitable adjustment payments of $198.2 million, employee taxes paid related to net share settlement of restricted stock units of $3.8 million, principal repayments of debt of $2.5 million and initial public offering costs of $1.5 million, all partially offset by proceeds from the exercise of stock options of $0.2 million.

Net cash used in financing activities during the nine months ended September 30, 2016 was $48.1 million and consisted primarily of dividend payments of $47.8 million.

Net cash provided by financing activities during the year ended December 31, 2016 was $149.4 million and consisted primarily of net proceeds from borrowings under our term loan facility of $292.2 million and proceeds from the exercise of stock options of $0.6 million, both partially offset by dividend and equitable adjustment payments of $142.3 million and payments of initial public offering costs of $0.5 million.

Net cash provided by financing activities during the year ended December 31, 2015 was $7.3 million and consisted primarily of proceeds of $7.9 million from the commercial mortgage on our corporate offices, partially offset by $0.7 million of dividend and equitable adjustment payments.

Net cash used in financing activities during the year ended December 31, 2014 was $21.7 million and primarily consisted of dividend and equitable adjustment payments of $28.9 million, partially offset by proceeds from the exercise of stock options and a common stock warrant totaling $6.7 million.

Working Capital Facility and Commercial Mortgage

In April 2014, we entered into a revolving credit agreement with Bank of America, which, as amended in 2016, provided for borrowings of up to $25.0 million, subject to certain limitations. Borrowings under the revolver accrued interest, at our election, at either (1) the bank’s prime rate or (2) LIBOR plus two percentage points, due quarterly in arrears. We were required to pay a fee of 0.20% per year, payable quarterly in arrears, on the unused amount of the revolver. The revolver was scheduled to mature on June 30, 2019 but was earlier terminated by us on December 20, 2016.

In July 2015, we entered into an $8.0 million commercial mortgage loan agreement. The annual interest rate on the loan is 3.5%, and the loan is repayable in 60 monthly installments of principal and interest based on a 20-year amortization schedule. The loan is secured by the land and building, which are our corporate offices, purchased in March 2015, and contains annual affirmative, negative and financial covenants, including

maintenance of a minimum debt service ratio. We were in compliance with all the covenants of the mortgage loan as of December 31, 2016 and September 30, 2017. As of December 31, 2016 and September 30, 2017, the outstanding principal amount under the mortgage loan was $7.6 million and $7.3 million, respectively.

Term Loan and Revolving Credit Facilities

On December 20, 2016, we entered into a credit agreement with JPMorgan Chase Bank, N.A., as administrative agent, various lenders and JPMorgan Chase Bank, N.A. and Barclays Bank PLC, as joint lead arrangers and joint bookrunners, providing for:

- a term loan facility of $300.0 million and
- a revolving credit facility of up to $25.0 million in revolving credit loans and letters of credit.

As of December 31, 2016 and September 30, 2017, we had borrowings of $300.0 million and $297.8 million, respectively, outstanding under the term loan facility and we did not have any outstanding borrowings under the revolving credit facility; however, we had used $1.0 million under the revolving credit facility for a stand-by letter of credit that serves as collateral for a stand-by letter of credit issued by Bank of America to one of our customers pursuant to a contractual performance guarantee. In addition, we may, subject to certain conditions, including the consent of the administrative agent and the institutions providing such increases, increase the facilities by an unlimited amount so long as we are in compliance with specified leverage ratios, or otherwise by up to $70.0 million.

Borrowings under the facilities bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at our option, a base rate (defined as the highest of (x) the JPMorgan Chase, N.A. prime rate, (y) the federal funds effective rate, plus one half percent (0.50%) per annum and (z) a one-month Eurodollar rate plus 1.00% per annum) plus an applicable margin. The applicable margin for borrowings under the term loan facility is 4.00% per annum for Eurodollar rate loans (subject to a 1.00% per annum interest rate floor) and 3.00% per annum for base rate loans. The applicable margin for borrowings under the revolving credit facility is 2.00% per annum for Eurodollar rate loans and 1.00% per annum for base rate loans, subject to reduction based on various factors, including our completion of this offering and our maintaining of specified net leverage ratios. The interest rates payable under the facilities are subject to an increase of 2.00% per annum during the continuance of any payment default.

For Eurodollar rate loans, we may select interest periods of one, two, three or six months or, with the consent of all relevant affected lenders, twelve months. Interest will be payable at the end of the selected interest period, but no less frequently than every three months within the selected interest period. Interest on any base rate loan is not set for any specified period and is payable quarterly. We have the right to convert Eurodollar rate loans into base rate loans and the right to convert base rate loans into Eurodollar rate loans at our option, subject, in the case of Eurodollar rate loans, to prepayment penalties if the conversion is effected prior to the end of the applicable interest period. As of December 31, 2016 and September 30, 2017, the interest rate on the term loans was 5.00% and 5.33%, respectively, per annum, which was based on a one-month Eurodollar rate at the applicable floor of 1.00% and the three-month Eurodollar rate of 1.33%, respectively, per annum, plus the applicable margin of 4.00% per annum for Eurodollar rate loans.

The revolving credit facility also requires payment of quarterly commitment fees at a rate of 0.25% per annum on the difference between committed amounts and amounts actually borrowed under the facility and customary letter of credit fees.

The term loan facility matures on December 20, 2023 and the revolving credit facility matures on December 20, 2021. The term loan facility is subject to amortization in equal quarterly installments, which commenced on March 31, 2017, of principal in an annual aggregate amount equal to 1.0% of the original principal amount of the term loans of $300.0 million, with the remaining outstanding balance payable at the date of maturity.

Voluntary prepayments of principal amounts outstanding under the term loan facility are permitted at any time; however, if a prepayment of principal is made with respect to a Eurodollar loan on a date other than the last day of the applicable interest period, we are required to compensate the lenders for any funding losses and expenses incurred as a result of the prepayment. Prior to the revolving credit facility maturity date, funds borrowed under the revolving credit facility may be borrowed, repaid and reborrowed, without premium or penalty.

In addition, we are required to make mandatory prepayments under the facilities with respect to (i) 100% of the net cash proceeds from certain asset dispositions (including casualty and condemnation events) by us or certain of our subsidiaries, subject to certain exceptions and reinvestment provisions, (ii) 100% of the net cash proceeds from the issuance or incurrence of any additional debt by us or certain of our subsidiaries, subject to certain exceptions, and (iii) 50% of our excess cash flow, as defined in the credit agreement, subject to reduction upon our achievement of specified performance targets.

The facilities are secured by, among other things, a first priority security interest, subject to permitted liens, in substantially all of our assets and all of the assets of certain of our subsidiaries and a pledge of certain of the stock of certain of our subsidiaries, in each case subject to specified exceptions. The facilities contain customary affirmative and negative covenants, including certain restrictions on our ability to pay dividends, and, with respect to the revolving credit facility, a financial covenant requiring us to maintain a specified total net leverage ratio in the event that on the last day of any fiscal quarter we have utilized more than 30% of our borrowing capacity under the facility. We were in compliance with all of the applicable covenants of the facilities as of December 31, 2016 and September 30, 2017. As of December 31, 2016 and September 30, 2017, we had not utilized more than 30% of our borrowing capacity under the revolving credit facility and compliance with the financial covenant was not applicable.

In connection with entering into the facilities in December 2016, we terminated our revolving credit facility with Bank of America. We did not have any outstanding borrowings under the Bank of America revolving credit facility at the time of termination.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations and commitments as of December 31, 2016.

	Payments Due by Period				
	Total	Less than 1 Year	1 to 3 Years	4 to 5 Years	More than 5 Years
			(in thousands)		
Debt obligations—Term loans(1)	$402,903	$18,150	$35,846	$35,278	$313,629
Debt obligations—Commercial mortgage(2)	8,448	556	1,112	6,780	—
Operating leases(3)	2,574	561	1,222	791	—
Total	$413,925	$19,267	$38,180	$42,849	$313,629

(1) Amounts in the table reflect the contractually required principal and interest payable pursuant to outstanding borrowings under our term loan facility. For purposes of this table, the interest due under the term loan facility was calculated using an assumed interest rate of 5.00% per annum, which was the interest rate in effect as of December 31, 2016.

(2) Amounts in the table reflect the contractually required principal and interest payable pursuant to outstanding borrowings under our commercial mortgage.

(3) Amounts in the table reflect payments due for our lease of manufacturing, warehouse and office space in the United States, China and Ireland under operating leases that expire at various dates through 2026, with a right to terminate in 2021. In addition, in February 2017, we entered into a lease for office space in Spain under a non-cancelable operating lease that expires in January 2022. The minimum lease payments due under the lease are approximately $42,700 during the year ending December 31, 2017, $102,500 in total during the years ending December 31, 2018 and 2019, $102,500 in total during the years ending December 31, 2020 and 2021, and $4,300 thereafter. Such amounts are not reflected in the table.

We enter into purchase agreements with our contract manufacturers and suppliers, generally with terms of a year or more. We have no minimum purchase requirements under these agreements.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP. In preparing our consolidated financial statements, we make estimates, assumptions and judgments that can have a significant effect on our reported revenue, results of operations and net income or loss, as well as on the value of certain assets and liabilities on our balance sheet during and as of the reporting periods. These estimates, assumptions and judgments are necessary because future events and their effects on our results and the value of our assets cannot be determined with certainty, and are made based on our historical experience and on other assumptions that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. These estimates may change as new events occur or additional information is obtained, and we may periodically be faced with uncertainties, the outcomes of which are not within our control and may not be known for a prolonged period of time. As the use of estimates is inherent in the financial reporting process, actual results could differ from those estimates.

While our significant accounting policies are described in more detail in Note 2 to our consolidated financial statements appearing at the end of this prospectus, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

We generate revenue from sales of our broadband products, along with associated maintenance and support services, and, to a lesser extent, from sales of professional services and extended warranty services. We also generate revenue from sales of additional line cards and software-based capacity expansions. Maintenance and support services include telephone support and unspecified software upgrades and updates provided on a when-and-if-available basis.

We recognize revenue from sales when the following revenue recognition criteria are met:

- *Persuasive evidence of an arrangement exists*. Binding contracts and/or customer purchase orders are generally evidence of an arrangement. For professional services, evidence of an arrangement may also include information documenting the scope of work to be performed, and customer acceptance terms, if any.
- *Delivery has occurred*. For broadband products, shipping documents and customer acceptance, if applicable, verify that delivery has occurred. For software-enabled capacity expansions, delivery occurs when the additional bandwidth capacity is made available to the customer. For professional services, delivery occurs as the services are completed.
- *The sales price is fixed or determinable*. The sales price is considered fixed or determinable when the fees have been contractually agreed with the customer and are not deemed to be subject to refund, adjustment or future discounts, and when the payment terms of the transaction do not extend beyond our customary payment terms, which are one year or less.
- *Collectibility is reasonably assured*. We assess the ability to collect from our customers based on a number of factors that generally include information supplied by credit agencies, references and/or analysis of customer accounts and payment history. If collection from a customer is not considered reasonably assured, all revenue related to the customer arrangement is deferred until payment is received and all other revenue recognition criteria have been met.

When customer acceptance of the product is required and is other than perfunctory, revenue for the entire customer arrangement is deferred until the acceptance has been received.

Our products have both software and non-software (i.e., hardware) components that function together to deliver the products' essential functionality. In addition, the hardware sold generally cannot be used apart from the embedded software. As a result, all of our product and service offerings are excluded from the scope of software revenue recognition requirements and instead fall within the scope of Accounting Standards Codification, or ASC, Topic 605, *Revenue Recognition*.

Many of our sales involve multiple-deliverable arrangements that include products and maintenance and support services and, on a limited basis, may also include professional services and extended warranty services. We have determined that our products, maintenance and support services, professional services and extended warranty services have standalone value to the customer because each of these deliverables is sold separately to our customers or, in the case of professional services, is sold separately by other vendors. As a result, we treat each of these deliverables as a separate unit of accounting for purposes of allocating the arrangement fee and recognizing the revenue of each unit.

For our multiple-deliverable arrangements, we allocate the arrangement fee to each deliverable based on the relative selling prices of each of the deliverables in the arrangement using the selling price hierarchy. In such circumstances, we determine the selling price of each deliverable based on vendor-specific objective evidence, or VSOE, of selling price, if it exists; otherwise, third-party evidence, or TPE, of selling price. If neither VSOE nor TPE exists, we use our best estimate of the selling price, or BESP, for the deliverable. We limit the amount of the arrangement fee allocated to deliverables to the amount that is not contingent on the future delivery of products or services or future performance obligations and the amount that is not subject to customer-specific return or refund privileges.

To date, we have not been able to establish VSOE of selling price of any of our products, maintenance and support services, professional services or extended warranty services because we have not established a history of consistently pricing each product or service within a narrow range. In addition, we are not able to determine TPE of selling price for our products or services because our various product and service offerings contain a significant level of differentiation and, therefore, comparable pricing of competitors' products and services with similar functionality cannot be obtained. As we are unable to establish selling price using VSOE or TPE, we use BESP to allocate the arrangement fee to products, maintenance and support services, professional services and extended warranty services in multiple-deliverable arrangements. The objective of BESP is to determine the price at which we would transact a sale if a product or service was sold on a standalone basis. We determine BESP of selling price for our products and services by considering multiple factors, including, but not limited to, our historical pricing practices by customer type and geographic-specific market factors.

Revenue from product sales is recognized upon delivery to the customer, or upon the later receipt of customer acceptance of the product when such acceptance is required.

Revenue from maintenance and support services is recognized ratably over the contract period, which is typically one year, but can be as long as three or five years. When customer acceptance of a product is required, the recognition of any associated maintenance and support services revenue commences only upon customer acceptance of the associated product. Revenue from extended warranty services is recognized ratably over the contract period, which is typically one to three years.

Revenue from professional services is recognized as the services are performed. Professional services generally include installation or configuration services that are not deemed to be essential to the functionality of the products. When customer acceptance is required, the recognition of any associated professional services revenue is deferred until the associated product and/or professional service is accepted by the customer.

Resellers

We market and sell our products through our direct global sales force, supported by sales agents, and through resellers. Our resellers receive an order from an end customer prior to placing an order with us, and we confirm the identification of or are aware of the end customer prior to accepting such order. We invoice the reseller an amount that reflects a reseller discount and record revenue based on the amount of the discounted arrangement fee. Our resellers do not stock inventory received from us.

When we transact with a reseller, our contractual arrangement is with the reseller and not with the end customer. Whether we transact business with and receive the order from a reseller or directly from an end customer, our revenue recognition policy and resulting pattern of revenue recognition for the order are the same.

We also use sales agents that assist us in the sales process with certain customers primarily located in the Latin America and Asia-Pacific regions. Sales agents are not resellers. If a sales agent is engaged in the sales process, we receive the order directly from and sell the products and services directly to the end customer, and we pay a commission to the sales agent, calculated as a percentage of the related customer payment. Sales agent commissions are recorded as expenses when incurred and are classified as sales and marketing expenses in our consolidated statements of operations and comprehensive income.

Deferred Revenue

Amounts billed in excess of revenue recognized are recorded as deferred revenue. Deferred revenue includes customer deposits, amounts billed for maintenance and support services contracts in advance of services being performed, amounts for trade-in right liabilities and amounts related to arrangements that have been deferred as a result of not meeting the required revenue recognition criteria as of the end of the reporting period. Deferred revenue expected to be recognized as revenue more than one year subsequent to the balance sheet date is reported within long-term liabilities in our consolidated balance sheets.

When the payment terms of a customer order extend beyond our customary payment terms, which are one year or less, we consider the arrangement to be an extended payment term arrangement and conclude that the sales price is not fixed or determinable for revenue recognition purposes. In these circumstances, we defer all revenue of the arrangement and only recognize revenue to the extent of the payment amounts that become due, provided that all other revenue recognition criteria have been met.

We defer recognition of incremental direct costs, such as cost of goods and services, until recognition of the related revenue. Such costs are classified as current assets if the related deferred revenue is classified as current, and such costs are classified as non-current assets if the related deferred revenue is classified as non-current.

Other Revenue Recognition Policies

In limited instances, we have offered future rebates to customers based on a fixed or variable percentage of actual sales volumes over specified periods. The future rebates earned based on the customer’s purchasing from us in one period may be used as credits to be applied by them against accounts receivable due to us in later periods. We account for these future rebates as a reduction of the revenue recorded for the customer’s current purchasing activity giving rise to the future rebates. The liability for these future rebates is recorded as accrued customer incentives until the credits have been applied by the customer against accounts receivable due to us or the credits expire.

When future trade-in rights are granted to customers at the time of sale, we defer a portion of the revenue recognized for the sale and account for it as a guarantee at fair value until the trade-in right is exercised or the right expires, in accordance with ASC Topic 460, *Guarantees*. Determining the fair value of the trade-in right requires us to estimate the probability of the trade-in right being exercised and the future value of the product upon trade-in. We assess and update these estimates at each reporting period, and our updates to these estimates may result in either an increase or decrease in the amount of revenue deferred.

Billings to customers for shipping costs and reimbursement of out-of-pocket expenses, including travel, lodging and meals, are recorded as revenue, and the associated costs incurred by us for those items are recorded as cost of revenue.

We exclude any taxes assessed by a governmental authority that are directly imposed on a revenue-producing transaction (e.g., sales, use and value added taxes) from our revenue and costs.

Inventories

Inventories are valued at the lower of cost or market value. Cost is computed using the first-in first-out convention. Inventories are composed of hardware and related component parts of finished goods. We establish provisions for excess and obsolete inventories after evaluating historical sales, future demand, market conditions, expected product life cycles, and current inventory levels to reduce such inventories to their estimated net realizable value. Such provisions are made in the normal course of business and charged to cost of revenue in our consolidated statements of operations and comprehensive income.

Deferred inventory costs are included within inventory in our consolidated balance sheets. Deferred inventory costs represent the cost of products that have been delivered to the customer for which revenue associated with the arrangement has been deferred as a result of not meeting all of the required revenue recognition criteria, such as receipt of customer acceptance. Until the revenue recognition criteria are met, we retain the right to a return of the underlying inventory. Deferred inventory costs are recognized as cost of revenue in our consolidated statements of operations and comprehensive income when the related revenue is recognized.

Product Warranties

Substantially all of our products are covered by a warranty for software and hardware for periods ranging from 90 days to one year. In addition, in conjunction with customers' renewals of maintenance and support contracts, we offer an extended warranty for periods typically of one to three years for agreed-upon fees. In the event of a failure of a hardware product or software covered by these warranties, we must repair or replace the software or hardware or, if those remedies are insufficient, provide a refund at our discretion. Our warranty reserve, which is included in accrued expenses and other current liabilities in our consolidated balance sheets, reflects estimated material, labor and other costs related to potential or actual software and hardware warranty claims for which we expect to incur an obligation. Our estimates of anticipated rates of warranty claims and the costs associated therewith are primarily based on historical information and future forecasts. We periodically assess the adequacy of the warranty reserve and adjust the amount as necessary. If the historical data used to calculate the adequacy of the warranty reserve are not indicative of future requirements, additional or reduced warranty reserves may be required.

Derivative Instruments

We have certain international customers that are billed in foreign currencies. To mitigate the volatility related to fluctuations in the foreign exchange rates for accounts receivable denominated in foreign currencies, we enter into foreign currency forward contracts. We do not use derivative financial instruments for speculative purposes. As of September 30, 2017, we had foreign currency forward contracts outstanding with notional amounts totaling 3.3 million euros maturing in the fourth quarter of 2017 and first quarter of 2018. As of December 31, 2016, we had foreign currency forward contracts outstanding with notional amounts totaling 11.2 million euros maturing in 2017. There were no outstanding derivative instruments as of December 31, 2015.

Our foreign currency forward contracts economically hedge certain risk but are not designated as hedges for financial reporting purposes, and accordingly, all changes in the fair value of these derivative instruments are recorded as unrealized foreign currency transaction gains or losses in our consolidated statements of operations and comprehensive income as a component of other income (expense). We record all derivative instruments in

the consolidated balance sheet at their fair values. As of December 31, 2016 and September 30, 2017, we recorded an asset of $0.1 million and $5,000, respectively, and a liability of $0.1 million and $12,000, respectively, related to outstanding foreign currency forward contracts, which were included in prepaid expenses and other current assets and in accrued expenses and other current liabilities, respectively, in the consolidated balance sheet.

Income Taxes

We account for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial statement and tax basis of assets and liabilities, as measured by enacted tax rates anticipated to be in effect when these differences reverse. This method also requires the recognition of future tax benefits to the extent that realization of such benefits is more likely than not. Deferred tax expense or benefit is the result of changes in the deferred tax assets and liabilities. We assess the likelihood that our deferred tax assets will be recovered from future taxable income and, to the extent we believe, based upon the weight of available evidence, that it is more likely than not that all or a portion of the deferred tax assets will not be realized, we establish a valuation allowance through a charge to income tax expense. We evaluate the potential for recovery of deferred tax assets by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

We record a liability for potential payments of taxes to various tax authorities related to uncertain tax positions and other tax matters. The recorded liability is based on a determination of whether and how much of a tax benefit in our tax filings or positions is more likely than not to be realized. The amount of the benefit that may be recognized in the financial statements is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. To the extent that the assessment of such tax positions changes, the change in estimate is recorded in the period in which the determination is made. We establish a liability, which is included in accrued income taxes in our consolidated balance sheets, for tax-related uncertainties based on estimates of whether, and the extent to which, additional taxes will be due. These liabilities are established when we believe that certain positions might be challenged despite our belief that the tax return positions are fully supportable. We adjust the recorded liability in light of changing facts and circumstances. Our provision for income taxes includes the impact of the recorded liability and changes thereto.

We recognize interest and penalties related to uncertain tax positions within other income (expense) in our consolidated statements of operations and comprehensive income. Accrued interest and penalties are included in accrued income taxes in our consolidated balance sheets.

Stock-Based Compensation

We measure stock options and other stock-based awards granted to employees and directors based on the fair value on the date of the grant and recognize compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, we issue stock options with only service-based vesting conditions and record the expense for these awards using the straight-line method.

For stock-based awards granted to non-employee consultants, compensation expense is recognized over the period during which services are rendered by such non-employee consultants until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option-pricing model.

We have also granted SARs to certain employees, which require us to pay in cash upon exercise an amount equal to the product of the excess of the per share fair market value of our common stock on the date of exercise over the exercise price, multiplied by the number of shares of common stock with respect to which the SAR is exercised. Because these awards may require us to settle the awards in cash, they are accounted for as a liability

in our consolidated balance sheets. The liability related to these awards, as well as related compensation expense, is recognized over the period during which services are rendered until completed. Changes in the fair value of the SAR liability are recorded in our consolidated statements of operations and comprehensive income. After vesting is completed, we will continue to remeasure the fair market value of the liability until the award is either exercised or cancelled, with changes in the fair value of the liability recorded in our consolidated statements of operations and comprehensive income.

We estimate the fair value of each stock option and SAR grant using the Black-Scholes option-pricing model, which uses as inputs the fair value of our common stock and assumptions we make for the volatility of our common stock, the expected term of the award, the risk-free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield.

Valuation of Common Stock

Given the absence of an active market for our common stock prior to our initial public offering, the estimated fair value of our common stock has been determined by our board of directors at the time of each award grant based upon several factors, including its consideration of input from management, our most recently available third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. These third-party valuations were performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation* and used a combination of income and market approaches to estimate our enterprise value. Cash is added and interest-bearing debt is subtracted from the estimated enterprise value in order to estimate the underlying equity value. Once the equity value is estimated, it is then allocated among the various classes of securities to arrive at the fair value of the common stock. These allocations were prepared using the option-pricing method, or OPM. The OPM treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceed the value of the preferred stock liquidation preferences at the time of a liquidity event, such as a strategic sale or merger.

The third-party valuations were performed at various dates, which resulted in valuations of our common stock of $41.97 per share as of October 23, 2015, $54.22 per share as of April 30, 2016, $61.18 per share as of October 31, 2016 (in the case of the valuation as of October 31, 2016, giving pro forma effect to our borrowing in December 2016 of $300.0 million under our term loan facility as well as the special dividend of $171.4 million declared by our board of directors in December 2016 and cash payments of $28.6 million to holders of our stock options, SARs and RSUs approved by our board of directors as an equitable adjustment in connection with such dividend) and $56.27 per share as of April 30, 2017 (in the case of the valuation as of April 30, 2017, giving pro forma effect to the special dividend of $87.1 million declared by our board of directors in May 2017 and cash payments of $12.9 million to holders of our stock options, SARs and RSUs approved by our board of directors as an equitable adjustment in connection with such dividend). In addition to considering the results of these third-party valuations, our board of directors considered various objective and subjective factors to determine the fair value of our common stock as of each grant date, which may be a date later than the most recent third-party valuation date, including:

- our historical operating and financial performance;
- the market performance of comparable publicly traded companies within our industry;
- external market conditions affecting the networking industry, and trends within the networking industry;
- the identification and analysis of mergers and acquisitions of comparable companies;

- the prices, rights, preferences and privileges of our convertible preferred stock relative to the common stock;
- the likelihood of achieving a liquidity event such as an initial public offering or sale given prevailing market conditions and the nature and history of our business;
- any adjustments necessary to recognize a lack of marketability for our common stock;
- our financial position, including cash on hand, and our historical and forecasted performance and operating results; and
- U.S. and global economic market conditions.

The assumptions underlying these valuations represent management's best estimates. There are significant judgments and estimates inherent in the determination of the fair value of our common stock. These judgments and estimates include assumptions regarding our future operating performance, the timing of a potential IPO or other liquidity event and the determination of the appropriate valuation method at each valuation date. If we had made different assumptions, our stock-based compensation expense, net income and net income (loss) per share attributable to common stockholders could have been significantly different.

Once a public trading market for our common stock has been established in connection with the closing of this offering, it will no longer be necessary for our board of directors to estimate the fair value of our common stock in connection with our accounting for stock-based awards, as the fair value of our common stock will be its trading price in the public market.

Awards Granted

The following table summarizes by grant date the number of shares of common stock subject to stock options, RSUs and SARs granted from January 1, 2016 through the date of this prospectus, as well as the associated per share exercise price or reference price and the estimated fair value per share of our common stock on each grant date:

Grant Date	Type of Award	Number of Shares Underlying Awards	Per Share Exercise Price of Options or SARs	Per Share Fair Value of Common Stock on Grant Date	Per Share Estimated Fair Value of Awards
March 26, 2016	Options	165,463	$ 41.97	$ 41.97	$ 16.80
March 26, 2016	RSUs	48,894	N/A	$ 41.97	$ 41.97
March 28, 2016	Options	60,500	$ 41.97	$ 41.97	$ 17.09
July 7, 2016	Options	79,500	$ 54.22	$ 54.22	$ 21.84
September 6, 2016	Options	50,340	$ 54.22	$ 54.22	$ 20.84
September 6, 2016	SARs	6,000	$ 54.22	$ 54.22	$ 20.52
January 13, 2017	Options	53,500	$ 61.18	$ 61.18	$ 24.74
January 13, 2017	SARs	22,000	$ 61.18	$ 61.18	$ 22.60
January 31, 2017	RSUs	35,218	N/A	$ 61.18	$ 61.18
January 31, 2017	Options	119,184	$ 61.18	$ 61.18	$ 24.55
May 15, 2017	RSUs	3,000	N/A	$ 56.27	$ 56.27
May 15, 2017	Options	37,000	$ 56.27	$ 56.27	$ 22.15
September 29, 2017	Options	42,500	$ 56.27	$ 56.27	$ 20.93

Emerging Growth Company Status

The JOBS Act provides that an "emerging growth company" can take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards. However, we have elected not to "opt out" of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised

standard at the time private companies adopt the new or revised standard, provided that we continue to be an emerging growth company. The JOBS Act provides that our decision to take advantage of the extended transition period for complying with new or revised accounting standards is irrevocable.

Off-Balance Sheet Arrangements

As of December 31, 2015 and 2016 and September 30, 2017, we did not have any off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K, such as the use of unconsolidated subsidiaries, structured finance, special purpose entities or variable interest entities.

Recent Accounting Pronouncements

We have reviewed all recently issued standards and have determined that, other than as disclosed in Note 2 to our audited consolidated financial statements and Note 2 to our unaudited condensed consolidated financial statements, both appearing at the end of this prospectus, such standards will not have a material impact on our consolidated financial statements or do not otherwise apply to our operations.

Quantitative and Qualitative Disclosures about Market Risks

Market risk is the risk of loss to future earnings, values or future cash flows that may result from changes in the price of a financial instrument. The value of a financial instrument may change as a result of changes in interest rates, exchange rates, commodity prices, equity prices and other market changes. We are exposed to market risk related to changes in foreign currency exchange rates and interest rates. We do not use derivative financial instruments for speculative or trading purposes. However, we have entered into, and in the future expect to continue to enter into, exchange rate hedging arrangements to manage the risks described below.

Foreign Currency Exchange Risk

We have accounts receivables denominated in foreign currencies, and our operations outside of the United States incur their operating expenses in foreign currencies. To date, the majority of our product sales and inventory purchases have been denominated in U.S. dollars. For our subsidiary in Ireland, the U.S. dollar is the functional currency. For each of our other foreign subsidiaries, the functional currency is the local currency. During the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2016 and 2017, we incurred foreign currency transaction gains (losses) of ($3.2) million, ($3.0) million, ($0.3) million, $45,000 and $0.8 million, respectively, primarily related to unrealized and realized foreign currency losses for accounts receivables denominated in foreign currencies. These foreign currency transaction losses were recorded as a component of other income (expense), net in our consolidated statements of operations and comprehensive income. We believe that a 5% change in the exchange rate between the U.S. dollar and euro would not materially impact our operating results or financial position. We entered into foreign currency exchange contracts during the nine months ended September 30, 2017 that mature in the fourth quarter of 2017 and first quarter of 2018, and we expect to continue to hedge certain significant transactions denominated in currencies other than the U.S. dollar in the future.

Interest Rate Sensitivity

Our cash and cash equivalents as of September 30, 2017 consisted of cash maintained in FDIC-insured operating accounts as well as investments in money market mutual funds, commercial paper and certificates of deposit. Our primary exposure to market risk for our cash and cash equivalents is interest income sensitivity, which is primarily affected by changes in the general level of U.S. interest rates. However, we do not believe a sudden change in the interest rates for our cash and cash equivalents would have a material impact on our financial condition, results of operations or cash flows.

We have a credit agreement that provides us with a term loan facility of $300.0 million and a revolving credit facility of up to $25.0 million in revolving credit loans and letters of credit. Borrowings under the facilities bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at our option, a base rate (defined as the highest of (x) the JPMorgan Chase, N.A. prime rate, (y) the federal funds effective rate, plus one half percent (0.50%) per annum and (z) a one-month Eurodollar rate plus 1.00% per annum) plus an applicable margin. The applicable margin for borrowings under the term loan facility is 4.00% per annum for Eurodollar rate loans (subject to a 1.00% per annum interest rate floor) and 3.00% per annum for base rate loans. The applicable margin for borrowings under the revolving credit facility is 2.00% per annum for Eurodollar rate loans and 1.00% per annum for base rate loans, subject to reduction based on various factors, including our completion of this offering and our maintaining of specified net leverage ratios.

As of September 30, 2017, we had borrowings of $297.8 million outstanding under the term loan facility, bearing interest at a rate of 5.33% per annum, which was based on a three-month Eurodollar rate of 1.33% per annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans. Changes in interest rates could cause interest charges on our term loan facility to fluctuate. Based on the amount of borrowings outstanding as of September 30, 2017, an increase of 10%, or approximately 13 basis points, in the three-month Eurodollar rate as of September 30, 2017 would cause pre-tax decreases to our earnings and cash flows of approximately $0.4 million per year, assuming that such rate were to remain in effect for a year. A decrease of 10%, or approximately 13 basis points, in the three-month Eurodollar rate as of September 30, 2017 would cause pre-tax increases to our earnings and cash flows of approximately $0.4 million, assuming that such rate were to remain in effect for a year.

As of September 30, 2017, we were not exposed to interest rate risk under the revolving credit facility as a result of having no outstanding borrowings under the facility.

Inflation Risk

We do not believe that inflation has had a material effect on our business. However, if global demand for the base materials utilized in our suppliers' components were to significantly increase for the components we purchase from our suppliers to manufacture our products, our costs could become subject to significant inflationary pressures, and we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, operating results and financial condition.

BUSINESS

Our Vision

Our products help our customers provide and manage broadband connectivity. We believe consumers and enterprises should be able to enjoy ultra-fast speeds and enhanced digital content experiences through their phones, tablets, computers, TVs and other connected devices at home or on the go. We believe that connectivity should be ubiquitous and seamless; it should not matter whether the user is accessing the Internet through wireless or fixed connections, and it should not matter whether that service is being provided by a cable operator, fixed telecom carrier or wireless services provider. Our innovative, software-centric products are designed to help achieve this vision.

Overview

We provide a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds. In addition, we offer solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom and wireless networks. Our innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures.

We focus our development efforts on innovation and being the first to market with new products at each generational shift in cable network technology. We pioneered the use of a software-centric approach to leverage the programmability of field programmable gate arrays, or FPGAs, and general purpose processors for use in the cable industry. In addition, we believe we were the first to provide each of the following to our customers: a solution enabling cable service providers to deliver IP voice, digital video and data over a single port; a solution enabling cable service providers to deliver multi-gigabit speeds to their subscribers; and a remote node solution to enable distributed broadband cable access at gigabit speeds.

We have created a software-centric, multi-service portfolio that enables a broad range of core and access network functions for fixed and wireless networks. These networks share a common set of core and access network functions that enable network services such as subscriber management, session management, transport security and radio frequency, or RF, management. Our Axyom software architecture allows each of these network functions to be provided and controlled by a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time. While we initially focused on providing solutions for cable service providers due to our founders' experience in the cable industry, the commonalities between fixed and wireless network architectures have allowed us to expand our solutions into the wireless market as cable service providers have increasingly sought to add wireless capabilities to their service offerings.

We offer a scalable solution that can meet the evolving bandwidth needs of our customers and their subscribers. Our first installation in a cable service provider's network frequently involves deploying our broadband products in only a portion of the provider's network and with only a fraction of the capacity of our products enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to increase network capacity. Capacity expansions are accomplished either by deploying additional systems or line cards, or by our remote enablement of additional channels through the use of software. Sales of additional line cards and software-based capacity expansions generate higher gross margins than our initial hardware-based deployments.

Our solutions are commercially deployed in over 70 countries by more than 400 customers, including regional service providers as well as some of the world's largest Tier 1 broadband service providers, serving

millions of subscribers. Our principal customers include Charter/Time Warner Cable, Rogers and Mediacom in North America; Televisa/IZZI Mexico, Megacable Mexico and Claro Telmex Colombia in Latin America; Liberty Global, Vodafone and DNA Oyj in Europe; and Jupiter Communications and Beijing Gehua CATV Networks in Asia-Pacific.

One of our largest customers, Time Warner Cable, launched its flagship "TWC Maxx" initiative in the New York City metropolitan area in 2014 using our solution. By deploying our C100G CCAP solution, TimeWarner Cable was able to triple the maximum speed offered to its customers and reduce power consumption by nearly 30%, or approximately 11GWh per year, which we estimate is enough power for over 1,800 residential homes. Our solution also enabled Time Warner Cable to reduce facility space and remove over 140 miles of coaxial copper cable.

We have achieved significant growth and profitability. For the year ended December 31, 2015, we generated revenue of $272.5 million, net income of $67.9 million and adjusted EBITDA of $115.5 million, representing increases of 29.0%, 13.8% and 22.1%, respectively, from the amounts for the year ended December 31, 2014. For the year ended December 31, 2016, we generated revenue of $316.1 million, net income of $88.7 million and adjusted EBITDA of $129.1 million, representing increases of 16.0%, 30.5% and 11.7%, respectively, from the amounts for the year ended December 31, 2015. For the nine months ended September 30, 2017, we generated revenue of $233.6 million, net income of $59.6 million and adjusted EBITDA of $93.3 million, representing increases of 7.7%, 22.2% and 25.2%, respectively, from the corresponding amounts for the nine months ended September 30, 2016.

Adjusted EBITDA is a non-GAAP financial measure. Please see "Selected Consolidated Financial Data—Non-GAAP Financial Measures" for information regarding the limitations of using adjusted EBITDA and for a reconciliation of adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

Industry Background and Broadband Service Provider Challenges

As broadband service providers look to address the rapidly evolving demands of consumers and enterprises, we believe they must address several key challenges.

Rapidly Increasing Bandwidth Demand

Bandwidth demand has grown substantially and is expected to continue to increase. Key drivers of this increased demand include:

- more users with more connected devices and applications;
- more time spent online by users;
- the increased use of bandwidth-intensive streaming media services, such as Amazon Prime Video, Netflix and YouTube; cloud applications, such as iCloud and Dropbox; and augmented and virtual reality applications;
- Internet of Things, or IoT, solutions, as already seen in connected homes, business and industries; connected devices such as Amazon Alexa or Google Assistant; machine-to-machine connectivity; car connectivity and smart cities;
- the backhaul demand by wireless service providers; and
- the rise of data consumption by enterprises with strict latency requirements on mission-critical and public safety-related applications.

According to a June 2017 Cisco Systems Visual Networking Index report, global IP traffic per month is forecasted to grow from 96 exabytes in 2016 (1 exabyte = 1,000,000,000 GB) to 278 exabytes in 2021, representing a 24% compound annual growth rate in global IP traffic; global IP traffic per capita is expected to increase from 13GB in 2016 to 35GB in 2021; and the number of connected devices is forecast to be three times the global population by 2021.

Competition Fueled by Increasing Breadth of Service Offerings

Consumers and enterprises enjoy increased choice among broadband service providers, including cable service providers such as Charter and Comcast, diversified telecommunications companies such as AT&T and Verizon, and mobile-only network operators such as Sprint and T-Mobile. As a result, broadband service providers are facing increasing pressure to develop differentiated service offerings with higher levels of performance at lower cost to consumers and enterprises. They are also under competitive pressure to offer a wider range of services, from Internet access, television, telephone and wireless services to additional services such as voice over Wi-Fi, video calling and, in general, smart Internet and security-related services. Moreover, the increasing popularity of over-the-top services puts additional pressure on the traditional video business of broadband service providers. In this new environment, fixed service providers have deployed fiber and Wi-Fi networks and have been exploring ways to provide mobile service offerings.

Increasing Network Complexity

Historically, broadband service providers have deployed separate systems within their fixed broadband networks for video and data services and have operated separate networks for fixed, Wi-Fi and mobile services. This traditional model requires service providers to maintain separate network infrastructure and personnel for each service. As network capacity and coverage have increased, and the diversity of service offerings has grown, the lack of interoperability of these separate networks has resulted in increasing network complexity and inefficient parallel network infrastructure.

Need to Control Operating and Capital Expenditures

The operation of network infrastructure is space, power and personnel intensive. In addition, the lack of interoperability between networks means that broadband service providers cannot optimize bandwidth usage by allocating traffic from networks experiencing high demand to those experiencing low demand, which can result in unused capacity and an unsatisfactory user experience.

Hardware-centric networks can also be expensive to update or replace. With frequent technology shifts and introductions of new service offerings, competition in the broadband industry is constantly changing. To remain competitive, service providers are regularly required to incur significant capital expenditures to upgrade existing equipment.

Opportunity to Transform Broadband Networks

Given the challenges they face, broadband service providers are undertaking three key technology initiatives to help build next-generation networks.

Densification

Increasing demand for bandwidth and user expectations for ubiquitous and seamless connectivity require, among other things, the addition of more end points for users to access broadband networks, also known as network densification. Consequently, broadband service providers are shifting from centralized to more distributed architectures. Densification requires extending network connectivity and distributing access aggregation solutions closer to end users. This results in the deployment of additional hardware, such as access aggregation nodes, small cells and related gateways.

Network Convergence

Many traditional service providers have historically either operated just one network type or operated fixed and wireless networks as separate businesses. However, more and more service providers that may have started

out providing just fixed or wireless services are recognizing the benefits, especially those associated with quality of experience, of being able to provide both services to their subscribers. For example, cable service providers in the United States have formed a joint consortium, Cable WiFi, that provides Wi-Fi access to broadband cable subscribers at over 500,000 access points. Continued acquisition activity, such as Altice's acquisitions of Cablevision and SuddenLink and Vodafone's acquisition of Kabel Deutschland, has accelerated fixed and wireless convergence. This consolidation trend has caused a heightened focus on the economics of maintaining two networks. Broadband service providers are seeking to integrate their separate delivery modes with all-IP architectures, shared transport and a common suite of software-centric core and access network functions.

Virtualization

Service providers are re-thinking traditional network architectures and moving toward more software-driven architectures. The use of software permits a fundamental change in the way broadband service providers deliver critical network functions. Software-enabled architectures that are decoupled from underlying hardware allow for increased efficiencies, upgradability, configuration flexibility, service agility and scalability not feasible with hardware-centric approaches.

Our Solutions

We offer solutions for fixed and wireless networks. Our software-centric, multi-service broadband platform, Axyom, enables ultra-broadband delivery and convergence.

We engineered our platform from the ground-up to be high performance, flexible and adaptable, and to allow our customers to seamlessly address the growing demand for bandwidth and connectivity and competitive need for service agility. Axyom also enables our customers to efficiently manage their networks and provide their subscribers with additional services.

Our software-centric broadband platform provides the following key benefits to broadband service providers:

Addition of Critical Bandwidth Capacity

Our solutions enable broadband service providers to offer multi-gigabit speeds to meet the growing demand for bandwidth. Our platform permits software-centric expansion of network capacity to enable rapid bandwidth and service provisioning, helping broadband service providers to respond flexibly to increased customer demands.

Flexibility to Add New and Expand Existing Services

Our platform provides us with the flexibility to adapt to changing industry standards and customer needs. We designed our Axyom software platform using what we refer to as Network Function Virtualization 2.0, or NFV 2.0, principles, which allow us to provide and control each needed network function through a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time. When possible, we also seek to implement new features and enhanced customization through the use of FPGAs, which can be re-programmed in the field as service needs evolve. This software-centric approach enables our customers, in turn, to commercialize new features faster than they could with hardware-centric solutions. For example, our solutions enable broadband service providers to efficiently add new services and features, such as wholesale connectivity services for wireless service providers, enterprise-class connectivity services and interactive communication services, such as voice over Wi-Fi and video calling.

Ability to Upgrade Networks Remotely

Our programmable architecture allows us to deploy technology updates to our customers remotely without the expense, disruption or network downtime caused by hardware replacements or field visits by personnel, while minimizing network downtime. Similarly, we can remotely turn on additional features or capacity in order to scale our solutions to meet the needs of our customers as they look to broaden the use and capabilities of our products. Similarly, we are often able to troubleshoot and assist our customers with technical issues through seamless software updates.

Reduced Network Complexity, Operating Costs and Capital Expenditures

Our converged software platform allows broadband service providers to significantly reduce the complexity and costs of their networks by reducing parallel and otherwise redundant network architecture. The large capacity increases that our solutions enable, and the ability of our solutions to deliver voice, video and data over a single platform, mean fewer pieces of equipment in the network, and lower energy usage, operating costs and capital expenditures. For example, our solutions permit our customers to transition from DOCSIS 3.0 to DOCSIS 3.1 with less network downtime and fewer hardware replacements that result in lower costs than those of our competitors.

Ability to Densify Networks

Our products help broadband service providers deploy more capacity at the network edge, closer to where end users and devices are accessing the network, thereby increasing available bandwidth and reducing latency to improve quality of service. For example, our solutions allow cable service providers to take advantage of new technologies and standards such as distributed access architectures, including passive optical networking, or PON, architectures, allowing cable service providers to move fiber closer to the network edge.

Common Platform Capabilities to Address the Needs of Both Fixed and Wireless Networks

Our software-centric, multi-service platform enables a broad range of network services for fixed and wireless networks, allowing for the delivery of diverse consumer and enterprise applications. Both fixed and wireless networks share a common set of core and access network functions that enable network services, such as subscriber management, session management, transport security, access aggregation and RF management. Our Axyom software architecture allows each of these network functions to be provided and controlled by a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer’s specific requirements, both as they exist at the time of initial implementation and as they evolve over time.

Our Competitive Strengths

The following competitive strengths have helped us become a market leader:

Highly Flexible, Software-Centric Architecture

We have designed our product portfolio from the ground up to be software-centric and modular in nature. Our proprietary software is at the heart of our products. Our software allows us to leverage the programmability of FPGAs and general purpose processors in our solutions. Our software-centric architecture allows us to virtualize core network and access functions allowing these functions to be decoupled from underlying hardware, which is not feasible with hardware-centric approaches. As a result, our software-centric architecture allows for increased efficiencies, upgradability, configuration flexibility, service agility and scalability while increasing the potential service life of the underlying hardware.

Proven Engineering and Product Development Track Record

We have a proven history of anticipating network evolutions and developing solutions that enable next-generation networks. Our forward-looking design and investment approach, coupled with our proven product development track record, has enabled us to deliver fully featured next-generation solutions in advance of competitors. For example, we believe we were:

- first to market (2005) with a software-centric cable solution leveraging the programmability of FPGAs and general purpose processors;
- first to market (2008) with a commercially deployed, fully qualified DOCSIS 3.0 cable modem termination system, or CMTS;
- first to market (2012) with a commercially deployed converged cable access platform, or CCAP, delivering IP voice, digital video and data over a single port;
- first to market (2015) with commercially deployed DOCSIS 3.1-compliant solutions supporting speeds of up to 10 gigabits per second; and
- first to market (2016) with a commercially deployable remote-PHY solution.

Strong Management and Engineering Team with a Culture of Innovation

We pride ourselves on our culture of innovation, which is driven by our management team of experienced executives and engineers with deep industry expertise. As of September 30, 2017, approximately 85% of our employees were engineers or had other technical backgrounds. With our talented and passionate engineering-led organization, we aim to be an industry visionary and are committed to delivering products based on next-generation technology before our competitors do. By providing customers with direct access to our engineers for product feedback and assistance, we believe our engineering expertise contributes to an enhanced customer experience.

Customer Focus

We have a passion to serve our customers and the agility and flexibility to offer solutions to meet their evolving requirements. Our sales, sales engineering, development and support teams work directly with customers to design, develop and implement new solutions and to resolve customer problems, even if another provider is the root cause of the problem. Our product development roadmap is based on our vision for the future but heavily influenced by near-term and mid-term customer requirements. This market insight helps us meet customer demands and achieve faster time to market with new features.

Diversified and Established Customer Base

Our solutions are commercially deployed in more than 70 countries by more than 400 customers, including regional service providers as well as some of the largest Tier 1 broadband service providers, serving millions of subscribers. According to S&P Global Intelligence, our market share by revenue in the CCAP market was 25% for 2016, as compared to 50% for Arris and 23% for Cisco, which was an increase from 2015, for which our market share was 16%, as compared to 58% for Arris and 23% for Cisco. Our wireless solutions have been purchased by several customers, including Tier 1 mobile operators. In addition, our wireless solutions are currently in trials with numerous prospective customers and we are in negotiations with several broadband service providers for commercial deployment of our small cell-related solutions.

Market Opportunity

We believe that the shift to software-centric ultra-broadband networks and fixed and wireless convergence presents us with a compelling market opportunity. Because fixed and wireless networks share a common set of core and access network functions, our platform is capable of addressing the needs of both fixed and wireless networks.

Our current CCAP solution addresses the service delivery needs of cable service providers. As fixed and wireless networks continue to converge, we believe there is an opportunity for us to take advantage of this fundamental shift. Although we currently generate the majority of our revenue from the fixed broadband CCAP market, we expect to generate increased revenue in the future from sales of both wireless and PON solutions to new and existing customers. Our current wireless products consist of small cells, Wi-Fi and related gateways as well as evolved packet core products. Our small cells and related products enable wireless access, routing and traffic management functions to support the delivery of a number of services to end users. Our evolved packet core products enable subscriber and session management, security and data exchange between the core wireless network and wireless subscribers. Our PON solutions enable cable service providers to push fiber closer to the network edge while leveraging their existing network assets and existing industry-standard protocols.

According to S&P Global Market Intelligence, the CCAP market (including both centralized and distributed solutions) is projected to grow from $2.0 billion in 2017 to $2.7 billion in 2021, representing a 6% compound annual growth rate. This market currently accounts for the majority of our revenue.

In addition, we believe the global market for our small cell, evolved packet core and PON solutions will grow from 2017 to 2021, based on the following:

- According to Gartner, the small cells market is projected to grow from $4.3 billion in 2017 to $6.5 billion in 2021, representing an 8% compound annual growth rate.[1] Our small cell-related solutions have been purchased by several customers, including Tier 1 mobile operators.
- According to ABI Research, the evolved packet core market is expected to grow from $2.4 billion in 2017 to $8.7 billion in 2021, representing a 29% compound annual growth rate.
- According to S&P Global Market Intelligence, the cable service provider PON market is projected to grow from $0.5 billion in 2017 to $0.8 billion in 2021, representing an 8% compounded annual growth rate.

Our small cell-related solutions, components of our evolved packet core application and our PON solutions are currently in trials with numerous prospective customers.

Our Growth Strategy

The key elements of our growth strategy are:

Continue to Innovate and Extend Technology Leadership Through R&D Investment

We believe that we offer market-leading broadband infrastructure products today. We intend to continue to enhance our existing products and develop new products in both our current and adjacent markets. For example, we have invested in and launched distributed access architecture solutions to allow our cable customers to densify their networks, providing higher bandwidth, which enhances user experience.

Further Penetrate Existing Customers

Our customers often deploy our products in a specific region or for a specific application, which may only account for a portion of their overall network infrastructure needs. We plan to expand our footprint within the networks of existing customers as they realize the technological and financial benefits of our solutions. Our

[1] Source: Gartner, Forecast: Communications Service Provider Operational Technology, Worldwide, 2015-2021, 3Q17 Update, 29 September 2017 (the "Gartner Report"). The Gartner Report represents research opinion or viewpoints published, as part of a syndicated subscription service, by Gartner, Inc. ("Gartner"), and are not representations of fact. The Gartner Report speaks as of its original publication date (and not as of the date of this prospectus) and the opinions expressed in the Gartner Report are subject to change without notice.

software-centric approach, which is embedded in our products already deployed in our customers' networks, allows those customers to expand network capacity to address increasing bandwidth demand and serve additional users through software.

Expand Our Customer Base

We intend to continue to invest in our sales and marketing organization to increase awareness of our products and services and expand our customer base. We believe our focus on hiring, training and retaining a knowledgeable and technical sales team helps us build better relationships with customers. We added 34 customers in the nine months ended September 30, 2017.

Expand the Breadth of Solutions Sold to Customers

We intend to sell additional products and solutions to our growing installed base of broadband service providers. We have invested in developing a virtualized platform that allows us to rapidly provide new applications and services to our customers.

Leverage Our Core Technology for the Cable Industry into Adjacent Wireless Markets

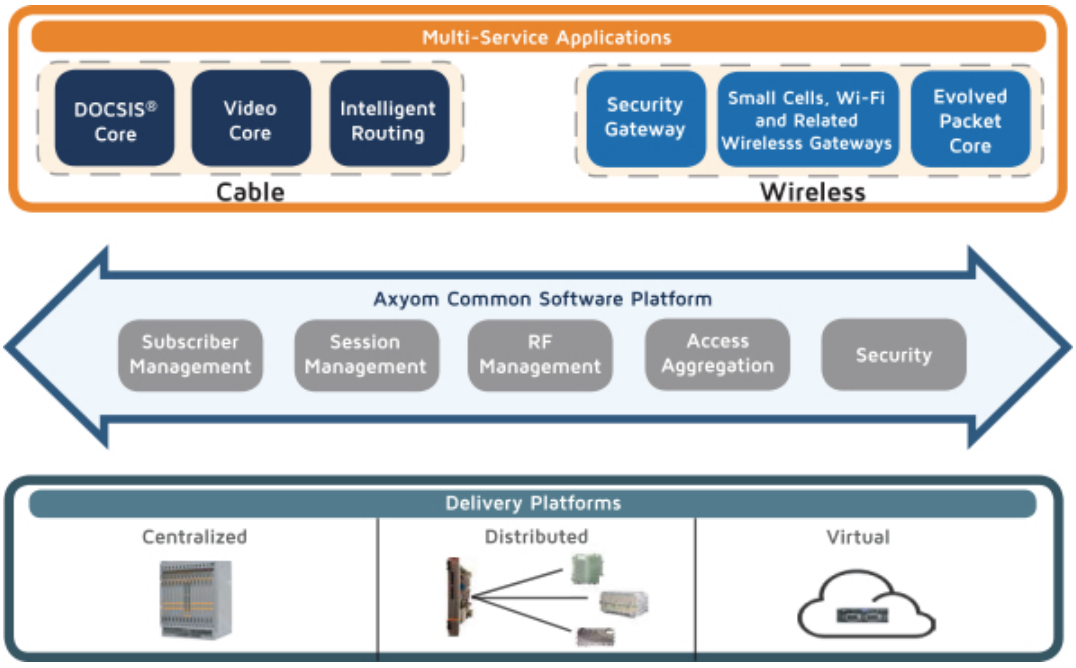
While we initially focused on providing solutions for cable service providers due to our founders' experience in the cable industry, the commonalities between fixed and wireless network architectures have allowed us to expand our solutions into the wireless market as cable service providers have increasingly sought to add wireless capabilities to their service offerings. Our wireless solutions have been purchased by several customers, including Tier 1 mobile operators. In addition, our wireless solutions are currently in trials with numerous prospective customers.

Invest in Our Platform through Selective Acquisitions

We may selectively pursue acquisitions that enhance our existing platform capabilities and are consistent with our overall growth strategy.

Products and Technology

We offer physical and virtual network solutions that enable our customers to provide fixed and wireless broadband services to consumers and enterprises.



Axyom Software Platform

Our Axyom software platform is central to our multi-service, ultra-broadband delivery architecture, integrating multiple core and access network functions. Axyom is 5G-ready and is designed to provide high performance, programmability, scalability and flexibility. We designed Axyom using NFV 2.0 principles, which allow us to provide and control each needed network function through a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time. Axyom has predominantly been integrated into our physical products to date and is increasingly being deployed in virtual environments.

Our Axyom software platform performs several critical network services:

- *Subscriber Management*. Enables dynamic management of subscriber authentication, provisioning, policy enforcement and allocation of network resources based on specific end-user service requirements to enhance quality of service
- *Session Management.* Intelligently manages application layer data streams to enable service creation and delivery and enhance quality of service
- *RF Management.* Efficiently manages RF signal generation (modulation/demodulation) while reducing noise to increase available RF spectrum and maximize data throughput over the network link in both fixed and wireless applications

- *Access Aggregation.* Manages and combines high volume data streams, regardless of connection type, including fixed broadband, Wi-Fi, LTE and 5G
- *Security.* Enables end-to-end secure connectivity between users, devices and networks without sacrificing performance

Axyom can be deployed on a centralized basis on one of our hardware chassis, over distributed network hardware or as a virtualized solution, allowing operators to place network functions where they choose, whether close to the network edge or at a centralized location or data center.

Delivery Platforms

Depending on customer preference, network requirements and current network configuration, our solutions can be deployed in either a centralized, distributed or virtual environment. While centralized deployments allow our customers to deploy all critical CCAP functions in a single location, distributed and virtual deployments enable our customers to densify the access network by distributing access deeper into the network, away from existing data centers.

Centralized Deployment. Our C100G CCAP combines Cable Modem Termination System, or CMTS, functionality that enables IP data transport from data centers to end-users over cable networks, including voice over IP and edge-quadrature amplitude modulation, or Edge-QAM, functionality to enable video delivery over cable networks in one integrated chassis. We believe our C100G CCAP solution was the industry's first fully integrated CCAP and DOCSIS 3.1 solution. Our C100G CCAP is capable of supporting downstream speeds of 10 gigabits per second. Our C100G CCAP also features high downstream and upstream channel capacity, and low space and energy consumption requirements. Using our C100G CCAP, our customers whose networks are configured for DOCSIS 3.0 can adopt DOCSIS 3.1 through either a software upgrade or a simple line card addition, while continuing to service their end customers who use DOCSIS 3.0 modems. We are also able to increase capacity for our C100G CCAP through channel expansions, which are remotely installed software-enabled increases in the bandwidth capacity, regardless of whether it is configured for DOCSIS 3.0 or 3.1. We believe that our software-centric approach will enable us to seamlessly provide our customers with future upgrades as standards evolve. In addition to our C100G CCAP, we also offer our C40G CCAP, that provides per rack unit performance comparable to that of our C100G CCAP, but in a smaller form factor.

Distributed Deployment. We offer three solutions for distributed deployment:

- *Remote-PHY Solution.* Our R-PHY solution for cable networks consists of remotely deployable hardware that primarily performs RF modulation and connects to a CCAP at the network core to provide subscriber management, session management, access aggregation and security functions. The remotely deployed R-PHY nodes aggregate end user traffic for delivery back to the central data center. The software at the central data center can run on our C100G CCAP chassis or in a virtual environment. Our R-PHY solution allows broadband service providers that have implemented fiber-deep architectures to deploy ultra-fast fiber connections closer to the end user. By retaining software-driven network control and intelligence functions at the network core and placing physical layer functions remotely in a fiber node, broadband services providers can densify their networks to increase operational efficiencies and network capacity.
- *Remote-MAC/PHY Solution (R-MAC/PHY).* Our R-MAC/PHY solution for cable networks offers the capabilities of our R-PHY solution while also moving media access control functions from the network core to remotely deployed R-MAC/PHY nodes, allowing cable service providers to increase network throughput to serve more customers at higher speed.
- *Apex Small Cell Solution.* Our Apex small cell solution consists of remotely deployable access points that provide cellular connectivity services at the network edge in conjunction with transport security functions to address coverage and capacity challenges. It allows a number of connectivity options

including LTE and 3G. The Apex small cell solution allows broadband service providers to more cost-effectively densify cellular networks.

In connection with all of our centralized and distributed deployment solutions, we offer a portfolio of PON solutions, enabling service providers to move fiber closer to the network edge and deliver a broader range of ultra-broadband services more efficiently and at higher speed. In particular, our portfolio of PON solutions includes end-to-end network elements, including optical line terminals and optical network units, and a DOCSIS Provisioning over Ethernet system for seamless integration of our PON solutions with existing DOCSIS network protocols.

Virtual Deployment. Using our NFV 2.0 software architecture, all of the multi-service applications supported across fixed and wireless by our Axyom software platform can be delivered on a virtualized basis utilizing commodity servers. We are in trials with numerous prospective customers to deliver multi-service applications virtually.

Multi-Service Applications

Our Axyom software platform initially focused on supporting applications enabling fixed broadband delivery. We have focused our recent development efforts on expanding Axyom's capabilities to support wireless applications. We refer to multi-service to describe a set of applications that are able to support requirements for both fixed and wireless networks.

Cable Network Applications

We believe our CCAP was the first solution offering full CCAP functionality, allowing the delivery of voice, video and data on a single platform. Our CCAP enables three key applications over a single cable network:

- *DOCSIS Core.* Provides high-speed delivery of IP data for broadband connectivity services, including voice over IP
- *Video Core.* Delivers high speed video processing, including for HD and 4K
- *Intelligent Routing.* Intelligently manages network traffic to optimize service quality

Wireless Network Applications

Our Axyom software platform also enables a number of applications addressing the evolving needs of fixed-mobile convergence as well as mobile network operators:

- *Security Gateway.* Enables secure encrypted access for subscribers roaming between trusted and untrusted networks, while providing high levels of density and performance.
- *Small Cells, Wi-Fi and Related Wireless Gateways.* Enables routing and security functions as well as traffic management to provide secure connectivity for wireless endpoints and enable broadband services such as LTE over Wi-Fi, including Wi-Fi calling.
- *Evolved Packet Core.* Enables subscriber management, session management and authentication, security and data exchange between the core network and subscribers.

Capacity Expansion Products

Our CCAP's flexible design allows our customers to rapidly increase service capabilities and tailor our solution to meet their evolving service needs.

Our software platform permits additional capacity and features to be provisioned remotely, as compared to hardware-centric solutions, which require wholesale hardware replacements. As new standards and services

evolve and broadband networks become increasingly virtualized, we expect we will be able to deliver additional capabilities as software-only updates.

Our line card expansion options allow our customers to rapidly add new service interfaces and physical connection capacity without the need for chassis replacements. In addition, our expansion cards can cost-effectively enable support for our distributed access solutions utilizing the same C100G CCAP chassis.

Our Customers

Our solutions are commercially deployed by more than 400 customers, including some of the world's largest Tier 1 broadband service providers:

- in North America: Charter/Time Warner Cable, Rogers and Mediacom
- in Latin America: Televisa/IZZI Mexico, Megacable Mexico and Claro Telmex Colombia
- in Europe: Liberty Global, Vodafone and DNA Oyj
- in Asia-Pacific: Jupiter Communications and Beijing Gehua CATV Networks

Customer Case Studies

The following case studies illustrate why and how our customers deploy our solutions and the impact of our solutions on their businesses.

Time Warner Cable

Challenge: In 2014, Time Warner Cable, or TWC, launched its "TWC Maxx" initiative in the New York City metropolitan area. The goal of the initiative was to provide increasingly competitive service offerings, deliver a superior customer experience with ultra-fast Internet speeds and prepare for continued growth in demand. TWC needed a solution that increased bandwidth and consolidated IP voice, digital video and data services while minimizing space and energy requirements.

Solution and results: TWC implemented our C100G CCAP solution across the New York City metropolitan area, representing the first commercial deployment of full integrated CCAP services including voice, video and data over a single port. Our C100G CCAP solution is able to provide these services through a single network using only one chassis design, enabling a reduction in power consumption and facilities space requirements. Prior to the deployment of our solution, these services were provided through two separate networks. Deployment of our C100G CCAP solution permitted TWC to reduce power consumption by nearly 30%, or approximately 11 GWh per year, which we estimate is enough power for over 1,800 residential homes, reduce facility space and remove over 140 miles of coaxial copper cable, yielding substantial energy and operational savings. In addition, our C100G CCAP solution enabled TWC to offer faster speeds because it allowed more bandwidth to be provided by hardware occupying a smaller footprint than the legacy equipment that was removed. As a result of deploying our C100G CCAP solution, TWC was able to triple the maximum speed offered to its customers. The implementation enabled TWC to increase bandwidth to customers by a factor of up to three. In addition, deployment of our solution permitted TWC to reduce power consumption by nearly 30%, or approximately 11 GWh per year, which we estimate is enough power for over 1,800 residential homes, to reduce facility space, and remove over 140 miles of coaxial copper cable, yielding substantial energy and operational savings.

Tier 1 Cable Service Provider in North America

Challenge: In the fourth quarter of 2015, a Tier 1 cable service provider in North America launched an initiative to make 1 gigabit per second service available across its entire cable footprint.

Solution and results: The customer recognized that a CCAP solution was necessary to offer 1 gigabit per second service. The customer required a DOCSIS 3.1-compliant solution and initially considered purchasing solutions from multiple vendors; however, after evaluating our technology compared to that of our competitors, the customer selected us to complete 100% of the project, citing our rapid deployment timelines. The customer deployed our C100G CCAP solution to service its entire footprint, replacing its existing third-party CMTSs in their entirety. As a result of the initiative, the customer is achieving its objective and rolling out 1 gigabit per second service across its entire footprint, and now provides 1 gigabit per second service in the largest metropolitan market it serves.

Sales and Marketing

We sell our products and services through our direct sales force and in partnership with our resellers and sales agents. Our sales force is supported by our sales engineering team, which has deep technical expertise and the capability for product presentations, product evaluations, trials and customer care. Each sales team is responsible for specific direct end-customer accounts and/or a geographic territory across the following regions: North America, Latin America, Asia-Pacific and Europe, Middle East and Africa. We intend to expand our sales force and our reseller and sales agent network.

Our products typically have a long sales cycle, requiring detailed discussions with prospective customers about their network requirements and technology roadmaps. To help us succeed in a market characterized by long sales cycles, we have developed strong customer relationships, which in turn provide us with insight into how our products will be deployed in our customers' networks. We involve product engineers in the sales process, enabling them to build relationships with customers that are valuable both during implementation and in post-sales customer support. These relationships also provide us with opportunities to leverage our familiarity with our customers' needs to make additional sales following the initial sale.

We also use resellers to market, sell and support our products and services, and we use sales agents to assist our direct global sales force with certain customers primarily located in the Latin America and Asia-Pacific regions.

Our marketing activities consist primarily of technology conferences, web marketing, trade shows, seminars and events, public relations, analyst relations, demand generation and direct marketing to build our brand, increase customer awareness, communicate our product advantages and generate qualified leads for our field sales force and resellers and sales agents.

Competition

The broadband service provider market is highly competitive and subject to rapidly changing technology trends and shifting customer needs.

We primarily compete with larger and more established companies in the broadband service provider market, such as Arris and Cisco. As we seek to enter the wireless market, we expect to encounter additional competition from large, established providers of wireless communication networks, including Ericsson and Nokia.

The principal factors upon which we compete are:

- product capabilities;
- performance;
- scalability, flexibility and adaptability to new standards;
- ability to innovate;

- time to market;
- customer support; and
- total cost of ownership relative to performance and features.

We believe that we compete favorably with respect to these factors. Nevertheless, many of our competitors have substantial competitive advantages against us, including greater name recognition, longer operating histories, and substantially greater financial, technical, research and development or other resources.

Research and Development

Our research and development efforts are focused on developing new broadband products for the cable and wireless markets and enhancing our current products to meet the current and future needs of our customers. We aim to be first to market with deployable products and are willing to invest early in research and development and take technological risks to meet this goal. We also seek to enhance our technological innovation through our partnerships with industry standard-setting organizations and groups, such as CableLabs, 3GPP and Wi-Fi Alliance. These efforts position us to be able to advance industry standards while evolving our solutions to meet such new standards.

As of October 31, 2017, our research and development organization consisted of 386 employees worldwide, including both software and hardware engineers. Our research and development expense totaled $25.5 million, $37.2 million, $49.2 million and $43.9 million for the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, respectively. We plan to continue to devote substantial resources to our research and development activities.

Manufacturing

We contract with multiple U.S.-based manufacturing firms, including Benchmark and Sanmina, to manufacture the hardware for our products using the designs, components and standards that we specify. After taking delivery from our contract manufacturers, we conduct final assembly and quality assurance testing at our facilities in Lawrence, Massachusetts and Limerick, Ireland. We believe our combination of local manufacturing and in-house assembly and quality assurance allows us to maintain consistency and quality in the products we ship to customers. We also believe that this manufacturing model enables us to respond quickly to technological changes and supports our engineering goal of being first to market with deployable products. We believe our inventory management enables us to offer shorter times between order and delivery to our customers as compared to our competitors.

We enter into purchase agreements with our contract manufacturers, generally with terms of one year or more. There are no minimum purchase requirements under these agreements and we purchase manufactured goods on a purchase order basis. As a result of our use of multiple contract manufacturers, we believe that we are not substantially dependent on the availability of any single contract manufacturer. Our contract manufacturers purchase the materials and components for our products through a variety of major electronics distributors. The materials and components of our solutions are generally available in adequate quantities from multiple potential suppliers.

Backlog

We do not have any long-term purchase commitments from customers. Customers generally order products on an as-needed basis with short lead and delivery times on a per-purchase-order basis. We maintain substantial finished goods inventory to ensure that products can generally be shipped shortly after receipt of an order.

A portion of our customer shipments in any fiscal period relate to orders received in prior fiscal periods. As of September 30, 2016 and 2017, we had backlog of $26.9 million and $26.0 million, respectively. The

decrease in backlog over that period was due principally to the timing of shipments of our software-centric broadband products. Of the amount of backlog as of September 30, 2017, we expect that approximately $24.3 million will be shipped within the following twelve months. However, because our customers utilize purchase orders containing non-binding purchase commitments and customers may cancel, change or reschedule orders without penalty at any time prior to shipment, we have no assurance that we will be able to convert our backlog into shipped orders.

Intellectual Property

Our success depends to a significant degree upon our ability to protect our core technology and intellectual property. To accomplish this, we rely on a combination of trade secrets, patents, copyrights and trademarks, as well as contractual protections. To date, we have focused our efforts to protect our intellectual property primarily on trade secrets because the cable industry generally relies on non-patentable CableLabs standards and specifications that are jointly developed by market participants.

We limit access to and use of our proprietary software, technology and other confidential information through the use of internal and external controls, including nondisclosure agreements with employees, consultants, customers and vendors and other measures for maintaining trade secret protection. We generally license our software to customers pursuant to agreements that impose restrictions on the customers' ability to use the software, including prohibitions on reverse engineering and limitations on the use of copies. We also seek to avoid disclosure of our intellectual property by requiring employees and consultants with access to our proprietary information to execute nondisclosure and assignment of intellectual property agreements and by restricting access to our source code.

We also incorporate a number of third-party software programs into our solutions pursuant to license agreements. Our software is not substantially dependent on any third-party software, although in some cases it utilizes open source code.

Employees

As of October 31, 2017, we employed 664 full-time employees, of which 347 were located in the United States and 317 were located outside the United States. Our workforce as of October 31, 2017, consisted of 386 employees in engineering and research and development, 116 employees in sales and marketing, 66 employees in general and administrative, 60 employees in manufacturing and 36 employees in services and support. None of our employees are represented by unions. We consider our relationship with our employees to be good and have not experienced significant interruptions of operations due to labor disagreements.

Facilities

Our corporate headquarters is located in Andover, Massachusetts and consists of approximately 122,000 square feet of space. We own the property constituting our corporate headquarters, subject to an $8.0 million mortgage loan. The annual interest rate on the loan is 3.5%, and the loan is repayable in 60 monthly installments of principal and interest based on a 20-year amortization schedule. The remaining amount of unpaid principal under the loan is due on the maturity date of July 1, 2020. The loan terms include annual affirmative, negative and financial covenants, including a requirement that we maintain a minimum debt service ratio. We were in compliance with all annual covenants of the mortgage loan as of December 31, 2016 and September 30, 2017. As of December 31, 2016 and September 30, 2017, outstanding borrowings under the mortgage loan were $7.6 million and $7.3 million, respectively.

We lease additional facilities in Lawrence, Massachusetts and Limerick, Ireland that we use for manufacturing, testing, logistics, research and development and customer support. We also lease a facility in

Guangzhou, China that we use for manufacturing, testing, logistics, research and development and technical support and a facility in Valencia, Spain that we use primarily for research and development.

We believe that our current facilities are adequate to meet our current needs. We anticipate expanding our facilities as we add employees and enter new geographic markets. We believe that suitable additional or alternative space will be available on acceptable terms as needed to accommodate future growth.

Legal Proceedings

From time to time, we are a party to various litigation matters and subject to claims that arise in the ordinary course of business including, for example, patent infringement lawsuits by non-practicing entities. In addition, third parties may from time to time assert claims against us in the form of letters and other communications. There is no pending or threatened legal proceeding to which we are a party that, in our opinion, is likely to have a material adverse effect on our financial condition or results of operations. However, litigation is inherently unpredictable. Regardless of the outcome, litigation can adversely affect us because of defense and settlement costs, diversion of management resources and other factors.

MANAGEMENT

Executive Officers and Directors

The following table provides information regarding our executive officers and directors as of October 31, 2017:

Name	Age	Position
Jerry Guo	54	President, Chief Executive Officer and Chairman
Gary Hall	56	Chief Financial Officer
Weidong Chen	50	Chief Technology Officer and Director
Lucy Xie	51	Senior Vice President of Operations and Director
Abraham Pucheril	51	Senior Vice President of Worldwide Sales
Bruce Evans	58	Director
Bill Styslinger	71	Director
Joe Tibbetts	65	Director

(1) Member of audit committee
(2) Member of compensation committee

Executive Officers

Jerry Guo, the founder of our company, has served as our president and chief executive officer and as the chairman of our board of directors since our founding in 2003. Prior to founding our company, Mr. Guo served as the Vice President of Broadband at River Delta Networks, which was acquired by Motorola in 2001. Prior to that, Mr. Guo was a research scientist at Bell Laboratories' research division. Mr. Guo holds a Ph.D. degree in electrical engineering from the University of Wisconsin-Madison and an M.S. degree in optical instruments from the Department of Precision Instruments at Tsinghua University. We believe that Mr. Guo is qualified to serve on our board of directors due to his leadership experience in the broadband and network industries, his extensive knowledge of our company and his service as our president and chief executive officer.

Gary Hall has served as our chief financial officer since June 2011. Prior to joining Casa, from April 2007 to March 2010, Mr. Hall was the chief financial officer of eCopy, a provider of document management solutions. From August 2004 to June 2006, he served as the chief financial officer of MatrixOne, a product life-cycle management company, where he had previously served as controller from April 1999 to August 2004. Previously, Mr. Hall served in various accounting and auditing roles at Deloitte & Touche, a multinational professional services firm. Mr. Hall holds a M.S. degree in finance from Bentley College and a B.A. degree in accounting from Southern New Hampshire University.

Weidong Chen has served as our chief technology officer since 2004 and as a member of our board of directors since 2010. Prior to joining Casa, Mr. Chen served as a software manager at Motorola, a multinational telecommunications company from October 2001 to November 2003. Mr. Chen holds a Ph.D. degree in physics from the University of Pennsylvania. We believe that Mr. Chen's deep experience in the telecommunications industry, his extensive knowledge of our company and his position as our chief technology officer enable Mr. Chen to make a valuable contribution to our board of directors.

Lucy Xie has served as our senior vice president of operations since 2011 and as a member of our board of directors since 2003. From 2003 to 2011, Ms. Xie served as our chief financial officer and vice president of operations. Prior to joining Casa, Ms. Xie held various accounting, finance and management positions at Raytheon, a U.S. defense contractor and industrial corporation, and Lucent Technologies, a telecommunications equipment company. Ms. Xie has also served as the vice chairman and a board member of the Asia-America Chamber of Commerce since 2015. Ms. Xie holds an M.B.A. degree in accounting from Fairleigh Dickinson University. We believe that Ms. Xie is qualified to serve on our board of directors due to her experience as an executive in the telecommunications industry, her extensive knowledge of our company and her service as our senior vice president of operations.

Abraham Pucheril has served as our senior vice president of worldwide sales since August 2012. Prior to joining Casa, Mr. Pucheril was the vice president of sales at Fujitsu Network Communications, Inc., a communications network equipment provider and a wholly owned subsidiary of Fujitsu Limited, from April 2005 to July 2012. Prior to joining Fujitsu, Mr. Pucheril served as area vice president of sales for Alcatel North America, a telecommunications conglomerate, from April 2003 to April 2005, and regional vice president of sales of Atoga Systems, a provider of advanced video and data transmission systems that was acquired by Arris Systems, Inc., from January 2002 to April 2003. He started his professional career with Bell Canada. Mr. Pucheril holds a B.E. degree in electronics and communications engineering from Mangalore University, an M.E. degree in electrical and electronics engineering from Anna University and an M.A.Sc. degree in electrical engineering from the University of Waterloo.

Board of Directors

Bruce Evans has been a director of our company since 2010. Since 1986, Mr. Evans has served in various positions with Summit Partners, a growth equity and venture capital investment firm, including most recently as a Managing Director and the Chairman of Summit Partners' Board of Managers. He is also currently a director of Analog Devices, a public company which designs and manufactures high-performance semiconductor products, as well as several private companies. Mr. Evans previously served as a director of more than a dozen public companies, including, from May 2012 to November 2014, FleetCor Technologies, a provider of fuel cards and workforce payment products and services. Mr. Evans holds a B.E. degree in mechanical engineering and economics from Vanderbilt University and an M.B.A. degree from Harvard Business School. We believe that Mr. Evans is qualified to serve as a director of our company due to his wide-ranging experience in growth equity and venture capital investing in the technology sector and his experience on other private and public company boards.

Bill Styslinger has been a director of our company since 2012. Mr. Styslinger served as chairman, president and chief executive officer of SeaChange International, a provider of multiscreen video software and services, from its inception in July 1993 until his retirement in November 2011. Mr. Styslinger was also previously a member of the board of directors of Omtool, a provider of enterprise client/server facsimile software solutions. Mr. Styslinger holds a B.S. degree in Engineering Science from the State University of New York at Buffalo. We believe that Mr. Styslinger is qualified to serve on our board of directors due to his leadership expertise, including service as chief executive officer of a public company with international operations, as well as his knowledge of the telecommunications industry.

Joe Tibbetts has been a director of our company since November 2017. Since March 2017, Mr. Tibbetts has served as the interim chief financial officer of Acquia Corporation, a provider of cloud-based, digital experience management solutions. Prior to that, Mr. Tibbetts served as the senior vice president and chief financial officer of the Publicis.Sapient unit of Publicis Group SA, from February 2015, when Publicis acquired Sapient Corporation, to September 2015. Prior to that, Mr. Tibbetts served as senior vice president and global chief financial officer for Sapient Corporation from October 2006 to February 2015. Mr. Tibbetts was formerly a partner with Price Waterhouse LLP. Mr. Tibbetts currently serves on the board of directors of Vivint Solar, Inc., a provider of smart home technology, and several private companies. Mr. Tibbetts holds a B.S. in business administration from the University of New Hampshire. We believe that Mr. Tibbetts is qualified to serve on our board of directors due to his experience as an executive officer or director of other technology companies and his financial and accounting expertise.

Jerry Guo and Lucy Xie are married to one another. There are no other family relationships among any of our directors or executive officers.

Composition of the Board of Directors

Our board of directors currently consists of six members. The current members of our board of directors were elected pursuant to a voting agreement among certain of our preferred and common stockholders. The

agreement will terminate upon the closing of this offering, at which time there will be no further contractual obligations regarding the election of our directors. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

In accordance with the terms of our restated certificate of incorporation and amended and restated bylaws, each of which will become effective upon the closing of this offering, our board of directors will be divided into three classes, each of whose members will serve for staggered three year terms. Upon the closing of this offering, the members of the classes will be divided as follows:

- the class I directors will be Messrs. Chen and Guo, and their term will expire at the first annual meeting of stockholders held after the closing of this offering;
- the class II directors will be Messrs. Evans and Tibbetts, and their term will expire at the second annual meeting of stockholders held after the closing of this offering; and
- the class III directors will be Mr. Styslinger and Ms. Xie, and their term will expire at the third annual meeting of stockholders held after the closing of this offering.

Our restated certificate of incorporation that will become effective upon the closing of this offering provides that the authorized number of directors may be changed only by resolution of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. This classification of our board of directors may have the effect of delaying or preventing changes in our control or management.

Our restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering provide that our directors may be removed only for cause by the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an annual election of directors. Upon the expiration of the term of a class of directors, directors in that class will be eligible to be elected for a new three-year term at the annual meeting of stockholders in the year in which their term expires. An election of our directors by our stockholders will be determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

Director Independence

Rule 5605 of the Nasdaq Listing Rules requires a majority of a listed company's board of directors to be comprised of independent directors within one year of listing. In addition, the Nasdaq Listing Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominations committees be independent, or, if a listed company has no nominations committee, that director nominees be selected or recommended for the board's selection by independent directors constituting a majority of the board's independent directors, and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act and compensation committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under Rule 5605(a)(2), a director will only qualify as an "independent director" if, in the opinion of our board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries.

The phase-in periods with respect to director independence under the Nasdaq Listing Rules allow us to have only one independent member on each of the audit committee and compensation committee upon the listing date of our common stock, a majority of independent members on each committee within 90 days of the listing date (or the effective date of the registration statement, in the case of the audit committee) and fully independent committees and a majority of independent directors on our board of directors within one year of the listing date (or the effective date of the registration statement, in the case of the audit committee).

In , our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that each of Messrs. and is an "independent director" as defined under Rule 5605(a)(2) of the Nasdaq Listing Rules. In making such determinations, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant, including the beneficial ownership of our capital stock by each non-employee director and any institutional stockholder with which he is affiliated.

We expect to satisfy the member independence requirements for each of the audit and compensation committees of our board of directors prior to the end of the transition period provided under Nasdaq Listing Rules and SEC rules and regulations for companies completing their initial public offering.

We do not intend to form a nominating and corporate governance committee at this time, and the independent members of our board of directors will be responsible for nominations.

Board Leadership Structure

Our corporate governance guidelines provide that the roles of chairman of the board and chief executive officer may be separated or combined. Our board of directors has considered its leadership structure and determined that at this time Mr. Guo should serve both as our chief executive officer and as chairman of the board. Since 2003, Mr. Guo has served as our president and chief executive officer and has been an integral part of the leadership of our company and our board of directors, and his strategic vision has guided our growth and performance. Our board of directors believes that having Mr. Guo also serve as our chairman facilitates the board's decision-making process and enables Mr. Guo to act as the key link between the board of directors and other members of management.

Board Committees

Our board of directors has established an audit committee and compensation committee. Each of these committees will operate under a charter to be approved by our board of directors prior to this offering. Following this offering, a copy of each committee's charter will be posted on the corporate governance section of our website, *www.casa-systems.com*. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus or in deciding whether to purchase shares of our common stock.

Audit Committee

The audit committee's responsibilities will include:

- appointing, approving the compensation of, and assessing the independence of our registered public accounting firm;
- overseeing the work of our registered public accounting firm, including through the receipt and consideration of reports from such firm;
- reviewing and discussing with management and the registered public accounting firm our annual and quarterly financial statements and related disclosures;
- monitoring our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- discussing our risk management policies;

- establishing policies regarding hiring employees from the registered public accounting firm and procedures for the receipt and retention of accounting related complaints and concerns;
- meeting independently with our registered public accounting firm and management;
- reviewing and approving or ratifying any related person transactions; and
- preparing the audit committee report required by SEC rules.

All audit services and all non-audit services, other than de minimis non-audit services, to be provided to us by our independent registered public accounting firm will be required to be approved in advance by our audit committee.

Effective upon the effectiveness of the registration statement of which this prospectus is a part, the members of our audit committee will be Messrs. , and . will be the chair of our audit committee. Our board of directors has determined that is independent within the meaning of Rule 10A-3 under the Exchange Act. Our board of directors has determined that is an "audit committee financial expert" as defined by applicable SEC rules.

We expect to satisfy the member independence requirements for the audit committee prior to the end of the transition period provided under current Nasdaq Listing Rules and SEC rules and regulations for companies completing their initial public offering.

Compensation Committee

The compensation committee's responsibilities will include:

- annually reviewing and approving or advising with respect to corporate goals and objectives relevant to CEO compensation;
- determining or advising with respect to our CEO's compensation;
- reviewing and approving, or making recommendations to our board of directors with respect to, the compensation of our other executive officers;
- overseeing an evaluation of our senior executives;
- overseeing and administering our equity incentive plans;
- reviewing and making recommendations to our board of directors with respect to director compensation;
- reviewing and discussing annually with management our "Compensation Discussion and Analysis" disclosure to the extent such disclosure is required by SEC rules; and
- preparing annual compensation committee reports to the extent required by SEC rules.

Effective upon the effectiveness of the registration statement of which this prospectus is a part, the members of our compensation committee will be Messrs. and and will be the chair of our compensation committee. Our board of directors has determined that is independent within the meaning of Rule 10C-1 under the Exchange Act.

We expect to satisfy the member independence requirements for the compensation committee prior to the end of the transition period provided under current Nasdaq Listing Rules and SEC rules and regulations for companies completing their initial public offering.

Compensation Committee Interlocks and Insider Participation

None of our executive officers serves as a member of the board of directors or compensation committee, or other committee serving an equivalent function, of any entity that has one or more executive officers who serve as members of our board of directors or our compensation committee. None of the members of our compensation committee is an officer or employee of our company, nor have they ever been an officer or employee of our company.

Code of Business Conduct and Ethics

We have a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A copy of the code is posted on our website, *www.casa-systems.com*. In addition, we intend to post on our website all disclosures that are required by law or the Nasdaq Listing Rules concerning any amendments to, or waivers from, any provision of the code.

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table sets forth the total compensation paid to our chief executive officer and each of our two other most highly compensated executive officers for the year ended December 31, 2016. We refer to these individuals as our "named executive officers."

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)(1)	Option Awards ($)(1)	All Other Compensation ($)(2)	Total ($)
Jerry Guo *President, Chief Executive Officer and Chairman*	2016	664,566(3)	1,613,825(4)	1,065,115	1,989,328	7,950	5,340,784
Lucy Xie *Senior Vice President of Operations and Director*	2016	402,721(5)	538,337(4)	628,081	502,724	7,950	2,079,813
Weidong Chen *Chief Technology Officer and Director*	2016	378,206(6)	538,337(4)	358,885	287,266	7,950	1,570,644

(1) The amounts reported represent the aggregate grant-date fair value of the stock and option grants awarded to the named executive officer in the fiscal year ended December 31, 2016, calculated in accordance with FASB ASC Topic 718. Such grant-date fair values do not take into account any estimated forfeitures related to service-vesting conditions. The assumptions used in calculating the grant-date fair value of the sale of the stock or equity awards reported in this column are set forth in the notes to our consolidated financial statements included elsewhere in this prospectus. The amounts reported in this column reflect the accounting cost for these stock options and do not correspond to the actual economic value that may be received by the named executive officers upon exercise of the stock options.

(2) Constitutes matching contributions to 401(k) plans.

(3) Includes $16,554 of cash paid in lieu of vacation earned in 2016 and paid in 2017.

(4) Consists of a discretionary bonus for 2016 performance that was determined and paid in early 2017.

(5) Includes $42,449 of cash paid in lieu of vacation earned in 2016 and paid in 2017.

(6) Includes $17,934 of cash paid in lieu of vacation earned in 2016 and paid in 2017.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information regarding outstanding stock awards held as of December 31, 2016 by our named executive officers.

		Option Awards				RSUs	
Name	Grant Date	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested ($)(1)
Jerry Guo	1/23/2015(2)	103,499	112,500	20.92	1/23/2025		
	1/23/2015(3)					115,714	
	1/23/2015(4)					34,715	
	3/26/2016(5)	—	118,432	41.97	3/25/2026		
	3/26/2016(6)					25,378	
Lucy Xie	1/23/2015(2)	21,796	23,692	20.92	1/23/2025		
	1/23/2015(3)					34,116	
	1/23/2015(4)					17,058	
	3/26/2016(5)	—	29,929	41.97	3/25/2026		
	3/26/2016(6)					14,965	
Weidong Chen	5/25/2012	120,000	—	8.46	5/24/2022		
	1/23/2015(2)	12,454	13,539	20.92	1/23/2025		
	1/23/2015(3)					19,495	
	1/23/2015(4)					9,748	
	3/26/2016(5)	—	17,102	41.97	3/25/2026		
	3/26/2016(6)					8,551	

(1) Based on an assumed market price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

(2) One-fourth (1/4) of the shares of our common stock subject to this stock option award vested on January 1, 2016, and the balance is scheduled to vest in 36 equal monthly installments thereafter, subject to continued service with us through each applicable vesting date.

(3) One-half (1/2) of these RSUs vested on January 1, 2016, one-third (1/3) vested on January 1, 2017 and one-sixth (1/6) are scheduled to vest on January 1, 2018, subject to continued service with us through each applicable vesting date.

(4) One-fourth (1/4) of these RSUs vested on each of January 1, 2016 and 2017, and one-fourth (1/4) are scheduled to vest each year thereafter, subject to continued service with us through each applicable vesting date.

(5) One-fourth (1/4) of the shares of our common stock subject to this stock option award vested on January 1, 2017, and the balance is scheduled to vest in 36 equal monthly installments thereafter, subject to continued service with us through each applicable vesting date.

(6) One-fourth (1/4) of these RSUs vested on January 1, 2017, and one-fourth (1/4) are scheduled to vest each year thereafter, subject to continued service with us through each applicable vesting date.

Potential Payments upon Termination or Change in Control

Under our 2011 Stock Incentive Plan, our board of directors may provide that outstanding awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an award shall lapse, in whole or in part, in connection with (a) any merger or consolidation of the company with or into another entity as a result of which all of the common stock of the company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the common stock of the company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the company. Further, under both our 2003 Stock Incentive Plan and our 2011 Stock Incentive Plan, our board of directors has complete discretion to cause any award to become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

Employment Agreements

Employment Agreement with Mr. Guo

We are a party to an employment agreement with Mr. Guo dated November 17, 2017. Under the employment agreement, Mr. Guo is an at-will employee, and his employment with us can be terminated by him or us at any time and for any reason. The employment agreement provides that Mr. Guo is entitled to a base salary of $677,806 during his employment with us and that he is eligible, at our sole discretion, to earn a target annual bonus equal to 150% of his base salary. The employment agreement also provides that Mr. Guo is eligible to participate in the our annual long-term incentive program, with a target annual equity award equal to five hundred and fifty percent (550%) of his then current base salary, and with the form, terms and conditions of such long-term incentive awards to be determined in our sole discretion.

Under the employment agreement, Mr. Guo is entitled, subject to his execution and nonrevocation of a release of claims in our favor, in the event of the termination of his employment by us without cause or by him for good reason, each as defined in his employment agreement with us, to (i) receive an amount equal to the sum of his then-current annual base salary plus his target annual bonus for the year of his termination of employment, with such amount payable in equal installments over a period of twelve months, (ii) continue to receive an amount equal to COBRA premiums for health benefit coverage on the same terms as were applicable to him prior to his termination for a period of twelve months following the date that his employment with us is terminated, or earlier, if he becomes eligible to enroll in a health benefit plan with a new employer and (iii) accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following his termination of employment for the period of time set forth in the applicable option agreement.

In addition, the employment agreement provides that in the event Mr. Guo's employment with us terminates by reason of his death or disability, Mr. Guo is entitled to accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following his termination of employment for the period of time set forth in the applicable option agreement.

Employment Agreement with Ms. Xie

We are a party to an employment agreement with Ms. Xie dated November 17, 2017. Under the employment agreement, Ms. Xie is an at-will employee, and her employment with us can be terminated by her or us at any time and for any reason. The employment agreement provides that Ms. Xie is entitled to a base salary of $376,836 during her employment with us and that she is eligible, at our sole discretion, to earn a target annual bonus equal to 100% of her base salary. The employment agreement also provides that Ms. Xie is eligible to participate in our annual long-term incentive program, with a target annual equity award equal to three hundred and fifty percent (350%) of her then current base salary, and with the form, terms and conditions of such long-term incentive awards to be determined in our sole discretion.

Under the employment agreement, Ms. Xie is entitled, subject to her execution and nonrevocation of a release of claims in our favor, in the event of the termination of her employment by us without cause or by her for good reason, each as defined in her employment agreement with us, to (i) receive an amount equal to the sum of her then-current annual base salary plus her target annual bonus for the year of her termination of employment, with such amount payable in equal installments over a period of twelve months, (ii) continue to receive an amount equal to COBRA premiums for health benefit coverage on the same terms as were applicable to her prior to her termination for a period of twelve months following the date that her employment with us is terminated, or earlier, if she becomes eligible to enroll in a health benefit plan with a new employer and (iii) accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following her termination of employment for the period of time set forth in the applicable option agreement.

In addition, the employment agreement provides that in the event Ms. Xie's employment with us terminates by reason of her death or disability, Ms. Xie is entitled to accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following her termination of employment for the period of time set forth in the applicable option agreement.

Employment Agreement with Mr. Chen

We are a party to an employment agreement with Mr. Chen dated November 17, 2017. Under the employment agreement, Mr. Chen is an at-will employee, and his employment with us can be terminated by him or us at any time and for any reason. The employment agreement provides that Mr. Chen is entitled to a base salary of $376,836 during his employment with us and that he is eligible, at our sole discretion, to earn a target annual bonus equal to 100% of his base salary. The employment agreement also provides that Mr. Chen is eligible to participate in our annual long-term incentive program, with a target annual equity award equal to two hundred percent (200%) of his then current base salary, and with the form, terms and conditions of such long-term incentive awards to be determined in our sole discretion.

Under the employment agreement, Mr. Chen is entitled, subject to his execution and nonrevocation of a release of claims in our favor, in the event of the termination of his employment by us without cause or by him for good reason, each as defined in his employment agreement with us, to (i) receive an amount equal to the sum of his then-current annual base salary plus his target annual bonus for the year of his termination of employment, with such amount payable in equal installments over a period of twelve months, (ii) continue to receive an amount equal to COBRA premiums for health benefit coverage on the same terms as were applicable to him prior to his termination for a period of twelve months following the date that his employment with us is terminated, or earlier, if he becomes eligible to enroll in a health benefit plan with a new employer and (iii) accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following his termination of employment for the period of time set forth in the applicable option agreement.

In addition, the employment agreement provides that in the event Mr. Chen's employment with us terminates by reason of his death or disability, Mr. Chen is entitled to accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following his termination of employment for the period of time set forth in the applicable option agreement.

Retirement Benefits

We maintain a retirement plan for the benefit of our employees, including our named executive officers. The plan is intended to qualify as a tax-qualified 401(k) plan so that contributions to the 401(k) plan, and income earned on such contributions, are not taxable to participants until withdrawn or distributed from the 401(k) plan (except in the case of contributions under the 401(k) plan designated as Roth contributions). Under the 401(k) plan, each employee is fully vested in his or her deferred salary contributions. Employee contributions are held and invested by the plan's trustee as directed by participants. We match 50% of employee contributions to our 401(k) plan up to a maximum amount of 6% of eligible wages.

Employee Benefits and Perquisites

Our named executive officers are eligible to participate in our health and welfare plans to the same extent as all full-time employees.

Director Compensation

During the year ended December 31, 2016, none of our directors received any cash compensation or stock-based awards for their service on our board of directors or committees of our board of directors. In December 2016, we approved, effective as of January 1, 2017, the payment to Bill Styslinger of an annual cash retainer of

$200,000, payable quarterly in arrears, for his services as a director and an annual cash retainer of $5,000, payable annually in arrears, for his services as a member of the compensation committee of our board of directors. This arrangement will terminate upon the closing of this offering. None of our other directors receives compensation for service on our board of directors or committees of our board of directors.

We also have a policy of reimbursing our directors for their reasonable out-of-pocket expenses incurred in attending board of directors and committee meetings.

In November 2017, we approved a non-employee director compensation program to become effective upon the closing of this offering. Under this program, non-employee directors will receive the cash compensation set forth below, and an additional payment of $150,000 annually, to be paid, at the discretion of our board of directors, in the form of cash or cash-settled or stock-settled restricted stock units for the number of shares of our common stock equal to $150,000 divided by the closing price of our common stock on the Nasdaq Global Market on the date of grant. Any such cash-settled or stock-settled restricted stock units will vest one year after the date of grant. In addition, new non-employee directors will also be eligible for an initial equity grant of cash-settled or stock-settled restricted stock units for the number of shares of our common stock equal to $300,000 divided by the closing price of our common stock on the Nasdaq Global Market on the date of such director's initial election to our board of directors. Such cash-settled or stock-settled restricted stock units will vest on a quarterly basis, over a period of three years after the date of grant, subject to the non-employee director's continued service as a director, with full acceleration of vesting upon a change in control of our company.

Following the closing of this offering, each non-employee director will be eligible to receive compensation for his or her service on our board of directors or committees thereof consisting of annual cash retainers paid quarterly in arrears, as follows:

Position	Retainer
Board member	$50,000
Audit committee chair	$20,000
Compensation committee chair	$10,000
Audit committee member	$10,000
Compensation committee member	$ 5,000

Stock Option and Other Compensation Plans

Prior to this offering, we granted awards under our 2003 Stock Incentive Plan, as amended to date, and our 2011 Stock Incentive Plan, as amended to date. Following the effectiveness of the registration statement of which this prospectus is a part, we expect to grant awards under the 2017 Stock Incentive Plan.

2017 Stock Incentive Plan

In November 2017, our board of directors adopted, and we expect our stockholders will approve, the 2017 Stock Incentive Plan, which will become effective immediately prior to the effectiveness of the registration statement of which this prospectus is a part. The 2017 Stock Incentive Plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, RSUs and other stock-based awards. Upon effectiveness of the 2017 Stock Incentive Plan, the number of shares of our common stock that will be reserved for issuance under the 2017 Stock Incentive Plan will be the sum of: (1) 1,432,137 plus; (2) the number of shares (up to 3,749,209 shares) equal to the sum of the number of shares of our common stock then available for issuance under the 2003 Stock Incentive Plan and the 2011 Stock Incentive Plan and the number of shares of our common stock subject to outstanding awards under the 2003 Stock Incentive Plan and the 2011 Stock Incentive Plan that expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right; plus (3) an annual increase, to be added on the first day of each fiscal year, beginning with the fiscal year ending December 31,

2018 and continuing until, and including, the fiscal year ending December 31, 2027, equal to the lowest of 4,000,000 shares of our common stock, 4% of the number of shares of our common stock outstanding on the first day of such fiscal year and an amount determined by our board of directors.

Our employees, officers, directors, consultants and advisors will be eligible to receive awards under the 2017 Stock Incentive Plan. Incentive stock options, however, may only be granted to our employees.

Pursuant to the terms of the 2017 Stock Incentive Plan, our board of directors (or a committee delegated by our board of directors) will administer the plan and, subject to any limitations in the plan, will select the recipients of awards and determine:

- the number of shares of our common stock covered by options and the dates upon which the options become exercisable;
- the type of options to be granted;
- the duration of options, which may not be in excess of ten years;
- the exercise price of options, which must be at least equal to the fair market value of our common stock on the date of grant; and
- the number of shares of our common stock subject to and the terms of any stock appreciation rights, restricted stock awards, RSUs or other stock-based awards and the terms and conditions of such awards, including conditions for repurchase, issue price and repurchase price (though the measurement price of stock appreciation rights must be at least equal to the fair market value of our common stock on the date of grant and the duration of such awards may not be in excess of ten years).

If our board of directors delegates authority to an executive officer to grant awards under the 2017 Stock Incentive Plan, the executive officer will have the power to make awards to all of our employees, except executive officers. Our board of directors will fix the terms of the awards to be granted by such executive officer, including the exercise price of such awards (which may include a formula by which the exercise price will be determined), and the maximum number of shares subject to awards that such executive officer may make.

Effect of Certain Changes in Capitalization. Upon the occurrence of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of our common stock other than an ordinary cash dividend, our board of directors shall equitably adjust:

- the number and class of securities available under the 2017 Stock Incentive Plan;
- the share counting rules under the 2017 Stock Incentive Plan;
- the number and class of securities and exercise price per share of each outstanding option;
- the share and per-share provisions and the measurement price of each outstanding stock appreciation right;
- the number of shares subject to, and the repurchase price per share subject to, each outstanding restricted stock award; and
- the share and per-share related provisions and the purchase price, if any, of each other stock-based award.

Effect of Certain Corporate Transactions. Upon a merger or other reorganization event (as defined in our 2017 Stock Incentive Plan), our board of directors may, on such terms as our board of directors determines (except to the extent specifically provided otherwise in an applicable award agreement or other agreement between the participant and us), take any one or more of the following actions pursuant to the 2017 Stock Incentive Plan as to some or all outstanding awards, other than restricted stock awards:

- provide that all outstanding awards shall be assumed, or substantially equivalent awards shall be substituted, by the acquiring or successor corporation (or an affiliate thereof);

- upon written notice to a participant, provide that all of the participant's unvested and/or vested but unexercised awards will terminate immediately prior to the consummation of such reorganization event unless exercised by the participant (to the extent then exercisable);
- provide that outstanding awards shall become exercisable, realizable or deliverable, or restrictions applicable to an award shall lapse, in whole or in part, prior to or upon such reorganization event;
- in the event of a reorganization event pursuant to which holders of shares of our common stock will receive a cash payment for each share surrendered in the reorganization event, make or provide for a cash payment to the participants with respect to each award held by a participant equal to (1) the number of shares of our common stock subject to the vested portion of the award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such reorganization event) multiplied by (2) the excess, if any, of the cash payment for each share surrendered in the reorganization event over the exercise, measurement or purchase price of such award and any applicable tax withholdings, in exchange for the termination of such award; and/or
- provide that, in connection with a liquidation or dissolution, awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings).

Our board of directors does not need to take the same action with respect to all awards, all awards held by a participant or all awards of the same type.

In the case of certain RSUs, no assumption or substitution is permitted, and the RSUs will instead be settled in accordance with the terms of the applicable RSU agreement.

Upon the occurrence of a reorganization event other than a liquidation or dissolution, the repurchase and other rights with respect to outstanding restricted stock awards will continue for the benefit of the successor company and will, unless the board of directors may otherwise determine, apply to the cash, securities or other property into which shares of our common stock are converted or exchanged pursuant to the reorganization event. Upon the occurrence of a reorganization event involving a liquidation or dissolution, all restrictions and conditions on each outstanding restricted stock award will automatically be deemed terminated or satisfied, unless otherwise provided in the agreement evidencing the restricted stock award or any other agreement between the participant and us.

At any time, our board of directors may, in its sole discretion, provide that any award under the 2017 Stock Incentive Plan will become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part as the case may be.

No award may be granted under the 2017 Stock Incentive Plan on or after the date that is ten years following the effectiveness of the registration statement of which this prospectus is a part. Our board of directors may amend, suspend or terminate the 2017 Stock Incentive Plan at any time, except that stockholder approval may be required to comply with applicable law or stock market requirements.

2011 Stock Incentive Plan

Our 2011 Stock Incentive Plan was adopted by our board of directors on August 2, 2011, approved by our stockholders on September 22, 2011 and subsequently amended on May 25, 2012, June 11, 2014, and June 29, 2015. The 2011 Stock Incentive Plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock units and shares, restricted or otherwise, of our common stock. Our employees, officers, directors, consultants and advisors are eligible to receive awards under our 2011 Stock Incentive Plan; however incentive stock options may only be granted to our employees. A maximum of 4,604,732 shares of our common stock are authorized for issuance under the 2011 Stock Incentive Plan.

The type of award granted under our 2011 Stock Incentive Plan and the terms of such award are set forth in the applicable award agreement.

Pursuant to the terms of the 2011 Stock Incentive Plan, our board of directors (or a committee assigned by our board of directors) administers the 2011 Stock Incentive Plan. The board of directors has complete discretion to take any actions it deems necessary or advisable for the administration of the 2011 Stock Incentive Plan. All decisions, interpretations and other actions of our board of directors are final and binding on all participants and all persons deriving their rights from a participant. In addition, subject to any limitations in the 2011 Stock Incentive Plan, our board of directors selects the recipients of awards and determines:

- the number of shares of our common stock covered by options and the dates upon which the options become exercisable;
- the type of options to be granted;
- the duration of options, which may not be in excess of ten years;
- the exercise price of options, which must be at least equal to the fair market value of our common stock on the date of grant; and
- the number of shares of our common stock subject to, and the terms of any restricted stock awards or restricted stock units, and the terms and conditions of such awards, including conditions for repurchase, issue price and repurchase price.

Effect of Certain Changes in Capitalization. Pursuant to the 2011 Stock Incentive Plan, in the event of stock split, stock dividend, a combination of shares, reverse stock-split, a reclassification, or any other increase or decrease in the number of issued shares of our common stock effected without receipt of consideration by us, proportionate adjustments shall automatically be made in each of:

- the number of shares of our common stock available for issuance under the 2011 Stock Incentive Plan;
- the number of shares of our common stock covered by each outstanding option or RSU granted under the 2011 Stock Incentive Plan; and
- the exercise price under each outstanding option granted under the 2011 Stock Incentive Plan.

Our board of directors, in its sole discretion, may also make appropriate adjustments to one or more of the same items described above in the event of a declaration of an extraordinary dividend payable in a form other than shares of our common stock that has a material effect on the fair market value of shares of our common stock, a recapitalization, a spin-off or any similar occurrence.

Effect of Certain Corporate Transactions. In the event that we are a party to a merger or consolidation, all shares of our common stock acquired under the 2011 Stock Incentive Plan and all awards outstanding under the 2011 Stock Incentive Plan on the effective date of the transaction shall be treated in the manner described in the agreement of merger or consolidation, which agreement need not treat all awards in an identical manner but which must preserve an award's status as exempt from or compliant with Section 409A of the Internal Revenue Code of 1986, as amended, or the Code, and must provide for one or more of the following:

- continuation of the outstanding award by us if we are the surviving corporation;
- assumption, or substitution of substantially equivalent awards, of the outstanding award by the surviving corporation or its parent, provided that the assumption or substitution is accomplished in a manner that complies with the rules regarding assumptions or substitutions that apply to incentive stock options under the Code (whether the outstanding award is an incentive stock option or a nonstatutory stock option);

- acceleration of the date of exercise or vesting of an option (which may be contingent on the closing of the merger or consolidation) followed by the termination of the option if it is not timely exercised prior to the closing of the merger or consolidation (which exercise may also be contingent on the closing of the merger or consolidation); or
- cancellation of the outstanding award in exchange for a payment (if any) equal to the fair market value of a share of common stock as of the closing date of the merger or consolidation minus the per-share exercise price of the award (if any).

Subject to the limitations of the 2011 Stock Incentive Plan, our board of directors may modify, extend or assume outstanding options and RSUs and may accept the cancellation of outstanding options in return for the grant of new options for the same or a different number of shares of our common stock or a different exercise price.

As of October 31, 2017, options to purchase 2,979,832 shares of common stock were outstanding under the 2011 Stock Incentive Plan, at a weighted-average exercise price of $21.16 per share, and options to purchase 618,700 shares of our common stock had been exercised. In addition, as of such date, 172,348 RSUs were outstanding under the 2011 Stock Incentive Plan.

No further awards will be made under our 2011 Stock Incentive Plan on or after the effectiveness of the registration statement of which this prospectus is a part; however, awards outstanding under our 2011 Stock Incentive Plan will continue to be governed by their existing terms. Our board of directors may amend, suspend or terminate the 2011 Stock Incentive Plan at any time and for any reason, except that any amendment of the 2011 Stock Incentive Plan that increases the number of shares of our common stock available for issuance under the 2011 Stock Incentive Plan or that materially changes the class of persons who are eligible for the grant of incentive stock options is subject to the approval of our stockholders.

2003 Stock Incentive Plan

Our 2003 Stock Incentive Plan was adopted by our board of directors on December 24, 2003, approved by our stockholders on December 24, 2003 and subsequently amended on April 26, 2004 and July 1, 2005. The 2003 Stock Incentive Plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock units and shares, restricted or otherwise, of our common stock. Our employees, officers, directors, consultants and advisors are eligible to receive awards under our 2003 Stock Incentive Plan; however incentive stock options may only be granted to our employees. A maximum of 6,322,000 shares of our common stock are authorized for issuance under the 2003 Stock Incentive Plan.

The type of award granted under our 2003 Stock Incentive Plan and the terms of such award are set forth in the applicable award agreement.

Pursuant to the terms of the 2003 Stock Incentive Plan, our board of directors (or a committee assigned by our board of directors) administers the 2003 Stock Incentive Plan. The board of directors has complete discretion to take any actions it deems necessary or advisable for the administration of the 2003 Stock Incentive Plan. All decisions, interpretations and other actions of our board of directors are final and binding on all participants and all persons deriving their rights from a participant. In addition, subject to any limitations in the 2003 Stock Incentive Plan, our board of directors selects the recipients of awards and determines:

- the number of shares of our common stock covered by options and the dates upon which the options become exercisable;
- the type of options to be granted;
- the duration of options, which may not be in excess of ten years;

- the exercise price of options, which must be at least equal to the fair market value of our common stock on the date of grant; and
- the number of shares of our common stock subject to, and the terms of any restricted stock awards or restricted stock units, and the terms and conditions of such awards, including conditions for repurchase, issue price and repurchase price.

Effect of Certain Changes in Capitalization. Pursuant to the 2003 Stock Incentive Plan, in the event of stock split, stock dividend, a combination of shares, reverse stock-split, a reclassification, or any other increase or decrease in the number of issued shares of our common stock effected without receipt of consideration by us, proportionate adjustments shall automatically be made in each of:

- the number of shares of our common stock available for issuance under the 2003 Stock Incentive Plan;
- the number of shares of our common stock covered by each outstanding option or RSU granted under the 2003 Stock Incentive Plan; and
- the exercise price under each outstanding option granted under the 2003 Stock Incentive Plan.

Our board of directors, in its sole discretion, may also make appropriate adjustments to one or more of the same items described above in the event of a declaration of an extraordinary dividend payable in a form other than shares of our common stock that has a material effect on the fair market value of shares of our common stock, a recapitalization, a spin-off or any similar occurrence.

Effect of Certain Corporate Transactions. In the event that we are a party to a merger or consolidation, all shares of our common stock acquired under the 2003 Stock Incentive Plan and all awards outstanding under the 2003 Stock Incentive Plan on the effective date of the transaction shall be treated in the manner described in the agreement of merger or consolidation, which agreement need not treat all awards in an identical manner but which must preserve an award's status as exempt from or compliant with Section 409A of the Code and must provide for one or more of the following:

- continuation of the outstanding award by us if we are the surviving corporation;
- assumption, or substitution of substantially equivalent awards, of the outstanding award by the surviving corporation or its parent, provided that the assumption or substitution is accomplished in a manner that complies with the rules regarding assumptions or substitutions that apply to incentive stock options under the Code (whether the outstanding award is an incentive stock option or a nonstatutory stock option);
- acceleration of the date of exercise or vesting of an option (which may be contingent on the closing of the merger or consolidation) followed by the termination of the option if it is not timely exercised prior to the closing of the merger or consolidation (which exercise may also be contingent on the closing of the merger or consolidation); or
- cancellation of the outstanding award in exchange for a payment (if any) equal the fair market value of a share of common stock as of the closing date of the merger or consolidation minus the per-share exercise price of the award (if any).

Subject to the limitations of the 2003 Stock Incentive Plan, our board of directors may modify, extend or assume outstanding options and RSUs and may accept the cancellation of outstanding options in return for the grant of new options for the same or a different number of shares of our common stock or a different exercise price.

As of October 31, 2017, options to purchase 29,166 shares of common stock were outstanding under the 2003 Stock Incentive Plan, at a weighted-average exercise price of $1.25 per share, and options to purchase 512,834 shares of our common stock had been exercised. In addition, as of such date no RSUs were outstanding under the 2003 Stock Incentive Plan.

No further awards will be made under our 2003 Stock Incentive Plan; however, awards outstanding under our 2003 Stock Incentive Plan continue to be governed by their existing terms.

Limitation of Liability and Indemnification

Our restated certificate of incorporation, which will become effective upon the closing of this offering, limits the personal liability of directors for breach of fiduciary duty to the maximum extent permitted by the Delaware General Corporation Law and provides that no director will have personal liability to us or to our stockholders for monetary damages for breach of fiduciary duty or other duty as a director. However, these provisions do not eliminate or limit the liability of any of our directors:

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- for voting or assenting to unlawful payments of dividends, stock repurchases or other distributions; or
- for any transaction from which the director derived an improper personal benefit.

Any amendment to, or repeal of, these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to such amendment or repeal. If the Delaware General Corporation Law is amended to provide for further limitations on the personal liability of directors of corporations, then the personal liability of our directors will be further limited to the greatest extent permitted by the Delaware General Corporation Law.

In addition, our restated certificate of incorporation, which will become effective upon the closing of this offering, provides that we must indemnify our directors and officers and we must advance expenses, including attorneys' fees, to our directors and officers in connection with legal proceedings, subject to very limited exceptions.

We maintain a general liability insurance policy that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers. In addition, we have entered into indemnification agreements with certain of our executive officers and directors, and we intend to enter into similar indemnification agreements with each of our other directors and executive officers prior to the closing of this offering. These indemnification agreements may require us, among other things, to indemnify each such director and executive officer for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by him or her in any action or proceeding arising out of his or her service as one of our directors or executive officers.

Certain of our non-employee directors may, through their relationships with their employers, be insured and/or indemnified against certain liabilities incurred in their capacity as members of our board of directors. We have agreed that we will be the indemnitor of "first resort," however, with respect to any claims against these directors for indemnification claims that are indemnifiable by both us and their employers. Accordingly, to the extent that indemnification is permissible under applicable law, we will have full liability for such claims (including for the advancement of any expenses) and we have waived all related rights of contribution, subrogation or other recovery that we might otherwise have against these directors' employers.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend or terminate the plan in some circumstances. Our directors and executive officers may also buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information.

RELATED PERSON TRANSACTIONS

Other than compensation arrangements for our executive officers which are described elsewhere in this prospectus, below we describe transactions since January 1, 2013 to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed $120,000; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of, or person sharing the household with, the foregoing persons, had or will have a direct or indirect material interest.

Transactions Involving Liberty Global Ventures Holding B.V. and its Affiliates

Liberty Global Ventures Holding B.V., one of our 5% stockholders, is affiliated with certain of our customers. In the years ended December 31, 2013, 2014, 2015, 2016, and the nine months ended September 30, 2017, sales to these customers accounted for $13.8 million, $14.8 million, $46.1 million, $31.7 million and $25.0 million, respectively, of our revenue.

We also issued 528,580 shares of our common stock to Liberty Global Ventures Holding B.V. on March 31, 2014, upon Liberty Global Ventures Holding B.V.'s exercise of outstanding warrants, for aggregate consideration of $2.4 million.

Consulting Agreement with Bill Styslinger

On March 5, 2012, we entered into a consulting agreement with Bill Styslinger, one of our directors, for the provision of sales management, corporate strategy and advisory services, which was initially scheduled to expire on January 31, 2014. We extended the term of the consulting agreement on two occasions, and the consulting agreement expired on December 31, 2016. We paid Mr. Styslinger $240,000, $453,600, $542,430 and $459,478 for his services in the years ended December 31, 2013, 2014, 2015 and 2016, respectively, under this consulting agreement. In addition, in May 2012, we granted to Mr. Styslinger an option to purchase 120,000 shares of common stock, at an exercise price of $8.46 per share, which vested as to one-third (1/3) of the option shares on February 1, 2013 and as to the remainder in equal monthly installments over the following two years. The option had a grant-date fair value of $526,837. Our board of directors declared special dividends in November 2014, June 2016, December 2016 and May 2017. In connection with these special dividends, our board of directors also approved cash payments to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments in accordance with the provisions of our equity incentive plans. In connection with the special dividends declared in November 2014 and June 2016, we paid Mr. Styslinger $59,753, $11,954 and $150,319 as equitable adjustments in the years ended December 31, 2014, 2015 and 2016, respectively. In connection with the special dividend declared in December 2016, we paid Mr. Styslinger $615,522 as an equitable adjustment in January 2017. In connection with the special dividend declared in May 2017, we paid Mr. Styslinger $303,993 as an equitable adjustment in June 2017. In the event that we declare an additional special dividend of $ million prior to the effective date of the registration statement of which this prospectus forms a part, we expect that we would pay Mr. Styslinger an equitable adjustment of $ in connection with such special dividend.

Employment of Rongke Xie

Rongke Xie, who serves as Deputy General Manager of Guangzhou Casa Communication Technology LTD, one of our subsidiaries, is the sister of Lucy Xie, our Senior Vice President of Operations and a member of our board of directors. We paid Rongke Xie $120,275, $153,650, $140,278, $139,660 and $138,912 in total compensation in the years ended December 31, 2013, 2014, 2015 and 2016 and the nine months ended September 30, 2017, respectively, for her services as an employee. In addition, in May 2006, we granted to Rongke Xie an option to purchase 20,000 shares of common stock, at an exercise price of $0.50 per share, which vested as to one-fourth (1/4) of the option shares on May 22, 2007 and as to the remainder in equal monthly

installments over the following three years. The option had a grant-date fair value of $6,400. In connection with the special dividend declared in November 2014, we paid Ms. Xie $18,746 as an equitable adjustment in the year ended December 31, 2015.

Indemnification Agreements

Our restated certificate of incorporation provides that we will indemnify our officers and directors to the fullest extent permitted by Delaware law. In addition, we have entered into indemnification agreements with certain of our executive officers and directors, and we intend to enter into similar indemnification agreements with each of our other directors and executive officers prior to the closing of this offering. See “Limitation of Liability and Indemnification.”

Arrangements with Executive Officers

For a description of the compensation arrangements that we have with our named executive officers and directors, see “Executive Compensation”.

Policies and Procedures for Related Person Transactions

We have adopted written policies and procedures, which will become effective upon the closing of this offering, for the review of any transaction, arrangement or relationship in which our company is a participant, the amount involved exceeds $120,000, and one of our executive officers, directors, director nominees or 5% stockholders (or their immediate family members), each of whom we refer to as a “related person,” has a direct or indirect material interest.

If a related person proposes to enter into such a transaction, arrangement or relationship, which we refer to as a “related person transaction,” the related person must report the proposed related person transaction. The policy will call for the proposed related person transaction to be reviewed and, if deemed appropriate, approved by the audit committee of our board of directors. Whenever practicable, the reporting, review and approval will occur prior to entry into the transaction. If advance review and approval is not practicable, the committee will review, and, in its discretion, may ratify the related person transaction. The policy will also permit the chairman of the audit committee to review and, if deemed appropriate, approve proposed related person transactions that arise between audit committee meetings, subject to ratification by the audit committee at its next meeting. Any related person transactions that are ongoing in nature will be reviewed annually.

A related person transaction reviewed under the policy will be considered approved or ratified if it is authorized by the audit committee after full disclosure of the related person’s interest in the transaction. As appropriate for the circumstances, the audit committee will review and consider:

- the related person’s interest in the related person transaction;
- the approximate dollar value of the amount involved in the related person transaction;
- the approximate dollar value of the amount of the related person’s interest in the transaction without regard to the amount of any profit or loss;
- whether the transaction was undertaken in the ordinary course of our business;
- whether the terms of the transaction are no less favorable to us than terms that could have been reached with an unrelated third party;
- the purpose of, and the potential benefits to us of, the transaction; and
- any other information regarding the related person transaction or the related person in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

The audit committee may approve or ratify the transaction only if it determines that, under all of the circumstances, the transaction is in or is not inconsistent with our company's best interests. The audit committee may impose any conditions on the related person transaction that it deems appropriate.

In addition to the transactions that are excluded by the instructions to the SEC's related person transaction disclosure rule, the policy will provide that the following transactions do not create a material direct or indirect interest on behalf of related persons and, therefore, are not related person transactions for purposes of this policy:

- interests arising only from the related person's position as a director of another corporation or organization that is a party to the transaction;
- interests arising only from the direct or indirect ownership by the related person and all other related persons in the aggregate of less than a 10% equity interest (other than a general partnership interest) in another entity which is a party to the transaction;
- interests arising from both the position and ownership level described above;
- interests arising solely from the related person's position as an executive officer of another entity (whether or not the person is also a director of such entity), that is a participant in the transaction, where (a) the related person and all other related persons own in the aggregate less than a 10% equity interest in such entity, (b) the related person and his or her immediate family members are not involved in the negotiation of the terms of the transaction and do not receive any special benefits as a result of the transaction and (c) the amount involved in the transaction equals less than the greater of $200,000 or 5% of the annual gross revenues of the company receiving payment under the transaction;
- interests arising solely from the ownership of a class of our equity securities if all holders of that class of equity securities receive the same benefit on a pro rata basis;
- a transaction that involves compensation to an executive officer if the compensation has been approved, or recommended to our board of directors for approval, by the compensation committee of the board of directors or a group of independent directors of ours performing a similar function;
- a transaction that involves compensation to a director for services as one of our directors if such compensation will be reported pursuant to Item 402(k) of Regulation S-K;
- a transaction that is specifically contemplated by provisions of our certificate of incorporation or bylaws;
- interests arising solely from indebtedness of a significant shareholder or an immediate family member of a significant shareholder of ours, as such terms are defined under the policy;
- a transaction where the rates or charges involved in the transaction are determined by competitive bids;
- a transaction that involves the rendering of services as a common or contract carrier or public utility at rates or charges fixed in conformity with law or governmental authority; and
- a transaction that involves services as a bank depositary of funds, transfer agent, registrar, trustee under a trust indenture, or similar services.

The policy will provide that transactions involving compensation of executive officers shall be reviewed and approved by the compensation committee in the manner specified in its charter.

PRINCIPAL STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our common stock, as of October 31, 2017, by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our common stock;
- each of our directors;
- each of our named executive officers; and
- all of our executive officers and directors as a group.

The column entitled "Shares Beneficially Owned Prior to Offering—Percentage" is based on a total of 14,819,495 shares of our common stock outstanding as of October 31, 2017, assuming the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,076,394 shares of our common stock upon the closing of this offering. The column entitled "Shares Beneficially Owned After Offering—Percentage" is based on shares of our common stock to be outstanding after this offering, including the shares of our common stock that we are selling in this offering, but not including any additional shares issuable pursuant to the underwriters' option to purchase additional shares in this offering or any additional shares issuable upon exercise of outstanding options.

The number of shares beneficially owned by each stockholder is determined under rules of the SEC and includes voting or investment power with respect to securities. Under these rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power. In computing the number of shares beneficially owned by an individual or entity and the percentage ownership of that person, shares of common stock subject to options or other rights held by such person that are currently exercisable or will become exercisable within 60 days after October 31, 2017, are considered outstanding, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other person. Unless otherwise indicated, the address of all listed stockholders is c/o Casa Systems, Inc., 100 Old River Road, Andover, Massachusetts 01810. Each of the stockholders listed has sole voting and investment power with respect to the shares beneficially owned by the stockholder unless noted otherwise, subject to community property laws where applicable. Beneficial ownership representing less than 1% is denoted with an asterisk (*).

	Shares Beneficially Owned Prior to Offering		Shares Beneficially Owned After Offering	
Name of Beneficial Owner	Number	Percentage	Number	Percentage
5% Stockholders				
Entities affiliated with Summit Partners(1)	7,718,400	52.1%		
Liberty Global Ventures Holding B.V.(2)	886,574	6.0%		
Dragonfly Trust(3)	800,000	5.4%		
Executive Officers and Directors				
Jerry Guo(4)	2,393,961	15.9%		
Gary Hall(5)	120,000	*		
Weidong Chen(6)	1,474,363	9.9%		
Lucy Xie(7)	476,565	3.2%		
Abraham Pucheril(8)	120,000	*		
Bruce R. Evans(9)	7,718,400	52.1%		
Bill Styslinger(10)	120,000	*		
Joe Tibbetts		*		
All executive officers and directors as a group (8 persons)(11)	12,423,289	80.2%		

(1) Consists of 4,810,582 shares of common stock issuable upon the conversion of Series C Convertible Preferred Stock held by Summit Partners Private Equity Fund VII-A, L.P., 2,889,314 shares of common stock issuable upon the conversion of Series C Convertible Preferred Stock held by Summit Partners Private Equity Fund VII-B, L.P., 16,422 shares of common stock issuable upon the conversion of Series C Convertible Preferred Stock held by Summit Investors I, LLC and 2,082 shares of common stock issuable upon the conversion of Series C Convertible Preferred Stock held by Summit Investors I (UK), L.P. Summit Partners, L.P. is the managing member of Summit Partners PE VII, LLC, which is the general partner of Summit Partners PE VII, L.P., which is the general partner of each of Summit Partners Private Equity Fund VII-A, L.P. and Summit Partners Private Equity Fund VII-B, L.P. Summit Master Company, LLC is the managing member of Summit Investors Management, LLC, which is the manager of Summit Investors I, LLC, and the general partner of Summit Investors I (UK), L.P. Summit Master Company, LLC, as the managing member of Summit Investors Management, LLC, has delegated investment decisions, including voting and dispositive power, to Summit Partners, L.P. and its investment committee responsible for voting and investment decisions with respect to Casa. Summit Partners, L.P., through a three-person investment committee responsible for voting and investment decisions with respect to Casa, currently comprised of Peter Y. Chung, Bruce R. Evans and Martin J. Mannion, has voting and dispositive power over the shares held by each of these entities and therefore may be deemed to beneficially own such shares. Each of the Summit entities and persons mentioned in this footnote disclaims beneficial ownership of the shares, except for those shares held of record by such entity, and except to the extent of their pecuniary interest therein. The address of the entities and persons mentioned in this footnote is 222 Berkeley Street, 18th Floor, Boston, Massachusetts 02116.

(2) Consists of (i) 528,580 shares of common stock and (ii) 357,994 shares of common stock issuable upon the conversion of Series B Convertible Preferred Stock held by Liberty Global Ventures Holding B.V. Liberty Global Ventures Holding B.V. has delegated investment decisions, including voting and dispositive power, to Liberty Global Europe Holding B.V. Liberty Global Europe Management B.V. may be deemed to have voting and dispositive control over Liberty Global Europe Holding B.V. Liberty Global Europe Management B.V., Liberty Global Europe Holding B.V. and Liberty Global Ventures Holding B.V. each disclaim beneficial ownership of such shares, except for those shares held of record by such entity, and except to the extent of its pecuniary interest therein. The address of Liberty Global Ventures Holding B.V. is Boeing Avenue 53, 1119PE Schiphol-Rijk, The Netherlands.

(3) Consists of 800,000 shares of common stock held by Dragonfly Trust, a family trust established for the children of Mr. Guo and Ms. Xie. Mr. Chen serves as trustee for Dragonfly Trust and has voting and dispositive control over the shares held by Dragonfly Trust. Mr. Chen and Dragonfly Trust each disclaim beneficial ownership of such shares, except for those shares held of record by such person or entity, and except to the extent of such person or entity's pecuniary interest therein.

(4) Consists of (i) 2,179,714 shares of common stock held by Mr. Guo and (ii) options to purchase 214,247 shares of common stock that may be exercised within 60 days of October 31, 2017.

(5) Consists of options to purchase 120,000 shares of common stock held by Mr. Hall that may be exercised within 60 days of October 31, 2017.

(6) Consists of (i) 527,218 shares of common stock held by Mr. Chen and (ii) options to purchase 147,145 shares of common stock that may be exercised within 60 days of October 31, 2017.

(7) Consists of (i) 429,057 shares of common stock held by Ms. Xie and (ii) options to purchase 47,508 shares of common stock that may be exercised within 60 days of October 31, 2017.

(8) Consists of 43,644 shares of common stock held by Mr. Pucheril and options to purchase 76,356 shares of common stock held by Mr. Pucheril that may be exercised within 60 days of October 31, 2017.

(9) Consists of the shares noted in note (1) above. Mr. Evans is a Managing Director at Summit Partners, the general partner of the Summit-affiliated entities listed in note (1), and may be deemed the indirect beneficial owner of such shares.

(10) Consists of (i) 60,000 shares of common stock held by Mr. Styslinger and (ii) an option to purchase 60,000 shares of common stock that may be exercised within 60 days of October 31, 2017.

(11) Includes (i) 3,239,633 shares of common stock held by our current directors and executive officers and (ii) options to purchase 665,256 shares of common stock that may be exercised within 60 days of October 31, 2017 by our current directors and executive officers.

DESCRIPTION OF CAPITAL STOCK

General

Following the closing of this offering, our authorized capital stock will consist of 100,000,000 shares of common stock, par value $0.001 per share, and 5,000,000 shares of preferred stock, par value $0.001 per share. The following description of our capital stock and provisions of our restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering. Copies of these documents have been filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The description of our common stock reflects changes to our capital structure that will occur upon the closing of this offering.

As of October 31, 2017, we had issued and outstanding:

- 6,743,101 shares of our common stock held by 54 stockholders of record;
- 178,997 shares of our Series B convertible preferred stock held by one stockholder of record; and
- 3,859,200 shares of our Series C convertible preferred stock held by four stockholders of record.

Immediately prior to the closing of this offering, all of the outstanding shares of our convertible preferred stock will automatically convert into an aggregate of 8,076,394 shares of our common stock.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of any series of preferred stock that we may designate and issue in the future.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. Our outstanding shares of common stock are, and the shares offered in this offering will be, when issued and paid for, validly issued, fully paid and nonassessable. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Under the terms of our restated certificate of incorporation that will become effective upon the closing of this offering, our board of directors is authorized to direct us to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock. Upon the closing of this offering, there will be no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Stock Options

As of October 31, 2017, options to purchase 29,166 shares of our common stock were outstanding under our 2003 Stock Incentive Plan at a weighted-average exercise price of $1.25 per share, of which 29,166 shares were vested and exercisable as of that date. As of October 31, 2017, options to purchase 2,979,832 shares of our common stock were outstanding under our 2011 Stock Incentive Plan at a weighted-average exercise price of $21.16 per share, of which 2,233,481 shares were vested and exercisable.

RSUs

As of October 31, 2017, 172,348 shares of our common stock were issuable upon the vesting of RSUs outstanding under our 2011 Stock Incentive Plan.

Registration Rights

Demand Registration Rights

Pursuant to our registration rights agreement, until the earlier of six months after the close of this offering and six months after the effective date of the registration statement of which this prospectus forms a part, the holders of at least 20% of the shares having rights under this agreement, which we refer to as registrable securities, can demand that we file up to two registration statements on Form S-1 registering all or a portion of their registrable securities, provided that the aggregate offering price is expected to be at least $5 million. As of October 31, 2017, the holders of 8,076,394 shares of our common stock, including shares issuable upon the conversion of our convertible preferred stock, have demand registration rights. Under specified circumstances, we also have the right to defer filing of a requested registration statement for a period of not more than 60 days, which right may not be exercised more than once during any 12-month period. These registration rights are subject to additional conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under certain circumstances.

Form S-3 Registration Rights

Pursuant to the registration rights agreement, if we are eligible to file a registration statement on Form S-3, the holders of at least 20% of our registrable securities have the right to demand that we file additional registration statements, including a shelf registration statement, for such holders on Form S-3, if the aggregate anticipated offering price is at least $5 million. These holders can demand up to two such registrations in any 12-month period.

Piggyback Registration Rights

Pursuant to the registration rights agreement, if we propose to file a registration statement under the Securities Act, other than with respect to a registration related to employee benefit or similar plans, a registration on any form which does not include substantially the same information as would be required to be included in this registration statement, or a registration in which the only common stock being registered is common stock issuable upon conversion of debt securities which are also being registered, the holders of registrable securities are entitled to receive notice of the registration and to include their registrable securities in such registration. As of October 31, 2017, the holders of 8,076,394 shares of our common stock, including shares issuable upon the conversion of our convertible preferred stock, will be entitled to notice of this registration and will be entitled to include their registrable securities in this registration statement, but we anticipate that such right will be waived prior to consummation of this offering. The underwriters of any underwritten offering will have the right to limit the number of the number of registrable securities that may be included in the registration statement.

Expenses of Registration

We are required to pay all expenses relating to any demand, Form S-3 or piggyback registration, other than underwriting discounts and commissions, subject to certain limited exceptions. We will not pay for any expenses

of any demand registration if the request is subsequently withdrawn by the holders of a majority of the shares requested to be included in such a registration statement, subject to limited exceptions.

Anti-Takeover Provisions

We are subject to Section 203 of the Delaware General Corporation Law. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger or consolidation involving us and the "interested stockholder" and the sale of more than 10% of our assets. In general, an "interested stockholder" is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Staggered Board; Removal of Directors

Our restated certificate of incorporation and our amended and restated bylaws, which will be effective upon the closing of this offering, divide our board of directors into three classes with staggered three-year terms. In addition, a director may be removed only for cause and only by the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an annual election of directors. Any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office.

The classification of our board of directors and the limitations on the removal of directors and filling of vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Supermajority Voting

The Delaware General Corporation Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless a corporation's certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our amended and restated bylaws, which will be effective upon the closing of this offering, may be amended or repealed by a majority vote of our board of directors or the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an annual election of directors. In addition, the affirmative vote of the holders of at least 75% of the votes which all our stockholders would be entitled to cast in an election of directors is required to amend, repeal, or adopt any provisions inconsistent with, any of the provisions of our restated certificate of incorporation described in the prior two paragraphs.

Stockholder Action; Special Meeting of Stockholders; Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our restated certificate of incorporation, which will be effective upon the closing of this offering, provides that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of such stockholders and may not be effected by any consent in writing by such stockholders. Our restated certificate of incorporation and our amended and restated bylaws also provide that, except as otherwise required by law, special meetings of our stockholders can only be called by our board of directors. In addition, our amended and restated bylaws, which will be effective upon the closing of this offering, establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of candidates for election to our board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the

meeting by or at the direction of our board of directors, or by a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder's intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions also could discourage a third party from making a tender offer for our common stock, because even if it acquired a majority of our outstanding voting stock, it would be able to take action as a stockholder, such as electing new directors or approving a merger, only at a duly called stockholders meeting and not by written consent.

Authorized But Unissued Shares

The authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval, subject to any limitations imposed by the Nasdaq Listing Rules. These additional shares may be used for a variety of corporate finance transactions, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could make more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Choice of Forum

Upon the closing of this offering, our restated certificate of incorporation will provide that unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (1) any derivative action or proceeding brought on behalf of our company, (2) any action asserting a claim of breach of fiduciary duty owed by any director, officer or other employee or stockholder of our company to us or our stockholders, (3) any action asserting a claim arising pursuant to any provision of the General Corporation Law or as to which the General Corporation Law of the State of Delaware confers jurisdiction on the Court of Chancery or (4) any action asserting a claim governed by the internal affairs doctrine. Our restated certificate of incorporation further provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock will be American Stock Transfer & Trust Company.

Nasdaq Global Market

We have applied to list our common stock on the Nasdaq Global Market under the symbol "CASA."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there was no public market for our common stock. Future sales of substantial amounts of common stock in the public market, or the perception that such sales may occur, could adversely affect the market price of our common stock. Although we have applied to list our common stock on the Nasdaq Global Market, we cannot assure you that there will be an active public market for our common stock.

Based on the 6,743,101 shares of our common stock that were outstanding on October 31, 2017, upon the closing of this offering, we will have outstanding an aggregate of shares of common stock, assuming the issuance of shares of common stock offered in this offering and the conversion of all outstanding shares of our convertible preferred stock into 8,076,394 shares of our common stock upon the closing of this offering. Of these shares, all shares sold in this offering will be freely tradable without restriction or further registration under the Securities Act, except for any shares purchased by our "affiliates," as that term is defined in Rule 144 under the Securities Act, whose sales would be subject to the Rule 144 resale restrictions described below, other than the holding period requirement.

The remaining 14,819,495 shares of common stock outstanding upon the closing of this offering will be "restricted securities," as that term is defined in Rule 144 under the Securities Act. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rules 144 or 701 under the Securities Act, which are summarized below.

As a result of the lock-up agreements described below and the provisions of Rules 144 and 701 under the Securities Act, these restricted securities will be available for sale in the public market as follows:

- On the date of this prospectus
- 90 days after the date of this prospectus
- 180 days after the date of this prospectus

In addition, of the 3,008,998 shares of our common stock that were subject to stock options outstanding as of October 31, 2017, options to purchase 2,262,647 shares of common stock were vested as of October 31, 2017 and, upon exercise, these shares will be eligible for sale subject to the lock-up agreements and securities laws described below.

Lock-Up Agreements

We and each of our directors and executive officers and holders of substantially all of our capital stock and stock options have agreed that, without the prior written consent of Morgan Stanley & Co. LLC, we and they will not, subject to limited exceptions, during the period ending 180 days after the date of this prospectus:

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any other securities so owned convertible into or exercisable or exchangeable for shares of our common stock; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock.

These agreements are subject to certain exceptions, as described in the section of this prospectus entitled "Underwriters."

Upon the expiration of the lock-up period, substantially all of the shares subject to such lock-up restrictions will become eligible for sale, subject to the limitations discussed above.

Rule 144

Affiliate Resales of Restricted Securities

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is an affiliate of ours, or who was an affiliate at any time during the 90 days before a sale, who has beneficially owned shares of our common stock for at least six months would be entitled to sell in "broker's transactions" or certain "riskless principal transactions" or to market makers, a number of shares within any three-month period that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately shares immediately after this offering; or
- the average weekly trading volume in our common stock on the Nasdaq Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Affiliate resales under Rule 144 are also subject to the availability of current public information about us. In addition, if the number of shares being sold under Rule 144 by an affiliate during any three-month period exceeds 5,000 shares or has an aggregate sale price in excess of $50,000, the seller must file a notice on Form 144 with the SEC and the Nasdaq Global Market concurrently with either the placing of a sale order with the broker or the execution directly with a market maker.

Non-Affiliate Resales of Restricted Securities

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is not an affiliate of ours at the time of sale, and has not been an affiliate at any time during the three months preceding a sale, and who has beneficially owned shares of our common stock for at least six months but less than a year, is entitled to sell such shares subject only to the availability of current public information about us. If such person has held our shares for at least one year, such person can resell under Rule 144(b)(1) without regard to any Rule 144 restrictions, including the 90-day public company requirement and the current public information requirement.

Non-affiliate resales are not subject to the manner of sale, volume limitation or notice filing provisions of Rule 144.

Rule 701

In general, under Rule 701, any of an issuer's employees, directors, officers, consultants or advisors who purchases shares from the issuer in connection with a compensatory stock or option plan or other written agreement before the effective date of a registration statement under the Securities Act is entitled to sell such shares 90 days after such effective date in reliance on Rule 144. An affiliate of the issuer can resell shares in reliance on Rule 144 without having to comply with the holding period requirement, and non-affiliates of the issuer can resell shares in reliance on Rule 144 without having to comply with the current public information and holding period requirements.

The SEC has indicated that Rule 701 will apply to typical stock options granted by an issuer before it becomes subject to the reporting requirements of the Exchange Act, along with the shares acquired upon exercise of such options, including exercises after an issuer becomes subject to the reporting requirements of the Exchange Act.

Equity Plans

We intend to file one or more registration statements on Form S-8 under the Securities Act to register all shares of common stock issued or issuable under our 2003 Stock Incentive Plan, 2011 Stock Incentive Plan and 2017 Stock Incentive Plan. We expect to file the registration statement covering shares offered pursuant to our 2011 Stock Incentive Plan and 2017 Stock Incentive Plan shortly after the date of this prospectus, permitting the resale of such shares by non-affiliates in the public market without restriction under the Securities Act and the sale by affiliates in the public market, subject to compliance with the resale provisions of Rule 144.

Registration Rights

Upon the closing of this offering, the holders of 8,076,394 shares of common stock will be entitled to various rights with respect to the registration of these shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares purchased by affiliates. See “Description of Capital Stock—Registration Rights” for additional information. Shares covered by a registration statement will be eligible for sale in the public market upon the expiration or release from the terms of the lock-up agreement.

MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF COMMON STOCK

The following is a discussion of material U.S. federal income and estate tax considerations relating to ownership and disposition of our common stock by a non-U.S. holder. For purposes of this discussion, the term "non-U.S. holder" means a beneficial owner (other than a partnership or other pass-through entity) of our common stock that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States or of any political subdivision of the United States;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if (1) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have authority to control all substantial decisions of the trust or (2) the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

This discussion does not address the tax treatment of partnerships or other entities that are pass-through entities for U.S. federal income tax purposes or persons who hold their common stock through partnerships or other pass-through entities. A partner in a partnership or other pass-through entity that will hold our common stock should consult his, her or its own tax advisor regarding the tax consequences of the ownership and disposition of our common stock through a partnership or other pass-through entity, as applicable.

This discussion is based on current provisions of the Internal Revenue Code of 1986, as amended, or the Code, existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus and all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any change could alter the tax consequences to non-U.S. holders described in this prospectus. There can be no assurance that the Internal Revenue Service, or the IRS, will not challenge one or more of the tax consequences described in this prospectus.

We assume in this discussion that each non-U.S. holder holds shares of our common stock as a capital asset (generally, property held for investment) for U.S. federal income tax purposes. This discussion does not address all aspects of U.S. federal income and estate taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances nor does it address any aspects of U.S. state, local or non-U.S. taxes, the alternative minimum tax, or the Medicare tax on net investment income. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

- financial institutions;
- brokers or dealers in securities;
- tax-exempt organizations;
- pension plans;
- owners that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment or who have elected to mark securities to market;
- insurance companies;
- controlled foreign corporations;
- passive foreign investment companies;
- non-U.S. governments; and
- certain U.S. expatriates.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT, AND IS NOT INTENDED TO BE, LEGAL OR TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE U.S. FEDERAL, STATE, LOCAL AND NON-U.S. INCOME, ESTATE AND OTHER TAX CONSIDERATIONS OF ACQUIRING, HOLDING AND DISPOSING OF OUR COMMON STOCK.

Distributions

If we make distributions in respect of our common stock, those distributions generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles, subject to the tax treatment described in this section. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to the holder's tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below under the heading "Gain on Sale, Exchange or Other Taxable Disposition of Our Common Stock." Any such distributions will also be subject to the discussions below under the headings "Information Reporting and Backup Withholding" and "FATCA."

Dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States, and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements (generally including provision of a valid IRS Form W-8ECI (or applicable successor form) certifying that the dividends are effectively connected with the non-U.S. holder's conduct of a trade or business within the United States). However, such U.S. effectively connected income, net of specified deductions and credits, is taxed in the hands of the non-U.S. holder at the same graduated U.S. federal income tax rates as would apply if such holder were a U.S. person (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is classified as a corporation for U.S. federal income tax purposes may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder's country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or successor form) and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their own tax advisors regarding their entitlement to benefits under a relevant income tax treaty and the specific methods available to them to satisfy these requirements.

A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

Gain on Sale, Exchange or Other Taxable Disposition of Our Common Stock

Subject to the discussions below under the headings "Information Reporting and Backup Withholding" and "FATCA," a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized upon such non-U.S. holder's sale, exchange or other disposition of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States, and, if an applicable income tax treaty so provides, the gain is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States; in these cases, the

non-U.S. holder generally will be taxed on a net income basis at the graduated U.S. federal income tax rates applicable to U.S. persons, and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above under the heading "Distributions" may also apply;

- the non-U.S. holder is a non-resident alien present in the United States for 183 days or more in the taxable year of the disposition and certain other requirements are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence) on the net gain derived from the disposition, which may be offset by certain U.S.-source capital losses of the non-U.S. holder, if any; or
- we are or have been, at any time during the five-year period preceding such disposition (or the non-U.S. holder's holding period, if shorter) a "U.S. real property holding corporation" unless our common stock is regularly traded on an established securities market and the non-U.S. holder held no more than 5% of our outstanding common stock, directly or indirectly, during the shorter of the five-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. Generally, a corporation is a "U.S. real property holding corporation" if the fair market value of its "U.S. real property interests" (as defined in the Code and applicable regulations) equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we believe that we are not currently, and we do not anticipate becoming, a "U.S. real property holding corporation" for U.S. federal income tax purposes. If we are a U.S. real property holding corporation and either our common stock is not regularly traded on an established securities market or a non-U.S. holder holds more than 5% of our outstanding common stock, directly or indirectly, during the applicable testing period, such non-U.S. holder's gain on the disposition of shares of our common stock generally will be taxed in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax generally will not apply.

U.S. Federal Estate Tax

Shares of our common stock that are owned or treated as owned by an individual who is not a citizen or resident of the United States (as specially defined for U.S. federal estate tax purposes) at the time of death are considered U.S. situs assets and will be included in the individual's gross estate for U.S. federal estate tax purposes. Such shares, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax or other treaty provides otherwise.

Information Reporting and Backup Withholding

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our common stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders generally will have to comply with specific certification procedures to establish that the holder is not a U.S. person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock. Generally, a holder will comply with such procedures if it provides a properly executed IRS Form W-8BEN or W-8BEN-E (or other applicable Form W-8), or otherwise meets documentary evidence requirements for establishing that it is a non-U.S. holder, or otherwise establishes an exemption. Dividends paid to non-U.S. holders subject to withholding of U.S. federal income tax, as described above under "Distributions," will generally be exempt from U.S. backup withholding.

Information reporting and backup withholding generally will apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or non-U.S., unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a

non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder's U.S. federal income tax liability, if any, provided that an appropriate claim is timely filed with the IRS.

FATCA

Provisions of the Code commonly known as the Foreign Account Tax Compliance Act, or FATCA, generally impose a 30% withholding tax on dividends on, and gross proceeds from the sale or disposition of, our common stock if paid to a foreign entity unless (1) if the foreign entity is a "foreign financial institution," the foreign entity undertakes certain due diligence, reporting, withholding, and certification obligations, (2) if the foreign entity is not a "foreign financial institution," the foreign entity identifies certain of its U.S. investors, or (iii) the foreign entity is otherwise exempt under FATCA.

Withholding under FATCA generally (1) applies to payments of dividends on our common stock, and (2) will apply to payments of gross proceeds from a sale or other disposition of our common stock made after December 31, 2018. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this section. Under certain circumstances, a non-U.S. holder may be eligible for refunds or credits of the tax. Non-U.S. holders should consult their own tax advisors regarding the possible implications of FATCA on their investment in our common stock.

THE PRECEDING DISCUSSION OF MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT LEGAL OR TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL, STATE, LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGES IN APPLICABLE LAWS.

UNDERWRITERS

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom Morgan Stanley & Co. LLC and Barclays Capital Inc. are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the number of shares indicated below:

Name	Number of Shares
Morgan Stanley & Co. LLC	
Barclays Capital Inc.	
Raymond James & Associates, Inc.	
Stifel, Nicolaus & Company, Incorporated	
Total	

The underwriters and the representatives are collectively referred to as the "underwriters" and the "representatives," respectively. The underwriters are offering the shares of common stock subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' option to purchase additional shares described below. The underwriting agreement also provides that if an underwriter defaults, the purchase commitment of non-defaulting underwriters may be increased or the offering terminated.

The underwriters initially propose to offer part of the shares of common stock directly to the public at the offering price listed on the cover page of this prospectus and part to certain dealers. After the initial offering of the shares of common stock, the offering price and other selling terms may from time to time be varied by the representatives.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to additional shares of common stock at the public offering price listed on the cover page of this prospectus, less underwriting discounts and commissions. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds before expenses. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase up to an additional shares of common stock.

	Per Share	Total	
		No Exercise	Full Exercise
Public offering price	$	$	$
Underwriting discounts and commissions to be paid by us	$	$	$
Proceeds, before expenses	$	$	$

The estimated offering expenses payable by us, exclusive of underwriting discounts and commissions, are approximately $. We have agreed to reimburse the underwriters for expense relating to clearance of this offering with the Financial Industry Regulatory Authority up to $.

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed 5% of the total number of shares of common stock offered by them.

We have applied to list our common stock on the Nasdaq Global Market under the symbol “CASA”.

We and all directors and officers and the holders of substantially all of our outstanding stock and stock options have agreed that, without the prior written consent of Morgan Stanley & Co. LLC on behalf of the underwriters, we and they will not, during the period ending 180 days after the date of this prospectus, which we refer to as the restricted period:

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any other securities so owned convertible into or exercisable or exchangeable for our common stock;
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock; or
- file any registration statement with the Securities and Exchange Commission relating to the offering of any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock

whether any such transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. In addition, we and each such person agrees that, without the prior written consent of Morgan Stanley & Co. LLC on behalf of the underwriters, we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock.

The restrictions described in the immediately preceding paragraph do not apply to certain specified types of transactions, including the following, subject in certain cases to specified limitations:

- the sale of shares in this offering;
- transactions relating to shares of our common stock acquired in open market transactions after the completion of this offering;
- transfers as bona fide gifts;
- transfers to a trust, or other entity formed for estate planning purposes;
- transfers to a corporation, partnership, limited liability company, trust or other business entity that controls, is controlled by or is under common control with the transferor, or distributions to partners, limited liability company members or stockholders of the transferor;
- transfers by will or intestate succession upon death;
- transfers in connection with the “net” or “cashless” exercise or settlement of equity awards;
- transfers in connection with our repurchase of shares of our common stock issued pursuant to an employee benefit plan disclosed in this prospectus or pursuant to the agreements pursuant to which such shares were issued as disclosed in this prospectus;
- the establishment of a trading plan pursuant to Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, for the transfer of shares of our common stock;
- the conversion of outstanding shares of our preferred stock into shares of our common stock;
- transfers pursuant to qualified domestic orders or in connection with divorce settlements; or
- transfers pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction involving a change of control approved by our board of directors.

Morgan Stanley & Co. LLC, in its sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the option. The underwriters can close out a covered short sale by exercising the option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the option. The underwriters may also sell shares in excess of the option, creating a naked short position. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of the common stock above independent market levels or prevent or retard a decline in the market price of the common stock. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of shares of common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses. In addition, affiliates of Barclays Capital Inc. serve as agents, arrangers and lenders under our term loan facility.

In addition, in the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Pricing of the Offering

Prior to this offering, there has been no public market for our common stock. The initial public offering price was determined by negotiations between us and the representatives. Among the factors considered in determining the initial public offering price were the information set forth in this prospectus and otherwise available to the representatives, our future prospects and those of our industry in general, assessment of our

management, conditions of the securities markets at the time of this offering, our sales, earnings and certain other financial and operating information in recent periods, and the price-earnings ratios, price-sales ratios, market prices of securities, and certain financial and operating information of companies engaged in activities similar to ours.

Neither we nor the underwriters can assure investors that an active trading market will develop for our common shares, or that the shares will trade in the public market at or above the initial public offering price.

Selling Restrictions

Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State"), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, no offer of shares may be made to the public in that Relevant Member State other than:

A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;

B. to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the underwriters; or

C. in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares shall require our company or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive and each person who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with each of the underwriters and our company that it is a "qualified investor" within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive.

In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression an "offer of shares to the public" in relation to any shares in any Relevant Member State means the communication in any form and by means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (as amended, including by Directive 2010/73/EU), and includes any relevant implementing measure in the Relevant Member State.

United Kingdom

In the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons") or otherwise in circumstances which have not resulted and will not result in an offer to the public of the shares in the United Kingdom within the meaning of the Financial Services and Markets Act 2000.

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons.

Hong Kong

Shares of our common stock may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to shares of our common stock may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares of our common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder.

Japan

Shares of our common stock have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial and Exchange Law) and each underwriter has agreed that it will not offer or sell any shares of our common stock, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a

resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments an Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares of our common stock may not be circulated or distributed, nor may the shares of our common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where shares of our common stock are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired shares of our common stock under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Wilmer Cutler Pickering Hale and Dorr LLP, Boston, Massachusetts. Wilson Sonsini Goodrich & Rosati, Professional Corporation, Boston, Massachusetts, has acted as counsel for the underwriters in connection with certain legal matters related to this offering.

EXPERTS

The financial statements as of December 31, 2015 and 2016 and for each of the three years in the period ended December 31, 2016 included in this prospectus have been so included in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the Securities and Exchange Commission a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information about us and the common stock offered hereby, we refer you to the registration statement and the exhibits and schedules filed thereto. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement.

You may read and copy the registration statement of which this prospectus is a part at the SEC's public reference room, which is located at 100 F Street, N.E., Room 1580, Washington, DC 20549. You can request copies of the registration statement by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the SEC's public reference room. In addition, the SEC maintains an Internet website, which is located at www.sec.gov, that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. You may access the registration statement of which this prospectus is a part at the SEC's Internet website.

Upon the closing of this offering, we will be subject to the informational and periodic reporting requirements of the Exchange Act. We will fulfill our obligations with respect to such requirements by filing periodic reports and other information with the SEC. We intend to furnish our stockholders with annual reports containing consolidated financial statements certified by an independent registered public accounting firm. We also maintain a website at *www.casa-systems.com*. The information contained on, or which can be accessed through, our website does not constitute a part of this prospectus.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Management
of Casa Systems, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and comprehensive income, of convertible preferred stock and stockholders' equity (deficit) and of cash flows present fairly, in all material respects, the financial position of Casa Systems, Inc. and its subsidiaries as of December 31, 2015 and 2016, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States) and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 8 to the consolidated financial statements, the Company changed the manner in which it records windfall tax benefits as of January 1, 2016.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
March 8, 2017

CASA SYSTEMS, INC.

CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except per share amounts)

	December 31, 2015	December 31, 2016
Assets		
Current assets:		
Cash and cash equivalents	$ 92,496	$ 329,554
Marketable securities	—	14,392
Accounts receivable, net of provision for doubtful accounts of $768 and $690 as of December 31, 2015 and 2016, respectively	90,945	110,234
Inventory	47,501	65,975
Prepaid expenses and other current assets	4,173	7,178
Prepaid income taxes	945	39
Total current assets	236,060	527,372
Property and equipment, net	22,328	25,682
Accounts receivable, net of current portion	9,839	6,629
Deferred tax assets	14,280	21,140
Deferred offering costs	—	1,464
Other assets	590	748
Total assets	$ 283,097	$ 583,035
Liabilities, Convertible Preferred Stock and Stockholders' Equity (Deficit)		
Current liabilities:		
Accounts payable	$ 7,218	$ 21,704
Accrued expenses and other current liabilities	25,354	149,184
Accrued income taxes	4,882	11,823
Deferred revenue	35,353	55,876
Current portion of long-term debt, net of unamortized debt issuance costs	272	2,133
Total current liabilities	73,079	240,720
Accrued income taxes, net of current portion	449	463
Deferred revenue, net of current portion	22,109	18,458
Long-term debt, net of current portion and unamortized debt issuance costs	7,523	297,618
Total liabilities	103,160	557,259
Commitments and contingencies (Note 17)		
Convertible preferred stock (Series A, B and C), $0.001 par value; 6,000 shares authorized as of December 31, 2015 and 2016; 4,038 shares issued and outstanding as of December 31, 2015 and 2016; aggregate liquidation preference of $137,460 as of December 31, 2016; no shares issued or outstanding, pro forma as of December 31, 2016 (unaudited)	97,479	97,479
Stockholders' equity (deficit):		
Common stock, $0.001 par value; 20,000 shares authorized as of December 31, 2015 and 2016; 6,362 and 6,637 shares issued and outstanding as of December 31, 2015 and 2016, respectively	6	7
Additional paid-in capital	14,745	—
Accumulated other comprehensive loss	(214)	(1,739)
Retained earnings (accumulated deficit)	67,921	(69,971)
Total stockholders' equity (deficit)	82,458	(71,703)
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	$ 283,097	$ 583,035

The accompanying notes are an integral part of these consolidated financial statements.

CASA SYSTEMS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME
(Amounts in thousands, except per share amounts)

	Year Ended December 31,		
	2014	2015	2016
Revenue:			
Product	$ 194,358	$ 247,588	$ 279,223
Service	16,920	24,862	36,905
Total revenue	211,278	272,450	316,128
Cost of revenue:			
Product	59,088	74,349	89,340
Service	5,917	5,265	8,477
Total cost of revenue	65,005	79,614	97,817
Gross profit	146,273	192,836	218,311
Operating expenses:			
Research and development	25,481	37,155	49,210
Sales and marketing	21,409	36,157	36,114
General and administrative	10,346	16,453	18,215
Total operating expenses	57,236	89,765	103,539
Income from operations	89,037	103,071	114,772
Other income (expense):			
Interest income	913	955	1,208
Interest expense	(23)	(214)	(902)
Loss on foreign currency, net	(3,173)	(3,020)	(328)
Other income (expense), net	(659)	871	943
Total other income (expense), net	(2,942)	(1,408)	921
Income before provision for income taxes	86,095	101,663	115,693
Provision for income taxes	26,387	33,742	27,025
Net income	59,708	67,921	88,668
Other comprehensive expense—foreign currency translation adjustment	(149)	(1,244)	(1,525)
Comprehensive income	$ 59,559	$ 66,677	$ 87,143

CASA SYSTEMS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (Continued)
(Amounts in thousands, except per share amounts)

	Year Ended December 31,		
	2014	2015	2016
Cash dividends declared per common share or common share equivalent	$ 1.9173	$ —	$ 14.5984
Net income (loss) attributable to common stockholders:			
Basic	$ 23,287	$ 27,302	$ (35,119)
Diluted	$ 23,843	$ 30,402	$ (35,119)
Net income (loss) per share attributable to common stockholders:			
Basic	$ 3.88	$ 4.30	$ (5.34)
Diluted	$ 3.65	$ 3.92	$ (5.34)
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders:			
Basic	5,997	6,348	6,573
Diluted	6,537	7,761	6,573
Pro forma net income per share attributable to common stockholders (unaudited):			
Basic			$
Diluted			$
Weighted-average shares used to compute pro forma net income per share attributable to common stockholders (unaudited):			
Basic			
Diluted			

The accompanying notes are an integral part of these consolidated financial statements.

CASA SYSTEMS, INC.

CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
(Amounts in thousands, except per share amounts)

	Series A, B and C Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount				
Balances at January 1, 2014	4,038	$97,479	5,294	$ 5	$ 8,215	$ 1,179	$ (42,944)	$ (33,545)
Exercise of stock options	—	—	512	—	4,297	—	—	4,297
Exercise of warrants	—	—	529	1	2,368	—	—	2,369
Reclassification of warrant liability	—	—	—	—	3,695	—	—	3,695
Foreign currency translation adjustment, net of tax of $0	—	—	—	—	—	(149)	—	(149)
Cash dividends declared ($1.9173 per share of common stock, $3.8346 per share of convertible preferred stock and $1.9173 per share to holders of stock-based awards)	—	—	—	—	(13,201)	—	(16,764)	(29,965)
Stock-based compensation	—	—	—	—	1,782	—	—	1,782
Income tax benefits related to stock-based compensation plans	—	—	—	—	508	—	—	508
Net income	—	—	—	—	—	—	59,708	59,708
Balances at December 31, 2014	4,038	97,479	6,335	6	7,664	1,030	—	8,700
Exercise of stock options	—	—	27	—	226	—	—	226
Foreign currency translation adjustment, net of tax of $0	—	—	—	—	—	(1,244)	—	(1,244)
Stock-based compensation	—	—	—	—	6,855	—	—	6,855
Net income	—	—	—	—	—	—	67,921	67,921
Balances at December 31, 2015	4,038	97,479	6,362	6	14,745	(214)	67,921	82,458
Exercise of stock options and common stock issued upon vesting of restricted stock units, net of shares withheld for employee taxes	—	—	275	1	277	—	—	278
Foreign currency translation adjustment, net of tax of $0	—	—	—	—	—	(1,525)	—	(1,525)
Cash dividends declared ($14.5984 per share of common stock, $29.1968 per share of convertible preferred stock and $14.5984 per share to holders of stock-based awards)	—	—	—	—	(22,867)	—	(226,560)	(249,427)
Stock-based compensation	—	—	—	—	7,845	—	—	7,845
Net income	—	—	—	—	—	—	88,668	88,668
Balances at December 31, 2016	4,038	$97,479	6,637	$ 7	$ —	$ (1,739)	$ (69,971)	$ (71,703)

The accompanying notes are an integral part of these consolidated financial statements.

CASA SYSTEMS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands)

	Year Ended December 31,		
	2014	2015	2016
Cash flows from operating activities:			
Net income	$ 59,708	$ 67,921	$ 88,668
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	3,604	5,149	6,008
Stock-based compensation	1,991	7,321	8,304
Deferred income taxes	(8,398)	(1,637)	(6,860)
Increase in fair value of warrant liability	1,523	—	—
Excess and obsolete inventory valuation adjustment	264	1,379	1,674
Increase in provision for doubtful accounts	311	454	—
Excess income tax benefits from stock-based compensation plans	(508)	—	—
Changes in operating assets and liabilities:			
Accounts receivable	(46,634)	(9,717)	(16,273)
Inventory	(22,075)	(17,373)	(22,798)
Prepaid expenses and other assets	(2,404)	(875)	(3,235)
Prepaid income taxes	(1,687)	742	900
Accounts payable	(6,621)	2,744	14,453
Accrued expenses and other current liabilities	7,993	7,967	15,759
Accrued income taxes	13,880	(10,842)	6,894
Deferred revenue	59,401	(28,631)	17,286
Net cash provided by operating activities	60,348	24,602	110,780
Cash flows used in investing activities:			
Purchases of property and equipment	(4,030)	(15,503)	(7,419)
Purchases of marketable securities	—	—	(14,392)
Net cash used in investing activities	(4,030)	(15,503)	(21,811)
Cash flows from financing activities:			
Proceeds from issuance of debt, net of issuance costs	—	7,905	292,189
Principal repayments of debt	—	(115)	(282)
Proceeds from exercise of warrants	2,369	—	—
Proceeds from exercise of stock options	4,297	226	594
Payments of dividends and equitable adjustments	(28,869)	(712)	(142,301)
Payments of initial public offering costs	—	—	(517)
Employee taxes paid related to net share settlement of restricted stock units	—	—	(315)
Excess income tax benefits from stock-based awards	508	—	—
Net cash provided by (used in) financing activities	(21,695)	7,304	149,368
Effect of exchange rate changes on cash and cash equivalents	28	(1,062)	(1,279)
Net increase in cash and cash equivalents	34,651	15,341	237,058
Cash and cash equivalents at beginning of year	42,504	77,155	92,496
Cash and cash equivalents at end of year	$ 77,155	$ 92,496	$ 329,554
Supplemental disclosures of cash flow information:			
Cash paid for interest	$ —	$ 117	$ 274
Cash paid for income taxes	$ 22,279	$ 45,182	$ 25,179
Supplemental disclosures of non-cash investing and financing activities:			
Purchases of property and equipment included in accounts payable	$ —	$ 1,140	$ 869
Deferred offering costs included in accounts payable and accrued expenses and other current liabilities	$ —	$ —	$ 947
Unpaid dividends and equitable adjustments included in accrued expenses and other current liabilities	$ 1,096	$ 383	$ 107,509

The accompanying notes are an integral part of these consolidated financial statements.

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

1. Nature of Business and Basis of Presentation

Casa Systems, Inc. (the "Company") was incorporated under the laws of the State of Delaware on February 28, 2003. The Company is a global communications technology company headquartered in Andover, Massachusetts and has wholly owned subsidiaries in China, France, Canada, Ireland, Spain and the Netherlands.

The Company provides a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds. In addition, the Company offers solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom and wireless networks. The Company's innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity, reconfigure and add new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures.

The Company is subject to a number of risks similar to other companies of comparable size and other companies selling and providing services to the communications industry. These risks include, but are not limited to, the level of capital spending by the communications industry, a lengthy sales cycle, dependence on the development of new products and services, unfavorable economic and market conditions, competition from larger and more established companies, limited management resources, dependence on a limited number of contract manufacturers and suppliers, the rapidly changing nature of the technology used by the communications industry and reliance on resellers and sales agents. Failure by the Company to anticipate or to respond adequately to technological developments in its industry, changes in customer or supplier requirements, changes in regulatory requirements or industry standards, or any significant delays in the development or introduction of products could have a material adverse effect on the Company's operating results, financial condition and cash flows.

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") and include the accounts of the Company and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting periods.

Significant estimates and judgments relied upon by management in preparing these consolidated financial statements include revenue recognition, provision for doubtful accounts, reserves for excess and obsolete inventory, valuation of inventory and deferred inventory costs, the expensing and capitalization of software-related research and development costs, amortization and depreciation periods, recoverability of net deferred tax assets, valuations of uncertain tax positions, warranty allowances, the Company's common stock and other equity instruments, and stock-based compensation expense.

Although the Company regularly reassesses the assumptions underlying these estimates, actual results could differ materially from these estimates. Changes in estimates are recorded in the period in which they become known. The Company bases its estimates on historical experience and various other assumptions that it believes to be reasonable under the circumstances existing at the time such estimates are made.

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

Unaudited Pro Forma Information

In the accompanying consolidated statements of operations and comprehensive income, the calculation of the unaudited pro forma basic and diluted net income per share attributable to common stockholders for the year ended December 31, 2016 has been prepared to give effect, upon the closing of a qualified initial public offering, to (i) the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock as if the proposed initial public offering had occurred on January 1, 2016 and (ii) the number of shares offered in the initial public offering whose proceeds are deemed necessary, based on an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to pay the $ amount by which the special cash dividends of $171,425, $87,133 and $ declared by the Company's board of directors on December 21, 2016, May 10, 2017 (unaudited) and , 2017 (unaudited), respectively, exceeded the Company's earnings for the twelve-month period ended September 30, 2017.

The unaudited pro forma net income per share data have been presented in accordance with Securities and Exchange Commission Staff Accounting Bulletin Topic 1B.3 ("SAB Topic 1B.3"). In accordance with SAB Topic 1B.3, dividends declared at or in the twelve-month period preceding an initial public offering are deemed to be in contemplation of the offering with the intention of repayment out of the offering proceeds to the extent that the amount of dividends exceeded the amount of earnings during the twelve-month period ended on the most recent balance sheet date. For the twelve-month period ended September 30, 2017 (unaudited), the Company's net income was $99,488.

Cash Equivalents

Cash equivalents include all highly liquid investments maturing within three months from the date of purchase. As of December 31, 2015 and 2016, the Company's cash equivalents consisted of investments in certificates of deposit and money market mutual funds.

Marketable Securities

Marketable securities with original maturities of greater than three months and remaining maturities of less than one year from the balance sheet date are classified as current assets. Marketable securities with remaining maturities of greater than one year from the balance sheet date are classified as non-current assets.

The Company classifies all of its marketable securities as available-for-sale securities. The Company's marketable securities are measured and reported at fair value. Unrealized gains and losses are reported as a separate component of stockholders' equity (deficit). The cost of securities sold is determined on a specific identification basis, and realized gains and losses are included in other income (expense) within the consolidated statement of operations and comprehensive income. If any adjustment to fair value reflects a decline in the value of the investment, the Company considers available evidence to evaluate the extent to which the decline is "other than temporary" and reduces the investment to fair value through a charge to the consolidated statement of operations and comprehensive income. As of December 31, 2016, the Company's marketable securities consisted of investments in certificates of deposit. The Company did not have any marketable securities outstanding as of December 31, 2015.

Accounts Receivable

Accounts receivable are presented net of a provision for doubtful accounts, which is an estimate of amounts that may not be collectible. Accounts receivable for arrangements with customary payment terms, which are one

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year or less, are recorded at invoiced amounts and do not bear interest. The Company generally does not require collateral, but the Company may, in certain instances based on its credit assessment, require full or partial prepayment prior to shipment.

For certain customers and/or for certain transactions, the Company provides extended payment arrangements to allow the customer to pay for the purchased equipment in monthly, other periodic or lump-sum payments over a period of one to five years. Certain of these arrangements are collateralized by the underlying assets during the term of the arrangement. Payments due beyond 12 months from the balance sheet date are recorded as non-current assets. In addition, amounts recorded as current and non-current accounts receivable for extended payment term arrangements at any balance sheet date have a corresponding amount recorded as deferred revenue because the Company defers the recognition of revenue for all extended payment term arrangements and only recognizes revenue to the extent of the payment amounts that become due from the customer (see—Revenue Recognition—Deferred Revenue).

Although there is no contractual interest rate for customer arrangements with extended payment terms, the Company imputes interest on the accounts receivable related to these arrangements and reduces the arrangement fee that will be recognized as revenue for the amount of the imputed interest, which is recorded as interest income over the payment term using the effective interest method. For the periods presented in the accompanying consolidated financial statements, the impact of imputing interest on revenue and interest income was insignificant.

Accounts receivable as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Current portion of accounts receivable, net:		
Accounts receivable, net	$ 71,155	$ 87,250
Amounts due from related party (see Note 16)	12,367	15,619
Accounts receivable, extended payment arrangements	7,423	7,365
	90,945	110,234
Accounts receivable, net of current portion:		
Accounts receivable, extended payment arrangements	9,839	6,629
	$100,784	$116,863

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The Company performs ongoing credit evaluations of its customers and, if necessary, provides a provision for doubtful accounts and expected losses. When assessing and recording its provision for doubtful accounts, the Company evaluates the age of its accounts receivable, current economic trends, creditworthiness of the customers, customer payment history, and other specific customer and transaction information. The Company writes off accounts receivable against the provision when it determines a balance is uncollectible and no longer actively pursues collection of the receivable. Adjustments to the provision for doubtful accounts are recorded as general and administrative expenses in the consolidated statements of operations and comprehensive income. A summary of changes in the provision for doubtful accounts for the years ended December 31, 2014, 2015 and 2016 is as follows:

	Year Ended December 31,		
	2014	2015	2016
Provision for doubtful accounts at beginning of year	$ 174	$ 485	$ 768
Provisions	311	454	—
Write-offs	—	(171)	(78)
Provision for doubtful accounts at end of year	$ 485	$ 768	$ 690

As of December 31, 2015 and 2016, the Company concluded that all amounts due under extended payment term arrangements were collectible and no reserve for credit losses was recorded. During the years ended December 31, 2014, 2015 and 2016, the Company did not provide a reserve for credit losses and did not write off any uncollectible receivables due under extended payment term arrangements.

Inventories

Inventories are valued at the lower of cost or market value. Cost is computed using the first-in first-out convention. Inventories are composed of hardware and related component parts of finished goods. The Company establishes provisions for excess and obsolete inventories after evaluating historical sales, future demand, market conditions, expected product life cycles, and current inventory levels to reduce such inventories to their estimated net realizable value. Such provisions are made in the normal course of business and charged to cost of revenue in the consolidated statements of operations and comprehensive income.

Deferred inventory costs are included within inventory in the consolidated balance sheets. Deferred inventory costs represent the cost of products that have been delivered to the customer for which revenue associated with the arrangement has been deferred as a result of not meeting all of the required revenue recognition criteria, such as receipt of customer acceptance. Until the revenue recognition criteria are met, the Company retains the right to a return of the underlying inventory. Deferred inventory costs are recognized as cost of revenue in the consolidated statements of operations and comprehensive income when the related revenue is recognized.

Property and Equipment

Property and equipment is stated at historical cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. Leasehold improvements are recorded at cost with any reimbursement from the landlord being accounted for as deferred rent, which is amortized using the straight-line method over the lease term. Costs for trial systems held and used by the Company’s customers pursuant to evaluation agreements are also included within property and equipment. Trial systems held and used by the Company’s customers are depreciated over the estimated useful life of such assets, which is two years.

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Whenever a trial system is sold to a customer and the selling price is recorded as revenue, the related net book value of the trial system sold is removed from property and equipment and recorded as a cost of revenue. Maintenance and repairs expenditures are charged to expense as incurred.

Estimated useful lives of the respective property and equipment assets are as follows:

	Estimated Useful Life
Computers and purchased software	3 years
Leasehold improvements	Shorter of lease term or 7 years
Furniture and fixtures	7 years
Machinery and equipment	3 – 5 years
Building	40 years
Building improvements	5 – 40 years
Trial systems at customers' sites	2 years

Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in income from operations.

Impairment of Long-Lived Assets

The Company evaluates its long-lived assets, which consist primarily of property and equipment, for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends and significant changes or planned changes in the use of the assets. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the asset exceeds the fair value of the asset, less the cost to sell. No events or changes in circumstances existed to require an impairment assessment during the years ended December 31, 2014, 2015 and 2016.

Deferred Offering Costs

The Company capitalizes certain legal, professional accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' equity (deficit) as a reduction of additional paid-in capital generated as a result of the offering. Should the planned equity financing be abandoned, the deferred offering costs will be expensed immediately as a charge to operating expenses in the statement of operations and comprehensive income. As of December 31, 2016, deferred offering costs of $1,464 were recorded in the consolidated balance sheet. The Company did not record any deferred offering costs as of December 31, 2015.

Concentration of Risks

Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents, marketable securities and accounts receivable. Cash and cash equivalents and marketable securities consist of demand deposits, savings accounts, money market mutual funds, and certificates of deposit with financial institutions, which may exceed Federal Deposit Insurance Corporation

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limits. The Company has not experienced any losses related to its cash, cash equivalents and marketable securities and does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

Significant customers are those that represent 10% or more of revenue or accounts receivable as set forth in the following table:

	Revenue Year Ended December 31,			Accounts Receivable, Net December 31,	
	2014	2015	2016	2015	2016
Customer A	41%	14%	23%	*	11%
Customer B	13%	*	*	*	*
Customer C	*	17%	10%	12%	13%
Customer D	*	*	*	17%	*
Customer E	*	*	*	12%	*
Customer F	*	*	*	15%	12%
Customer G	*	*	19%	*	21%

* Less than 10% of total

Customer C is a related party, Liberty Global Affiliates (see Note 16).

Certain of the components and subassemblies included in the Company's products are obtained from a single source or a limited group of suppliers. In addition, the Company primarily relies on two third parties to manufacture its products. Although the Company seeks to reduce dependence on those limited sources of suppliers and manufacturers, the partial or complete loss of certain of these sources could have a material adverse effect on the Company's operating results, financial condition and cash flows and damage its customer relationships.

Product Warranties

Substantially all of the Company's products are covered by a warranty for software and hardware for periods ranging from 90 days to one year. In addition, in conjunction with customers' renewals of maintenance and support contracts, the Company offers an extended warranty for periods typically of one to three years for agreed-upon fees. In the event of a failure of a hardware product or software covered by these warranties, the Company must repair or replace the software or hardware or, if those remedies are insufficient, and at the discretion of the Company, provide a refund. The Company's warranty reserve, which is included in accrued expenses and other current liabilities in the consolidated balance sheets, reflects estimated material, labor and other costs related to potential or actual software and hardware warranty claims for which the Company expects to incur an obligation. The Company's estimates of anticipated rates of warranty claims and the costs associated therewith are primarily based on historical information and future forecasts. The Company periodically assesses the adequacy of the warranty reserve and adjusts the amount as necessary. If the historical data used to calculate the adequacy of the warranty reserve are not indicative of future requirements, additional or reduced warranty reserves may be required.

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A summary of changes in the amount reserved for warranty costs for the years ended December 31, 2014, 2015 and 2016 is as follows:

	Year Ended December 31,		
	2014	2015	2016
Warranty reserve at beginning of year	$ 646	$ 949	$ 993
Provisions	988	1,272	1,862
Charges	(685)	(1,228)	(1,599)
Warranty reserve at end of year	$ 949	$ 993	$ 1,256

Revenue Recognition

The Company generates revenue from sales of its broadband products, along with associated maintenance and support services, and, to a lesser extent, from sales of professional services and extended warranty services. The Company also generates revenue from sales of additional line cards and software-based capacity expansions. Maintenance and support services include telephone support and unspecified software upgrades and updates provided on a when-and-if-available basis.

In the Company's consolidated statements of operations and comprehensive income, revenue from sales of broadband products and capacity expansions is classified as product revenue, and revenue from maintenance and support, professional services and extended warranty services is classified as service revenue.

The Company recognizes revenue from sales when the following revenue recognition criteria are met:

- *Persuasive evidence of an arrangement exists*. Binding contracts and/or customer purchase orders are generally evidence of an arrangement. For professional services, evidence of an arrangement may also include information documenting the scope of work to be performed, and customer acceptance terms, if any.
- *Delivery has occurred*. For broadband products, shipping documents and customer acceptance, if applicable, verify that delivery has occurred. For software-enabled capacity expansions, delivery occurs when the additional bandwidth capacity is made available to the customer. For professional services, delivery occurs as the services are completed.
- *The sales price is fixed or determinable*. The sales price is considered fixed or determinable when the fees have been contractually agreed with the customer and are not deemed to be subject to refund, adjustment or future discounts, and when the payment terms of the transaction do not extend beyond the Company's customary payment terms, which are one year or less.
- *Collectibility is reasonably assured*. The Company assesses the ability to collect from its customers based on a number of factors that generally include information supplied by credit agencies, references and/or analysis of customer accounts and payment history. If collection from a customer is not considered reasonably assured, all revenue related to the customer arrangement is deferred until payment is received and all other revenue recognition criteria have been met.

When customer acceptance of the product is required and is other than perfunctory, revenue for the entire customer arrangement is deferred until the acceptance has been received.

The Company's products have both software and non-software (i.e., hardware) components that function together to deliver the products' essential functionality. In addition, the hardware sold generally cannot be used

apart from the embedded software. As a result, all of the Company's product and service offerings are excluded from the scope of software revenue recognition requirements and instead fall within the scope of Accounting Standards Codification ("ASC") Topic 605, *Revenue Recognition*.

Many of the Company's sales involve multiple-deliverable arrangements that include products and maintenance and support services and, on a limited basis, may also include professional services and extended warranty services. The Company has determined that its products, maintenance and support services, professional services and extended warranty services have standalone value to the customer because each of these deliverables is sold separately by the Company to its customers or, in the case of professional services, is sold separately by other vendors. As a result, the Company treats each of these deliverables as a separate unit of accounting for purposes of allocating the arrangement fee and recognizing the revenue of each unit.

For its multiple-deliverable arrangements, the Company allocates the arrangement fee to each deliverable based on the relative selling prices of each of the deliverables in the arrangement using the selling price hierarchy. In such circumstances, the Company determines the selling price of each deliverable based on vendor-specific objective evidence ("VSOE") of selling price, if it exists; otherwise, third-party evidence ("TPE") of selling price. If neither VSOE nor TPE exists, the Company uses its best estimate of the selling price ("BESP") for the deliverable. The Company limits the amount of the arrangement fee allocated to deliverables to the amount that is not contingent on the future delivery of products or services or future performance obligations and the amount that is not subject to customer-specific return or refund privileges.

To date, the Company has not been able to establish VSOE of selling price of any of its products, maintenance and support services, professional services or extended warranty services because the Company has not established a history of consistently pricing each product or service within a narrow range. In addition, the Company is not able to determine TPE of selling price for its products or services because the Company's various product and service offerings contain a significant level of differentiation and, therefore, comparable pricing of competitors' products and services with similar functionality cannot be obtained. As the Company is unable to establish selling price using VSOE or TPE, the Company uses BESP to allocate the arrangement fee to products, maintenance and support services, professional services and extended warranty services in multiple-deliverable arrangements. The objective of BESP is to determine the price at which the Company would transact a sale if a product or service was sold on a standalone basis. The Company determines BESP of selling price for its products and services by considering multiple factors, including, but not limited to, its historical pricing practices by customer type and geographic-specific market factors.

Revenue from product sales is recognized upon delivery to the customer, or upon the later receipt of customer acceptance of the product when such acceptance is required.

Revenue from maintenance and support services is recognized ratably over the contract period, which is typically one year, but can be as long as three or five years. When customer acceptance of a product is required, the recognition of any associated maintenance and support services revenue commences only upon customer acceptance of the associated product. Revenue from extended warranty services is recognized ratably over the contract period, which is typically one to three years.

Revenue from professional services is recognized as the services are performed. Professional services generally include installation or configuration services that are not deemed to be essential to the functionality of the products. When customer acceptance is required, the recognition of any associated professional services revenue is deferred until the associated product and/or professional service is accepted by the customer.

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Resellers

The Company markets and sell its products through its direct global sales force, supported by sales agents, and through resellers. The Company's resellers receive an order from an end customer prior to placing an order with the Company, and the Company confirms the identification of or is aware of the end customer prior to accepting such order. The Company invoices the reseller an amount that reflects a reseller discount and records revenue based on the amount of the discounted arrangement fee. The Company's resellers do not stock inventory received from the Company.

When the Company transacts with a reseller, its contractual arrangement is with the reseller and not with the end customer. Whether the Company transacts business with and receives the order from a reseller or directly from an end customer, its revenue recognition policy and resulting pattern of revenue recognition for the order are the same.

The Company also uses sales agents that assist in the sales process with certain customers primarily located in the Latin America and Asia-Pacific regions. Sales agents are not resellers. If a sales agent is engaged in the sales process, the Company receives the order directly from and sells the products and services directly to the end customer, and the Company pays a commission to the sales agent, calculated as a percentage of the related customer payment. Sales agent commissions are recorded as expenses when incurred and are classified as sales and marketing expenses in the Company's consolidated statements of operations and comprehensive income.

Deferred Revenue

Amounts billed in excess of revenue recognized are recorded as deferred revenue. Deferred revenue includes customer deposits, amounts billed for maintenance and support services contracts in advance of services being performed, amounts for trade-in right liabilities and amounts related to arrangements that have been deferred as a result of not meeting the required revenue recognition criteria as of the end of the reporting period. Deferred revenue expected to be recognized as revenue more than one year subsequent to the balance sheet date is reported within long-term liabilities in the consolidated balance sheets.

When the payment terms of a customer order extend beyond the Company's customary payment terms, which are one year or less, the Company considers the arrangement to be an extended payment term arrangement and concludes that the sales price is not fixed or determinable for revenue recognition purposes. In these circumstances, the Company defers all revenue of the arrangement and only recognizes revenue to the extent of the payment amounts that become due, provided that all other revenue recognition criteria have been met.

The Company defers recognition of incremental direct costs, such as cost of goods and services, until recognition of the related revenue. Such costs are classified as current assets if the related deferred revenue is classified as current, and such costs are classified as non-current assets if the related deferred revenue is classified as non-current.

Other Revenue Recognition Policies

In limited instances, the Company has offered future rebates to customers based on a fixed or variable percentage of actual sales volumes over specified periods. The future rebates earned based on the customer's purchasing from the Company in one period may be used as credits to be applied by them against accounts receivable due to the Company in later periods. The Company accounts for these future rebates as a reduction of the revenue recorded for the customer's current purchasing activity giving rise to the future rebates. The liability

for these future rebates is recorded as accrued customer incentives (within accrued expenses and other current liabilities) until the credits have been applied by the customer against accounts receivable due to the Company or the credits expire.

When future trade-in rights are granted to customers at the time of sale, the Company defers a portion of the revenue recognized for the sale and accounts for it as a guarantee at fair value until the trade-in right is exercised or the right expires, in accordance with ASC Topic 460, *Guarantees*. Determining the fair value of the trade-in right requires the Company to estimate the probability of the trade-in right being exercised and the future value of the product upon trade-in. The Company assesses and updates these estimates each reporting period, and updates to these estimates may result in either an increase or decrease in the amount of revenue deferred. The amounts of deferred revenue recorded in the consolidated balance sheets as of December 31, 2015 and 2016 included amounts deferred for trade-in rights of $1,743 and $8,477, respectively.

Billings to customers for shipping costs and reimbursement of out-of-pocket expenses, including travel, lodging and meals, are recorded as revenue, and the associated costs incurred by the Company for those items are recorded as cost of revenue.

The Company excludes any taxes assessed by a governmental authority that are directly imposed on a revenue-producing transaction (e.g., sales, use and value added taxes) from its revenue and costs.

Stock-Based Compensation

The Company measures stock options and other stock-based awards granted to employees and directors based on the fair value on the date of the grant and recognizes compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, the Company issues stock options with only service-based vesting conditions and records the expense for these awards using the straight-line method.

For stock-based awards granted to non-employee consultants, compensation expense is recognized over the period during which services are rendered by such non-employee consultants until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of the Company’s common stock and updated assumption inputs in the Black-Scholes option-pricing model.

The Company classifies stock-based compensation expense in its consolidated statements of operations and comprehensive income in the same manner in which the award recipient’s payroll costs are classified or in which the award recipient’s service payments are classified.

The Company recognizes compensation expense for only the portion of awards that are expected to vest. In developing a forfeiture rate estimate, the Company has considered its historical experience to estimate pre-vesting forfeitures for service-based awards. The impact of a forfeiture rate adjustment will be recognized in full in the period of adjustment, and if the actual forfeiture rate is materially different from the Company’s estimate, the Company may be required to record adjustments to stock-based compensation expense in future periods.

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option pricing model. The Company historically has been a private company and lacks company-specific historical and

implied volatility information for its stock. Therefore, it estimates its expected stock volatility based on the historical volatility of publicly traded peer companies and expects to continue to do so until such time as it has adequate historical data regarding the volatility of its own traded stock price. The expected term of the Company's stock options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. The expected term of stock options granted to non-employees is equal to the contractual term of the option award. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that the Company does not have a history of declaring or paying cash dividends, except for the special cash dividends declared in November 2014, June 2016 and December 2016, and in that circumstance the board of directors approved cash dividends to be paid to holders of the Company's stock options, stock appreciation rights ("SARs") and restricted stock units ("RSUs") upon vesting as an equitable adjustment to the holders of such instruments.

The Company has also granted SARs to certain employees, which require the Company to pay in cash upon exercise an amount equal to the product of the excess of the per share fair market value of the Company's common stock on the date of exercise over the exercise price, multiplied by the number of shares of common stock with respect to which the stock appreciation right is exercised. Because these awards may require the Company to settle the awards in cash, they are accounted for as a liability in the Company's consolidated balance sheets. The liability related to these awards, as well as related compensation expense, is recognized over the period during which services are rendered until completed. Changes in the fair value of the SAR liability are estimated using the Black-Scholes option pricing model and are recorded in the consolidated statements of operations and comprehensive income. After vesting is completed, the Company will continue to remeasure the fair market value of the liability until the award is either exercised or canceled, with changes in the fair value of the liability recorded in the consolidated statements of operations and comprehensive income.

Research and Development Costs

The Company expenses research and development costs as incurred. Costs incurred to develop software to be licensed to customers are expensed prior to the establishment of technological feasibility of the software and are capitalized thereafter until commercial release of the software. The Company has not historically capitalized software development costs as the establishment of technological feasibility typically occurs shortly before the commercial release of its software, which is embedded in its products. As such, all software development costs related to software for license to customers are expensed as incurred and included within research and development expense in the accompanying consolidated statements of operations and comprehensive income.

Advertising Costs

Advertising costs are expensed as incurred and are included in selling and marketing expense in the accompanying consolidated statements of operations and comprehensive income. Advertising expenses were $12, $28 and $7 for the years ended December 31, 2014, 2015 and 2016, respectively.

Foreign Currency Translation

For the Company's subsidiary in Ireland, the U.S. dollar is the functional currency. For each of the Company's other foreign subsidiaries, the functional currency is its local currency. Assets and liabilities of these foreign subsidiaries are translated into U.S. dollars using period-end exchange rates, and revenues and expenses are translated into U.S. dollars using average exchange rates in effect during each period. The effects of these foreign currency translation adjustments are included in accumulated other comprehensive income, a separate component of stockholders' equity (deficit).

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Foreign currency transaction losses included in the consolidated statements of operations and comprehensive income as a component of other income (expense) totaled $3,173, $3,020 and $328 for the years ended December 31, 2014, 2015 and 2016, respectively.

Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the price that would be received for an asset or the exit price that would be paid to transfer a liability in the principal or most advantageous market in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

Level 1— Quoted prices in active markets for identical assets and liabilities.

Level 2— Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities at the measurement date; quoted prices in markets that are not active for identical or similar assets and liabilities; or other inputs that are observable or can be corroborated by observable market data.

Level 3— Unobservable inputs that involve management judgment and are supported by little or no market activity, including pricing models, discounted cash flow methodologies and similar techniques.

The categorization of a financial instrument within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement.

The Company's cash equivalents, marketable securities, SARs and warrant liability are carried at fair value, determined according to the fair value hierarchy described above (see Note 6). The fair values of accounts receivable, accounts payable and accrued expenses and other current liabilities approximate their fair values due to the short-term nature of these assets and liabilities, with the exception of amounts recorded by the Company as "accounts receivable, non-current," which represent amounts billed to customers for which payment has not yet become due and for which an offsetting amount of deferred revenue has been recorded. The carrying values of the Company's debt obligations (see Note 9) as of December 31, 2015 and 2016 approximated their fair values because the debt bears interest at rates the Company would be required to pay on the issuance of debt with similar terms, based on an analysis of recent market conditions and other Company-specific factors.

Income Taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial statement and tax basis of assets and liabilities, as measured by enacted tax rates anticipated to be in effect when these differences reverse. This method also requires the recognition of future tax benefits to the extent that realization of such benefits is more likely than not. Deferred tax expense or benefit is the result of changes in the deferred tax assets and liabilities. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes, based upon the weight of available evidence, that it is more likely than not that all or a portion of the deferred tax assets will not be realized, a

valuation allowance is established through a charge to income tax expense. Potential for recovery of deferred tax assets is evaluated by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

The Company records a liability for potential payments of taxes to various tax authorities related to uncertain tax positions and other tax matters. The recorded liability is based on a determination of whether and how much of a tax benefit taken by the Company in its tax filings or positions is "more likely than not" to be realized. The amount of the benefit that may be recognized in the financial statements is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. To the extent that the assessment of such tax positions changes, the change in estimate is recorded in the period in which the determination is made. The Company establishes a liability, which is included in accrued income taxes in the consolidated balance sheets, for tax-related uncertainties based on estimates of whether, and the extent to which, additional taxes will be due. These liabilities are established when the Company believes that certain positions might be challenged despite the Company's belief that the tax return positions are fully supportable. The recorded liability is adjusted in light of changing facts and circumstances. The provision for income taxes includes the impact of the recorded liability and changes thereto.

The Company recognizes interest and penalties related to uncertain tax positions within other income (expense) in the accompanying consolidated statements of operations and comprehensive income. Accrued interest and penalties are included in accrued income taxes in the consolidated balance sheets.

Comprehensive Income

Comprehensive income includes net income as well as other changes in stockholders' equity (deficit) that result from transactions and economic events other than those with stockholders. Comprehensive income for the periods presented consists of net income and the change in the cumulative foreign currency translation adjustment.

Net Income (Loss) per Share

The Company follows the two-class method when computing net income (loss) per share as the Company has issued shares that meet the definition of participating securities. The two-class method determines net income (loss) per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income available to common stockholders for the period to be allocated between common and participating securities based upon their respective rights to receive dividends as if all income for the period had been distributed.

Basic net income (loss) per share attributable to common stockholders is computed by dividing the net income (loss) attributable to common stockholders by the weighted-average number of shares of common stock outstanding for the period. Diluted net income (loss) attributable to common stockholders is computed by adjusting net income (loss) attributable to common stockholders to reallocate undistributed earnings based on the potential impact of dilutive securities. Diluted net income (loss) per share attributable to common stockholders is computed by dividing the diluted net income (loss) attributable to common stockholders by the weighted-average number of shares of common stock outstanding for the period, including potential dilutive common shares. For purpose of this calculation, outstanding stock-based awards, warrants to purchase common stock and convertible preferred stock are considered potential dilutive common shares.

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Impact of Recently Adopted Accounting Standards

In March 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-09, *Improvements to Employee Share-Based Payment Accounting* ("ASU 2016-09"), which simplifies the accounting for share-based payments. The amendments of the updated standard include, among other things, the requirement to recognize excess tax benefits (or deficiencies) through earnings instead of additional paid-in capital, changes to the classification of excess tax benefits on the statement of cash flows, and the election of a policy to either estimate forfeitures when determining periodic expense or recognize actual forfeitures when they occur. The standard is effective for annual periods beginning after December 15, 2016.

The Company elected to early adopt ASU 2016-09 as of January 1, 2016. The primary impacts of the adoption were (i) the recognition, on a prospective basis, of excess tax benefits from equity transactions as a reduction of the provision for income taxes rather than as an increase to additional paid-in capital and (ii) excluding, on a prospective basis, from the calculation of diluted net income (loss) per share attributable to common stockholders the effect of the excess tax benefit when applying the treasury stock method to determine the dilutive effect of outstanding stock-based awards. If the Company had not adopted the standard as of January, 1, 2016, it would have reported a higher provision for income taxes for the year ended December 31, 2016 of $1,458 for the excess tax benefit of restricted stock vesting and of $8,397 for the equitable adjustment payments. Similarly, if the Company had not adopted the standard as of January 1, 2016, it would have reported higher net cash provided by operating activities of $9,855 and lower net cash used in financing activities of $9,855 for the year ended December 31, 2016. The Company elected to maintain its existing policy to estimate forfeitures when determining periodic expense. The adoption of the other provisions of ASU 2016-09 had an insignificant impact on the Company's consolidated financial statements.

Impact of Recently Issued Accounting Standards

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)* ("ASU 2014-09"), which supersedes existing revenue recognition guidance under GAAP. The core principle of this standard is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which delays the effective date of ASU 2014-09 such that the standard is effective for annual periods beginning after December 15, 2017 and for interim periods within those fiscal years. Early adoption of the standard is permitted for annual periods beginning after December 15, 2016. This standard can be adopted either retrospectively to each prior reporting period presented or as a cumulative effect adjustment as of the date of adoption. In March 2016, the FASB issued ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations* ("ASU 2016-08"), which further clarifies the implementation guidance on principal versus agent considerations in ASU 2014-09. In April 2016, the FASB issued ASU No. 2016-10, *Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing*, clarifying the implementation guidance on identifying performance obligations and licensing. In May 2016, the FASB issued ASU No. 2016-12, *Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients* ("ASU 2016-12"), which clarifies the objective of the collectibility criterion, presentation of taxes collected from customers, non-cash consideration, contract modifications at transition, completed contracts at transition and how guidance in ASU 2014-09 is retrospectively applied. ASU 2016-08, ASU 2016-10 and ASU 2016-12 have the same effective dates and transition requirements as ASU 2014-09. The Company is currently assessing the potential impact that the adoption of ASU 2014-09, ASU 2016-08, ASU 2016-10 and ASU 2016-12 will have on its consolidated financial statements. Based on its assessment to date, the Company does expect that the adoption of this new accounting standard will impact the

timing and amount of assets, liabilities, revenue and/or expenses recorded and the financial statement disclosures related to the Company's revenue from contracts with its customers. For example, the treatment of extended payment terms, contingent revenue elements, commissions and costs to obtain customer contracts may change under the new accounting standard. The Company is continuing to assess the impact of this new accounting standard and the expected adoption method. This assessment is subject to change, and the Company may identify other impacts on its consolidated financial statements.

In July 2015, the FASB issued ASU 2015-11, *Simplifying the Measurement of Inventory*. Under ASU 2015-11, subsequent measurement of inventory is based on the lower of cost or net realizable value. Net realizable value is estimated selling price in the ordinary course of business, less the estimated cost of completion and disposal. This update does not apply to inventory that is measured using last-in, first-out or the retail inventory method. The new guidance is effective for fiscal years beginning after December 15, 2016. Early application is permitted. The Company will adopt ASU 2015-11 during the first quarter of 2017, and adoption is not expected to have a material impact on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases*, which will require lessees to recognize most leases on their balance sheets as a right-of-use asset with a corresponding lease liability, and lessors to recognize a net lease investment. Additional qualitative and quantitative disclosures will also be required. The new guidance is effective for annual reporting periods beginning after December 15, 2018 and for interim periods within those fiscal years. Early application is permitted. The Company is currently assessing the potential impact that the adoption of ASU 2016-02 will have on its consolidated financial statements.

In June 2016, the FASB issued ASU 2016-13, *Measurement of Credit Losses on Financial Instruments*. This guidance requires that financial assets measured at amortized cost be presented at the net amount expected to be collected. The measurement of expected credit losses is based on historical experience, current conditions and reasonable and supportable forecasts that affect the collectibility. This guidance is effective for annual reporting periods beginning after December 15, 2019 and for interim periods within those fiscal years. The Company is currently assessing the potential impact that the adoption of ASU 2016-13 will have on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"), to address diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The standard is effective for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The Company is currently assessing the potential impact that the adoption of ASU 2016-15 will have on its consolidated financial statements.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfer of Assets Other than Inventory* ("ASU 2016-16"), which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. The standard is effective for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The Company is currently assessing the potential impact that the adoption of ASU 2016-16 will have on its consolidated financial statements.

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3. Inventory

Inventory as of December 31, 2015 and 2016 consisted of the following:

	December 31, 2015	December 31, 2016
Raw materials	$ 4,267	$ 5,037
Work in process	361	103
Finished goods:		
Manufactured finished goods	40,052	60,866
Deferred inventory costs	5,680	4,488
	50,360	70,494
Valuation adjustment for excess and obsolete inventory	(2,859)	(4,519)
	$47,501	$65,975

4. Property and Equipment

Property and equipment as of December 31, 2015 and 2016 consisted of the following:

	December 31, 2015	December 31, 2016
Computers and purchased software	$ 6,570	$ 9,246
Leasehold improvements	905	1,044
Furniture and fixtures	1,416	1,516
Machinery and equipment	8,068	11,494
Land	3,091	3,091
Building	4,765	4,765
Building improvements	3,152	4,724
Trial systems at customers' sites	6,028	6,581
	33,995	42,461
Less: Accumulated depreciation and amortization	(11,667)	(16,779)
	$ 22,328	$ 25,682

During the years ended December 31, 2014, 2015 and 2016, the Company transferred trial systems from inventory into property and equipment with a value of $1,229, $1,545 and $706, respectively, net of transfers of trial systems to cost of revenue. In addition, the Company transferred $1,357, $806 and $1,082 of equipment from inventory into property and equipment during the years ended December 31, 2014, 2015 and 2016, respectively.

Total depreciation and amortization expense was $3,604, $5,149 and $6,008 for the years ended December 31, 2014, 2015 and 2016, respectively.

In March 2015, the Company purchased the land and building of its U.S. corporate offices for $8,325. As a result of the purchase, the Company recorded closing costs of $57 and reclassified $1,887 of leasehold improvements net of accumulated depreciation, $238 of leasehold improvement receivable and $1,098 of deferred rent liability to land, building and building improvements.

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5. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Accrued compensation and related taxes	$17,346	$ 18,475
Accrued warranty (see Note 2)	993	1,256
Dividends and equitable adjustments payable (see Note 10)	383	107,509
Accrued customer incentives (see Note 2)	—	15,449
Other accrued expenses	6,632	6,495
	$25,354	$149,184

6. Fair Value Measurements

The Company's cash equivalents include certificates of deposit and money market mutual funds, which are valued using Level 1 or Level 2 inputs in the fair value hierarchy. The Company's marketable securities consist of certificates of deposit, which are valued using Level 2 inputs in the fair value hierarchy. The Company's foreign currency contracts are valued using Level 2 inputs in the fair value hierarchy. The Company's warrant liabilities and SARs are valued using as Level 3 inputs in the fair value hierarchy based on management's judgment and the assumptions set forth in Notes 12 and 13 as there is no market activity to derive an estimate of their fair value. Changes in the fair value of warrant liabilities and SARs are recorded in other income (expense) and operating expenses, respectively, in the consolidated statements of operations and comprehensive income.

The following tables present information about the fair value of the Company's financial assets and liabilities as of December 31, 2015 and 2016 and indicate the level of the fair value hierarchy utilized to determine such fair values:

	Fair Value Measurements as of December 31, 2015 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Certificates of deposit	$ —	$ 342	$ —	$ 342
Money market mutual funds	45,065	—	—	45,065
	$ 45,065	$ 342	$ —	$ 45,407
Liabilities:				
SARs	$ —	$ —	$ 737	$ 737
	$ —	$ —	$ 737	$ 737

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	Fair Value Measurements as of December 31, 2016 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Certificates of deposit	$ —	$ 17,558	$ —	$ 17,558
Money market mutual funds	321,088	—	—	321,088
Foreign currency contracts	—	60	—	60
	$ 321,088	$ 17,618	$ —	$ 338,706
Liabilities:				
SARs	$ —	$ —	$ 1,195	$ 1,195
Foreign currency contracts	—	56	—	56
	$ —	$ 56	$ 1,195	$ 1,251

During the years ended December 31, 2014, 2015 and 2016, there were no transfers between Level 1, Level 2 and Level 3.

The liability for SARs in the table above consists of the fair value of the SARs granted to the Company's employees. The fair values of the SARs is based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. The Company's valuation of these SARs utilized the Black-Scholes option-pricing model, which incorporates assumptions and estimates to determine their fair values (see Note 13). The Company assesses these assumptions and estimates on a quarterly basis as additional information impacting the assumptions is obtained. Changes in the fair value of the SARs liability are recognized as stock-based compensation expense in the consolidated statements of operations and comprehensive income.

Until March 31, 2014, the Company had classified warrants for the purchase of shares of its common stock as a liability in its consolidated balance sheets due to the anti-dilution provisions in those warrants. The warrants were initially recorded at fair value on date of issuance and were subsequently remeasured to fair value at each balance sheet date. The Company continued to adjust the liability for changes in fair value until the warrants were exercised on March 31, 2014. The Company's valuation of the warrants utilized the Black-Scholes option-pricing model, which incorporates assumptions and estimates, to value these warrants (see Note 12). The Company assessed these assumptions and estimates on a quarterly basis as additional information impacting the assumptions was obtained. Changes in the fair value of the warrant liability were recognized as other income (expense) in the consolidated statements of operations and comprehensive income.

The following table provides a summary of changes in the fair values of the Company's SARs liability and warrant liability, for which fair value is determined by Level 3 inputs:

	SARs Liability			Warrant Liability
	Year Ended December 31,			Year Ended December 31,
	2014	2015	2016	2014
Fair value at beginning of the year	$ 62	$ 271	$ 737	$ 2,172
Change in fair value	209	466	458	1,523
Exercises	—	—	—	(3,695)
Fair value at end of year	$ 271	$ 737	$ 1,195	$ —

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The Company's cash and cash equivalents as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Cash	$47,089	$ 5,300
Cash equivalents:		
Certificates of deposit	342	3,166
Money market mutual funds	45,065	321,088
Total cash equivalents	45,407	324,254
Total cash and cash equivalents	$92,496	$329,554

The Company's marketable securities as of December 31, 2016 consisted of certificates of deposit of $14,392.

7. Derivative Instruments

The Company has certain international customers that are billed in foreign currencies. To mitigate the volatility related to fluctuations in the foreign exchange rates for accounts receivable denominated in foreign currencies, the Company enters into foreign currency forward contracts. As of December 31, 2016, the Company had foreign currency forward contracts outstanding with notional amounts totaling 11,171 euros maturing in 2017. The Company had no outstanding derivative instruments as of December 31, 2015.

The Company's foreign currency forward contracts economically hedge certain risk but are not designated as hedges for financial reporting purposes, and accordingly, all changes in the fair value of these derivative instruments are recorded as unrealized foreign currency transaction gains or losses and are included in the consolidated statements of operations and comprehensive income as a component of other income (expense). The Company records all derivative instruments in the consolidated balance sheet at their fair values. As of December 31, 2016, the Company recorded an asset of $60 and a liability of $56 related to outstanding foreign currency forward contracts, which were included in prepaid expenses and other current assets and in accrued expenses and other current liabilities, respectively, in the consolidated balance sheet.

8. Income Taxes

Income before the provision for income taxes for the years ended December 31, 2014, 2015 and 2016 consisted of the following:

	Year Ended December 31,		
	2014	2015	2016
United States	$ 82,237	$ 99,972	$ 106,386
Foreign	3,858	1,691	9,307
	$ 86,095	$ 101,663	$ 115,693

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The provision for income taxes for the years ended December 31, 2014, 2015 and 2016 consisted of the following:

	Year Ended December 31,		
	2014	2015	2016
Current income tax provision:			
Federal	$30,556	$34,124	$30,876
State	3,644	924	1,775
Foreign	585	331	1,234
Total current income tax provision	34,785	35,379	33,885
Deferred income tax provision (benefit):			
Federal	(6,556)	(2,260)	(5,802)
State	(1,081)	346	(979)
Foreign	(761)	277	(79)
Total deferred income tax provision (benefit)	(8,398)	(1,637)	(6,860)
Total income tax provision	$26,387	$33,742	$27,025

A reconciliation of the U.S. federal statutory rate to the Company's effective income tax rate for the years ended December 31, 2014, 2015 and 2016 is as follows:

	Year Ended December 31,		
	2014	2015	2016
Federal statutory income tax rate	35.0%	35.0%	35.0%
State taxes, net of federal tax benefit	1.9	0.7	1.2
Research and development tax credits	(1.1)	(1.6)	(2.1)
Permanent differences	(0.2)	1.6	1.1
Domestic manufacturing deduction	(3.3)	(3.2)	(2.0)
Foreign tax rate differential	(1.2)	0.6	(2.0)
Equitable adjustment payments	—	—	(7.0)
Excess tax benefit from stock-based transactions	—	—	(1.2)
Uncertain tax positions	(0.4)	—	—
Other, net	(0.1)	0.1	0.4
Effective income tax rate	30.6%	33.2%	23.4%

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The income tax effect of each type of temporary difference and carryforward as of December 31, 2015 and 2016 was as follows:

	December 31, 2015	December 31, 2016
Deferred tax assets:		
Nonqualified stock options	$ 2,846	$ 3,183
Tax credit carryforwards	1,057	1,099
Inventory valuation	1,090	1,750
Accrued liabilities and reserves	3,859	5,690
Deferred revenue	7,367	12,805
Other	525	515
Total deferred tax assets	16,744	25,042
Deferred tax liabilities:		
Depreciation and amortization	(1,626)	(2,328)
Deferred costs	(589)	(804)
Nonqualified stock options	(86)	—
Accrued liabilities and reserves	—	(647)
Deferred revenue	(156)	(116)
Other	(7)	(7)
Total deferred tax liabilities	(2,464)	(3,902)
Net deferred tax assets	$14,280	$21,140

The Company has concluded that these net tax assets will be recovered based upon its expectation that current and future earnings will provide sufficient taxable income to realize the recorded net tax assets. However, the realization of the Company's net deferred tax assets cannot be assured, and to the extent that future taxable income against which these tax assets may be applied is not sufficient, some or all of the Company's recorded net deferred tax assets would not be realizable. The Company is required to compute income tax expense in each jurisdiction in which it operates. This process requires the Company to project its current tax liability and estimate its deferred tax assets and liabilities, including tax credit carryforwards. In assessing the need for a valuation allowance against its net deferred tax assets, the Company considers its recent operating results, future taxable income projections and feasible tax planning strategies.

As of December 31, 2016, the Company had state research and development tax credits of $1,691 that will begin to expire in 2029 through 2031. Management believes that it is more likely than not that the research and development tax benefit will be realized and thus has not provided a valuation allowance relating to these tax credit carryforwards.

The Company's intent is to indefinitely reinvest the total amount of the unremitted earnings of each of its foreign subsidiaries to support business growth in international regions. As such, the Company has not provided for U.S. taxes on the unremitted earnings of its international subsidiaries, which totaled approximately $27,850 as of December 31, 2016. It is not practicable to estimate the amount of deferred tax liability related to the unremitted earnings of these foreign subsidiaries.

Interest and penalties related to uncertain tax positions are recorded in the consolidated statements of operations and comprehensive income within other income (expense) and totaled $24, $20 and $14 for the years

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ended December 31, 2014, 2015 and 2016, respectively. The liability recorded for potential penalties and interest was $131 and $145 as of December 31, 2015 and 2016, respectively. The Company had a total recorded liability of $449 and $463 related to uncertain tax positions, inclusive of penalties and interest, as of December 31, 2015 and 2016, respectively, which is included in accrued income taxes, net of current portion in the consolidated balance sheets.

The aggregate changes in the balance of gross unrecognized tax benefits, which excludes interest and penalties, for the years ended December 31, 2014, 2015 and 2016 were as follows:

Balance at January 1, 2014	$ 532
Settlement/decreases related to tax positions taken during prior years	(336)
Increases related to tax positions taken during prior years	122
Increases related to tax positions taken during the current year	—
Balance at December 31, 2014	318
Settlement/decreases related to tax positions taken during prior years	—
Increases related to tax positions taken during prior years	—
Increases related to tax positions taken during the current year	—
Balance at December 31, 2015	318
Settlement/decreases related to tax positions taken during prior years	—
Increases related to tax positions taken during prior years	—
Increases related to tax positions taken during the current year	—
Balance at December 31, 2016	$ 318

The Company and its subsidiaries file income tax returns in the U.S. federal jurisdiction as well as various states and foreign jurisdictions. As of December 31, 2016, the tax years 2013 through 2016 remained open to examination in the U.S. federal jurisdiction and the tax years 2012 through 2016 remained open to examination in the Massachusetts state and China federal jurisdictions. If any issues addressed in the Company's tax audits are resolved in a manner not consistent with management's expectations, the Company would be required to adjust its provision for income tax in the period such resolution occurs. Although timing of the resolution and/or closure of audits is highly uncertain, the Company does not believe it is reasonably possible that its unrecognized tax benefits will materially change in the next 12 months.

The Company recorded stock-based compensation expense of $7,321 and $8,304 in the years ended December 31, 2015 and 2016, respectively. Accounting for the tax effects of certain stock-based awards requires that the Company establish a deferred tax asset as the compensation expense is recognized for financial reporting purposes prior to recognizing the related income tax deduction upon exercise of the awards.

Upon the settlement of certain stock-based awards, such as exercise, vesting, forfeiture or cancellation, the actual tax deduction is compared with the cumulative stock-based compensation expense and any excess tax deduction related to such awards is considered a windfall tax benefit. Windfall tax benefits are tracked within a windfall tax benefit pool to offset any future tax deduction shortfalls. Prior to the Company's adoption of ASU 2016-09 as of January 1, 2016 (see Note 2), windfall tax benefits were recorded as increases to additional paid-in capital in the period in which the tax deduction reduced income taxes. During the year ended December 31, 2014, the Company recorded a net windfall tax benefit of $508 as an increase to additional paid-in capital.

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9. Debt

The aggregate principal amount of debt outstanding as of December 31, 2015 and 2016 consisted of the following:

	December 31, 2015	December 31, 2016
Term loans	$ —	$300,000
Mortgage loan	7,835	7,553
Total principal amount of debt outstanding	$7,835	$307,553

Current and non-current debt obligations reflected in the consolidated balance sheets as of December 31, 2015 and 2016 consisted of the following:

	December 31, 2015	December 31, 2016
Current liabilities:		
Term loans	$ —	$ 3,000
Mortgage loan	282	292
Current portion of principal payment obligations	282	3,292
Unamortized debt issuance costs, current portion	(10)	(1,159)
Current portion of long-term debt, net of unamortized debt issuance costs	$ 272	$ 2,133
Non-current liabilities:		
Term loans	$ —	$297,000
Mortgage loan	7,553	7,261
Non-current portion of principal payment obligations	7,553	304,261
Unamortized debt issuance costs, non-current portion	(30)	(6,643)
Long-term debt, net of current portion and unamortized debt issuance costs	$ 7,523	$297,618

Revolving Credit Agreement

On April 11, 2014, the Company entered into a revolving credit agreement (the "Revolver") with Bank of America that, as of December 31, 2015, provided for borrowings of up to $10,000, subject to certain limitations, that accrued interest, at the Company's election, at either (i) the bank's prime rate or (ii) LIBOR plus two percentage points and that was due to expire on April 11, 2017. Interest on amounts borrowed under the Revolver was due quarterly in arrears, and, as of December 31, 2015, the Company was required to pay a fee of 0.25% per year, payable quarterly in arrears, on the unused amount of the Revolver.

On July 1, 2016, the Company amended the Revolver to increase the amount of available borrowings, extend the maturity date and decrease the fee for the unused amount of the Revolver. The amended Revolver was to expire on June 30, 2019 and provided for borrowings of up to $25,000, subject to certain limitations, that accrue interest, at the Company's election, at either (i) the bank's prime rate or (ii) LIBOR plus two percentage points. Interest on amounts borrowed under the Revolver was due quarterly in arrears, and the Company is required to pay a fee of 0.20% per year, payable quarterly in arrears, on the unused amount of the Revolver.

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As of December 31, 2015, the Company did not have any outstanding borrowings under the Revolver but used $1,000 under the Revolver as collateral for a stand-by letter of credit to guarantee the Company's contractual performance with a customer. For the years ended December 31, 2015 and 2016, interest expense related to the fee for the unused amount of the Revolver totaled $25 and $22, respectively. For the year ended December 31, 2014, no interest expense was recorded and no fees were due for the unused amount of the Revolver.

Borrowings under the Revolver were secured by substantially all of the Company's assets, excluding its intellectual property, as defined, and its investments in foreign subsidiaries. Under the Revolver, the Company was subject to various affirmative, negative and financial covenants, including a funded debt to consolidated EBITDA ratio and a basic fixed charge coverage ratio. The Company was in compliance with all covenants of the Revolver as of December 31, 2014 and 2015.

The Revolver was terminated by the Company on December 20, 2016. The Company did not have any outstanding borrowings under the Revolver at the time of termination.

Term Loan and Revolving Credit Facilities

On December 20, 2016, the Company entered into a credit agreement with JPMorgan Chase Bank, N.A., as administrative agent, various lenders and JPMorgan Chase Bank, N.A. and Barclays Bank PLC providing for (i) a term loan facility of $300,000 and (ii) a revolving credit facility of up to $25,000 in revolving credit loans and letters of credit.

As of December 31, 2016, $300,000 in principal amount was outstanding under the term loan facility (the "Term Loans") and the Company did not have any outstanding borrowings under the revolving credit facility; however, the Company had used $1,000 under the revolving credit facility for a stand-by letter of credit that serves as collateral for a stand-by letter of credit issued by Bank of America to one of the Company's customers pursuant to a contractual performance guarantee. In addition, the Company may, subject to certain conditions, including the consent of the administrative agent and the institutions providing such increases, increase the facilities by an unlimited amount so long as the Company is in compliance with specified leverage ratios, or otherwise by up to $70,000.

Borrowings under the facilities bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at the Company's option, a base rate (defined as the highest of (x) the JPMorgan Chase, N.A. prime rate, (y) the federal funds effective rate, plus one half percent (0.50%) per annum and (z) a one-month Eurodollar rate plus 1.00% per annum) plus an applicable margin. The applicable margin for borrowings under the term loan facility is 4.00% per annum for Eurodollar rate loans (subject to a 1.00% interest rate floor) and 3.00% per annum for base rate loans. The applicable margin for borrowings under the revolving credit facility is 2.00% per annum for Eurodollar rate loans and 1.00% per annum for base rate loans, subject to reduction based on various factors, including the Company's completion of an initial public offering and its maintaining of specified net leverage ratios. The interest rates payable under the facilities are subject to an increase of 2.00% per annum during the continuance of any payment default.

For Eurodollar rate loans, the Company may select interest periods of one, two, three or six months or, with the consent of all relevant affected lenders, twelve months. Interest will be payable at the end of the selected interest period, but no less frequently than every three months within the selected interest period. Interest on any base rate loan is not set for any specified period and payable quarterly. The Company has the right to convert Eurodollar rate loans into base rate loans and the right to convert base rate loans into Eurodollar rate loans at its

option, subject, in the case of Eurodollar rate loans, to prepayment penalties if the conversion is effected prior to the end of the applicable interest period. As of December 31, 2016, the interest rate on the Term Loans was 5.00% per annum, which was based on a one-month Eurodollar rate at the applicable floor of 1.00% per annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans.

Upon entering into the term loan facility, the Company incurred debt issuance costs of $7,811, which were initially recorded as a reduction of the debt liability and are amortized to interest expense using the effective interest method from the issuance date of the Term Loan until the maturity date. No principal payments were made under the term loan facility during the year ended December 31, 2016. Interest expense, including the amortization of debt issuance costs, totaled $538 for the year ended December 31, 2016.

The revolving credit facility also requires payment of quarterly commitment fees at a rate of 0.25% per annum on the difference between committed amounts and amounts actually borrowed under the facility and customary letter of credit fees. For the year ended December 31, 2016, interest expense related to the fee for the unused amount of the revolving credit facility totaled $2.

The Term Loans mature on December 20, 2023, and the revolving credit facility matures on December 20, 2021. The Term Loans are subject to amortization in equal quarterly installments, commencing on March 31, 2017, of principal in an annual aggregate amount equal to 1.0% of the original principal amount of the Term Loans of $300,000, with the remaining outstanding balance payable at the date of maturity.

Voluntary prepayments of principal amounts outstanding under the term loan facility are permitted at any time; however, if a prepayment of principal is made with respect to a Eurodollar loan on a date other than the last day of the applicable interest period, the Company is required to compensate the lenders for any funding losses and expenses incurred as a result of the prepayment. Prior to the revolving credit facility maturity date, funds borrowed under the revolving credit facility may be borrowed, repaid and reborrowed, without premium or penalty.

In addition, the Company is required to make mandatory prepayments under the facilities with respect to (i) 100% of the net cash proceeds from certain asset dispositions (including casualty and condemnation events) by the Company or certain of its subsidiaries, subject to certain exceptions and reinvestment provisions, (ii) 100% of the net cash proceeds from the issuance or incurrence of any additional debt by the Company or certain of its subsidiaries, subject to certain exceptions, and (iii) 50% of the Company’s excess cash flow, as defined in the credit agreement, subject to reduction upon its achievement of specified performance targets.

The facilities are secured by, among other things, a first priority security interest, subject to permitted liens, in substantially all of the Company’s assets and all of the assets of certain of its subsidiaries and a pledge of certain of the stock of certain of its subsidiaries, in each case subject to specified exceptions. The facilities contain customary affirmative and negative covenants, including certain restrictions on the Company’s ability to pay dividends, and, with respect to the revolving credit facility, a financial covenant requiring the Company to maintain a specified total net leverage ratio in the event that on the last day of any fiscal quarter the Company has utilized more than 30% of its borrowing capacity under the facility. As of December 31, 2016, the Company had not utilized more than 30% of its borrowing capacity under the revolving credit facility and compliance with the financial covenant was not applicable.

Commercial Mortgage Loan

On July 1, 2015, the Company entered into a commercial mortgage loan agreement in the amount of $7,950 (the “Mortgage Loan”). Borrowings under the Mortgage Loan bear interest at a rate of 3.5% per annum and are

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repayable in 60 monthly installments of $46, consisting of principal and interest based on a 20-year amortization schedule. The remaining amount of unpaid principal under the Mortgage Loan is due on the maturity date of July 1, 2020. Upon entering into the Mortgage Loan, the Company incurred debt issuance costs of $45, which was initially recorded as a direct deduction from the debt liability and are amortized to interest expense using the effective interest method from issuance date of the loan until the maturity date.

The Company made principal payments under the Mortgage Loan of $115 and $282 during the years ended December 31, 2015 and 2016, respectively. Interest expense, including the amortization of debt issuance costs, totaled $145 and $283 for the years ended December 31, 2015 and 2016, respectively.

The Mortgage Loan is secured by the land and building purchased in March 2015 and subjects the Company to various affirmative, negative and financial covenants, including maintenance of a minimum debt service ratio. The Company was in compliance with all covenants of the Mortgage Loan as of December 31, 2015 and 2016.

As of December 31, 2016, aggregate minimum future principal payments of the Company's debt are summarized as follows:

Year Ending December 31,	
2017	$ 3,292
2018	3,303
2019	3,314
2020	9,644
2021	3,000
Thereafter	285,000
	$ 307,553

10. Convertible Preferred Stock

The Company has issued Series A, Series B and Series C convertible preferred stock (collectively, the "Convertible Preferred Stock"). All of the issued and outstanding shares of Series A convertible preferred stock (the "Series A Preferred Stock") were repurchased by the Company in April 2010. The holders of Convertible Preferred Stock have liquidation rights in the event of a deemed liquidation that, in certain situations, is not solely within the control of the Company. Therefore, the Convertible Preferred Stock is classified outside of stockholders' equity (deficit) in the consolidated balance sheets. As of December 31, 2015 and 2016, the Company's certificate of incorporation, as amended and restated, authorized the Company to issue 6,000 shares of $0.001 par value preferred stock, of which 5,502 shares had been designated.

As of each balance sheet date, Convertible Preferred Stock consisted of the following:

	December 31, 2015				
	Preferred Shares Designated	Preferred Shares Issued and Outstanding	Carrying Value	Liquidation Preference	Common Stock Issuable Upon Conversion
Series A convertible preferred stock	1,291	—	$ —	$ —	—
Series B convertible preferred stock	352	179	1,542	2,230	358
Series C convertible preferred stock	3,859	3,859	95,937	129,347	7,718
	5,502	4,038	$97,479	$ 131,577	8,076

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	December 31, 2016				
	Preferred Shares Designated	Preferred Shares Issued and Outstanding	Carrying Value	Liquidation Preference	Common Stock Issuable Upon Conversion
Series A convertible preferred stock	1,291	—	$ —	$ —	—
Series B convertible preferred stock	352	179	1,542	2,326	358
Series C convertible preferred stock	3,859	3,859	95,937	135,134	7,718
	5,502	4,038	$97,479	$ 137,460	8,076

The rights and preferences of the Series A Preferred Stock, Series B convertible preferred stock (the "Series B Preferred Stock") and Series C convertible preferred stock (the "Series C Preferred Stock") are described below:

Voting Rights

The holders of Convertible Preferred Stock are entitled to vote, together with the holders of common stock, on all matters submitted to the stockholders for vote. The holders of the Convertible Preferred Stock are entitled to the number of votes equal to the number of shares of common stock into which such shares of Convertible Preferred Stock could convert.

Dividends

Holders of the Convertible Preferred Stock are entitled to receive cumulative dividends, when and if declared by the board of directors. Dividends on Convertible Preferred Stock accrue at a rate of $0.5376 per share for Series B Preferred Stock and $1.499694 per share for Series C Preferred Stock from the date of issuance of share of each series of Convertible Preferred Stock. In the case of a dividend on common stock, the holders of Convertible Preferred Stock are entitled to receive payment equal to the pro rata per share amount of the declared dividend on an as-converted to common stock basis. Except with the consent of the holders of the Convertible Preferred Stock voting as a single class on an as-converted to common stock basis, no dividends may be paid on common stock or a lesser class of preferred stock until the dividends accruing to the Convertible Preferred Stock are paid in full. As of December 31, 2016, no dividends had been declared by the board of directors, except for the special cash dividends declared on November 30, 2014, June 17, 2016 and December 21, 2016, payable to the holders of the Company's common and preferred stock.

Conversion

Each share of Convertible Preferred Stock may be converted at any time at the option of the holder or will automatically be converted into shares of common stock at the applicable conversion rate then in effect (i) upon the closing of a firm commitment public offering of the Company's common stock with gross proceeds to the Company of at least $100,000 and a price per share of at least $24.9949 or (ii) upon the vote or written consent of the holders of at least a majority of the votes represented by the then-outstanding shares of Convertible Preferred Stock, voting together as a single class and on an as-converted to common stock basis.

The conversion ratio of each series of preferred stock is determined by dividing the Original Issue Price of each series by the Conversion Price of each series. The Original Issue Price per share is $8.96 for Series B Preferred Stock and $24.9949 for Series C Preferred Stock. The Conversion Price per share is $4.48 for Series B Preferred Stock and $12.49745 for Series C Preferred Stock, subject to appropriate adjustment in the event of any

deemed issuance of additional shares, stock dividend, stock split combination or other similar recapitalization and other adjustments as set forth in the Company's certificate of incorporation, as amended and restated. As of December 31, 2015 and 2016, all outstanding shares of Convertible Preferred Stock were convertible into common stock on a 2-for-1 basis. Shares of preferred stock that are converted into shares of common stock may not be reissued.

Liquidation Preference

In the event of any voluntary or involuntary liquidation, dissolution or winding-up of the Company or Liquidating Event (as described below), the holders of the Convertible Preferred Stock will receive, in preference to the common stockholders, an amount equal to the greater of (i) the Original Issue Price per share of the respective share of preferred stock, plus all accrued but unpaid dividends (whether or not declared) or (ii) the amount the holders would receive if the Convertible Preferred Stock were converted into common stock immediately prior to such liquidation event. If, upon any such liquidation event, the assets of the Company available for distribution are insufficient to permit payment in full to the holders of Convertible Preferred Stock, the proceeds will be ratably distributed among the holders of Convertible Preferred Stock in proportion to the respective amounts that they would have received if they were paid in full. After payments of all preferential amounts have been made in full to the holders of Convertible Preferred Stock, then, to the extent available, the remaining assets available for distribution will be distributed among the common stockholders ratably in proportion to the number of shares of common stock held by each common stockholder. As of December 31, 2016, accrued but undeclared dividends totaled $723 for the Series B Preferred Stock and $38,674 for Series C Preferred Stock.

A Liquidating Event shall include a merger or consolidation (other than one in which stockholders of the Company own a majority by voting power of the outstanding shares of the surviving or acquiring corporation) or a sale, exchange, transfer or other disposition of all or substantially all of the assets of the Company.

Redemption

The Company's certificate of incorporation, as amended and restated, does not provide redemption rights to the holders of Convertible Preferred Stock.

Special Dividends to Holders of Common and Preferred Stock

November 2014 Special Dividend

On November 30, 2014, the board of directors declared and the stockholders approved a special cash dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared to stockholders was $1.9173 per share of common stock, $3.8346 per share of Series B convertible preferred stock (the "Series B Preferred Stock") and $3.8346 per share of Series C convertible preferred stock (the "Series C Preferred Stock"). Related to this special dividend declared in November 2014, the Company paid $27,251 and $345 of dividends to the common and preferred stockholders during the years ended December 31, 2014 and 2015, respectively, and no dividends were payable as of December 31, 2015 or 2016.

In connection with the special dividend declared in November 2014, the board of directors also approved cash payments to be made to holders of the Company's stock options and SARs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of stock options and SARs are equal to $1.9173 per share

multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to the holders of stock options and SARs will be made as equity awards vest through fiscal year 2018. During the years ended December 31, 2014, 2015 and 2016, the Company paid $1,618, $367 and $203, respectively, to the holders of stock options and SARs for vested equity awards. As of December 31, 2015 and 2016, equitable adjustment payments to be made as equity awards vest through fiscal 2018, net of estimated forfeitures, totaled $383 and $180, respectively, and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheets.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled $12,111, $686 and $14,799, respectively, and the equitable adjustment to the holders of stock options and SARs, net of estimated forfeitures, totaled $2,369. The $29,965 aggregate amount of such dividends and equitable adjustments was recorded as a charge to retained earnings (until reduced to zero) and a charge to additional paid-in capital during the year ended December 31, 2014.

June 2016 Special Dividend

On June 17, 2016, the board of directors declared and the stockholders approved a special cash dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared to stockholders was $2.9455 per share of common stock, $5.8910 per share of Series B Preferred Stock, and $5.8910 per share of Series C Preferred Stock. Related to this special dividend declared in June 2016, the Company paid $43,148 of dividends to the common and preferred stockholders during the year ended December 31, 2016, and, as of December 31, 2016, no dividends were payable.

In connection with the special dividend declared in June 2016, the board of directors also approved cash payments to be made to holders of the Company’s stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company’s equity incentive plans. The equitable adjustment payments to the holders of stock options, SARs and RSUs are equal to $2.9455 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2020. During the year ended December 31, 2016, the Company paid $4,678 to the holders of such vested equity awards. As of December 31, 2016, equitable adjustment payments to be made as equity awards vest through fiscal 2020, net of estimated forfeitures, totaled $2,055 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled $19,359, $1,054 and $22,735, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled $6,733. The $49,881 aggregate amount of such dividends and equitable adjustments was recorded as a charge to retained earnings during the year ended December 31, 2016.

December 2016 Special Dividend

On December 21, 2016, the board of directors declared, and on December 29, 2016 the stockholders approved, a special cash dividend to the holders of common stock and preferred stock of record on December 27, 2016. The cash dividend declared to stockholders was $11.6529 per share of common stock, $23.3058 per share of Series B Preferred Stock and $23.3058 per share of Series C Preferred Stock. Related to this special dividend declared in December 2016, the Company paid $94,272 of dividends to the common and preferred stockholders

during the year ended December 31, 2016, and, as of December 31, 2016, dividend payments to be made totaled $77,153 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet. All of these accrued dividend payments were made in January 2017.

In connection with the special dividend declared in December 2016, the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of stock options, SARs and RSUs are equal to $11.6529 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2020. During the year ended December 31, 2016, no payments were made to the holders of such vested equity awards. As of December 31, 2016, equitable adjustment payments to be made as equity awards vest through fiscal 2020, net of estimated forfeitures, totaled $28,121 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet. In January 2017, the Company paid $19,123 of equitable adjustments related to the December 2016 special dividend.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled $77,311, $4,172 and $89,942, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled $28,121. The $199,546 aggregate amount of such dividends and equitable adjustments was recorded as a charge to retained earnings (until reduced to zero), a charge to additional paid-in capital (until reduced to zero) and a charge to accumulated deficit during the year ended December 31, 2016.

11. Common Stock

As of December 31, 2015 and 2016, the Company's certificate of incorporation, as amended and restated, authorized the Company to issue 20,000 shares of $0.001 par value common stock. The voting, dividend and liquidation rights of the holders of the Company's common stock are subject to and qualified by the rights, powers and preferences of the holders of the Convertible Preferred Stock set forth above.

Each share of common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Common stockholders are entitled to receive dividends, as may be declared by the board of directors, if any, subject to the preferential dividend rights of the preferred stock. Through December 31, 2016, except for the special cash dividends declared on November 30, 2014, June 17, 2016 and December 21, 2016 (see Note 10), no dividends have been declared by the board of directors.

As of December 31, 2016, the Company had reserved 11,933 shares of common stock for the conversion of outstanding shares of Convertible Preferred Stock (see Note 10), the exercise of outstanding stock options, the vesting of outstanding RSUs, and the number of shares remaining available for grant under the Company's 2011 Stock Incentive Plan (see Note 13).

12. Common Stock Warrants

In June 2009, in connection with the issuance of Series B Preferred Stock, the Company entered into an agreement with an investor, Liberty Global Ventures Holding B.V. (the "Series B Investor"), to issue warrants for the purchase of up to 793 shares of the Company's common stock, at an exercise price of $4.48 per share, subject to the achievement of specified targets for the amount of purchases made by a subsidiary of the Series B Investor, Liberty Global Services B.V. (the "Series B Subsidiary"), from the Company. Pursuant to the

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agreement, the Series B Investor was entitled to receive warrants for the purchase 53 shares of the Company's common stock for every $5,000 of net revenues, as defined in the warrant agreement, received by the Company from the Series B Subsidiary for the period from January 1, 2009 through December 31, 2011. Under the agreement, the Series B Investor received warrants for the purchase of 529 shares of the Company's common stock. The warrants were due to expire in June 2014. Due to specified anti-dilution provisions included in the terms of those warrants, the warrant was classified as a liability for accounting purposes. The warrant liability was remeasured to its fair value at the end of each reporting period until it was exercised, and the related change in fair value was recorded as an increase or decrease in other income (expense) in the consolidated statements of operations and comprehensive income. The Company recorded other expense of $1,523 during the year ended December 31, 2014 related to the change in fair value of these warrants.

All of the warrants for the purchase of 529 shares of common stock were exercised on March 31, 2014, and the Company received proceeds of $2,369. Upon exercise of the warrants, the Company recorded an increase to common stock and additional paid-in capital equal to the $3,695 remeasured fair value of the warrant liability immediately prior to exercise of the warrants and recorded an increase to additional paid-in capital of $2,369 for the cash proceeds received.

The Company calculated the fair value of the warrants outstanding as of the exercise date of March 31, 2014 using the Black-Scholes option-pricing model and the following assumptions:

Contractual term (in years)	0.2
Risk-free interest rate	0.1%
Expected volatility	55.7%
Expected dividend yield	0.0%

13. Stock-based Compensation

2003 Stock Incentive Plan

The Company's 2003 Stock Incentive Plan, as amended (the "2003 Plan"), provided for the grant of qualified incentive stock options, nonqualified stock options, restricted stock or other stock-based awards to the Company's employees, officers, directors, advisers and outside consultants. The number of shares authorized for grant under the 2003 Plan, as amended, was 6,500 shares. The 2003 Plan was administered by the board of directors, or at the discretion of the board of directors, by a committee of the board or by one or more executive officers of the Company. The exercise prices, vesting and other restrictions were determined at the discretion of the board of directors, or their committee or by one or more executive officers of the Company, if so delegated.

The 2003 Plan was terminated in August 2011, and the remaining 428 shares available for issuance under the plan at that time were transferred to the Company's 2011 Stock Incentive Plan (the "2011 Plan"). The shares of common stock underlying any awards that are forfeited, canceled, repurchased or are otherwise terminated by the Company under the 2003 Plan will be added back to the shares of common stock available for issuance under the 2011 Plan.

2011 Stock Incentive Plan

The 2011 Plan provides for the Company to sell or issue common stock or restricted common stock, or to grant qualified incentive stock options, nonqualified stock options, SARs, RSUs or other stock-based awards to the Company's employees, officers, directors, advisers and outside consultants. The 2011 Plan is administered by the board of directors, or at the discretion of the board of directors, by a committee of the board. The exercise prices, vesting and other restrictions are determined at the discretion of the board of directors, or their committee if so delegated, except that the exercise price per share of stock options may not be less than 100% of the fair

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market value of common stock on the date of grant and the term of the stock option may not be greater than ten years. The stock options generally vest over a four-year period and expire ten years from the date of grant. Certain options provide for accelerated vesting if there is a change in control (as defined in the stock option agreements). Any award that expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part shall again be available for grant.

The total number of shares authorized for issuance under the 2011 Plan was 3,485 shares as of December 31, 2014, of which 928 shares remained available for future grant. In June 2015, the Company effected an increase in the number of shares of common stock authorized for future issuance under the 2011 Plan by 1,000 shares. The total number of shares authorized for issuance under the 2011 Plan was 4,605 shares as of December 31, 2015, of which 1,030 shares remained available for future grant. The total number of shares authorized for issuance under the 2011 Plan was 4,605 shares as of December 31, 2016, of which 695 shares remained available for future grant.

Stock Option Valuation

The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model that uses the assumptions noted in the table below. Expected volatility for the Company's common stock was determined based on an average of the historical volatility of a peer group of similar public companies. The expected term of options granted was calculated using the simplified method, which represents the average of the contractual term of the option and the weighted-average vesting period of the option. The Company uses the simplified method because it does not have sufficient historical option exercise data to provide a reasonable basis upon which to estimate the expected term. The expected dividend yield is based on the fact that the Company does not have a history of paying cash dividends, except for the special dividends declared in November 2014, June 2016 and December 2016 (see Note 10), and in that circumstance, the board of directors approved cash dividends to be paid to holders of the Company's stock options and SARs upon vesting as an equitable adjustment to the holders of such instruments. The risk-free rate for periods within the expected life of the option is based upon the U.S. Treasury yield curve in effect at the time of grant.

In determining the exercise prices for options granted, the Company's board of directors has considered the fair value of the common stock as of the measurement date. The fair value of the common stock has been determined by the board of directors at each award grant date based upon a variety of factors, including the results obtained from an independent third-party valuation of the Company's common stock, the Company's financial position and historical financial performance, the status of technological developments within the Company's products, the composition and ability of the current management team, an evaluation or benchmark of the Company's competition, the current business climate in the marketplace, the illiquid nature of the common stock, the effect of the rights and preferences of the holders of the Company's convertible preferred stock, and the prospects of a liquidity event, among others.

The assumptions used in the Black-Scholes option-pricing model were as follows, presented on a weighted-average basis:

	Year Ended December 31,		
	2014	2015	2016
Risk-free interest rate	1.9%–2.1%	1.4%–2.0%	1.1%–1.5%
Expected term (in years)	5.8–6.2	5.6–6.2	4.7–6.2
Expected volatility	52.1%–56.5%	41.3%–52.5%	34.2%–40.4%
Expected dividend yield	0.0%	0.0%	0.0%

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Stock Options

A summary of option activity under the 2003 Plan and the 2011 Plan for the year ended December 31, 2016 is as follows:

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at January 1, 2016	2,681	$ 14.42	7.41	$ 73,852
Granted	356	46.44		
Exercised	(93)	6.37		
Forfeited	(63)	34.72		
Outstanding at December 31, 2016	2,881	$ 18.20	6.79	$123,844
Options exercisable at December 31, 2016	1,943	$ 11.11	5.94	$ 97,275
Vested or expected to vest at December 31, 2016	2,827	$ 17.85	6.75	$122,470

The weighted-average grant-date fair value of options granted during the years ended December 31, 2014, 2015 and 2016 was $7.56, $13.77 and $18.55 per share, respectively. Cash proceeds received upon the exercise of options were $4,297, $226 and $594 during the years ended December 31, 2014, 2015 and 2016, respectively. The intrinsic value of stock options exercised during the years ended December 31, 2014, 2015 and 2016 was $2,021, $720 and $5,001, respectively. The aggregate intrinsic value of is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock.

Restricted Stock Units

On January 23, 2015 and March 26, 2016, the Company granted 421 and 49 RSUs, respectively, under the 2011 Plan. The RSUs vest ratably over a three- to four-year period from the date of grant. The grant-date fair value of each RSU award is being recorded as stock-based compensation expense on a straight-line basis, net of estimated forfeitures, over the requisite service period for the RSUs, which is generally three to four years. The fair value of each RSU on date of grant is the estimated fair value of the underlying common stock on the date of the grant. A summary of RSU activity under the 2011 Plan for the year ended December 31, 2016 is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value	Aggregate Fair Value
Unvested balance at January 1, 2016	421	$ 20.92	
Granted	49	41.97	
Vested	(190)	20.92	$ 7,967
Unvested balance at December 31, 2016	280	$ 24.60	

During the year ended December 31, 2016, the Company withheld 8 shares of common stock in settlement of employee tax withholding obligations due upon the vesting of RSUs. The Company had no RSUs that vested during the year ended December 31, 2015.

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Stock Appreciation Rights

In September 2016, the Company granted 6 SARs that allow the holder the right, upon exercise, to receive in cash the amount of the difference between the fair value of the Company's common stock at the date of exercise and the price of the underlying common stock at the date of grant of each SAR. The price of the underlying common stock on the date of grant was $54.22 per share and the grant-date fair value was $20.52 per SAR. The SARs vest over a four-year period from the date of grant and expire ten years from the date of grant. As of December 31, 2016, 28 SARs were outstanding and 6 were unvested. As of December 31, 2016, there were 22 SARs exercisable and the fair value of each SAR was $52.72 per SAR. The fair value of the SAR liability as of December 31, 2015 and 2016 was $737 and $1,195, respectively, (see Note 6) and was included in accrued expenses and other current liabilities in the accompanying consolidated balance sheets.

Stock-Based Compensation Expense

The Company recorded stock-based compensation expense of $1,991, $7,321 and $8,304 during the years ended December 31, 2014, 2015 and 2016, respectively, which is based on the number of stock options, RSUs and SARs ultimately expected to vest. As of December 31, 2016, there was $14,535 of unrecognized compensation cost related to outstanding stock options, RSUs and SARs, which is expected to be recognized over a weighted-average period of 2.59 years.

Stock-based compensation expense related to stock options, RSUs and SARs for the years ended December 31, 2014, 2015 and 2016 was classified in the consolidated statements of operations and comprehensive income as follows as follows:

	Year Ended December 31,		
	2014	2015	2016
Cost of revenue	$ 161	$ 143	$ 237
Research and development expenses	852	1,843	2,306
Sales and marketing expenses	598	775	1,147
General and administrative expenses	380	4,560	4,614
	$1,991	$7,321	$8,304

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14. Net Income (Loss) per Share and Unaudited Pro Forma Net Income per Share

Net Income (Loss) per Share

Basic and diluted net income (loss) per share attributable to common stockholders was calculated as follows:

	Year Ended December 31,		
	2014	2015	2016
Numerator:			
Net income	$ 59,708	$ 67,921	$ 88,668
Cumulative dividends on convertible preferred stock	(5,884)	(5,884)	(5,884)
Dividends declared on convertible preferred stock	(15,485)	—	(117,903)
Undistributed earnings allocated to participating securities	(15,052)	(34,735)	—
Net income (loss) attributable to common stockholders, basic	23,287	27,302	(35,119)
Undistributed earnings reallocated to dilutive potential common shares	556	3,100	—
Net income (loss) attributable to common stockholders, diluted	$ 23,843	$ 30,402	$ (35,119)
Denominator:			
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders, basic	5,997	6,348	6,573
Dilutive effect of stock options	540	1,266	—
Dilutive effect of restricted stock units	—	147	—
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders, diluted	6,537	7,761	6,573
Net income (loss) per share attributable to common stockholders:			
Basic	$ 3.88	$ 4.30	$ (5.34)
Diluted	$ 3.65	$ 3.92	$ (5.34)

The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the computation of diluted net income (loss) per share attributable to common stockholders for the periods presented because including them would have been anti-dilutive:

	Year Ended December 31,		
	2014	2015	2016
Convertible preferred stock (on an as-converted basis)	8,076	8,076	8,076
Options to purchase common stock	474	330	2,881
Unvested restricted stock units	—	—	280
Warrants to purchase common stock	62	—	—

Unaudited Pro Forma Net Income per Share

Unaudited pro forma basic and diluted net income per share attributable to common stockholders for the year ended December 31, 2016 have been prepared to give effect, upon the closing of a qualified initial public offering, to (i) the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock as if the proposed initial public offering had occurred on January 1, 2016 and (ii) the number of shares offered in the initial public offering whose proceeds are deemed necessary, based on an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of

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this prospectus, to pay the $ amount by which the special cash dividends of $171,425, $87,133 and $ declared by the Company's board of directors on December 21, 2016, May 10, 2017 (unaudited) and , 2017 (unaudited), respectively, exceeded the Company's earnings for the twelve-month period ended September 30, 2017.

The unaudited pro forma net income per share data have been presented in accordance with Securities and Exchange Commission SAB Topic 1B.3. In accordance with SAB Topic 1B.3, dividends declared at or in the twelve-month period preceding an initial public offering are deemed to be in contemplation of the offering with the intention of repayment out of the offering proceeds to the extent that the amount of dividends exceeded the amount of earnings during the twelve-month period ended on the most recent balance sheet date. For the twelve-month period ended September 30, 2017 (unaudited), the Company's net income was $99,488.

Unaudited pro forma basic and diluted net income per share attributable to common stockholders was calculated as follows:

	Year Ended December 31, 2016 (unaudited)
Numerator:	
Net income	$ 88,668
Denominator:	
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders, basic	6,573
Pro forma adjustment to reflect assumed conversion of convertible preferred stock upon closing of initial public offering	8,076
Pro forma adjustments to reflect the number of shares whose proceeds are deemed necessary to pay dividends in excess of earnings	
Pro forma weighted-average shares used in computing pro forma net income per share attributable to common stockholders, basic	
Dilutive effect of stock options	1,763
Dilutive effect of restricted stock units	174
Pro forma weighted-average shares used in computing pro forma net income per share attributable to common stockholders, diluted	
Pro forma net income per share attributable to common stockholders:	
Basic	$
Diluted	$

15. Segment Information

The Company operates as one operating segment. Operating segments are defined as components of an enterprise for which separate financial information is regularly evaluated by the Company's chief operating decision maker, or decision-making group, in deciding how to allocate resources and assess performance. The Company has determined that its chief operating decision maker is its President and Chief Executive Officer. The Company's chief operating decision maker reviews the Company's financial information on a consolidated basis for purposes of allocating resources and assessing financial performance. Since the Company operates as one operating segment, all required financial segment information can be found in these consolidated financial statements.

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

The following table summarizes the Company's revenue based on the customer's location, as determined by the customer's shipping address:

	Year Ended December 31,		
	2014	2015	2016
North America:			
United States	$ 106,639	$ 54,365	$ 105,318
Canada	737	153	78,623
Total North America	107,376	54,518	183,941
Latin America:			
Mexico	4,092	66,991	18,631
Other	25,823	20,391	28,683
Total Latin America	29,915	87,382	47,314
Europe, Middle East and Africa:			
Belgium	—	30,794	2,502
Other	32,407	44,973	42,703
Total Europe, Middle East and Africa	32,407	75,767	45,205
Asia-Pacific:			
Japan	27,003	25,433	19,054
Other	14,577	29,350	20,614
Total Asia-Pacific	41,580	54,783	39,668
Total revenue(1)	$ 211,278	$ 272,450	$ 316,128

(1) Other than the United States, Mexico, Belgium, Japan and Canada, no individual countries represented 10% or more of the Company's total revenue for each of the periods presented.

The Company's property and equipment, net by location was as follows:

	December 31,	
	2015	2016
United States	$18,465	$21,984
China	2,460	2,305
Other	1,403	1,393
Total property and equipment, net	$22,328	$25,682

16. Related Parties

Transactions Involving Liberty Global Ventures Holding B.V. and its Affiliates

Liberty Global Ventures Holding B.V. is a principal stockholder of the Company through its ownership of Series B Preferred Stock. Affiliates of Liberty Global Ventures Holding B.V. ("Liberty Global Affiliates") are customers of the Company. During the years ended December 31, 2014, 2015 and 2016, the Company recognized revenue of $14,807, $46,069 and $31,737, respectively, from transactions with Liberty Global Affiliates and amounts received in cash from Liberty Global Affiliates totaled $13,774, $37,012 and $29,143, respectively. As of December 31, 2015 and 2016, amounts due from Liberty Global Affiliates totaled $12,367 and $15,619, respectively.

In addition, on March 31, 2014, Liberty Global Ventures Holding B.V. exercised outstanding warrants to purchase 529 shares of the Company's common stock (see Note 12), and the Company received proceeds of $2,369.

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

Consulting Agreement with Bill Styslinger

In March 2012, the Company entered into a consulting agreement with Bill Styslinger, a member of its board of directors, for the provision of sales management, corporate strategy and advisory services, which was initially scheduled to expire on January 31, 2014. The Company extended the term of the consulting agreement on two occasions, and the consulting agreement expired on December 31, 2016. During the years ended December 31, 2014, 2015 and 2016, the Company recognized sales and marketing expenses of $503, $441 and $323, respectively, and paid Mr. Styslinger $454, $542 and $459, respectively, for his services under this consulting agreement. As of December 31, 2015, the amount due to Mr. Styslinger for his consulting services was $137, and no amounts were due to Mr. Styslinger as of December 31, 2016.

In connection with Mr. Styslinger's services as a consultant, in May 2012, the Company granted Mr. Styslinger stock options for the purchase of 120,000 shares of common stock, at an exercise price of $8.46 per share, which vested as to one-third of the shares under the award on February 1, 2013 and in equal monthly installments thereafter for the following two years. The grant-date fair value of the award totaled $527, which was recorded by the Company as stock-based compensation expense over the vesting period of the award. During the years ended December 31, 2014 and 2015, the Company recognized sales and marketing expenses of $175 and $15, respectively, related to these stock options. The Company recognized no sales and marketing expenses related to these stock options during the year ended December 31, 2016.

In connection with special dividends declared by the Company's board of directors in November 2014, June 2016 and December 2016 (see Note 10), the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs in accordance with the provisions of the Company's equity incentive plans. In connection with the special dividends declared in November 2014 and June 2016, the Company paid Mr. Styslinger $60, $12 and $150 as equitable adjustments in the years ended December 31, 2014, 2015 and 2016, respectively. In connection with the special dividend declared in December 2016, the Company paid Mr. Styslinger $616 as an equitable adjustment in January 2017.

Employment of Rongke Xie

Rongke Xie, who serves as Deputy General Manager of Guangzhou Casa Communication Technology LTD, one of the Company's subsidiaries, is the sister of Lucy Xie, the Company's Senior Vice President of Operations and a member of its board of directors. During the years ended December 31, 2014, 2015 and 2016, the Company paid Rongke Xie $154, $140 and $140, respectively, for her services as an employee of the Company.

In addition, in May 2006, the Company granted to Rongke Xie an option to purchase 20 shares of common stock, at an exercise price of $0.50 per share, which vested as to one-fourth of the option shares on May 22, 2007 and as to the remainder in equal monthly installments over the following three years. The option had a grant-date fair value of $6. In connection with the special dividend declared in November 2014 (see Note 10), the Company paid Rongke Xie $19 as an equitable adjustment in the year ended December 31, 2015.

17. Commitments and Contingencies

Operating Leases

The Company leases manufacturing, warehouse and office space in the United States, China and Ireland under non-cancelable operating leases that expire in 2021, 2019 and 2026, with a right to terminate in 2021,

(Amounts in thousands, except per share amounts)

respectively. Rent expense for the years ended December 31, 2014, 2015 and 2016 was $1,337, $773 and $572, respectively. Rent expense is recorded on a straight-line basis, and, as a result, as of December 31, 2015 and 2016, the Company had a deferred rent liability of $64 and $130, respectively, which is included in accrued expenses and other current liabilities in the accompanying consolidated balance sheets.

Future minimum lease payments under non-cancelable operating leases as of December 31, 2016 were as follows:

Year Ending December 31,	
2017	$ 561
2018	730
2019	492
2020	486
2021	305
	$2,574

In February 2017, the Company entered into a lease for office space in Spain under a non-cancelable operating lease that expires in January 2022. Future minimum lease payments due under this lease are not included in the table above presented as of December 31, 2016 and total less than $51 in each of the six years ending December 31, 2022 and aggregate $252 for the entire lease term.

Indemnification

The Company has, in the ordinary course of business, agreed to defend and indemnify certain customers against third-party claims asserting infringement of certain intellectual property rights, which may include patents, copyrights, trademarks or trade secrets.

As permitted under Delaware law, the Company indemnifies its officers, directors and employees for certain events or occurrences that happen by reason of their relationship with or position held at the Company.

As of December 31, 2015 and 2016, the Company had not experienced any losses related to these indemnification obligations and no material claims were outstanding. The Company does not expect significant claims related to these indemnification obligations and, consequently, concluded that the fair value of these obligations is negligible, and no related liabilities were recorded in its consolidated financial statements.

Litigation

From time to time, and in the ordinary course of business, the Company may be subject to various claims, charges and litigation. As of December 31, 2016, the Company did not have any pending claims, charges or litigation that it expects would have a material adverse effect on its consolidated financial position, results of operations or cash flows.

18. Employee Benefit Plan

The Company has a Section 401(k) defined contribution savings plan for its employees. The plan covers substantially all employees in the United States who meet minimum age and service requirements and allows

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participants to defer a portion of their annual compensation on a pre-tax basis, subject to certain limitations. Company contributions to the plan may be made at the discretion of the board of directors. Effective January 1, 2014, the Company commenced matching contributions in the amount of 50% of the employee's contributions of up to 6% of eligible wages. The Company made matching contributions to the plan of $628, $977 and $1,313 in the years ended December 31, 2014, 2015 and 2016, respectively.

19. Subsequent Events

For its consolidated financial statements as of December 31, 2016 and for the year then ended, the Company evaluated subsequent events through March 8, 2017, the date on which those financial statements were issued.

CASA SYSTEMS, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except per share amounts)
(Unaudited)

	December 31, 2016	September 30, 2017	Pro Forma September 30, 2017
Assets			
Current assets:			
Cash and cash equivalents	$ 329,554	$ 183,519	$ 183,519
Marketable securities	14,392	—	—
Accounts receivable, net of provision for doubtful accounts of $690 and $702 as of December 31, 2016 and September 30, 2017, respectively	110,234	97,544	97,544
Inventory	65,975	49,443	49,443
Prepaid expenses and other current assets	7,178	5,725	5,725
Prepaid income taxes	39	—	—
Total current assets	527,372	336,231	336,231
Property and equipment, net	25,682	27,928	27,928
Accounts receivable, net of current portion	6,629	5,528	5,528
Deferred tax assets	21,140	19,839	19,839
Deferred offering costs	1,464	2,112	2,112
Other assets	748	597	597
Total assets	$ 583,035	$ 392,235	$ 392,235
Liabilities, Convertible Preferred Stock and Stockholders' Deficit			
Current liabilities:			
Accounts payable	$ 21,704	$ 3,820	$ 3,820
Accrued expenses and other current liabilities	149,184	34,047	
Accrued income taxes	11,823	5,679	5,679
Deferred revenue	55,876	43,353	43,353
Current portion of long-term debt, net of unamortized debt issuance costs	2,133	2,150	2,150
Total current liabilities	240,720	89,049	
Accrued income taxes, net of current portion	463	2,064	2,064
Deferred revenue, net of current portion	18,458	15,852	15,852
Long-term debt, net of current portion and unamortized debt issuance costs	297,618	295,997	295,997
Total liabilities	557,259	402,962	
Commitments and contingencies (Note 15)			
Convertible preferred stock (Series A, B and C), $0.001 par value; 6,000 shares authorized as of December 31, 2016 and September 30, 2017; 4,038 shares issued and outstanding as of December 31, 2016 and September 30, 2017; aggregate liquidation preference of $141,862 as of September 30, 2017; no shares issued or outstanding, pro forma as of September 30, 2017	97,479	97,479	—
Stockholders' deficit:			
Common stock, $0.001 par value; 20,000 shares authorized as of December 31, 2016 and September 30, 2017; 6,637 and 6,740 shares issued and outstanding as of December 31, 2016 and September 30, 2017, respectively: 14,817 shares issued and outstanding, pro forma as of September 30, 2017	7	7	15
Additional paid-in capital	—	—	
Accumulated other comprehensive loss	(1,739)	(460)	(460)
Accumulated deficit	(69,971)	(107,753)	
Total stockholders' deficit	(71,703)	(108,206)	
Total liabilities, convertible preferred stock and stockholders' deficit	$ 583,035	$ 392,235	$

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

CASA SYSTEMS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME
(Amounts in thousands, except per share amounts)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2017
Revenue:		
Product	$ 191,763	$ 205,155
Service	25,139	28,458
Total revenue	216,902	233,613
Cost of revenue:		
Product	68,793	62,865
Service	5,983	3,637
Total cost of revenue	74,776	66,502
Gross profit	142,126	167,111
Operating expenses:		
Research and development	37,213	43,912
Sales and marketing	27,289	26,983
General and administrative	13,532	14,387
Total operating expenses	78,034	85,282
Income from operations	64,092	81,829
Other income (expense):		
Interest income	811	1,674
Interest expense	(256)	(12,937)
Gain (loss) on foreign currency, net	(45)	773
Other income, net	443	632
Total other income (expense), net	953	(9,858)
Income before provision for income taxes	65,045	71,971
Provision for income taxes	16,228	12,334
Net income	48,817	59,637
Other comprehensive income (expense)—foreign currency translation adjustment, net of tax	(574)	1,279
Comprehensive income	$ 48,243	$ 60,916

CASA SYSTEMS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (Continued)
(Amounts in thousands, except per share amounts)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2017
Cash dividends declared per common share or common share equivalents	$ 2.9455	$ 5.8872
Net income attributable to common stockholders:		
Basic	$ 19,928	$ 7,689
Diluted	$ 20,006	$ 7,689
Net income per share attributable to common stockholders:		
Basic	$ 3.04	$ 1.14
Diluted	$ 2.37	$ 0.89
Weighted-average shares used to compute net income per share attributable to common stockholders:		
Basic	6,564	6,731
Diluted	8,427	8,639
Pro forma net income per share attributable to common stockholders (unaudited):		
Basic		$
Diluted		$
Weighted-average shares used to compute pro forma net income per share attributable to common stockholders (unaudited):		
Basic		
Diluted		

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

CASA SYSTEMS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT
(Amounts in thousands, except per share amounts)
(Unaudited)

	Series A, B and C Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount				
Balances at January 1, 2017	4,038	$97,479	6,637	$ 7	$ —	$ (1,739)	$ (69,971)	$ (71,703)
Exercise of stock options and common stock issued upon vesting of restricted stock units, net of shares withheld for employee taxes	—	—	103	—	(3,584)	—	—	(3,584)
Foreign currency translation adjustment, net of tax of $0	—	—	—	—	—	1,279	—	1,279
Cash dividends declared ($5.8872 per share of common stock, $11.7744 per share of convertible preferred stock and $5.8872 per share to holders of stock-based awards)	—	—	—	—	(2,437)	—	(97,419)	(99,856)
Stock-based compensation	—	—	—	—	6,021	—	—	6,021
Net income	—	—	—	—	—	—	59,637	59,637
Balances at September 30, 2017	4,038	$97,479	6,740	$ 7	$ —	$ (460)	$ (107,753)	$ (108,206)

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

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CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2017
Cash flows from operating activities:		
Net income	$ 48,817	$ 59,637
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	4,451	5,576
Stock-based compensation	5,974	5,893
Deferred income taxes	(4,015)	1,347
Excess and obsolete inventory valuation adjustment	(19)	673
Increase in provision for doubtful accounts	17	—
Changes in operating assets and liabilities:		
Accounts receivable	24,583	14
Inventory	1,741	13,074
Prepaid expenses and other assets	(1,851)	1,651
Prepaid income taxes	(185)	52
Accounts payable	15,562	(16,694)
Accrued expenses and other current liabilities	11,547	(2,331)
Accrued income taxes	(4,873)	(4,558)
Deferred revenue	22,320	(15,280)
Net cash provided by operating activities	124,069	49,054
Cash flows provided by (used in) investing activities:		
Purchases of property and equipment	(6,159)	(4,703)
Proceeds from maturities of marketable securities	—	14,589
Net cash (used in) provided by investing activities	(6,159)	9,886
Cash flows used in financing activities:		
Principal repayments of debt	(210)	(2,468)
Proceeds from exercise of stock options	172	204
Payments of dividends and equitable adjustments	(47,793)	(198,187)
Payments of initial public offering costs	—	(1,511)
Employee taxes paid related to net share settlement of restricted stock units	(315)	(3,788)
Net cash used in financing activities	(48,146)	(205,750)
Effect of exchange rate changes on cash and cash equivalents	(554)	775
Net increase (decrease) in cash and cash equivalents	69,210	(146,035)
Cash and cash equivalents at beginning of period	92,496	329,554
Cash and cash equivalents at end of period	$161,706	$ 183,519
Supplemental disclosures of cash flow information:		
Cash paid for interest	$ 207	$ 12,197
Cash paid for income taxes	$ 25,200	$ 15,204
Supplemental disclosures of non-cash operating, investing and financing activities:		
Purchases of property and equipment included in accounts payable	$ 552	$ 901
Deferred offering costs included in accounts payable and accrued expenses and other current liabilities	$ —	$ 85
Unpaid equitable adjustments included in accrued expenses and other current liabilities	$ 2,471	$ 9,178
Release of customer incentives included in accounts receivable and accrued expenses and other current liabilities	$ 1,265	$ 13,930

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

CASA SYSTEMS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)
(Unaudited)

1. Nature of Business and Basis of Presentation

Casa Systems, Inc. (the "Company") was incorporated under the laws of the State of Delaware on February 28, 2003. The Company is a global communications technology company headquartered in Andover, Massachusetts and has wholly owned subsidiaries in China, France, Canada, Ireland, Spain and the Netherlands.

The Company provides a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds. In addition, the Company offers solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom and wireless networks. The Company's innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity, reconfigure and add new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures.

The Company is subject to a number of risks similar to other companies of comparable size and other companies selling and providing services to the communications industry. These risks include, but are not limited to, the level of capital spending by the communications industry, a lengthy sales cycle, dependence on the development of new products and services, unfavorable economic and market conditions, competition from larger and more established companies, limited management resources, dependence on a limited number of contract manufacturers and suppliers, the rapidly changing nature of the technology used by the communications industry and reliance on resellers and sales agents. Failure by the Company to anticipate or to respond adequately to technological developments in its industry, changes in customer or supplier requirements, changes in regulatory requirements or industry standards, or any significant delays in the development or introduction of products could have a material adverse effect on the Company's operating results, financial condition and cash flows.

The accompanying condensed consolidated balance sheet as of September 30, 2017, the condensed consolidated statements of operations and comprehensive income for the nine months ended September 30, 2016 and 2017, the condensed consolidated statements of cash flows for the nine months ended September 30, 2016 and 2017 and the condensed consolidated statements of convertible preferred stock and stockholders' deficit for the nine months ended September 30, 2017 are unaudited. The financial data and other information disclosed in these notes related to the nine months ended September 30, 2016 and 2017 are also unaudited. The accompanying consolidated balance sheet as of December 31, 2016 was derived from the Company's audited consolidated financial statements for the year ended December 31, 2016. The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States ("GAAP") regarding interim financial reporting. Certain information and note disclosures normally included in the consolidated financial statements prepared in accordance with GAAP have been condensed or omitted. Therefore, these condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes included in the Company's audited consolidated financial statements for the year ended December 31, 2016.

The unaudited interim condensed consolidated financial statements have been prepared on a basis consistent with that used to prepare the audited annual consolidated financial statements and, in the opinion of management, include all adjustments, consisting of only normal recurring adjustments, necessary for a fair statement of the financial position, results of operations and cash flows for the interim periods, but are not necessarily indicative of the results of operations and cash flows to be anticipated for the full year ending December 31, 2017 or any future period.

CASA SYSTEMS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)
(Unaudited)

The accompanying condensed consolidated financial statements include the accounts and results of operations of the Company and its wholly owned subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Unaudited Pro Forma Information

The accompanying unaudited pro forma consolidated balance sheet as of September 30, 2017 has been prepared to give effect, upon the closing of a qualified initial public offering, to the automatic conversion of all outstanding shares of convertible preferred stock into 8,076 shares of common stock as if the proposed initial public offering had occurred on September 30, 2017 and to the accrual of a special dividend of $, which was declared by the Company's board of directors on , 2017.

In the accompanying condensed consolidated statements of operations and comprehensive income, the calculation of the unaudited pro forma basic and diluted net income per share attributable to common stockholders for the nine months ended September 30, 2017 has been prepared to give effect, upon the closing of a qualified initial public offering, to (i) the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock as if the proposed initial public offering had occurred on January 1, 2016 and (ii) the number of shares offered in the initial public offering whose proceeds are deemed necessary, based on an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to pay the $ amount by which the special cash dividends of $171,425, $87,133 and $ declared by the Company's board of directors on December 21, 2016, May 10, 2017 and , 2017, respectively, exceeded the Company's earnings for the twelve-month period ended September 30, 2017.

The unaudited pro forma net income per share data have been presented in accordance with Securities and Exchange Commission Staff Accounting Bulletin Topic 1B.3 ("SAB Topic 1B.3"). In accordance with SAB Topic 1B.3, dividends declared at or in the twelve-month period preceding an initial public offering are deemed to be in contemplation of the offering with the intention of repayment out of the offering proceeds to the extent that the amount of dividends exceeded the amount of earnings during the twelve-month period ended on the most recent balance sheet date. For the twelve-month period ended September 30, 2017, the Company's net income was $99,488.

Accounts Receivable

Accounts receivable are presented net of a provision for doubtful accounts, which is an estimate of amounts that may not be collectible. Accounts receivable for arrangements with customary payment terms, which are one year or less, are recorded at invoiced amounts and do not bear interest. The Company generally does not require collateral, but the Company may, in certain instances based on its credit assessment, require full or partial prepayment prior to shipment.

For certain customers and/or for certain transactions, the Company provides extended payment arrangements to allow the customer to pay for the purchased equipment in monthly, other periodic or lump-sum payments over a period of one to five years. Certain of these arrangements are collateralized by the underlying assets during the term of the arrangement. Payments due beyond 12 months from the balance sheet date are recorded as non-current assets. In addition, amounts recorded as current and non-current accounts receivable for extended payment term arrangements at any balance sheet date have a corresponding amount recorded as

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)
(Unaudited)

deferred revenue because the Company defers the recognition of revenue for all extended payment term arrangements and only recognizes revenue to the extent of the payment amounts that become due from the customer.

Although there is no contractual interest rate for customer arrangements with extended payment terms, the Company imputes interest on the accounts receivable related to these arrangements and reduces the arrangement fee that will be recognized as revenue for the amount of the imputed interest, which is recorded as interest income over the payment term using the effective interest method. For the periods presented in the accompanying consolidated financial statements, the impact of imputing interest on revenue and interest income was insignificant.

Accounts receivable as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Current portion of accounts receivable, net:		
Accounts receivable, net	$ 87,250	$ 85,662
Amounts due from related party (see Note 14)	15,619	7,390
Accounts receivable, extended payment arrangements	7,365	4,492
	110,234	97,544
Accounts receivable, net of current portion:		
Accounts receivable, extended payment arrangements	6,629	5,528
	$ 116,863	$ 103,072

The Company performs ongoing credit evaluations of its customers and, if necessary, provides a provision for doubtful accounts and expected losses. When assessing and recording its provision for doubtful accounts, the Company evaluates the age of its accounts receivable, current economic trends, creditworthiness of the customers, customer payment history, and other specific customer and transaction information. The Company writes off accounts receivable against the provision when it determines a balance is uncollectible and no longer actively pursues collection of the receivable. Adjustments to the provision for doubtful accounts are recorded as general and administrative expenses in the condensed consolidated statements of operations and comprehensive income.

As of December 31, 2016 and September 30, 2017, the Company concluded that all amounts due under extended payment term arrangements were collectible and no reserve for credit losses was recorded. During the nine months ended September 30, 2016 and 2017, the Company did not provide a reserve for credit losses and did not write off any uncollectible receivables due under extended payment term arrangements.

Other Revenue Recognition Policies

When future trade-in rights are granted to customers at the time of sale, the Company defers a portion of the revenue recognized for the sale and accounts for it as a guarantee at fair value until the trade-in right is exercised or the right expires, in accordance with Accounting Standards Codification (“ASC”) Topic 460, *Guarantees*. Determining the fair value of the trade-in right requires the Company to estimate the probability of the trade-in right being exercised and the future value of the product upon trade-in. The Company assesses and updates these estimates each reporting period, and updates to these estimates may result in either an increase or decrease in the

CASA SYSTEMS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)
(Unaudited)

amount of revenue deferred. The amounts of deferred revenue recorded in the condensed consolidated balance sheet as of December 31, 2016 included amounts deferred for trade-in rights of $8,477. As of September 30, 2017, no amounts for trade-in rights were deferred.

Concentration of Risks

Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents, marketable securities and accounts receivable. Cash and cash equivalents and marketable securities consist of demand deposits, savings accounts, money market mutual funds, commercial paper and certificates of deposit with financial institutions, which may exceed Federal Deposit Insurance Corporation limits. The Company has not experienced any losses related to its cash, cash equivalents and marketable securities and does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

Significant customers are those that represent 10% or more of revenue or accounts receivable as set forth in the following table:

	Revenue		Accounts Receivable, Net	
	Nine Months Ended September 30,		December 31,	September 30,
	2016	2017	2016	2017
Customer A	26%	36%	11%	59%
Customer B	*	11%	13%	*
Customer C	17%	*	21%	*
Customer D	*	*	12%	*

* Less than 10% of total

Customer B is a related party, Liberty Global Affiliates (see Note 14).

Certain of the components and subassemblies included in the Company's products are obtained from a single source or a limited group of suppliers. In addition, the Company primarily relies on two third parties to manufacture its products. Although the Company seeks to reduce dependence on those limited sources of suppliers and manufacturers, the partial or complete loss of certain of these sources could have a material adverse effect on the Company's operating results, financial condition and cash flows and damage its customer relationships.

Impact of Recently Adopted Accounting Standards

In July 2015, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2015-11, *Simplifying the Measurement of Inventory* ("ASU 2015-11"). Under ASU 2015-11, subsequent measurement of inventory is based on the lower of cost or net realizable value. Net realizable value is estimated selling price in the ordinary course of business, less the estimated cost of completion and disposal. This update does not apply to inventory that is measured using last-in, first-out or the retail inventory method. The new guidance is effective for fiscal years beginning after December 15, 2016. The Company adopted ASU 2015-11 during the first quarter of 2017, and there was no material impact on its condensed consolidated financial statements.

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Impact of Recently Issued Accounting Standards

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)* ("ASU 2014-09"), which supersedes existing revenue recognition guidance under GAAP. The core principle of this standard is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which delays the effective date of ASU 2014-09 such that the standard is effective for public companies for annual periods beginning after December 15, 2017 and for interim periods within those fiscal years. Early adoption of the standard is permitted for annual periods beginning after December 15, 2016. The standard is effective for private companies for annual reporting periods beginning after December 15, 2018. Entities are not permitted to adopt the standard earlier than the original effective date for public entities. This standard can be adopted either retrospectively to each prior reporting period presented or as a cumulative effect adjustment as of the date of adoption. In March 2016, the FASB issued ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations* ("ASU 2016-08"), which further clarifies the implementation guidance on principal versus agent considerations in ASU 2014-09. In April 2016, the FASB issued ASU No. 2016-10, *Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing*, clarifying the implementation guidance on identifying performance obligations and licensing. In May 2016, the FASB issued ASU No. 2016-12, *Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients* ("ASU 2016-12"), which clarifies the objective of the collectibility criterion, presentation of taxes collected from customers, non-cash consideration, contract modifications at transition, completed contracts at transition and how guidance in ASU 2014-09 is retrospectively applied. In December 2016, the FASB issued ASU No. 2016-20, *Revenue from Contracts with Customers (Topic 606): Technical Corrections and Improvements*, which corrects unintended application of ASU 2014-09. ASU 2016-08, ASU 2016-10, ASU 2016-12 and ASU 2016-20 have the same effective dates and transition requirements as ASU 2014-09. The Company is currently assessing the potential impact that the adoption of ASU 2014-09, ASU 2016-08, ASU 2016-10 and ASU 2016-12 will have on its consolidated financial statements. Based on its assessment to date, the Company does expect that the adoption of this new accounting standard will impact the timing and amount of assets, liabilities, revenue and/or expenses recorded and the financial statement disclosures related to the Company's revenue from contracts with its customers. For example, the treatment of extended payment terms, contingent revenue elements, commissions and costs to obtain customer contracts may change under the new accounting standard. The Company is continuing to assess the impact of this new accounting standard and the expected adoption method. This assessment is subject to change, and the Company may identify other impacts on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases* ("ASU 2016-02"), which will require lessees to recognize most leases on their balance sheets as a right-of-use asset with a corresponding lease liability, and lessors to recognize a net lease investment. Additional qualitative and quantitative disclosures will also be required. The new guidance is effective for public companies for annual reporting periods beginning after December 15, 2018 and for interim periods within those fiscal years. The new guidance is effective for private companies for annual reporting periods beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early application is permitted. The Company is currently assessing the potential impact that the adoption of ASU 2016-02 will have on its consolidated financial statements.

In June 2016, the FASB issued ASU 2016-13, *Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). This guidance requires that financial assets measured at amortized cost be presented at the net

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amount expected to be collected. The measurement of expected credit losses is based on historical experience, current conditions and reasonable and supportable forecasts that affect the collectibility. This guidance is effective for public companies for annual reporting periods beginning after December 15, 2019 and for interim periods within those fiscal years. This guidance is effective for private companies for annual reporting periods beginning after December 15, 2020, and interim periods within fiscal years beginning after December 15, 2021. The Company is currently assessing the potential impact that the adoption of ASU 2016-13 will have on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"), to address diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The standard is effective for public companies for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The standard is effective for private companies for annual periods beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019. The Company will adopt ASU 2016-15 during the first quarter of 2018, and adoption is not expected to have a material impact on its consolidated financial statements.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfer of Assets Other than Inventory* ("ASU 2016-16"), which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. The standard is effective for public companies for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The standard is effective for private companies for annual periods beginning after December 15, 2018, and interim reporting periods within annual periods beginning after December 15, 2019. The Company will adopt ASU 2016-16 during the first quarter of 2018, and adoption is not expected to have a material impact on its consolidated financial statements.

In August 2017, the FASB issued ASU 2017-12, *Derivatives and Hedging—Targeted Improvements to Accounting for Hedging Activities* ("ASU 2017-12"), which aims to improve the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities in its financial statements. The standard is effective for public companies for annual periods beginning after December 15, 2018, including interim periods within those fiscal years. The standard is effective for private companies for annual periods beginning after December 15, 2019, and interim reporting periods within annual periods beginning after December 15, 2020. The Company is currently assessing the potential impact that the adoption of ASU 2017-12 will have on its consolidated financial statements.

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3. Inventory

Inventory as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Raw materials	$ 5,037	$ 8,719
Work in process	103	11
Finished goods:		
Manufactured finished goods	60,866	43,545
Deferred inventory costs	4,488	2,376
	70,494	54,651
Valuation adjustment for excess and obsolete inventory	(4,519)	(5,208)
	$ 65,975	$ 49,443

4. Property and Equipment

Property and equipment as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Computers and purchased software	$ 9,246	$ 11,398
Leasehold improvements	1,044	1,171
Furniture and fixtures	1,516	1,581
Machinery and equipment	11,494	15,747
Land	3,091	3,091
Building	4,765	4,765
Building improvements	4,724	4,820
Trial systems at customers' sites	6,581	7,541
	42,461	50,114
Less: Accumulated depreciation and amortization	(16,779)	(22,186)
	$ 25,682	$ 27,928

During the nine months ended September 30, 2016 and 2017, the Company transferred trial systems from inventory into property and equipment with a value of $758 and $960, respectively, net of transfers of trial systems to cost of revenue. In addition, the Company transferred $571 and $1,666 of equipment from inventory into property and equipment during the nine months ended September 30, 2016 and 2017, respectively.

Total depreciation and amortization expense was $4,451 and $5,576 for the nine months ended September 30, 2016 and 2017, respectively.

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5. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Accrued compensation and related taxes	$ 18,475	$ 15,577
Accrued warranty	1,256	1,301
Dividends and equitable adjustments payable (see Note 10)	107,509	9,178
Accrued customer incentives	15,449	5,380
Other accrued expenses	6,495	2,611
	$ 149,184	$ 34,047

Accrued Warranty

Substantially all of the Company's products are covered by a warranty for software and hardware for periods ranging from 90 days to one year. In addition, in conjunction with customers' renewals of maintenance and support contracts, the Company offers an extended warranty for periods typically of one to three years for agreed-upon fees. In the event of a failure of a hardware product or software covered by these warranties, the Company must repair or replace the software or hardware or, if those remedies are insufficient, and at the discretion of the Company, provide a refund. The Company's warranty reserve, which is included in accrued expenses and other current liabilities in the condensed consolidated balance sheets, reflects estimated material, labor and other costs related to potential or actual software and hardware warranty claims for which the Company expects to incur an obligation. The Company's estimates of anticipated rates of warranty claims and the costs associated therewith are primarily based on historical information and future forecasts. The Company periodically assesses the adequacy of the warranty reserve and adjusts the amount as necessary. If the historical data used to calculate the adequacy of the warranty reserve are not indicative of future requirements, additional or reduced warranty reserves may be required.

A summary of changes in the amount reserved for warranty costs for the nine months ended September 30, 2016 and 2017 is as follows:

	Nine Months Ended September 30,	
	2016	2017
Warranty reserve at beginning of period	$ 993	$ 1,256
Provisions	1,595	1,448
Charges	(1,175)	(1,403)
Warranty reserve at end of period	$ 1,413	$ 1,301

6. Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the price that would be received for an asset or the exit price that would be paid to transfer a liability in the principal or most advantageous market in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of

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unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

Level 1— Quoted prices in active markets for identical assets and liabilities.

Level 2— Observable inputs (other than Level 1 quoted prices) such as quoted prices in active markets for similar assets or liabilities at the measurement date; quoted prices in markets that are not active for identical or similar assets and liabilities; or other inputs that are observable or can be corroborated by observable market data.

Level 3— Unobservable inputs that involve management judgment and are supported by little or no market activity, including pricing models, discounted cash flow methodologies and similar techniques.

The following tables present information about the fair value of the Company's financial assets and liabilities as of December 31, 2016 and September 30, 2017 and indicate the level of the fair value hierarchy utilized to determine such fair values:

	Fair Value Measurements as of December 31, 2016 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Certificates of deposit	$ —	$ 17,558	$ —	$ 17,558
Money market mutual funds	321,088	—	—	321,088
Foreign currency contracts	—	60	—	60
	$ 321,088	$ 17,618	$ —	$ 338,706
Liabilities:				
SARs	$ —	$ —	$ 1,195	$ 1,195
Foreign currency contracts	—	56	—	56
	$ —	$ 56	$ 1,195	$ 1,251

	Fair Value Measurements as of September 30, 2017 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Certificates of deposit	$ —	$ 19,259	$ —	$ 19,259
Commercial paper	—	2,998	—	2,998
Money market mutual funds	147,032	—	—	147,032
Foreign currency contracts	—	5	—	5
	$ 147,032	$ 22,262	$ —	$ 169,294
Liabilities:				
SARs	$ —	$ —	$ 1,067	$ 1,067
Foreign currency contracts	—	12	—	12
	$ —	$ 12	$ 1,067	$ 1,079

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During the nine months ended September 30, 2016 and 2017, there were no transfers between Level 1, Level 2 and Level 3.

There were no changes to the valuation techniques used to measure asset and liability fair values on a recurring basis during the nine months ended September 30, 2017 from those included in the Company's audited consolidated financial statements for the year ended December 31, 2016. The following table provides a summary of changes in the fair values of the Company's SARs liability, for which fair value is determined by Level 3 inputs:

	Nine Months Ended September 30,	
	2016	2017
Fair value at beginning of period	$ 737	$ 1,195
Change in fair value	276	(128)
Fair value at end of period	$ 1,013	$ 1,067

7. Derivative Instruments

The Company has certain international customers that are billed in foreign currencies. To mitigate the volatility related to fluctuations in the foreign exchange rates for accounts receivable denominated in foreign currencies, the Company enters into foreign currency forward contracts. As of September 30, 2017, the Company had foreign currency forward contracts outstanding with notional amounts totaling 3,264 euros maturing in the fourth quarter of 2017 and first quarter of 2018. As of December 31, 2016, the Company had foreign currency forward contracts outstanding with notional amounts totaling 11,171 euros maturing in the first and second quarter of 2017.

The Company's foreign currency forward contracts economically hedge certain risk but are not designated as hedges for financial reporting purposes, and accordingly, all changes in the fair value of these derivative instruments are recorded as unrealized foreign currency transaction gains or losses and are included in the condensed consolidated statements of operations and comprehensive income as a component of other income (expense). The Company records all derivative instruments in the consolidated balance sheet at their fair values. As of December 31, 2016 and September 30, 2017, the Company recorded an asset of $60 and $5, respectively, and as of December 31, 2016 and September 30, 2017, the Company recorded a liability of $56 and $12, respectively, related to outstanding foreign currency forward contracts, which were included in prepaid expenses and other current assets and in accrued expenses and other current liabilities, respectively, in the condensed consolidated balance sheets.

8. Income Taxes

The Company's effective income tax rate was 24.9% and 17.1% for the nine months ended September 30, 2016 and 2017, respectively. The effective income tax rate is based on the estimated annual effective tax rate, adjusted for discrete tax items recorded in the period. The provision for income taxes was $16,228 and $12,334 for the nine months ended September 30, 2016 and 2017, respectively.

The Company determines its estimated annual effective tax rate at the end of each interim period based on estimated pre-tax income and facts known at that time. The estimated annual effective tax rate is applied to the

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year-to-date pre-tax income at the end of each interim period with certain adjustments. The tax effect of significant unusual or extraordinary items is discretely reflected in the period in which they occur. Our estimated annual effective tax rate can change based on the mix of jurisdictional pre-tax income and other factors.

The effective income tax rate for the nine months ended September 30, 2017 differed from the federal statutory rate due to foreign tax rate differential, permanent differences, research and development tax credits, excess tax benefit from stock-based transactions and state taxes. Permanent differences primarily included the nondeductible stock-based compensation expense.

The change in the provision for income taxes for the nine months ended September 30, 2017 compared to the nine months ended September 30, 2016 was primarily due to foreign tax rate differential impacted by the geographic distribution of earnings in foreign jurisdictions, excess tax benefit from stock-based transactions, permanent differences, and U.S. research and development tax credits. For the nine months ended September 30, 2017, the Company recorded tax benefits attributed to foreign jurisdiction earnings with lower effective tax rates and excess tax benefits from stock-based transactions and recorded a benefit attributed to U.S. federal research and development tax credits.

9. Debt

The aggregate principal amount of debt outstanding as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Term loans	$ 300,000	$ 297,750
Mortgage loan	7,553	7,335
Total principal amount of debt outstanding	$ 307,553	$ 305,085

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Current and non-current debt obligations reflected in the consolidated balance sheets as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Current liabilities:		
Term loans	$ 3,000	$ 3,000
Mortgage loan	292	300
Current portion of principal payment obligations	3,292	3,300
Unamortized debt issuance costs, current portion	(1,159)	(1,150)
Current portion of long-term debt, net of unamortized debt issuance costs	$ 2,133	$ 2,150
Non-current liabilities:		
Term loans	$ 297,000	$ 294,750
Mortgage loan	7,261	7,035
Non-current portion of principal payment obligations	304,261	301,785
Unamortized debt issuance costs, non-current portion	(6,643)	(5,788)
Long-term debt, net of current portion and unamortized debt issuance costs	$ 297,618	$ 295,997

Term Loan and Revolving Credit Facilities

On December 20, 2016, the Company entered into a credit agreement with JPMorgan Chase Bank, N.A., as administrative agent, various lenders and JPMorgan Chase Bank, N.A. and Barclays Bank PLC providing for (i) a term loan facility of $300,000 and (ii) a revolving credit facility of up to $25,000 in revolving credit loans and letters of credit.

As of December 31, 2016 and September 30, 2017, $300,000 and $297,750 in principal amount, respectively, was outstanding under the term loan facility (the “Term Loans”) and the Company did not have any outstanding borrowings under the revolving credit facility; however, the Company had used $1,000 under the revolving credit facility for a stand-by letter of credit that serves as collateral for a stand-by letter of credit issued by Bank of America to one of the Company’s customers pursuant to a contractual performance guarantee. In addition, the Company may, subject to certain conditions, including the consent of the administrative agent and the institutions providing such increases, increase the facilities by an unlimited amount so long as the Company is in compliance with specified leverage ratios, or otherwise by up to $70,000.

Borrowings under the facilities bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at the Company’s option, a base rate (defined as the highest of (x) the JPMorgan Chase, N.A. prime rate, (y) the federal funds effective rate, plus one half percent (0.50%) per annum and (z) a one-month Eurodollar rate plus 1.00% per annum) plus an applicable margin. The applicable margin for borrowings under the term loan facility is 4.00% per annum for Eurodollar rate loans (subject to a 1.00% interest rate floor) and 3.00% per annum for base rate loans. The applicable margin for borrowings under the revolving credit facility is 2.00% per annum for Eurodollar rate loans and 1.00% per annum for base rate loans, subject to reduction based on various factors, including the Company’s completion of an initial public offering and its

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maintaining of specified net leverage ratios. The interest rates payable under the facilities are subject to an increase of 2.00% per annum during the continuance of any payment default.

For Eurodollar rate loans, the Company may select interest periods of one, two, three or six months or, with the consent of all relevant affected lenders, twelve months. Interest will be payable at the end of the selected interest period, but no less frequently than every three months within the selected interest period. Interest on any base rate loan is not set for any specified period and payable quarterly. The Company has the right to convert Eurodollar rate loans into base rate loans and the right to convert base rate loans into Eurodollar rate loans at its option, subject, in the case of Eurodollar rate loans, to prepayment penalties if the conversion is effected prior to the end of the applicable interest period. As of December 31, 2016, the interest rate on the Term Loans was 5.00% per annum, which was based on a one-month Eurodollar rate at the applicable floor of 1.00% per annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans. As of September 30, 2017, the interest rate on the Term Loans was 5.33% per annum, which was based on a three-month Eurodollar rate of 1.33% per annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans.

Upon entering into the term loan facility, the Company incurred debt issuance costs of $7,811, which were initially recorded as a reduction of the debt liability and are amortized to interest expense using the effective interest method from the issuance date of the Term Loan until the maturity date. Principal payments of $2,250 were made under the term loan facility during the nine months ended September 30, 2017. Interest expense, including the amortization of debt issuance costs, totaled $12,443 for the nine months ended September 30, 2017.

The revolving credit facility also requires payment of quarterly commitment fees at a rate of 0.25% per annum on the difference between committed amounts and amounts actually borrowed under the facility and customary letter of credit fees. For the nine months ended September 30, 2017, interest expense related to the fee for the unused amount of the revolving credit facility totaled $45.

The Term Loans mature on December 20, 2023, and the revolving credit facility matures on December 20, 2021. The Term Loans are subject to amortization in equal quarterly installments, commencing on March 31, 2017, of principal in an annual aggregate amount equal to 1.0% of the original principal amount of the Term Loans of $300,000, with the remaining outstanding balance payable at the date of maturity.

Voluntary prepayments of principal amounts outstanding under the term loan facility are permitted at any time; however, if a prepayment of principal is made with respect to a Eurodollar loan on a date other than the last day of the applicable interest period, the Company is required to compensate the lenders for any funding losses and expenses incurred as a result of the prepayment. Prior to the revolving credit facility maturity date, funds borrowed under the revolving credit facility may be borrowed, repaid and reborrowed, without premium or penalty.

In addition, the Company is required to make mandatory prepayments under the facilities with respect to (i) 100% of the net cash proceeds from certain asset dispositions (including casualty and condemnation events) by the Company or certain of its subsidiaries, subject to certain exceptions and reinvestment provisions, (ii) 100% of the net cash proceeds from the issuance or incurrence of any additional debt by the Company or certain of its subsidiaries, subject to certain exceptions, and (iii) 50% of the Company’s excess cash flow, as defined in the credit agreement, subject to reduction upon its achievement of specified performance targets.

The facilities are secured by, among other things, a first priority security interest, subject to permitted liens, in substantially all of the Company’s assets and all of the assets of certain of its subsidiaries and a pledge of

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certain of the stock of certain of its subsidiaries, in each case subject to specified exceptions. The facilities contain customary affirmative and negative covenants, including certain restrictions on the Company's ability to pay dividends, and, with respect to the revolving credit facility, a financial covenant requiring the Company to maintain a specified total net leverage ratio in the event that on the last day of any fiscal quarter the Company has utilized more than 30% of its borrowing capacity under the facility. As of December 31, 2016 and September 30, 2017, the Company had not utilized more than 30% of its borrowing capacity under the revolving credit facility and compliance with the financial covenant was not applicable.

Commercial Mortgage Loan

On July 1, 2015, the Company entered into a commercial mortgage loan agreement in the amount of $7,950 (the "Mortgage Loan"). Borrowings under the Mortgage Loan bear interest at a rate of 3.5% per annum and are repayable in 60 monthly installments of $46, consisting of principal and interest based on a 20-year amortization schedule. The remaining amount of unpaid principal under the Mortgage Loan is due on the maturity date of July 1, 2020. Upon entering into the Mortgage Loan, the Company incurred debt issuance costs of $45, which was initially recorded as a direct deduction from the debt liability and are amortized to interest expense using the effective interest method from issuance date of the loan until the maturity date.

The Company made principal payments under the Mortgage Loan of $210 and $218 during the nine months ended September 30, 2016 and 2017, respectively. Interest expense, including the amortization of debt issuance costs, totaled $212 and $204 for the nine months ended September 30, 2016 and 2017, respectively.

The Mortgage Loan is secured by the land and building purchased in March 2015 and subjects the Company to various affirmative, negative and financial covenants, including maintenance of a minimum debt service ratio. The Company was in compliance with all covenants of the Mortgage Loan as of December 31, 2016 and September 30, 2017.

As of September 30, 2017, aggregate minimum future principal payments of the Company's debt are summarized as follows:

Year Ending December 31,	
2017	$ 824
2018	3,303
2019	3,314
2020	9,644
2021	3,000
Thereafter	285,000
	$ 305,085

10. Stockholders' Deficit

Special Dividends to Holders of Common and Preferred Stock

November 2014 Special Dividend

On November 30, 2014, the board of directors declared and the stockholders approved a special cash dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared

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to stockholders was $1.9173 per share of common stock, $3.8346 per share of Series B convertible preferred stock (the "Series B Preferred Stock") and $3.8346 per share of Series C convertible preferred stock (the "Series C Preferred Stock"). Related to this special dividend declared in November 2014, no dividend payments were made to the common and preferred stockholders during the nine months ended September 30, 2016 and 2017 and no dividends were payable as of December 31, 2016 or September 30, 2017.

In connection with the special dividend declared in November 2014, the board of directors also approved cash payments to be made to holders of the Company's stock options and SARs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of stock options and SARs are equal to $1.9173 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to the holders of stock options and SARs will be made as equity awards vest through fiscal year 2018. During the nine months ended September 30, 2016 and 2017, the Company paid $158 and $94, respectively, to the holders of stock options and SARs for vested equity awards. As of December 31, 2016 and September 30, 2017, equitable adjustment payments to be made as equity awards vest through fiscal 2018, net of estimated forfeitures, totaled $180 and $86, respectively, and were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

June 2016 Special Dividend

On June 17, 2016, the board of directors declared and the stockholders approved a special cash dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared to stockholders was $2.9455 per share of common stock, $5.8910 per share of Series B Preferred Stock, and $5.8910 per share of Series C Preferred Stock. Related to this special dividend declared in June 2016, the Company paid $43,148 of dividends to the common and preferred stockholders during the nine months ended September 30, 2016 and no dividends were payable as of December 31, 2016 or September 30, 2017.

In connection with the special dividend declared in June 2016, the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of stock options, SARs and RSUs are equal to $2.9455 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2020. During the nine months ended September 30, 2016 and 2017, the Company paid $4,487 and $940, respectively, to the holders of such vested equity awards. As of December 31, 2016 and September 30, 2017, equitable adjustment payments to be made as equity awards vest through fiscal 2020, net of estimated forfeitures, totaled $2,055 and $1,115, respectively, and were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled $19,359, $1,054 and $22,735, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled $6,733. The $49,881 aggregate amount of such dividends and equitable adjustments was recorded as a charge to retained earnings during the year ended December 31, 2016.

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December 2016 Special Dividend

On December 21, 2016, the board of directors declared, and on December 29, 2016 the stockholders approved, a special cash dividend to the holders of common stock and preferred stock of record on December 27, 2016. The cash dividend declared to stockholders was $11.6529 per share of common stock, $23.3058 per share of Series B Preferred Stock and $23.3058 per share of Series C Preferred Stock. Related to this special dividend declared in December 2016, the Company paid $77,153 of dividends to the common and preferred stockholders during the nine months ended September 30, 2017, and, as of December 31, 2016, dividend payments to be made totaled $77,153 and were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets. No dividends were payable as of September 30, 2017.

In connection with the special dividend declared in December 2016, the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of stock options, SARs and RSUs are equal to $11.6529 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2020. During the nine months ended September 30, 2017, the Company paid $22,731 to the holders of such vested equity awards. As of December 31, 2016 and September 30, 2017, equitable adjustment payments to be made as equity awards vest through fiscal 2020, net of estimated forfeitures, totaled $28,121 and $5,390, respectively, and were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled $77,311, $4,172 and $89,942, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled $28,121. The $199,546 aggregate amount of such dividends and equitable adjustments was recorded as a charge to retained earnings (until reduced to zero), a charge to additional paid-in capital (until reduced to zero) and a charge to accumulated deficit during the year ended December 31, 2016.

May 2017 Special Dividend

On May 10, 2017, the board of directors declared and the stockholders approved a special dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared to stockholders was $5.8872 per share of common stock, $11.7744 per share of Series B Preferred Stock and $11.7744 per share of Series C Preferred Stock. Related to this special dividend declared in May 2017, the Company paid $87,133 of dividends to the common and preferred stockholders during the nine months ended September 30, 2017 and no dividends were payable as of September 30, 2017.

In connection with the special dividend declared in May 2017, the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of the stock options, SARs and RSUs are equal to $5.8872 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2021. During the nine months ended September 30, 2017, the Company paid $10,136 to the holders of such vested equity awards. As of September 30, 2017, equitable adjustment payments to be made as equity awards

CASA SYSTEMS, INC.

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vest through fiscal 2021, net of estimated forfeitures, totaled $2,587 and were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled $39,585, $2,108 and $45,440, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled $12,723. The $99,856 aggregate amount of such dividends and equitable adjustments was recorded as a charge to additional paid-in capital (until reduced to zero) and a charge to accumulated deficit during the nine months ended September 30, 2017.

11. Stock-based Compensation

2011 Stock Incentive Plan

The 2011 Plan provides for the Company to sell or issue common stock or restricted common stock, or to grant qualified incentive stock options, nonqualified stock options, SARs, RSUs or other stock-based awards to the Company's employees, officers, directors, advisers and outside consultants. The total number of shares authorized for issuance under the 2011 Plan was 4,605 shares as of September 30, 2017, of which 556 shares remained available for future grant.

Stock Options

The following table summarizes the outstanding stock option activity and a summary of information related to stock options as of and for the nine months ended September 30, 2017:

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at January 1, 2017	2,881	$ 18.20	6.79	$123,844
Granted	252	59.63		
Exercised	(20)	10.31		
Forfeited	(90)	40.28		
Outstanding at September 30, 2017	3,023	$ 21.05	6.28	$107,306
Options exercisable at September 30, 2017	2,234	$ 13.64	5.55	$ 95,237
Vested or expected to vest at September 30, 2017	2,979	$ 20.65	6.25	$106,849

The fair value of each option is estimated on the date of grant using the Black-Scholes option-pricing model using the following assumptions, presented on a weighted-average basis:

	Nine Months Ended September 30,	
	2016	2017
Risk-free interest rate	1.1%–1.6%	2.0%–2.1%
Expected term (in years)	4.7–6.2	6.0–6.2
Expected volatility	34.2%–40.4%	33.9%–38.5%
Expected dividend yield	0.0%	0.0%

The weighted-average grant-date fair value of options granted during the nine months ended September 30, 2016 and 2017 was $18.55 and $23.63 per share, respectively. Cash proceeds received upon the exercise of

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options were $172 and $204 during the nine months ended September 30, 2016 and 2017, respectively. The intrinsic value of stock options exercised during the nine months ended September 30, 2016 and 2017 was $1,982 and $930, respectively. The aggregate intrinsic value is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock.

Restricted Stock Units

A summary of RSU activity under the 2011 Plan for the nine months ended September 30, 2017 is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value	Aggregate Fair Value
Unvested balance at January 1, 2017	280	$ 24.60	
Granted	38	60.79	
Vested	(146)	22.69	$ 8,908
Unvested balance at September 30, 2017	172	$ 34.24	

The Company withheld 8 and 62 shares of common stock in settlement of employee tax withholding obligations due upon the vesting of RSUs during the nine months ended September 30, 2016 and 2017, respectively.

Stock Appreciation Rights

In January 2017, the Company granted 22 SARs that allow the holder the right, upon exercise, to receive in cash the amount of the difference between the fair value of the Company's common stock at the date of exercise and the price of the underlying common stock at the date of grant of each SAR. The price of the underlying common stock on the date of grant was $61.18 per share and the grant-date fair value was $22.60 per SAR. The SARs vest over a four-year period from the date of grant and expire ten years from the date of grant. As of September 30, 2017, 50 SARs were outstanding and 16 were unvested. As of September 30, 2017, there were 34 SARs exercisable and the fair value of each SAR was $35.22 per SAR. The fair value of the SAR liability as of December 31, 2016 and September 30, 2017 was $1,195 and $1,067, respectively, (see Note 6) and was included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

CASA SYSTEMS, INC.

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Stock-Based Compensation Expense

Stock-based compensation expense related to stock options, RSUs and SARs for the nine months ended September 30, 2016 and 2017 was classified in the condensed consolidated statements of operations and comprehensive income as follows:

	Nine Months Ended September 30,	
	2016	2017
Cost of revenue	$ 178	$ 202
Research and development expenses	1,637	1,535
Sales and marketing expenses	846	801
General and administrative expenses	3,313	3,355
	$ 5,974	$ 5,893

As of September 30, 2017, there was $15,682 of unrecognized compensation cost related to outstanding stock options, RSUs and SARs, which is expected to be recognized over a weighted-average period of 2.56 years.

12. Net Income per Share and Unaudited Pro Forma Net Income per Share

Net Income per Share

Basic and diluted net income per share attributable to common stockholders was calculated as follows:

	Nine Months Ended September 30,	
	2016	2017
Numerator:		
Net income	$ 48,817	$ 59,637
Cumulative dividends on convertible preferred stock	(4,401)	(4,401)
Dividends declared on convertible preferred stock	(23,789)	(47,547)
Undistributed earnings allocated to participating securities	(699)	—
Net income attributable to common stockholders, basic	19,928	7,689
Undistributed earnings reallocated to dilutive potential common shares	78	—
Net income attributable to common stockholders, diluted	$ 20,006	$ 7,689
Denominator:		
Weighted-average shares used to compute net income per share attributable to common stockholders, basic	6,564	6,731
Dilutive effect of stock options	1,703	1,820
Dilutive effect of restricted stock units	160	88
Weighted-average shares used to compute net income per share attributable to common stockholders, diluted	8,427	8,639
Net income per share attributable to common stockholders:		
Basic	$ 3.04	$ 1.14
Diluted	$ 2.37	$ 0.89

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The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the computation of diluted net income per share attributable to common stockholders for the periods presented because including them would have been anti-dilutive:

	September 30,	
	2016	2017
Convertible preferred stock (on an as-converted basis)	8,076	8,076
Options to purchase common stock	494	345

Unaudited Pro Forma Net Income per Share

Unaudited pro forma basic and diluted net income per share attributable to common stockholders for the nine months ended September 30, 2017 have been prepared to give effect, upon the closing of a qualified initial public offering, to (i) the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock as if the proposed initial public offering had occurred on January 1, 2016 and (ii) the number of shares offered in the initial public offering whose proceeds are deemed necessary, based on an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to pay the $ amount by which the special cash dividends of $171,425, $87,133 and $ declared by the Company's board of directors on December 21, 2016, May 10, 2017 and , 2017, respectively, exceeded the Company's earnings for the twelve-month period ended September 30, 2017.

The unaudited pro forma net income per share data have been presented in accordance with Securities and Exchange Commission Staff Accounting Bulletin Topic 1B.3 ("SAB Topic 1B.3"). In accordance with SAB Topic 1B.3, dividends declared at or in the twelve-month period preceding an initial public offering are deemed to be in contemplation of the offering with the intention of repayment out of the offering proceeds to the extent that the amount of dividends exceeded the amount of earnings during the twelve-month period ended on the most recent balance sheet date. For the twelve-month period ended September 30, 2017, the Company's net income was $99,488 (unaudited).

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Unaudited pro forma basic and diluted net income per share attributable to common stockholders was calculated as follows:

	Nine Months Ended September 30, 2017
Numerator:	
Net income	$ 59,637
Denominator:	
Weighted-average shares used to compute net income per share attributable to common stockholders, basic	6,731
Pro forma adjustment to reflect assumed conversion of convertible preferred stock upon closing of initial public offering	8,076
Pro forma adjustments to reflect the number of shares whose proceeds are deemed necessary to pay dividends in excess of earnings	
Pro forma weighted-average shares used in computing pro forma net income per share attributable to common stockholders, basic	
Dilutive effect of stock options	1,820
Dilutive effect of restricted stock units	88
Pro forma weighted-average shares used in computing pro forma net income per share attributable to common stockholders, diluted	
Pro forma net income per share attributable to common stockholders:	
Basic	$
Diluted	$

13. Segment Information

The Company operates as one operating segment. Operating segments are defined as components of an enterprise for which separate financial information is regularly evaluated by the Company's chief operating decision maker, or decision-making group, in deciding how to allocate resources and assess performance. The Company has determined that its chief operating decision maker is its President and Chief Executive Officer. The Company's chief operating decision maker reviews the Company's financial information on a consolidated basis for purposes of allocating resources and assessing financial performance. Since the Company operates as one operating segment, all required financial segment information can be found in these consolidated financial statements.

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The following table summarizes the Company's revenue based on the customer's location, as determined by the customer's shipping address:

	Nine Months Ended September 30,	
	2016	2017
North America:		
United States	$ 77,790	$ 95,630
Canada	50,508	29,766
Total North America	128,298	125,396
Asia-Pacific	28,184	31,888
Europe, Middle East and Africa	27,377	44,906
Latin America	33,043	31,423
Total revenue(1)	$ 216,902	$ 233,613

(1) Other than the United States and Canada, no individual countries represented 10% or more of the Company's total revenue for each of the periods presented.

The Company's property and equipment, net by location was as follows:

	December 31, 2016	September 30, 2017
United States	$ 21,984	$ 23,660
China	2,305	2,355
Other	1,393	1,913
Total property and equipment, net	$ 25,682	$ 27,928

14. Related Parties

Transactions Involving Liberty Global Ventures Holding B.V. and its Affiliates

Liberty Global Ventures Holding B.V. is a principal stockholder of the Company through its ownership of Series B Preferred Stock. Liberty Global Ventures Holding B.V. controls a wholly owned subsidiary, Liberty Global Services B.V., that is a customer of the Company. During the nine months ended September 30, 2016 and 2017, the Company recognized revenue of $16,332 and $24,981, respectively, from transactions with Liberty Global Affiliates and amounts received in cash from Liberty Global Affiliates totaled $24,981 and $32,600. As of December 31, 2016 and September 30, 2017, amounts due from Liberty Global Affiliates totaled $15,619 and $7,390, respectively.

Consulting Agreement with Bill Styslinger

In March 2012, the Company entered into a consulting agreement with Bill Styslinger, a member of its board of directors, for the provision of sales management, corporate strategy and advisory services, which was initially scheduled to expire on January 31, 2014. The Company extended the term of the consulting agreement on two occasions, and the consulting agreement expired on December 31, 2016. During the nine months ended September 30, 2016, the Company recognized sales and marketing expenses of $242 and paid Mr. Styslinger

$379, for his services under this consulting agreement. As of December 31, 2016, no amounts were due to Mr. Styslinger for his consulting services.

During the nine months ended September 30, 2017, the Company recognized general and administrative expenses of $150 and paid Mr. Styslinger $100 for his services as a non-employee director. As of September 30, 2017, the amount due to Mr. Styslinger for his services as a non-employee director was $50.

In connection with Mr. Styslinger's services as a consultant, in May 2012, the Company granted Mr. Styslinger stock options for the purchase of 120,000 shares of common stock, at an exercise price of $8.46 per share, which vested as to one-third of the shares under the award on February 1, 2013 and in equal monthly installments thereafter for the following two years. The grant-date fair value of the award totaled $527, which was recorded by the Company as stock-based compensation expense over the vesting period of the award. The Company recognized no sales and marketing expenses related to these stock options during the nine months ended September 30, 2016 and 2017.

In connection with special dividends declared by the Company's board of directors in June 2016, December 2016, and May 2017 (see Note 10), the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs in accordance with the provisions of the Company's equity incentive plans. In connection with the special dividends declared in June 2016, the Company paid Mr. Styslinger $150 as equitable adjustments in the nine months ended September 30, 2016. In connection with the special dividend declared in December 2016 and May 2017, the Company paid Mr. Styslinger $920 as an equitable adjustment in the nine months ended September 30, 2017.

Employment of Rongke Xie

Rongke Xie, who serves as Deputy General Manager of Guangzhou Casa Communication Technology LTD, one of the Company's subsidiaries, is the sister of Lucy Xie, the Company's Senior Vice President of Operations and a member of its board of directors. During the nine months ended September 30, 2016 and 2017, the Company paid Rongke Xie $130 and $139, respectively, for her services as an employee of the Company.

15. Commitments and Contingencies

Operating Leases

The Company leases manufacturing, warehouse and office space in the United States, China, Spain and Ireland under non-cancelable operating leases that expire in 2021, 2019, 2022 and 2026, with a right to terminate in 2021, respectively. Rent expense was $363 and $697 for the nine months ended September 30, 2016 and 2017, respectively. Rent expense is recorded on a straight-line basis, and, as a result, as of December 31, 2016 and September 30, 2017, the Company had a deferred rent liability of $130 and $272, respectively, which is included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

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Future minimum lease payments under non-cancelable operating leases as of September 30, 2017 were as follows:

Year Ending December 31,	
2017	$ 208
2018	843
2019	594
2020	587
2021	395
Thereafter	5
	$2,632

Indemnification

The Company has, in the ordinary course of business, agreed to defend and indemnify certain customers against third-party claims asserting infringement of certain intellectual property rights, which may include patents, copyrights, trademarks or trade secrets.

As permitted under Delaware law, the Company indemnifies its officers, directors and employees for certain events or occurrences that happen by reason of their relationship with or position held at the Company.

As of December 31, 2016 and September 30, 2017, the Company had not experienced any losses related to these indemnification obligations and no material claims were outstanding. The Company does not expect significant claims related to these indemnification obligations and, consequently, concluded that the fair value of these obligations is negligible, and no related liabilities were recorded in its consolidated financial statements.

Litigation

From time to time, and in the ordinary course of business, the Company may be subject to various claims, charges and litigation. As of September 30, 2017, the Company did not have any pending claims, charges or litigation that it expects would have a material adverse effect on its consolidated financial position, results of operations or cash flows.

16. Subsequent Events

For its interim condensed consolidated financial statements as of September 30, 2017 and for the nine months then ended, the Company evaluated subsequent events through November 3, 2017, the date on which those financial statements were issued.

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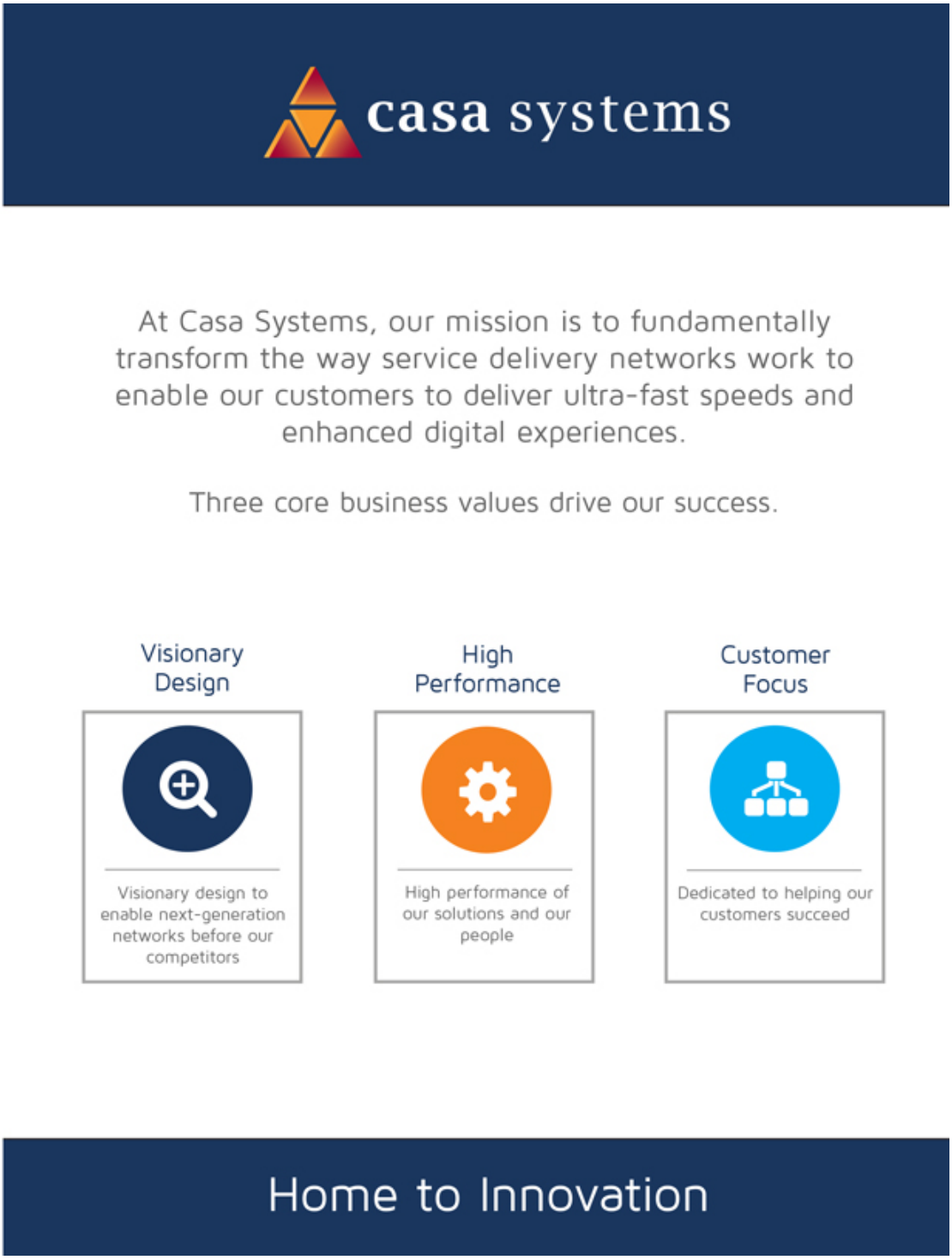

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table indicates the expenses to be incurred in connection with the offering described in this registration statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimated except the SEC registration fee, the Financial Industry Regulatory Authority, Inc., or FINRA, filing fee and the Nasdaq Global Market listing fee.

	Amount
SEC registration fee	$18,675
FINRA filing fee	23,000
Nasdaq Global Market listing fee	*
Legal fees and expenses	*
Accountants' fees and expenses	*
Printing and engraving expenses	*
Blue Sky fees and expenses	*
Transfer Agent's and registrar fees and expenses	*
Miscellaneous expenses	*
Total expenses	$ *

* To be filed by amendment.

Item 14. Indemnification of Directors and Officers.

Section 102 of the General Corporation Law of the State of Delaware permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our restated certificate of incorporation that will be effective upon the closing of this offering provides that no director of the Registrant shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Our restated certificate of incorporation that will be effective upon the closing of this offering provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful.

Our restated certificate of incorporation that will be effective upon the closing of this offering provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys' fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

We have entered into indemnification agreements with certain of our executive officers and directors and intend to enter into similar indemnification agreements with each of our other directors and executive officers prior to the closing of this offering. These indemnification agreements may require us, among other things, to indemnify each such director or executive officer for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by him or her in any action or proceeding arising out of his or her service as one of our directors or executive officers.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

In any underwriting agreement we enter into in connection with the sale of common stock being registered hereby, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act of 1933, as amended, against certain liabilities.

Item 15. Recent Sales of Unregistered Securities.

Set forth below is information regarding shares of capital stock issued by us since December 1, 2013, that were not registered under the Securities Act. Also included is the consideration received by us for such shares and information relating to the section of the Securities Act, or rule of the Securities and Exchange Commission, under which exemption from registration was claimed.

(1) Under our 2011 Stock Incentive Plan, we granted stock options to purchase an aggregate of 1,834,842 shares of our common stock, with exercise prices ranging from $11.47 to $61.18 per share. 622,180 shares of common stock have been issued pursuant to the exercise of stock options for aggregate consideration of $5,345,194.

(2) Under our 2011 Stock Incentive Plan, we granted an aggregate of 507,789 restricted stock units to be settled in shares of our common stock to certain of our employees and we issued 265,989 shares of common stock upon the vesting of restricted stock units.

(3) Under our 2011 Stock Incentive Plan, we granted an aggregate of 28,000 stock appreciation rights to be settled in cash to certain of our employees.

(4) Under our 2003 Stock Incentive Plan, we issued 35,834 shares of common stock upon the exercise of stock options at a weighted-average exercise price of $0.67 per share, for aggregate consideration of $23,917.

(5) We issued 528,580 shares of our common stock to Liberty Global Ventures Holding B.V. on March 31, 2014, upon Liberty Global Ventures Holding B.V.'s exercise of outstanding warrants, for aggregate consideration of $2,369,000.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. The stock options and the common stock issued upon the exercise of such options, and the restricted stock units and the common stock issued upon the vesting of such restricted stock units described in paragraphs (1), (2) and (3) of this Item 15 were issued under our 2011 Stock Incentive Plan in reliance on the exemptions provided by Rule 701 and Regulation D promulgated under the Securities Act. The common stock issued upon the exercise of the stock options described in paragraph (4) of this Item 15 was issued under our 2003 Stock Incentive Plan in reliance on the exemption provided by Rule 701 promulgated under the Securities Act. The common stock issued upon the exercise of the warrants described in paragraph (5) of this Item 15 was issued pursuant to the exemption provided by Regulation D promulgated under the Securities Act. Each of the recipients of securities in these transactions had adequate access, through employment, business or other relationships, to information about us. The sales of these securities were made without any general solicitation or advertising.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

The exhibits to the registration statement of which this prospectus is a part are listed in the Exhibit Index attached hereto and incorporated by reference herein.

(b) Financial Statement Schedules.

No financial statement schedules have been submitted because they are not required or are not applicable or because the information required is included in the consolidated financial statements or the notes thereto.

Item 17. Undertakings.

The undersigned registrant hereby undertakes to provide to the underwriter, at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

Some of the agreements included as exhibits to this registration statement contain representations and warranties by the parties to the applicable agreement. These representations and warranties were made solely for the benefit of the other parties to the applicable agreement and (1) were not intended to be treated as categorical statements of fact, but rather as a way of allocating the risk to one of the parties if those statements prove to be inaccurate; (2) may have been qualified in such agreement by disclosures that were made to the other party in connection with the negotiation of the applicable agreement; (3) may apply contract standards of "materiality" that are different from "materiality" under the applicable securities laws; and (4) were made only as of the date of the applicable agreement or such other date or dates as may be specified in the agreement.

The Registrant acknowledges that, notwithstanding the inclusion of the foregoing cautionary statements, it is responsible for considering whether additional specific disclosures of material information regarding contractual provisions are required to make the statements in this registration statement not misleading.

Exhibit Number	Description
1.1*	Form of Underwriting Agreement
3.1	Certificate of Incorporation of the Registrant
3.2	Bylaws of the Registrant
3.3	Form of Restated Certificate of Incorporation of the Registrant (to be effective immediately prior to the closing of this offering)
3.4	Form of Amended and Restated Bylaws of the Registrant (to be effective immediately prior to the closing of this offering)
4.1*	Specimen stock certificate evidencing shares of common stock
5.1*	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP
10.1	Form of Indemnification Agreement between the Registrant and its executive officers and directors
10.2	2003 Stock Incentive Plan, as amended
10.3	Form of Incentive Stock Option Agreement under 2003 Stock Incentive Plan
10.4	Form of Non-statutory Stock Option Agreement under 2003 Stock Incentive Plan
10.5	Form of Restricted Stock Agreement under 2003 Stock Incentive Plan
10.6	2011 Stock Incentive Plan, as amended
10.7	Form of Incentive Stock Option Agreement under 2011 Stock Incentive Plan
10.8	Form of Non-statutory Stock Option Agreement under 2011 Stock Incentive Plan
10.9	Form of Restricted Stock Agreement under 2011 Stock Incentive Plan
10.10	Form of Restricted Stock Unit Agreement under 2011 Stock Incentive Plan
10.11	Form of Stock Appreciation Rights Agreement under 2011 Stock Incentive Plan
10.12	2017 Stock Incentive Plan
10.13	Form of Stock Option Agreement under 2017 Stock Incentive Plan
10.14	Form of Restricted Stock Unit Agreement under 2017 Stock Incentive Plan
10.15	Offer Letter between the Registrant and Gary Hall, dated May 25, 2011
10.16	Offer Letter between the Registrant and Abraham Pucheril, dated August 18, 2012
10.17	Consulting Agreement between the Registrant and Bill Styslinger, dated March 5, 2012, as amended
10.18	Mortgage, Security Agreement and Financing Statement, dated July 1, 2015, between Casa Properties LLC and Middlesex Savings Bank

Exhibit Number	Description
10.19	Registration Rights Agreement, dated April 26, 2010, between the Registrant and the investors party thereto
10.20	Credit Agreement, dated as of December 20, 2016, by and among the Registrant and JPMorgan Chase Bank, N.A., as agent, and the other agents, arrangers and lenders party thereto
10.21	Letters, dated as of February 1, 2017 and April 14, 2017, from the Registrant to the lenders party to the Credit Agreement
10.22	Security Agreement, dated as of December 20, 2016, by and among the Registrant, each of the subsidiaries of the Registrant party thereto, and JPMorgan Chase Bank, N.A., as Collateral Agent
10.23†	Master Purchase Agreement, dated October 31, 2013, between Time Warner Cable Enterprises LLC and Casa Systems, Inc., as amended
10.24	Employment Agreement, dated November 17, 2017, by and between the Registrant and Jerry Guo
10.25	Employment Agreement, dated November 17, 2017, by and between the Registrant and Lucy Xie
10.26	Employment Agreement, dated November 17, 2017, by and between the Registrant and Weidong Chen
21.1	List of Subsidiaries
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm
23.2*	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)
24.1	Powers of Attorney (included on signature page)

* To be filed by amendment.

† Confidential treatment requested as to certain portions, which portions have been omitted and filed separately with the Securities and Exchange Commission.

SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Andover, Commonwealth of Massachusetts, on this 17th day of November, 2017.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Jerry Guo
President, Chief Executive Officer and Chairman

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of Casa Systems, Inc., hereby severally constitute and appoint Jerry Guo, Gary Hall and Todd Keebaugh, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement (and any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities held on the dates indicated.

Signature	Title	Date
/s/ Jerry Guo Jerry Guo	President, Chief Executive Officer and Chairman (Principal Executive Officer)	November 17, 2017
/s/ Gary Hall Gary Hall	Chief Financial Officer (Principal Financial and Accounting Officer)	November 17, 2017
/s/ Lucy Xie Lucy Xie	Senior Vice President of Operations and Director	November 17, 2017
/s/ Weidong Chen Weidong Chen	Chief Technology Officer and Director	November 17, 2017
/s/ Bruce R. Evans Bruce R. Evans	Director	November 17, 2017
/s/ Bill Styslinger Bill Styslinger	Director	November 17, 2017
/s/ Joe Tibbetts Joe Tibbetts	Director	November 17, 2017

Exhibit 3.1

State of Delaware
Secretary of State
Division of Corporations
Delivered 03:03 PM 04/28/2003
FILED 02:58 PM 04/28/2003
SRV 030273818 - 3630717 FILE

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
CASA SYSTEMS, INC.

Casa Systems, Inc. (hereinafter called the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

1. The name of the corporation is Casa Systems, Inc. The original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on February 28, 2003.

2. The Corporation has not received any payment for any of its stock. This Amended and Restated Certificate of Incorporation was duly adopted by unanimous written consent of the board of directors of the Corporation in accordance with the applicable provisions of Sections 141, 241 and 245 of the General Corporation Law of the State of Delaware.

3. This Amended and Restated Certificate of Incorporation restates, integrates and amends the Certificate of Incorporation, and the text of the Certificate of Incorporation is hereby amended and restated to read as herein set forth in full:

FIRST. The name of the Corporation is: Casa Systems, Inc.

SECOND. The address of its registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle. The name of its registered agent at such address is The Corporation Trust Company.

THIRD. The nature of the business or purposes to be conducted or promoted by the Corporation is as follows:

To engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH. The total number of shares of stock which the Corporation shall have authority to issue is 5,000,000 shares of Common Stock, $.001 par value per share.

The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of Delaware.

FIFTH. In furtherance of and not in limitation of powers conferred by statute, it is further provided:

1. Election of directors need not be by written ballot.

2. The Board of Directors is expressly authorized to adopt, amend or repeal the By-Laws of the Corporation.

SIXTH: Except to the extent that the General Corporation Law of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty, no director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director of the Corporation for or with respect to any acts or omissions of such director occurring prior to such amendment.

SEVENTH: The Corporation shall provide indemnification as follows:

1. Actions, Suits and Proceedings Other than by or in the Right of the Corporation. The Corporation shall indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Corporation) by reason of the fact that he or she is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) (all such persons being referred to hereafter as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful.

2. Actions or Suits by or in the Right of the Corporation. The Corporation shall indemnify any Indemnitee who was or is a party to or threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that Indemnitee is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan), or by reason of any action

alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, except that no indemnification shall be made under the Section 2 in respect of any claim, issue or matter as to which Indemnitee shall have been adjudged to be liable to the Corporation, unless, and only to the extent, that the Court of Chancery of Delaware shall determine upon application that, despite the adjudication of such liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnity for such expenses (including attorneys' fees) which the Court of Chancery of Delaware shall deem proper.

3. Indemnification for Expenses of Successful Party. Notwithstanding any other provisions of this Article, to the extent that an Indemnitee has been successful, on the merits or otherwise, in defense of any action, suit or proceeding referred to in Sections 1 and 2 of this Article SEVENTH, or in defense of any claim, issue or matter therein, or on appeal from any such action, suit or proceeding, Indemnitee shall be indemnified against all expenses (including attorneys' fees) actually and reasonably incurred by or on behalf of Indemnitee in connection therewith.

4. Notification and Defense of Claim. As a condition precedent to an Indemnitee's right to be indemnified, such Indemnitee must notify the Corporation in writing as soon as practicable of any action, suit, proceeding or investigation involving such Indemnitee for which indemnity will or could be sought. With respect to any action, suit, proceeding or investigation of which the Corporation is so notified, the Corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to Indemnitee. After notice from the Corporation to Indemnitee of its election so to assume such defense, the Corporation shall not be liable to Indemnitee for any legal or other expenses subsequently incurred by Indemnitee in connection with such action, suit, proceeding or investigation, other than as provided below in this Section 4. Indemnitee shall have the right to employ his or her own counsel in connection with such action, suit, proceeding or investigation, but the fees and expenses of such counsel incurred after notice from the Corporation of its assumption of the defense thereof shall be at the expense of Indemnitee unless (i) the employment of counsel by Indemnitee has been authorized by the Corporation, (ii) counsel to Indemnitee shall have reasonably concluded that there may be a conflict of interest or position on any significant issue between the Corporation and Indemnitee in the conduct of the defense of such action, suit, proceeding or investigation or (iii) the Corporation shall not in fact have employed counsel to assume the defense of such action, suit, proceeding or investigation, in each of which cases the fees and expenses of counsel for Indemnitee shall be at the expense of the Corporation, except as otherwise expressly provided by this Article. The Corporation shall not be entitled, without the consent of Indemnitee, to assume the defense of any claim brought by or in

the right of the Corporation or as to which counsel for Indemnitee shall have reasonably made the conclusion provided for in clause (ii) above. The Corporation shall not be required to indemnify Indemnitee under this Article SEVENTH for any amounts paid in settlement of any action, suit, proceeding or investigation effected without its written consent. The Corporation shall not settle any action, suit, proceeding or investigation in any manner which would impose any penalty or limitation on Indemnitee without Indemnitee's written consent. Neither the Corporation nor Indemnitee will unreasonably withhold or delay its consent to any proposed settlement.

5. Advance of Expenses. Subject to the provisions of Section 6 of this Article SEVENTH, in the event that the Corporation does not assume the defense pursuant to Section 4 of this Article SEVENTH of any action, suit, proceeding or investigation of which the Corporation receives notice under this Article, any expenses (including attorneys' fees) incurred by or on behalf of an Indemnitee in defending an action, suit, proceeding or investigation or any appeal therefrom shall be paid by the Corporation in advance of the final disposition of such matter; provided, however, that the payment of such expenses incurred by or on behalf of Indemnitee in advance of the final disposition of such matter shall be made only upon receipt of an undertaking by or on behalf of Indemnitee to repay all amounts so advanced in the event that it shall ultimately be determined that Indemnitee is not entitled to be indemnified by the Corporation as authorized in this Article; and further provided that no such advancement of expenses shall be made under this Article SEVENTH if it is determined (in the manner described in Section 6) that (i) Indemnitee did not act in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the Corporation, or (ii) with respect to any criminal action or proceeding, Indemnitee had reasonable cause to believe his or her conduct was unlawful. Such undertaking shall be accepted without reference to the financial ability of Indemnitee to make such repayment.

6. Procedure for Indemnification. In order to obtain indemnification or advancement of expenses pursuant to Section 1, 2, 3 or 5 of this Article SEVENTH, an Indemnitee shall submit to the Corporation a written request. Any such advancement of expenses shall be made promptly, and in any event within 30 days after receipt by the Corporation of the written request of Indemnitee, unless the Corporation determines within such 30-day period that Indemnitee did not meet the applicable standard of conduct set forth in Section 1, 2 or 5 of this Article SEVENTH, as the case may be. Any such indemnification, unless ordered by a court, shall be made with respect to requests under Section 1 or 2 only as authorized in the specific case upon a determination by the Corporation that the indemnification of Indemnitee is proper because Indemnitee has met the applicable standard of conduct set forth in Section 1 or 2, as the case may be. Such determination shall be made in each instance (a) by a majority vote of the directors of the Corporation consisting of persons who are not at that time parties to the action, suit or proceeding in question ("disinterested directors"), whether or not a quorum, (b) by a committee of disinterested directors designated by majority

vote of disinterested directors, whether or not a quorum, (c) if there are no disinterested directors, or if the disinterested directors so direct, by independent legal counsel (who may, to the extent permitted by law, be regular legal counsel to the Corporation) in a written opinion, or (d) by the stockholders of the Corporation.

7. Remedies. The right to indemnification or advancement of expenses as granted by this Article shall be enforceable by Indemnitee in any court of competent jurisdiction. Neither the failure of the Corporation to have made a determination prior to the commencement of such action that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Corporation pursuant to Section 6 of this Article SEVENTH that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct. Indemnitee's expenses (including attorneys' fees) reasonably incurred in connection with successfully establishing Indemnitee's right to indemnification, in whole or in part, in any such proceeding shall also be indemnified by the Corporation.

8. Limitations. Notwithstanding anything to the contrary in this Article, except as set forth in Section 7 of the Article SEVENTH, the Corporation shall not indemnify an Indemnitee pursuant to this Article SEVENTH in connection with a proceeding (or part thereof) initiated by such Indemnitee unless the initiation thereof was approved by the Board of Directors of the Corporation. Notwithstanding anything to the contrary in this Article, the Corporation shall not indemnify an Indemnitee to the extent such Indemnitee is reimbursed from the proceeds of insurance, and in the event the Corporation makes any indemnification payments to an Indemnitee and such Indemnitee is subsequently reimbursed from the proceeds of insurance, Indemnitee shall promptly refund such indemnification payments to the Corporation to the extent of such insurance reimbursement.

9. Subsequent Amendment. No amendment, termination or repeal of this Article or of the relevant provisions of the General Corporation Law of Delaware or any other applicable laws shall affect or diminish in any way the rights of any Indemnitee to indemnification under the provisions hereof with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the final adoption of such amendment, termination or repeal.

EIGHTH: The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute and this Certificate of Incorporation, and all rights conferred upon stockholders herein are granted subject to this reservation.

IN WITNESS WHEREOF, the Corporation has caused this Amended and Restated Certificate of Incorporation to be signed by its President this 28th day of April, 2003.

CASA SYSTEMS, INC.

/s/ Jerry Guo

Jerry Guo
President

State of Delaware
Secretary of State
Division of Corporations
Delivered 11:09 AM 05/04/2004
FILED 11:01 AM 05/04/2004
SRV 040322595 - 3630717 FILE

CERTIFICATE OF AMENDMENT
OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
CASA SYSTEMS, INC.

Casa Systems, Inc. (the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "General Corporation Law"), does hereby certify as follows:

The Board of Directors of the Corporation duly adopted a resolution, pursuant to Sections 14l(f) and 242 of the General Corporation Law, setting forth an amendment to the Amended and Restated Certificate of Incorporation of the Corporation and declaring said amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment by written consent in accordance with Sections 228 and 242 of the General Corporation Law. The resolution setting forth the amendment is as follows:

RESOLVED: That Article FOURTH of the Amended and Restated Certificate of Incorporation of the Corporation be and hereby is deleted in its entirety and the following Article FOURTH is inserted in lieu thereof:

"The total number of shares of stock which the Corporation shall have authority to issue is 10,000,000 shares of Common Stock, $.001 par value per share."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its President this 26th day of April, 2004.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Jerry Guo
President

State of Delaware
Secretary of State
Division of Corporations
Delivered 09:39 AM 07/06/2005
FILED 09:35 AM 07/06/2005
SRV 050557869 - 3630717 FILE

CERTIFICATE OF AMENDMENT
OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
CASA SYSTEMS, INC.

Casa Systems, Inc. (the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "General Corporation Law"), does hereby certify as follows:

The Board of Directors of the Corporation duly adopted a resolution, pursuant to Sections 141(f) and 242 of the General Corporation Law, setting forth an amendment to the Amended and Restated Certificate of Incorporation, as amended (the "Amended and Restated Certificate of Incorporation"), of the Corporation and declaring said amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment by written consent in accordance with Sections 228 and 242 of the General Corporation Law. The resolution setting forth the amendment is as follows:

RESOLVED: That Article FOURTH of the Amended and Restated Certificate of Incorporation of the Corporation be and hereby is deleted in its entirety and the following Article FOURTH is inserted in lieu thereof:

"FOURTH. The Corporation is authorized to have two classes of shares, designated as Common Stock and Preferred Stock. The total number of shares of Common Stock which the Corporation is authorized to issue is 7,300,000 shares, and the par value of each of the shares of Common Stock is one tenth of one cent ($.001). The total number of shares of Preferred Stock which the Corporation is authorized to issue is 1,290,679 shares, and the par value of each of the shares of Preferred Stock is one tenth of one cent ($.001). A total of 1,290,679 shares of Preferred Stock, par value $.001 per share, shall be designated the "Series A Convertible Preferred Stock." The Series A Convertible Preferred Stock is sometimes referred to herein as the "Preferred Stock."

1. Voting. Except as may be otherwise provided in these terms of Preferred Stock or by law, the Series A Convertible Preferred Stock shall vote together with all other classes and series of stock of the Corporation as a single class on all actions to be taken by the stockholders of the Corporation. Each share of Series A Convertible Preferred Stock shall entitle the holder thereof to such number of votes per share on each

such action as shall equal the number of shares of Common Stock (including fractions of a share) into which each share of Series A Convertible Preferred Stock is then convertible.

2. Dividends.

2A. Dividends. In the event the Board of Directors of the Corporation shall declare a dividend (other than a dividend payable in Common Stock) payable upon the then outstanding shares of the Common Stock of the Corporation, the Board of Directors shall declare at the same time a dividend upon the then outstanding shares of Series A Convertible Preferred Stock, payable at the same time as the dividend paid on the Common Stock, in an amount equal to the amount of dividends per share of Series A Convertible Preferred Stock as would have been payable on the largest number of whole shares of Common Stock into which all shares of Series A Convertible Preferred Stock held by each holder thereof would be converted if such Series A Convertible Preferred Stock had been converted to Common Stock pursuant to the provisions of Paragraph 5 hereof as of the record date for the determination of holders of Common Stock entitled to receive such dividends. All dividends declared upon the Preferred Stock pursuant to this Paragraph 2A shall be declared and paid pro rata per share.

2B. Accruing Dividends. From and after the date of the issuance of any shares of Series A Convertible Preferred Stock, the holders of such shares of the Series A Convertible Preferred Stock shall be entitled to receive, out of funds legally available therefor, when and if declared by the Board of Directors, dividends at the rate per annum of $.3832 per share (the “Accruing Dividends”). Accruing Dividends shall accrue from day to day, whether or not earned or declared, and shall be cumulative; provided however, that except as provided in paragraph 3, the Corporation shall be under no obligation to pay such Accruing Dividends unless so declared by the Board of Directors.

3. Liquidation, Dissolution and Winding-up.

3A. Liquidation. Upon any liquidation, dissolution or winding up of the Corporation (a “Liquidation Event”), whether voluntary or involuntary, the holders of the shares of Series A Convertible Preferred Stock shall be paid an amount equal to $6.3868 per share (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series A Convertible Preferred Stock) plus, in the case of each share, an amount equal to all accrued and unpaid dividends thereon (whether or not declared) computed to the date payment thereof is made available, together with payment to any class of stock ranking equally with the Series A Convertible Preferred Stock, and before any payment shall be made to the holders of any stock ranking on liquidation junior to the Series A Convertible Preferred Stock. If upon any Liquidation Event, the assets to be distributed to the holders of the Series A Convertible Preferred Stock shall be insufficient to permit payment to such stockholders of the full preferential amounts aforesaid, then all of the assets of the Corporation available for distribution to holders of the Preferred Stock shall be distributed to such holders of the Preferred Stock pro rata, so that each holder receives

that portion of the assets available for distribution as the amount of the full liquidation preference to which such holder would otherwise be entitled bears to the amount of the full liquidation preference to which all holders of Series A Convertible Preferred Stock would otherwise be entitled pursuant to this paragraph 3.

3B. Upon any Liquidation Event, immediately after the holders of Series A Convertible Preferred Stock and holders of any class of stock ranking equally with the Series A Convertible Preferred Stock have been paid in full pursuant to subsection 3A above, the remaining net assets of the Corporation available for distribution shall be distributed ratably among the holders of the shares of Common Stock.

3C. Written notice of such liquidation, dissolution or winding up, stating a payment date and the place where said payments shall be made, shall be given by mail, postage prepaid, or by facsimile to non-U.S. residents, not less than 20 days prior to the payment date stated therein, to the holders of record of Series A Convertible Preferred Stock, such notice to be addressed to each such holder at its address as shown by the records of the Corporation.

3D. The (x) consolidation or merger of the Corporation into or with any other entity or entities (except a consolidation or merger into a Subsidiary or merger in which the Corporation is the surviving corporation and the holders of the Corporation's voting stock outstanding immediately prior to the transaction constitute the holders of a majority of the voting stock outstanding immediately following the transaction), or (y) the sale or transfer by the Corporation of all or substantially all its assets, or (z) the sale, exchange or transfer by the Corporation's stockholders, in a single transaction or series of related transactions, of capital stock representing a majority of the voting power at elections of directors of the Corporation shall be deemed to be a Liquidation Event within the meaning of the provisions of this paragraph 3 (subject to the provisions of this paragraph 3 and not the provisions of subparagraph 5G hereof, unless subparagraph 5G is elected in the following proviso); provided, however, that the holders of at least a majority in interest of the then outstanding shares of Series A Convertible Preferred Stock shall have the right to elect the benefits of the provisions of subparagraph 5G in lieu of receiving payment in liquidation, dissolution or winding up of the Corporation pursuant to this paragraph 3.

3E. Whenever the distribution provided for in this paragraph 3 shall be payable in property other than cash, the value of such distribution shall be the fair market value of such property as determined in good faith by the Board of Directors of the Corporation.

3F. The Corporation shall not effect any transaction constituting a deemed Liquidation Event pursuant to subparagraph 3D above unless (i) the agreement or plan of merger or consolidation provides that the consideration payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with subparagraphs 3A and 3B above or (ii) the holders of

at least a majority in interest of the shares of Series A Convertible Preferred Stock specifically consent in writing to the allocation of such consideration in a manner different from that provided in subparagraphs 3A and 3B above.

3G. In the event of a deemed Liquidation Event pursuant to subparagraph 3D above, if the Corporation does not effect a dissolution of the Corporation under the Delaware General Corporation Law within 60 days after such deemed Liquidation Event, then (i) the Corporation shall deliver a written notice to each holder of Series A Convertible Preferred Stock no later than the 60th day after the deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause (ii) to require the redemption of such shares of Series A Convertible Preferred Stock, and (ii) if the holders of shares of Series A Convertible Preferred Stock representing at least a majority in interest of the votes represented by the then outstanding shares of Preferred Stock so request in a written instrument delivered to the Corporation not later than 75 days after such deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such deemed Liquidation Event (net of any liabilities associated with the assets sold, as determined in good faith by the Board of Directors of the Corporation), to the extent legally available therefor (the "Net Proceeds"), to redeem, on the 90th day after such deemed Liquidation Event (the "Liquidation Redemption Date"), all outstanding shares of Series A Convertible Preferred Stock at a price per share equal to the maximum amount payable to each holder of Series A Convertible Preferred Stock pursuant to subparagraph 3A as of the date of the deemed Liquidation Event. If the Net Proceeds are not sufficient to so redeem all outstanding shares of Series A Convertible Preferred Stock, the Corporation shall redeem a pro rata portion (based on the aggregate amounts that would have been payable on redemption of the Series A Convertible Preferred Stock) of each holder's shares of Series A Convertible Preferred Stock out of the Net Proceeds. Prior to the distribution or redemption provided for in this subparagraph 3G, the Corporation shall not expend or dissipate the consideration received for such deemed Liquidation Event, except to discharge expenses incurred in the ordinary course of business.

4. Restrictions. At any time when shares of Series A Convertible Preferred Stock are outstanding, except where the vote or written consent of the holders of a greater number of shares of the Corporation is required by law or by the Certificate of Incorporation, and in addition to any other vote required by law or the Certificate of Incorporation, without the written consent of the holders of at least a majority in interest of the then outstanding shares of Series A Convertible Preferred Stock, given in writing or by vote at a meeting, consenting or voting (as the case may be) separately as one series, the Corporation will not:

(a) Amend, alter or repeal any provision of, or add any provision to, its Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise) or By-laws to change the rights of the Series A Convertible Preferred Stock or to increase or decrease the number of authorized shares of Series A Convertible Preferred Stock;

(b) Create or authorize the creation of any additional class or series of shares of stock which ranks senior to the Series A Convertible Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation, or increase the authorized amount of any additional class or series of shares of stock which ranks senior to such Series A Convertible Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation, or create or authorize any obligation or security convertible into shares of any series of Preferred Stock or into shares of any other class or series of stock which ranks senior to such Series A Convertible Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation, whether any such creation, authorization or increase shall be by means of amendment to the Certificate of Incorporation or by merger, consolidation or otherwise;

(c) Create, or authorize the creation of, or issue, or authorize the issuance of, any debt security of the Corporation which by its terms is convertible into or exchangeable for any equity security of the Corporation or any security of the Corporation which is a combination of debt and equity, if such equity security ranks senior to the Series A Convertible Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation;

(d) Purchase or redeem, or set aside any sums for the purchase or redemption of, or pay any dividend or make any distribution on, any shares of stock other than the Series A Convertible Preferred Stock, except for dividends or other distributions payable on the Common Stock solely in the form of additional shares of Common Stock and other than shares of Common Stock repurchased from employees, advisors, officers, directors or consultants or service providers of the Corporation at the original purchase price thereof (not to exceed an aggregate amount of $100,000);

(e) Increase the number of Reserved Employee Shares (as defined in paragraph 6 hereof) by more than an aggregate of 500,000 shares; or

(f) Change the nature of the Corporation’s business.

5. Conversion of the Series A Convertible Preferred Stock. The holders of shares of Series A Convertible Preferred Stock shall have the following conversion rights:

5A. Right to Convert. Subject to the terms and conditions of this paragraph 5, the holder of any share or shares of Series A Convertible Preferred Stock shall have the right, at its option at any time, to convert any such shares of Series A Convertible Preferred Stock (except that upon any liquidation of the Corporation the right of conversion shall terminate at the close of business on the business day fixed for payment of the amounts distributable on the Series A Convertible Preferred Stock) into

such number of fully paid and nonassessable shares of Common Stock as is obtained by (i) multiplying the number of shares of Series A Convertible Preferred Stock so to be converted by $6.3868 and (ii) dividing the result by the conversion price of $6.3868 per share or in case an adjustment of such price has taken place pursuant to the further provisions of this paragraph 5, then by the conversion price as last adjusted and in effect at the date any share or shares of Series A Convertible Preferred Stock are surrendered for conversion (such price, or such price as last adjusted, being referred to as the "Series A Conversion Price"). Such rights of conversion shall be exercised by the holder thereof by giving written notice that the holder elects to convert a stated number of shares of Series A Convertible Preferred Stock into Common Stock and by surrender of a certificate or certificates for the shares so to be converted to the Corporation at its principal office (or such other office or agency of the Corporation as the Corporation may designate by notice in writing to the holders of the Series A Convertible Preferred Stock) at any time during its usual business hours on the date set forth in such notice, together with a statement of the name or names (with address) in which the certificate or certificates for shares of Common Stock shall be issued. Notwithstanding any other provisions hereof, if a conversion of Series A Convertible Preferred Stock is to be made in connection with any transaction affecting the Corporation, the conversion of any shares of Series A Convertible Preferred Stock, may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated, subject in all events to the terms hereof applicable to such transaction.

5B. Issuance of Certificates; Time Conversion Effected. Promptly after the receipt of the written notice referred to in paragraph 5A and surrender of the certificate or certificates for the share or shares of Series A Convertible Preferred Stock to be converted, the Corporation shall issue and deliver, or cause to be issued and delivered, to the holder, registered in such name or names as such holder may direct, a certificate or certificates for the number of whole shares of Common Stock issuable upon the conversion of such share or shares of Series A Convertible Preferred Stock. To the extent permitted by law, such conversion shall be deemed to have been effected and the Series A Conversion Price shall be determined as of the close of business on the date on which such written notice shall have been received by the Corporation and the certificate or certificates for such share or shares shall have been surrendered as aforesaid, and at such time the rights of the holder of such share or shares of Series A Convertible Preferred Stock shall cease, and the person or persons in whose name or names any certificate or certificates for shares of Common Stock shall be issuable upon such conversion shall be deemed to have become the holder or holders of record of the shares represented thereby.

5C. Fractional Shares; Partial Conversion. No fractional shares shall be issued upon conversion of Series A Convertible Preferred Stock into Common Stock and no payment or adjustment shall be made upon any such conversion with respect to any cash dividends previously payable on the Common Stock issued upon such conversion. In case the number of shares of Series A Convertible Preferred Stock represented by the certificate or certificates surrendered pursuant to paragraph 5A

exceeds the number of shares converted, the Corporation shall, upon such conversion, execute and deliver to the holder, at the expense of the Corporation, a new certificate or certificates for the number of shares of Series A Convertible Preferred Stock represented by the certificate or certificates surrendered which are not to be converted. If any fractional share of Common Stock would, except for the provisions of the first sentence of this paragraph 5C, be delivered upon such conversion, the Corporation, in lieu of delivering such fractional share, shall pay to the holder surrendering the Series A Convertible Preferred Stock for conversion an amount in cash equal to the current market price of such fractional share as determined in good faith by the Board of Directors of the Corporation, and based upon the aggregate number of shares of Series A Convertible Preferred Stock surrendered by any one holder.

5D. Adjustment of Series A Conversion Price Upon Issuance of Common Stock. Except as provided in paragraphs 5E and 5F, if and whenever the Corporation shall issue or sell, or is, in accordance with subparagraphs 5D(1) through 5D(7), deemed to have issued or sold, any shares of Common Stock for a consideration per share less than the Series A Conversion Price (the "Applicable Conversion Price") in effect immediately prior to the time of such issue or sale, (such number being appropriately adjusted to reflect the occurrence of any event described in paragraph 5F), then, forthwith upon such issue or sale, the Applicable Conversion Price shall be reduced to the price determined by dividing (i) an amount equal to the sum of (a) the number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Series A Convertible Preferred Stock) multiplied by the then existing Applicable Conversion Price and (b) the consideration, if any, received by the Corporation upon such issue or sale, by (ii) an amount equal to the sum of (a) the total number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Series A Convertible Preferred Stock) and (b) the total number of shares of Common Stock issuable in such issue or sale.

For purposes of this paragraph 5D, the following subparagraphs 5D(l) to 5D(7) shall also be applicable:

5D(l) Issuance of Rights or Options. In case at any time the Corporation shall in any manner grant (whether directly or by assumption in a merger or otherwise) any warrants or other rights to subscribe for or to purchase, or any options for the purchase of, Common Stock or any stock or security convertible into or exchangeable for Common Stock (such warrants, rights or options being called "Options" and such convertible or exchangeable stock or securities being called "Convertible Securities") whether or not such Options or the right to convert or exchange any such Convertible Securities are immediately exercisable, and the price per share for which Common Stock is issuable upon the exercise of such Options or upon the conversion or exchange of such Convertible Securities (determined by dividing (i) the total amount, if any, received or receivable by the Corporation as consideration for the granting of such Options, plus the minimum aggregate amount of additional consideration payable to the Corporation upon the exercise of all such

Options, plus, in the case of such Options which relate to Convertible Securities, the minimum aggregate amount of additional consideration, if any, payable upon the issue or sale of such Convertible Securities and upon the conversion or exchange thereof, by (ii) the total maximum number of shares of Common Stock issuable upon the exercise of such Options or upon the conversion or exchange of all such Convertible Securities issuable upon the exercise of such Options) shall be less than the Series A Conversion Price in effect immediately prior to the time of the granting of such Options, then the total maximum number of shares of Common Stock issuable upon the exercise of such Options or upon conversion or exchange of the total maximum amount of such Convertible Securities issuable upon the exercise of such Options shall be deemed to have been issued for such price per share as of the date of granting of such Options or the issuance of such Convertible Securities and thereafter shall be deemed to be outstanding. Except as otherwise provided in subparagraph 5D(3), no adjustment of the Series A Conversion Price shall be made upon the actual issue of such Common Stock or of such Convertible Securities upon exercise of such Options or upon the actual issue of such Common Stock upon conversion or exchange of such Convertible Securities.

5D(2) Issuance of Convertible Securities. In case the Corporation shall in any manner issue (whether directly or by assumption in a merger or otherwise) or sell any Convertible Securities, whether or not the rights to exchange or convert any such Convertible Securities are immediately exercisable, and the price per share for which Common Stock is issuable upon such conversion or exchange (determined by dividing (i) the total amount received or receivable by the Corporation as consideration for the issue or sale of such Convertible Securities, plus the minimum aggregate amount of additional consideration, if any, payable to the Corporation upon the conversion or exchange thereof, by (ii) the total maximum number of shares of Common Stock issuable upon the conversion or exchange of all such Convertible Securities) shall be Less than the Series A Conversion Price in effect immediately prior to the time of such issue or sale, then the total maximum number of shares of Common Stock issuable upon conversion or exchange of all such Convertible Securities shall be deemed to have been issued for such price per share as of the date of the issue or sale of such Convertible Securities and thereafter shall be deemed to be outstanding, provided that (a) except as otherwise provided in subparagraph 5D(3), no adjustment of the Series A Conversion Price shall be made upon the actual issue of such Common Stock upon conversion or exchange of such Convertible Securities and (b) if any such issue or sale of such Convertible Securities is made upon exercise of any Options to purchase any such Convertible Securities for which adjustments of the Series A Conversion Price have been or are to be made pursuant to other provisions of this paragraph 5D, no further adjustment of the Series A Conversion Price shall be made by reason of such issue or sale.

5D(3) Change in Option Price or Conversion Rate. Upon the happening of any of the following events, namely, if the purchase price provided for in any Option referred to in subparagraph 5D(1), the additional consideration, if any, payable upon the conversion or exchange of any Convertible Securities referred to in

subparagraph 5D(1) or 5D(2), or the rate at which Convertible Securities referred to in subparagraph5D(l) or 5D(2) are convertible into or exchangeable for Common Stock shall change at any time (including, but not limited to, changes under or by reason of provisions designed to protect against dilution), the Series A Conversion Price in effect at the time of such event shall forthwith be readjusted (in each case by an amount equal to not less than one cent ($.01)) to the Series A Conversion Price which would have been in effect at such time had such Options or Convertible Securities still outstanding provided for such changed purchase price, additional consideration or conversion rate, as the case may be, at the time initially granted, issued or sold; and on the expiration of any such Option or the termination of any such right to convert or exchange such Convertible Securities, the Series A Conversion Price then in effect hereunder shall forthwith be increased to the Conversion Price which would have been in effect at the time of such expiration or termination had such Option or Convertible Securities, to the extent outstanding immediately prior to such expiration or termination, never been issued.

5D(4) Stock Dividends. In case the Corporation shall declare a dividend or make any other distribution upon any stock of the Corporation payable in Common Stock (except for the issue of stock dividends or distributions upon the outstanding Common Stock for which adjustment is made pursuant to paragraph 5F), Options or Convertible Securities, any Common Stock, Options or Convertible Securities, as the case may be, issuable in payment of such dividend or distribution shall be deemed to have been issued or sold without consideration.

5D(5) Consideration for Stock. In case any shares of Common Stock, Options or Convertible Securities shall be issued or sold for cash, the consideration received therefor shall be deemed to be the amount received by the Corporation therefor, without deduction therefrom of any expenses incurred or any underwriting commissions or concessions paid or allowed by the Corporation in connection therewith. In case any shares of Common Stock, Options or Convertible Securities shall be issued or sold for a consideration other than cash, the amount of the consideration other than cash received by the Corporation shall be deemed to be the fair value of such consideration as determined in good faith by the Board of Directors of the Corporation, without deduction of any expenses incurred or any underwriting commissions or concessions paid or allowed by the Corporation in connection therewith. In case any Options shall be issued in connection with the issue and sale of other securities of the Corporation, together comprising one integral transaction in which no specific consideration is allocated to such Options by the parties thereto, such Options shall be deemed to have been issued for such consideration as determined in good faith by the Board of Directors of the Corporation.

5D(6) Record Date. In case the Corporation shall take a record of the holders of its Common Stock for the purpose of entitling them (i) to receive a dividend or other distribution payable in Common Stock, Options or Convertible Securities or (ii) to subscribe for or purchase Common Stock, Options or

Convertible Securities, then such record date shall be deemed to be the date of the issue or sale of the shares of Common Stock deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase, as the case may be.

5D(7) Treasury Shares. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the disposition of any such shares shall be considered an issue or sale of Common Stock for the purpose of this paragraph 5D.

5E. Certain Issues of Common Stock Excepted. Anything herein to the contrary notwithstanding, the Corporation shall not be required to make any adjustment of the Series A Conversion Price in the case of the issuance of (i) shares of Common Stock issuable upon conversion of the Preferred Stock, and (ii) Reserved Employee Shares (as defined in paragraph 6 hereof).

5F. Subdivision or Combination of Common Stock. In case the Corporation shall at any time subdivide (by any stock split, stock dividend or otherwise) its outstanding shares of Common Stock into a greater number of shares, the Series A Conversion Price in effect immediately prior to such subdivision shall be proportionately reduced, and, conversely, in case the outstanding shares of Common Stock shall be combined into a smaller number of shares, the Series A Conversion Price in effect immediately prior to such combination shall be proportionately increased.

5G. Reorganization or Reclassification. If any capital reorganization, reclassification, recapitalization, consolidation, merger, sale of all or substantially all of the Corporation's assets or other similar transaction (any such transaction being referred to herein as an "Organic Change") shall be effected in such a way that holders of Common Stock shall be entitled to receive (either directly or upon subsequent liquidation) stock, securities or assets with respect to or in exchange for Common Stock, then, as a condition of such Organic Change, lawful and adequate provisions shall be made whereby each holder of a share or shares of Series A Convertible Preferred Stock shall thereupon have the right to receive, upon the basis and upon the terms and conditions specified herein and in lieu of or in addition to, as the case may be, the shares of Common Stock immediately theretofore receivable upon the conversion of such share or shares of Series A Convertible Preferred Stock such shares of stock, securities or assets as may be issued or payable with respect to or in exchange for a number of outstanding shares of such Common Stock equal to the number of shares of such Common Stock immediately theretofore receivable upon such conversion had such Organic Change not taken place, and in any case of a reorganization or reclassification only appropriate provisions shall be made with respect to the rights and interests of such holder to the end that the provisions hereof (including without limitation provisions for adjustments of the Series A Conversion Price) shall thereafter be applicable, as nearly as may be, in relation to any shares of stock, securities or assets thereafter deliverable upon the exercise of such conversion rights.

5H. Notice of Adjustment. Upon any adjustment of the Series A Conversion Price, then and in each such case the Corporation shall give written notice thereof, by first class mail, postage prepaid, or by facsimile transmission to non-U.S. residents, addressed to each holder of shares of Series A Convertible Preferred Stock at the address of such holder as shown on the books of the Corporation, which notice shall state the Series A Conversion Price, as applicable, resulting from such adjustment, setting forth in reasonable detail the method upon which such calculation is based.

5I. Other Notices. In case at any time:

(1) the Corporation shall declare any dividend upon its Common Stock payable in cash or stock or make any other distribution to the holders of its Common Stock;

(2) the Corporation shall offer for subscription pro rata to the holders of its Common Stock any additional shares of stock of any class or other rights;

(3) there shall be any capital reorganization or reclassification of the capital stock of the Corporation, or a consolidation or merger of the Corporation with or into, or a sale of all or substantially all its assets to, another entity or entities; or

(4) there shall be a voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then, in any one or more of said cases, the Corporation shall give, by first class mail, postage prepaid, or by facsimile transmission to non-U.S. residents, addressed to each holder of any shares of Preferred Stock at the address of such holder as shown on the books of the Corporation, (a) at least 20 days' prior written notice of the date on which the books of the Corporation shall close or a record shall be taken for such dividend, distribution or subscription rights or for determining rights to vote in respect of any such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, and (b) in the case of any such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, at least 20 days' prior written notice of the date when the same shall take place. Such notice in accordance with the foregoing clause (a) shall also specify, in the case of any such dividend, distribution or subscription rights, the date on which the holders of Common Stock shall be entitled thereto and such notice in accordance with the foregoing clause (b) shall also specify the date on which the holders of Common Stock shall be entitled to exchange their Common Stock for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, as the case may be.

5J. Stock to be Reserved. The Corporation will at all times reserve and keep available out of its authorized Common Stock, solely for the purpose of issuance upon the conversion of Series A Convertible Preferred Stock as herein provided, such number of shares of Common Stock as shall then be issuable upon the conversion of

all outstanding shares of Series A Convertible Preferred Stock. The Corporation covenants that all shares of Common Stock which shall be so issued shall be duly and validly issued and fully paid and nonassessable and free from all taxes, liens and charges with respect to the issue thereof, and, without limiting the generality of the foregoing, the Corporation covenants that it will from time to time take all such action as may be requisite to assure that the par value per share of the Common Stock is at all times equal to or less than the Series A Conversion Price in effect at the time. The Corporation will take all such action as may be necessary to assure that all such shares of Common Stock may be so issued without violation of any applicable law or regulation, or of any requirement of any national securities exchange upon which the Common Stock may be listed.

5K. No Reissuance of Series A Convertible Preferred Stock. Shares of Series A Convertible Preferred Stock which are converted into shares of Common Stock as provided herein shall not be reissued.

5L. Issue Tax. The issuance of certificates for shares of Common Stock upon conversion of Series A Convertible Preferred Stock shall be made without charge to the holders thereof for any issuance tax in respect thereof, provided that the Corporation shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of any certificate in a name other than that of the holder of the Series A Convertible Preferred Stock which is being converted.

5M. Closing of Books. The Corporation will at no time close its transfer books against the transfer of any shares of Series A Convertible Preferred Stock or of any shares of Common Stock issued or issuable upon the conversion of any shares of Series A Convertible Preferred Stock, in any manner which interferes with the timely conversion of such Series A Convertible Preferred Stock except as may otherwise be required to comply with applicable securities laws.

5N. Definition of Common Stock. As used in this paragraph 5, the term “Common Stock” shall mean and include the Corporation’s authorized Common Stock, par value $.001 per share, as constituted on the date of filing of these terms of the Preferred Stock, and shall also include any capital stock of any class of the Corporation thereafter authorized which shall neither be limited to a fixed sum or percentage of par value in respect of the rights of the holders thereof to participate in dividends nor entitled to a preference in the distribution of assets upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation; provided that the shares of Common Stock receivable upon conversion of shares of Series A Convertible Preferred Stock shall include only shares designated as Common Stock of the Corporation on the date of filing of this instrument, or in case of any reorganization or reclassification of the outstanding shares thereof, the stock, securities or assets provided for in subparagraph 5G.

5O. Mandatory Conversion. All outstanding shares of Series A Convertible Preferred Stock shall automatically convert to shares of Common Stock effective upon the closing of a firm commitment underwritten public offering of shares of

Common Stock in which (i) the aggregate net proceeds from such offering to the Corporation shall be at least $80,000,000 and (ii) the price paid by the public for such shares shall be at least $12.75 (appropriately adjusted to reflect the occurrence of any event described in paragraph 5F).

6. Definitions. As used herein, the following terms shall have the following meanings:

(a) The term "Reserved Employee Shares" shall mean shares of Common Stock reserved by the Corporation from time to time for (i) the sale of shares of Common Stock to employees, consultants or non-employee directors (other than representatives of the holders of Preferred Stock) of the Corporation or (ii) the issuance and/or exercise of options to purchase Common Stock granted to employees, consultants or non-employee directors (other than representatives of the holders of Preferred Stock) of the Corporation, not to exceed in the aggregate 740,000 shares (appropriately adjusted to reflect an event described in paragraph 5F hereof) of Common Stock after the date hereof (provided that any options for such shares that expire or terminate unexercised or any restricted stock repurchased by the Corporation at cost shall not be counted toward such maximum number unless and until such shares are regranted as new stock grants (or as new options)).

(b) The term "Subsidiary" shall mean any corporation, partnership, trust or other entity of which the Corporation and/or any of its other subsidiaries directly or indirectly owns at the time a majority of the outstanding shares of every class of equity security of such corporation, partnership, trust or other entity.

7. Common Stock.

(a) All preferences, voting powers, relative, participating, optional or other special rights and privileges, and qualifications, limitations, or restrictions of the Common Stock are expressly made subject to those that may be fixed with respect to any shares of Preferred Stock.

(b) The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of Delaware."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its President this 6th day of July, 2005.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Jerry Guo
President

State of Delaware
Secretary of State
Division of Corporations
Delivered 09:55 AM 06/26/2009
FILED 09:40 AM 06/26/2009
SRV 090651233 - 3630717 FILE

CERTIFICATE OF AMENDMENT
OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
CASA SYSTEMS, INC.

Casa Systems, Inc. (the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "General Corporation Law"), does hereby certify as follows:

The Board of Directors of the Corporation duly adopted a resolution, pursuant to Sections 141(f) and 242 of the General Corporation Law, setting forth an amendment to the Amended and Restated Certificate of Incorporation, as amended (the "Amended and Restated Certificate of Incorporation"), of the Corporation and declaring said amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment by written consent in accordance with Sections 228 and 242 of the General Corporation Law. The resolution setting forth the amendment is as follows:

RESOLVED: That Article FOURTH of the Amended and Restated Certificate of Incorporation of the Corporation be and hereby is deleted in its entirety and the following Article FOURTH is inserted in lieu thereof:

"FOURTH. The Corporation is authorized to have two classes of shares, designated as Common Stock and Preferred Stock. The total number of shares of Common Stock which the Corporation is authorized to issue is 8,200,000 shares, and the par value of each of the shares of Common Stock is one tenth of one cent ($.001). The total number of shares of Preferred Stock which the Corporation is authorized to issue is 2,000,000 shares, and the par value of each of the shares of Preferred Stock is one tenth of one cent ($.001). A total of 1,290,679 shares of Preferred Stock shall be designated the "Series A Convertible Preferred Stock" (the "Series A Preferred Stock") and a total of 352,018 shares of Preferred Stock shall be designated the "Series B Convertible Preferred Stock" (the "Series B Preferred Stock" and together with the Series A Preferred Stock, the "Series Preferred Stock").

Preferred Stock may also be issued from time to time in one or more further series, each of such series to have such terms as stated or expressed herein and in the resolution or resolutions providing for the issue of such series adopted by the Board of

Directors of the Corporation as hereinafter provided. Any shares of Preferred Stock which may be redeemed, purchased or acquired by the Corporation may be reissued except as otherwise provided by law or by the terms of any series of Preferred Stock. Different series of Preferred Stock shall not be construed to constitute different classes of shares for the purposes of voting by classes unless expressly provided.

Authority is hereby expressly granted to the Board of Directors from time to time to issue additional shares of Preferred Stock in one or more series, and in connection with the creation of any such series, by resolution or resolutions providing for the issue of the shares thereof, to determine and fix such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including without limitation thereof, dividend rights, special voting rights, conversion rights, redemption privileges and liquidation preferences, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by the General Corporation Law. Without limiting the generality of the foregoing, except as otherwise specifically provided in this Certificate of Incorporation, the resolutions providing for issuance of any series of Preferred Stock may provide that such series shall be superior or rank equally or be junior to the Preferred Stock of any other series to the extent permitted by law. Except as otherwise specifically provided in this Certificate of Incorporation, no vote of the holders of Preferred Stock or Common Stock shall be a prerequisite to the issuance of any shares of any series of Preferred Stock authorized by and complying with the conditions of this Certificate of Incorporation, the right to have such vote being expressly waived by all present and future holders of the capital stock of the Corporation.

The following is a statement of the powers, privileges and rights, and the qualifications, limitations or restrictions thereof, in respect of each series of Series Preferred Stock:

1. Voting. Except as may be otherwise provided in these terms of the Series Preferred Stock or by law, the Series Preferred Stock shall vote together with all other classes and series of stock of the Corporation, including, but not limited to, any other series of Preferred Stock the terms of which so provide, as a single class on all actions to be taken by the stockholders of the Corporation. Each share of Series Preferred Stock shall entitle the holder thereof to such number of votes per share on each such action as shall equal the number of shares of Common Stock (including fractions of a share) into which each share of Series Preferred Stock is then convertible. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

2. Dividends.

2A. Dividends. In the event the Board of Directors of the Corporation shall declare a dividend (other than a dividend payable in Common Stock) payable upon the then outstanding shares of the Common Stock of the Corporation, the Board of Directors

shall declare at the same time a dividend upon the then outstanding shares of Series A Preferred Stock and Series B Preferred Stock, payable at the same time as the dividend paid on the Common Stock, in an amount equal to the amount of dividends per share of Series A Preferred Stock or Series B Preferred Stock, as the case may be, as would have been payable on the largest number of whole shares of Common Stock into which all shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, held by each holder thereof would be converted if such Series A Preferred Stock or Series B Preferred Stock, as the case may be, had been converted to Common Stock pursuant to the provisions of paragraph 5 hereof as of the record date for the determination of holders of Common Stock entitled to receive such dividends. All dividends declared upon the Series Preferred Stock pursuant to this subparagraph 2A shall be declared and paid pro rata per share.

2B. Series A Accruing Dividends. From and after the date of the issuance of any shares of Series A Preferred Stock, the holders of such shares of Series A Preferred Stock shall be entitled to receive, out of funds legally available therefor, when and if declared by the Board of Directors, dividends at the rate per annum of $.3832 per share (the "Series A Accruing Dividends"). The Series A Accruing Dividends shall accrue from day to day, whether or not earned or declared, and shall be cumulative; provided however, that except as provided in paragraph 3, the Corporation shall be under no obligation to pay such Series A Accruing Dividends unless so declared by the Board of Directors. The Series A Accruing Dividends set forth in this subparagraph 2B shall be in addition to any dividends declared and paid pursuant to subparagraph 2A.

2C. Series B Accruing Dividends. From and after the date of the issuance of any shares of Series B Preferred Stock, the holders of such shares of Series B Preferred Stock shall be entitled to receive, out of funds legally available therefor, when and if declared by the Board of Directors, dividends at the rate per annum of $.5376 per share (the "Series B Accruing Dividends"). The Series B Accruing Dividends shall accrue from day to day, whether or not earned or declared, and shall be cumulative; provided however, that except as provided in paragraph 3, the Corporation shall be under no obligation to pay such Series B Accruing Dividends unless so declared by the Board of Directors. The Series B Accruing Dividends set forth in this subparagraph 2C shall be in addition to any dividends declared and paid pursuant to subparagraph 2A.

3. Liquidation, Dissolution and Winding-up.

3A. Liquidation. Upon any liquidation, dissolution or winding up of the Corporation (a "Liquidation Event"), whether voluntary or involuntary, (i) the holders of the shares of Series A Preferred Stock shall be paid an amount equal to $6.3868 per share (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series A Preferred Stock) plus, in the case of each share, an amount equal to all accrued and unpaid dividends thereon (whether or not declared) computed to the date payment thereof is made available and (ii) the holders of the shares of Series B Preferred Stock shall be paid an amount equal to $8.96 per share (subject to appropriate adjustment to reflect any stock split, stock dividend,

reverse stock split or similar corporate event affecting the Series B Preferred Stock) plus, in the case of each share, an amount equal to all accrued and unpaid dividends thereon (whether or not declared) computed to the date payment thereof is made available, together, in each case, with payment to any class or series of stock ranking on liquidation on a parity with the Series Preferred Stock, before any payment shall be made to the holders of any other class or series of stock ranking on liquidation junior to the Series Preferred Stock. If upon any Liquidation Event, the assets to be distributed to the holders of the Series Preferred Stock and any class or series of stock ranking on liquidation on a parity with the Series Preferred Stock shall be insufficient to permit payment to such stockholders of the full preferential amounts to which they are entitled, then all of the assets of the Corporation available for distribution to such holders shall be distributed to such holders pro rata, so that each holder receives that portion of the assets available for distribution as the amount of the full liquidation preference to which such holder would otherwise be entitled bears to the amount of the full liquidation preference to which all such holders would otherwise be entitled.

3B. Upon any Liquidation Event, immediately after the holders of Series Preferred Stock and any class or series of stock ranking on liquidation on a parity with the Series Preferred Stock have been paid the full liquidation preference to which such holders are entitled, the remaining net assets of the Corporation available for distribution shall be distributed ratably among the holders of the shares of Common Stock and any other class or series of stock entitled to participate in liquidation distributions with the holders of Common Stock, pro rata based on the number of shares of Common Stock held by each such holder (assuming, where applicable, conversion into Common Stock of all such shares).

3C. Written notice of a Liquidation Event, stating a payment date and the place where said payments shall be made, shall be given by mail, postage prepaid, or by facsimile to non-U.S. residents, not less than 20 days prior to the payment date stated therein, to the holders of record of Series Preferred Stock, such notice to be addressed to each such holder at its address as shown by the records of the Corporation.

3D. The (x) consolidation or merger of the Corporation into or with any other entity or entities (except a consolidation or merger into a Subsidiary (as defined in paragraph 6 below) or merger in which the Corporation is the surviving corporation and the holders of the Corporation's voting stock outstanding immediately prior to the transaction constitute the holders of a majority of the voting stock outstanding immediately following the transaction), or (y) the sale or transfer by the Corporation of all or substantially all its assets, or (z) the sale, exchange or transfer by the Corporation's stockholders, in a single transaction or series of related transactions, of capital stock representing a majority of the voting power at elections of directors of the Corporation shall be deemed to be a Liquidation Event within the meaning of the provisions of this paragraph 3 (subject to the provisions of this paragraph 3 and not the provisions of subparagraph 5G hereof, unless subparagraph 5G is elected in accordance with the following proviso); provided, however, that (i) the holders of at least a majority of the then outstanding shares of Series A Preferred Stock shall have the right to elect the

benefits of the provisions of subparagraph 5G in lieu of receiving payment in a Liquidation Event pursuant to this paragraph 3 with respect to the Series A Preferred Stock, on behalf of all holders of Series A Preferred Stock and (ii) the holders of at least a majority of the then outstanding shares of Series B Preferred Stock shall have the right to elect the benefits of the provisions of subparagraph 5G in lieu of receiving payment in a Liquidation Event pursuant to this paragraph 3 with respect to the Series B Preferred Stock, on behalf of all holders of Series B Preferred Stock.

3E. Whenever the distribution provided for in this paragraph 3 shall be payable in property other than cash, the value of such distribution shall be the fair market value of such property as determined in good faith by the Board of Directors of the Corporation, and the same form of property shall be distributed, on a *pari passu* basis in accordance with this paragraph 3, to the holders of Series A Preferred Stock and Series B Preferred Stock, provided, however, that (i) with respect to such distribution allocable to the Series A Preferred Stock, the holders of at least a majority of the then outstanding shares of Series A Preferred Stock, voting together as a single class, may consent otherwise, on behalf of all holders of Series A Preferred Stock, and (ii) with respect to such distribution allocable to the Series B Preferred Stock, a majority of the then outstanding shares of Series B Preferred Stock, voting together as a single class, may consent otherwise, on behalf of all holders of Series B Preferred Stock.

3F. The Corporation shall not effect any transaction constituting a deemed Liquidation Event pursuant to subparagraph 3D above unless the agreement or plan of merger or consolidation provides that the consideration payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with subparagraphs 3A and 3B above, provided, however, that the holders of at least (i) a majority of the votes represented by the outstanding shares of Series A Preferred Stock, voting together as a single class, may specifically consent in writing to the allocation of such consideration with respect to the Series A Preferred Stock in a manner different from that provided in subparagraphs 3A and 3B above, on behalf of all holders of Series A Preferred Stock and (B) a majority of the votes represented by the outstanding shares of Series B Preferred Stock, voting together as a single class, may specifically consent in writing to the allocation of such consideration with respect to the Series B Preferred Stock in a manner different from that provided in subparagraphs 3A and 3B above, on behalf of all holders of Series B Preferred Stock.

3G. In the event of a deemed Liquidation Event pursuant to subparagraph 3D above, if the Corporation does not effect a dissolution of the Corporation under the General Corporation Law within 60 days after such deemed Liquidation Event, then (i) the Corporation shall deliver a written notice to each holder of Series Preferred Stock no later than the 60th day after the deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause (ii) to require the redemption of such shares of Series Preferred Stock, and (ii) if the holders of shares of Series A Preferred Stock and Series B Preferred Stock, voting together as a single class, representing at least a majority of the votes represented by the then outstanding shares of Series Preferred Stock so

request in a written instrument delivered to the Corporation not later than 75 days after such deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such deemed Liquidation Event (net of any liabilities associated with the assets sold, as determined in good faith by the Board of Directors of the Corporation), to the extent legally available therefor (the "Net Proceeds"), to redeem, on the 90th day after such deemed Liquidation Event (the "Liquidation Redemption Date"), (i) all outstanding shares of Series A Preferred Stock at a price per share equal to the maximum amount payable to each holder of Series A Preferred Stock pursuant to subparagraph 3A as of the date of the deemed Liquidation Event, and (ii) all outstanding shares of Series B Preferred Stock at a price per share equal to the maximum amount payable to each holder of Series B Preferred Stock pursuant to subparagraph 3A as of the date of the deemed Liquidation Event. If the Net Proceeds are not sufficient to so redeem all outstanding shares of Series A Preferred Stock and Series B Preferred Stock, the Corporation shall redeem a pro rata portion (based on the aggregate amounts that would have been payable on redemption of the Series A Preferred Stock and the Series B Preferred Stock) of each holder's shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, out of the Net Proceeds. Prior to the distribution or redemption provided for in this subparagraph 3G, the Corporation shall not expend or dissipate the consideration received for such deemed Liquidation Event, except to discharge expenses incurred in the ordinary course of business. At any time and from time to time thereafter, when additional funds of the Corporation are legally available for such purpose, such funds shall immediately be used to redeem the shares of Series Preferred Stock which were required to be redeemed pursuant to this subparagraph 3G, but which the Corporation failed to so redeem, until the balance of such shares have been redeemed. The redemption of shares pursuant to the immediately preceding sentence shall be made, as nearly as practicable, on a pro rata basis among the holders of shares of Series Preferred Stock.

4. Restrictions.

4A. At any time when shares of Series Preferred Stock are outstanding, except where the vote or written consent of the holders of a greater number of shares of Series Preferred Stock of the Corporation is required by law or by this Certificate of Incorporation, and in addition to any other vote required by law or this Certificate of Incorporation, without the written consent of the holders of at least a majority of the votes represented by the then outstanding shares of Series A Preferred Stock and Series B Preferred Stock, voting together as a single class, given in writing or by vote at a meeting, the Corporation will not:

(a) Amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise) or the Corporation's By-laws to change the rights of the Series A Preferred Stock or the Series B Preferred Stock;

(b) Create or authorize the creation of any additional class or series of shares of stock which ranks senior to the Series A Preferred Stock or the Series B Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution

or winding up of the Corporation, or increase the authorized amount of any additional class or series of shares of stock which ranks senior to such Series A Preferred Stock or Series B Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation, or create or authorize any obligation or security convertible into shares of any series of Series Preferred Stock or into shares of any other class or series of stock which ranks senior to such Series A Preferred Stock or Series B Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation, whether any such creation, authorization or increase shall be by means of amendment to this Certificate of Incorporation or by merger, consolidation or otherwise;

(c) Create, or authorize the creation of, or issue, or authorize the issuance of, any debt security of the Corporation which by its terms is convertible into or exchangeable for any equity security of the Corporation or any security of the Corporation which is a combination of debt and equity, if such equity security ranks senior to the Series A Preferred Stock or the Series B Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation;

(d) Purchase or redeem, or set aside any sums for the purchase or redemption of, or pay any dividend or make any distribution on, any shares of stock other than the Series A Preferred Stock and the Series B Preferred Stock, except for dividends or other distributions payable on the Common Stock solely in the form of additional shares of Common Stock and other than shares of Common Stock repurchased from employees, advisors, officers, directors or consultants or service providers of the Corporation at the original purchase price thereof (not to exceed an aggregate amount of $100,000);

(e) Increase the number of Reserved Employee Shares (as defined in paragraph 6 hereof) by more than an aggregate of 500,000 shares; or

(f) Change the nature of the Corporation’s business.

4B. Notwithstanding anything in subparagraph 4A to the contrary, at any time when shares of Series A Preferred Stock are outstanding, except where the vote or written consent of the holders of a greater number of shares of Series A Preferred Stock of the Corporation is required by law or by this Certificate of Incorporation, and in addition to any other vote required by law or this Certificate of Incorporation, without the written consent of the holders of at least a majority of the then outstanding shares of Series A Preferred Stock, voting as a separate class, given in writing or by vote at a meeting, the Corporation will not (i) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise), in a manner that alters or changes the powers, preferences, or special rights of the Series A Preferred Stock so as to affect the Series A Preferred Stock adversely, but does not similarly adversely affect the Series B Preferred Stock and each other series of Preferred Stock, or (ii) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise) to change the rights of the Series A Preferred Stock with respect to (A) the distribution of assets on the liquidation, dissolution or winding up of the Corporation, (B) the payment of dividends or (C) conversion.

4C. Notwithstanding anything in subparagraph 4A to the contrary, at any time when shares of Series B Preferred Stock are outstanding, except where the vote or written consent of the holders of a greater number of shares of Series B Preferred Stock of the Corporation is required by law or by this Certificate of Incorporation, and in addition to any other vote required by law or this Certificate of Incorporation, without the written consent of the holders of at least a majority of the then outstanding shares of Series B Preferred Stock, voting as a separate class, given in writing or by vote at a meeting, the Corporation will not (i) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise), in a manner that alters or changes the powers, preferences, or special rights of the Series B Preferred Stock so as to affect the Series B Preferred Stock adversely, but does not similarly adversely affect the Series A Preferred Stock and each other series of Preferred Stock, or (ii) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise) to change the rights of the Series B Preferred Stock with respect to (A) the distribution of assets on the liquidation, dissolution or winding up of the Corporation, (B) the payment of dividends or (C) conversion.

5. Conversion of the Series Preferred Stock. The holders of shares of Series Preferred Stock shall have the following conversion rights:

5A. Right to Convert. Subject to the terms and conditions of this paragraph 5, the holder of any share or shares of Series A Preferred Stock shall have the right, at its option at any time, to convert any such shares of Series A Preferred Stock (except that upon any liquidation, dissolution or winding up of the Corporation the right of conversion shall terminate at the close of business on the business day fixed for payment of the amounts distributable on the Series A Preferred Stock) into such number of fully paid and nonassessable shares of Common Stock as is obtained by (i) multiplying the number of shares of Series A Preferred Stock so to be converted by $6.3868 (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series A Preferred Stock) and (ii) dividing the result by the conversion price of $6.3868 per share or in case an adjustment of such price has taken place pursuant to the further provisions of this paragraph 5, then by the conversion price as last adjusted and in effect at the date any share or shares of Series A Preferred Stock are surrendered for conversion (such price, or such price as last adjusted, being referred to as the “Series A Conversion Price”). Subject to the terms and conditions of this paragraph 5, the holder of any share or shares of Series B Preferred Stock shall have the right, at its option at any time, to convert any such shares of Series B Preferred Stock (except that upon any liquidation, dissolution or winding up of the Corporation the right of conversion shall terminate at the close of business on the business day fixed for payment of the amounts distributable on the Series B Preferred Stock) into such number of fully paid and nonassessable shares of Common Stock as is obtained by (i) multiplying the number of shares of Series B Preferred Stock so to be converted by $8.96 (subject to

appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series B Preferred Stock) and (ii) dividing the result by the conversion price of $8.96 per share or in case an adjustment of such price has taken place pursuant to the further provisions of this paragraph 5, then by the conversion price as last adjusted and in effect at the date any share or shares of Series B Preferred Stock are surrendered for conversion (such price, or such price as last adjusted, being referred to as the "Series B Conversion Price"). Such rights of conversion shall be exercised by the holder thereof by giving written notice to the Corporation at its principal office that the holder elects to convert a stated number of shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, into Common Stock and by surrender of a certificate or certificates for the shares so to be converted to the Corporation at its principal office (or such other office or agency of the Corporation as the Corporation may designate by notice in writing to the holders of the Series Preferred Stock) at any time during its usual business hours on the date set forth in such notice, together with a statement of the name or names (with address) in which the certificate or certificates for shares of Common Stock shall be issued. Notwithstanding any other provisions hereof, if a conversion of Series A Preferred Stock or Series B Preferred Stock is to be made in connection with any transaction affecting the Corporation, the conversion of any shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until immediately prior to the time such transaction has been consummated, subject in all events to the terms hereof applicable to such transaction.

5B. Issuance of Certificates; Time Conversion Effected. Promptly after the receipt of the written notice referred to in subparagraph 5A and surrender of the certificate or certificates for the share or shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, to be converted, the Corporation shall issue and deliver, or cause to be issued and delivered, to the holder, registered in such name or names as such holder may direct, a certificate or certificates for the number of whole shares of Common Stock issuable upon the conversion of such share or shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be. To the extent permitted by law, such conversion shall be deemed to have been effected and the Series A Conversion Price or the Series B Conversion Price, as the case may be, shall be determined as of the close of business on the date on which such written notice shall have been received by the Corporation and the certificate or certificates for such share or shares shall have been surrendered as aforesaid, and at such time the rights of the holder of such share or shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, shall cease, and the person or persons in whose name or names any certificate or certificates for shares of Common Stock shall be issuable upon such conversion shall be deemed to have become the holder or holders of record of the shares represented thereby.

5C. Fractional Shares; Partial Conversion. No fractional shares shall be issued upon conversion of Series Preferred Stock into Common Stock and no payment or adjustment shall be made upon any such conversion with respect to any cash dividends

previously payable on the Common Stock issued upon such conversion. In case the number of shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, represented by the certificate or certificates surrendered pursuant to subparagraph 5A exceeds the number of shares converted, the Corporation shall, upon such conversion, execute and deliver to the holder, at the expense of the Corporation, a new certificate or certificates for the number of shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, represented by the certificate or certificates surrendered which are not to be converted. If any fractional share of Common Stock would, except for the provisions of the first sentence of this subparagraph 5C, be delivered upon such conversion, the Corporation, in lieu of delivering such fractional share, shall pay to the holder surrendering the Series Preferred Stock for conversion an amount in cash equal to the fair market value of such fractional share as determined in good faith by the Board of Directors of the Corporation, and based upon the aggregate number of shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, surrendered by any one holder.

5D. Adjustment of Conversion Price Upon Issuance of Common Stock. Except as provided in subparagraphs 5E and 5F, if and whenever the Corporation shall issue or sell, or is, in accordance with subparagraphs 5D(1) through 5D(7), deemed to have issued or sold, any shares of Common Stock for a consideration per share less than the Series A Conversion Price in effect immediately prior to the time of such issue or sale (such number being appropriately adjusted to reflect the occurrence of any event described in subparagraph 5F), then, forthwith upon such issue or sale, such Series A Conversion Price shall be reduced to the price determined by dividing (i) an amount equal to the sum of (a) the number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) multiplied by the then existing Series A Conversion Price and (b) the consideration, if any, received by the Corporation upon such issue or sale, by (ii) an amount equal to the sum of (a) the total number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) and (b) the total number of shares of Common Stock issuable in such issue or sale. Except as provided in subparagraphs 5E and 5F, if and whenever the Corporation shall issue or sell, or is, in accordance with subparagraphs 5D(l) through 50(7), deemed to have issued or sold, any shares of Common Stock for a consideration per share less than the Series B Conversion Price in effect immediately prior to the time of such issue or sale (such number being appropriately adjusted to reflect the occurrence of any event described in subparagraph 5F), then, forthwith upon such issue or sale, such Series B Conversion Price shall be reduced to the price determined by dividing (i) an amount equal to the sum of (a) the number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) multiplied by the then existing Series B Conversion Price and (b) the consideration, if any, received by the Corporation upon such issue or sale, by (ii) an amount equal to the sum of (a) the total number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) and (b) the total number of shares of Common Stock issuable in such issue or sale.

For purposes of this subparagraph 5D, the following subparagraphs 5D(1) to 5D(7) shall also be applicable:

5D(1) Issuance of Rights or Options. In case at any time the Corporation shall in any manner grant (whether directly or by assumption in a merger or otherwise) any warrants or other rights to subscribe for or to purchase, or any options for the purchase of, Common Stock or any stock or security convertible into or exchangeable for Common Stock (such warrants, rights or options being called "Options" and such convertible or exchangeable stock or securities being called "Convertible Securities") whether or not such Options or the right to convert or exchange any such Convertible Securities are immediately exercisable, and the price per share for which Common Stock is issuable upon the exercise of such Options (determined by dividing (i) the total amount, if any, received or receivable by the Corporation as consideration for the granting of such Options, plus the minimum aggregate amount of additional consideration payable to the Corporation upon the exercise of all such Options, plus, in the case of such Options which relate to Convertible Securities, the minimum aggregate amount of additional consideration, if any, payable upon the issue or sale of such Convertible Securities and upon the conversion or exchange thereof, by (ii) the total maximum number of shares of Common Stock issuable upon the exercise of such Options or upon the conversion or exchange of all such Convertible Securities issuable upon the exercise of such Options) shall be less than the Series A Conversion Price or the Series B Conversion Price in effect immediately prior to the time of the granting of such Options, then the total maximum number of shares of Common Stock issuable upon the exercise of such Options or upon conversion or exchange of the total maximum amount of such Convertible Securities issuable upon the exercise of such Options shall be deemed to have been issued for such price per share as of the date of granting of such Options and thereafter shall be deemed to be outstanding. Except as otherwise provided in subparagraph 5D(3), no adjustment of the Series A Conversion Price or the Series B Conversion Price shall be made upon the actual issue of such Common Stock or of such Convertible Securities upon exercise of such Options or upon the actual issue of such Common Stock upon conversion or exchange of such Convertible Securities.

5D(2) Issuance of Convertible Securities. In case the Corporation shall in any manner issue (whether directly or by assumption in a merger or otherwise) or sell any Convertible Securities, except as provided in subparagraph 5D(1), whether or not the rights to exchange or convert any such Convertible Securities are immediately exercisable, and the price per share for which Common Stock is issuable upon such conversion or exchange (determined by dividing (i) the total amount received or receivable by the Corporation as consideration for the issue or sale of such Convertible Securities, plus the minimum aggregate amount of additional consideration, if any, payable to the Corporation upon the conversion or exchange thereof, by (ii) the total maximum number of shares of Common Stock

issuable upon the conversion or exchange of all such Convertible Securities) shall be less than the Series A Conversion Price or the Series B Conversion Price in effect immediately prior to the time of such issue or sale, then the total maximum number of shares of Common Stock issuable upon conversion or exchange of all such Convertible Securities shall be deemed to have been issued for such price per share as of the date of the issue or sale of such Convertible Securities and thereafter shall be deemed to be outstanding, provided that (a) except as otherwise provided in subparagraph 5D(3), no adjustment of the Series A Conversion Price or the Series B Conversion Price shall be made upon the actual issue of such Common Stock upon conversion or exchange of such Convertible Securities and (b) if any such issue or sale of such Convertible Securities is made upon exercise of any Options to purchase any such Convertible Securities for which adjustments of the Series A Conversion Price or the Series B Conversion Price, as the case may be, have been or are to be made pursuant to other provisions of this subparagraph 5D, no further adjustment of the Series A Conversion Price or the Series B Conversion Price, as the case may be, shall be made by reason of such issue or sale.

5D(3) Change in Option Price or Conversion Rate. Upon the happening of any of the following events, namely, if the purchase price provided for in any Option referred to in subparagraph 5D(1), the additional consideration, if any, payable upon the conversion or exchange of any Convertible Securities referred to in subparagraphs 5D(1) or 5D(2), or the rate at which Convertible Securities referred to in subparagraphs 5D(1) or 5D(2) are convertible into or exchangeable for Common Stock shall change at any time (including, but not limited to, changes under or by reason of provisions designed to protect against dilution), the Series A Conversion Price or the Series B Conversion Price, as applicable, in effect at the time of such event shall forthwith be readjusted (in each case by an amount equal to not less than one cent ($.01)) to the Series A Conversion Price or the Series B Conversion Price, as the case may be, which would have been in effect at such time had such Options or Convertible Securities still outstanding provided for such changed purchase price, additional consideration or conversion rate, as the case may be, at the time initially granted, issued or sold; and on the expiration of any such Option or the termination of any such right to convert or exchange such Convertible Securities, the Series A Conversion Price or the Series B Conversion Price, as applicable, then in effect hereunder shall forthwith be increased to the Series A Conversion Price or the Series B Conversion Price, as the case may be, which would have been in effect at the time of such expiration or termination had such Option or Convertible Securities, to the extent outstanding immediately prior to such expiration or termination, never been issued.

5D(4) Stock Dividends. In case the Corporation shall declare a dividend or make any other distribution upon any stock of the Corporation payable in Common Stock (except for the issue of stock dividends or distributions upon the outstanding Common Stock for which adjustment is made pursuant to subparagraph 5F), Options or Convertible Securities, any Common Stock, Options or Convertible Securities, as the case may be, issuable in payment of such dividend or distribution shall be deemed to have been issued or sold without consideration.

5D(5) Consideration for Stock. In case any shares of Common Stock, Options or Convertible Securities shall be issued or sold for cash, the consideration received therefor shall be deemed to be the amount received by the Corporation therefor, without deduction therefrom of any expenses incurred or any underwriting commissions or concessions paid or allowed by the Corporation in connection therewith. In case any shares of Common Stock, Options or Convertible Securities shall be issued or sold for a consideration other than cash, the amount of the consideration other than cash received by the Corporation shall be deemed to be the fair market value of such consideration as determined in good faith by the Board of Directors of the Corporation, without deduction of any expenses incurred or any underwriting commissions or concessions paid or allowed by the Corporation in connection therewith. In case any Options shall be issued in connection with the issue and sale of other securities of the Corporation, together comprising one integral transaction in which no specific consideration is allocated to such Options by the parties thereto, such Options shall be deemed to have been issued for such consideration as determined in good faith by the Board of Directors of the Corporation.

5D(6) Record Date. In case the Corporation shall take a record of the holders of its Common Stock for the purpose of entitling them (i) to receive a dividend or other distribution payable in Common Stock, Options or Convertible Securities or (ii) to subscribe for or purchase Common Stock, Options or Convertible Securities, then such record date shall be deemed to be the date of the issue or sale of the shares of Common Stock deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase, as the case may be.

5D(7) Treasury Shares. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the disposition of any such shares (other than the retirement and cancellation thereof) shall be considered an issue or sale of Common Stock for the purpose of this subparagraph 5D.

5E. Certain Issues of Common Stock Excepted. Anything herein to the contrary notwithstanding, the Corporation shall not be required to make any adjustment of the Series A Conversion Price or the Series B Conversion Price in the case of the issuance of (i) shares of Series B Preferred Stock and a warrant (the “LGI Warrant”) to purchase up to 396,431 shares of Common Stock issued pursuant to that certain Securities Purchase Agreement entered into on or about June 26, 2009 between the Corporation, LGI Ventures B.V. and UPC Broadband Operations B.V., (ii) shares of Common Stock issuable upon conversion of the Series Preferred Stock, (iii) shares of Common Stock issuable upon exercise of the LGI Warrant, (iv) shares of Common Stock actually issued upon the exercise of options to purchase Common Stock outstanding as of June 26, 2009, provided such issuance is pursuant to the terms of such option and (v) Reserved Employee Shares (as defined in paragraph 6 hereof).

5F. Subdivision or Combination of Common Stock. In case the Corporation shall at any time subdivide (by any stock split, stock dividend or otherwise) its outstanding shares of Common Stock into a greater number of shares, the Series A Conversion Price and the Series B Conversion Price in effect immediately prior to such subdivision shall be proportionately reduced, and, conversely, in case the outstanding shares of Common Stock shall be combined into a smaller number of shares, the Series A Conversion Price and the Series B Conversion Price in effect immediately prior to such combination shall be proportionately increased. In the event both subparagraph 5D(4) and this subparagraph 5F would require an adjustment to the Series A Conversion Price or the Series B Conversion Price, then such adjustment shall be made by applying this subparagraph 5F in lieu of subparagraph 5D(4).

5G. Reorganization or Reclassification. If any capital reorganization, reclassification, recapitalization, consolidation, merger, sale of all or substantially all of the Corporation's assets or other similar transaction (any such transaction being referred to herein as an "Organic Change") shall be effected in such a way that holders of Common Stock shall be entitled to receive (either directly or upon subsequent liquidation) stock, securities or assets with respect to or in exchange for Common Stock, then, as a condition of such Organic Change, lawful and adequate provisions shall be made whereby each holder of a share or shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, shall thereupon have the right to receive, upon the basis and upon the terms and conditions specified herein and in lieu of or in addition to, as the case may be, the shares of Common Stock immediately theretofore receivable upon the conversion of such share or shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, such shares of stock, securities or assets as may be issued or payable with respect to or in exchange for a number of outstanding shares of such Common Stock equal to the number of shares of such Common Stock immediately theretofore receivable upon such conversion had such Organic Change not taken place, and in any case of a reorganization or reclassification only appropriate provisions shall be made with respect to the rights and interests of such holder to the end that the provisions hereof (including without limitation provisions for adjustments of the Series A Conversion Price and the Series B Conversion Price) shall thereafter be applicable, as nearly as may be, in relation to any shares of stock, securities or assets thereafter deliverable upon the exercise of such conversion rights.

5H. Notice of Adjustment. Upon any adjustment of the Series A Conversion Price or the Series B Conversion Price, then, and in each such case, the Corporation shall give written notice thereof, by first class mail, postage prepaid, or by facsimile transmission to non-U.S. residents, addressed to each holder of shares of Series A Preferred Stock or Series B Preferred Stock, as the case may be, at the address of such holder as shown on the books of the Corporation, which notice shall state the Series A Conversion Price or the Series B Conversion Price, as the case may be, as applicable, resulting from such adjustment, setting forth in reasonable detail the method upon which such calculation is based.

5I. Other Notices. In case at any time:

(1) the Corporation shall declare any dividend upon its Common Stock payable in cash or stock or make any other distribution to the holders of its Common Stock;

(2) the Corporation shall offer for subscription pro rata to the holders of its Common Stock any additional shares of stock of any class or other rights;

(3) there shall be any capital reorganization or reclassification of the capital stock of the Corporation, or a consolidation or merger of the Corporation with or into, or a sale of all or substantially all its assets to, another entity or entities; or

(4) there shall be a voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then, in any one or more of said cases, the Corporation shall give, by first class mail, postage prepaid, or by facsimile transmission to non-U.S. residents, addressed to each holder of any shares of Series Preferred Stock at the address of such holder as shown on the books of the Corporation, (a) at least 20 days' prior written notice of the date on which the books of the Corporation shall close or a record shall be taken for such dividend, distribution or subscription rights or for determining rights to vote in respect of any such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, and (b) in the case of any such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, at least 20 days' prior written notice of the date when the same shall take place. Such notice in accordance with the foregoing clause (a) shall also specify, in the case of any such dividend, distribution or subscription rights, the date on which the holders of Common Stock shall be entitled thereto and such notice in accordance with the foregoing clause (b) shall also specify the date on which the holders of Common Stock shall be entitled to exchange their Common Stock for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, as the case may be.

5J. Stock to be Reserved. The Corporation will at all times reserve and keep available out of its authorized Common Stock, solely for the purpose of issuance upon the conversion of Series A Preferred Stock and Series B Preferred Stock as herein provided, such number of shares of Common Stock as shall then be issuable upon the conversion of all outstanding shares of Series A Preferred Stock and Series B Preferred Stock. The Corporation covenants that all shares of Common Stock which shall be so issued shall be duly and validly issued and fully paid and nonassessable and free from all taxes, liens and charges with respect to the issue thereof, and, without

limiting the generality of the foregoing, the Corporation covenants that it will from time to time take all such action as may be requisite to assure that the par value per share of the Common Stock is at all times equal to or less than the Series A Conversion Price and the Series B Conversion Price in effect at the time. The Corporation will take all such action as may be necessary to assure that all such shares of Common Stock may be so issued without violation of any applicable law or regulation, or of any requirement of any national securities exchange upon which the Common Stock may be listed.

5K. No Reissuance of Series Preferred Stock. Shares of Series Preferred Stock which are converted into shares of Common Stock as provided herein shall not be reissued.

5L. Issue Tax. The issuance of certificates for shares of Common Stock upon conversion of Series Preferred Stock shall be made without charge to the holders thereof for any issuance tax in respect thereof, provided that the Corporation shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of any certificate in a name other than that of the holder of the Series Preferred Stock which is being converted.

5M. Closing of Books. The Corporation will at no time close its transfer books against the transfer of any shares of Series Preferred Stock or of any shares of Common Stock issued or issuable upon the conversion of any shares of Series Preferred Stock, in any manner which interferes with the timely conversion of such Series Preferred Stock except as may otherwise be required to comply with applicable securities laws.

5N. Definition of Common Stock. As used in this paragraph 5, the term “Common Stock” shall mean and include the Corporation’s authorized Common Stock, par value $.001 per share, as constituted on the date of filing of these terms of the Series Preferred Stock, and shall also include any capital stock of any class of the Corporation thereafter authorized which shall neither be limited to a fixed sum or percentage of par value in respect of the rights of the holders thereof to participate in dividends nor entitled to a preference in the distribution of assets upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation; provided that the shares of Common Stock receivable upon conversion of shares of Series Preferred Stock shall include only shares designated as Common Stock of the Corporation on the date of filing of this instrument, or in case of any reorganization or reclassification of the outstanding shares thereof, the stock, securities or assets provided for in subparagraph 5G.

5O. Mandatory Conversion. All outstanding shares of Series Preferred Stock shall automatically convert to shares of Common Stock effective upon the closing of a firm commitment underwritten public offering of shares of Common Stock in which (i) the aggregate net proceeds from such offering to the Corporation shall be at least $80,000,000 and (ii) the price paid by the public for such shares shall be at least $12.75 (appropriately adjusted to reflect the occurrence of any event described in subparagraph 5F).

6. Definitions. As used herein, the following terms shall have the following meanings:

(a) The term “Reserved Employee Shares” shall mean shares of Common Stock reserved by the Corporation from time to time for (i) the sale of shares of Common Stock to employees, consultants or non-employee directors (other than representatives of the holders of Preferred Stock) of the Corporation or (ii) the issuance and/or exercise of options to purchase Common Stock granted to employees, consultants or non-employee directors (other than representatives of the holders of Preferred Stock) of the Corporation, not to exceed in the aggregate 544,000 shares (appropriately adjusted to reflect an event described in subparagraph 5F hereof) of Common Stock after the date hereof (provided that any options for such shares that expire or terminate unexercised or any restricted stock repurchased by the Corporation at cost shall not be counted toward such maximum number unless and until such shares are regranted as new stock grants (or as new options)).

(b) The term “Subsidiary” shall mean any corporation, partnership, trust or other entity of which the Corporation and/or any of its other subsidiaries directly or indirectly owns at the time a majority of the outstanding shares of every class of equity security of such corporation, partnership, trust or other entity.

7. Common Stock.

(a) All preferences, voting powers, relative, participating, optional or other special rights and privileges, and qualifications, limitations, or restrictions of the Common Stock are expressly made subject to those that may be fixed with respect to any shares of Preferred Stock.

(b) The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its President this 26th day of June, 2009.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Jerry Guo
President

State of Delaware
Secretary of State
Division of Corporations
Delivered 12:29 PM 04/26/2010
FILED 12:17 PM 04/26/2010
SRV 100421804 - 3630717 FILE

CERTIFICATE OF AMENDMENT
OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
CASA SYSTEMS, INC.

Casa Systems, Inc. (the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "General Corporation Law"), does hereby certify as follows:

The Board of Directors of the Corporation duly adopted a resolution, pursuant to Sections 141(f) and 242 of the General Corporation Law, setting forth an amendment to the Amended and Restated Certificate of Incorporation of the Corporation, as amended, and declaring said amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment by written consent in accordance with Sections 228 and 242 of the General Corporation Law. The resolution setting forth the amendment is as follows:

RESOLVED: That Article FOURTH of the Amended and Restated Certificate of Incorporation of the Corporation, as amended, be and hereby is deleted in its entirety and the following Article FOURTH is inserted in lieu thereof:

"FOURTH. The Corporation is authorized to have two classes of shares, designated as Common Stock and Preferred Stock. The total number of shares of Common Stock which the Corporation is authorized to issue is 12,500,000 shares, and the par value of each of the shares of Common Stock is one tenth of one cent ($.001). The total number of shares of Preferred Stock which the Corporation is authorized to issue is 6,000,000 shares, and the par value of each of the shares of Preferred Stock is one tenth of one cent ($.001). A total of 1,290,679 shares of Preferred Stock shall be designated the "Series A Convertible Preferred Stock" (the "Series A Preferred Stock"), a total of 352,018 shares of Preferred Stock shall be designated the "Series B Convertible Preferred Stock" (the "Series B Preferred Stock") and a total of 3,859,200 shares of Preferred Stock shall be designated the "Series C Convertible Preferred Stock" (the "Series C Preferred Stock" and together with the Series A Preferred Stock and the Series B Preferred Stock, the "Series Preferred Stock").

Preferred Stock may also be issued from time to time in one or more further series, each of such series to have such terms as stated or expressed herein and in the resolution or resolutions providing for the issue of such series adopted by the Board of Directors of the Corporation as hereinafter provided. Any shares of Preferred Stock which may be redeemed,

purchased or acquired by the Corporation may be reissued except as otherwise provided by law or by the terms of any series of Preferred Stock. Different series of Preferred Stock shall not be construed to constitute different classes of shares for the purposes of voting by classes unless expressly provided.

Except as otherwise specifically provided for in this Certificate of Incorporation, authority is hereby expressly granted to the Board of Directors from time to time to issue additional shares of Preferred Stock in one or more series, and in connection with the creation of any such series, by resolution or resolutions providing for the issue of the shares thereof, to determine and fix such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including without limitation thereof, dividend rights, special voting rights, conversion rights, redemption privileges and liquidation preferences, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by the General Corporation Law. Without limiting the generality of the foregoing, except as otherwise specifically provided in this Certificate of Incorporation, the resolutions providing for issuance of any series of Preferred Stock may provide that such series shall be superior or rank equally or be junior to the Preferred Stock of any other series to the extent permitted by law. Except as otherwise specifically provided in this Certificate of Incorporation, no vote of the holders of Preferred Stock or Common Stock shall be a prerequisite to the issuance of any shares of any series of Preferred Stock authorized by and complying with the conditions of this Certificate of Incorporation, the right to have such vote being expressly waived by all present and future holders of the capital stock of the Corporation.

For purposes of clarity, no shares of Preferred Stock created pursuant to the authority granted in the preceding two paragraphs shall be deemed to be ‘‘Series Preferred Stock” without the prior written consent of the holders of a majority of the then outstanding shares of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock (voting together as a single class on an as converted to Common Stock basis).

The following is a statement of the powers, privileges and rights, and the qualifications, limitations or restrictions thereof, in respect of each series of Series Preferred Stock:

1. Voting. Except as may be otherwise provided in these terms of the Series Preferred Stock or by law, the Series Preferred Stock shall vote together with all other classes and series of stock of the Corporation, including, but not limited to, any other series of Preferred Stock the terms of which so provide, as a single class on all actions to be taken by the stockholders of the Corporation. Each share of Series Preferred Stock shall entitle the holder thereof to such number of votes per share on each such action as shall equal the number of shares of Common Stock (including fractions of a share) into which each share of Series Preferred Stock is then convertible. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

2. Dividends.

2A. Dividends. In the event the Board of Directors of the Corporation shall declare a dividend (other than a dividend payable in Common Stock) payable upon the then outstanding shares of the Common Stock of the Corporation, the Board of Directors shall declare at the same time a dividend upon the then outstanding shares of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, payable at the same time as the dividend paid on the Common Stock, in an amount equal to the amount of dividends per share of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, as would have been payable on the largest number of whole shares of Common Stock into which all shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, held by each holder thereof would be converted if such Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, had been converted to Common Stock pursuant to the provisions of paragraph 5 hereof as of the record date for the determination of holders of Common Stock entitled to receive such dividends. All dividends declared upon the Series Preferred Stock pursuant to this subparagraph 2A shall be declared and paid pro rata per share.

2B. Series A Accruing Dividends. From and after the date of the issuance of any shares of Series A Preferred Stock, the holders of such shares of Series A Preferred Stock shall be entitled to receive, out of funds legally available therefor, when and if declared by the Board of Directors, dividends at the rate per annum of $.3832 per share (the "Series A Accruing Dividends"). The Series A Accruing Dividends shall accrue from day to day, whether or not earned or declared, and shall be cumulative; provided however, that except as provided in paragraph 3, the Corporation shall be under no obligation to pay such Series A Accruing Dividends unless so declared by the Board of Directors. The Series A Accruing Dividends set forth in this subparagraph 2B shall be in addition to any dividends declared and paid pursuant to subparagraph 2A.

2C. Series B Accruing Dividends. From and after the date of the issuance of any shares of Series B Preferred Stock, the holders of such shares of Series B Preferred Stock shall be entitled to receive, out of funds legally available therefor, when and if declared by the Board of Directors, dividends at the rate per annum of $.5376 per share (the "Series B Accruing Dividends"). The Series B Accruing Dividends shall accrue from day to day, whether or not earned or declared, and shall be cumulative; provided however, that except as provided in paragraph 3, the Corporation shall be under no obligation to pay such Series B Accruing Dividends unless so declared by the Board of Directors. The Series B Accruing Dividends set forth in this subparagraph 2C shall be in addition to any dividends declared and paid pursuant to subparagraph 2A.

2D. Series C Accruing Dividends. From and after the date of the issuance of any shares of Series C Preferred Stock, the holders of such shares of Series C Preferred Stock shall be entitled to receive, out of funds legally available therefor, when and if declared by the Board of Directors, dividends at the rate per annum of $1.499694 per share (the "Series C Accruing Dividends" and, together with the Series A Accruing Dividends and the Series B Accruing Dividends, the "Accruing Dividends"). The Series C Accruing Dividends shall accrue from day

to day, whether or not earned or declared, and shall be cumulative; provided however, that except as provided in paragraph 3, the Corporation shall be under no obligation to pay such Series C Accruing Dividends unless so declared by the Board of Directors. The Series C Accruing Dividends set forth in this subparagraph 2D shall be in addition to any dividends declared and paid pursuant to subparagraph 2A.

2E. Except with the consent of the holders of a majority of the votes represented by the then outstanding shares of Series A Preferred Stock. Series B Preferred Stock and Series C Preferred Stock, voting together as a single class on an as converted to Common Stock basis, given in writing or by vote at a meeting, no dividends may be paid on the Common Stock or any other series of Preferred Stock ranking junior to the Series Preferred Stock (other than dividends on shares of Common Stock payable in shares of Common Stock) until the Accruing Dividends have been paid in full. Any payments in respect of the Accruing Dividends shall be made on a *pari passu* basis in proportion to the total amount of Accruing Dividends outstanding on each series of the Series Preferred Stock.

3. Liquidation, Dissolution and Winding-up.

3A. Liquidation. Upon any liquidation, dissolution or winding up of the Corporation (a "Liquidation Event"), whether voluntary or involuntary: (i) the holders of the shares of Series A Preferred Stock shall be paid an amount per share equal to the greater of (a) $6.3868 (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series A Preferred Stock) plus, in the case of each share, an amount equal to all accrued and unpaid dividends thereon (whether or not declared) computed to the date payment thereof is made available, and (b) the amount that would have been payable to such share had all shares of Series A Preferred Stock been converted into shares of Common Stock immediately prior to the Liquidation Event pursuant to Section 5; (ii) the holders of the shares of Series B Preferred Stock shall be paid an amount per share equal to the greater of (a) $8.96 (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series B Preferred Stock) plus, in the case of each share, an amount equal to all accrued and unpaid dividends thereon (whether or not declared) computed to the date payment thereof is made available, and (b) the amount that would have been payable to such share had all shares of Series B Preferred Stock been converted into shares of Common Stock immediately prior to the Liquidation Event pursuant to Section 5; and (iii) the holders of the shares of Series C Preferred Stock shall be paid an amount per share equal to the greater of (a) $24.9949 (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series C Preferred Stock) plus, in the case of each share, an amount equal to all accrued and unpaid dividends thereon (whether or not declared) computed to the date payment thereof is made available, and (b) the amount that would have been payable to such share had all shares of Series C Preferred Stock been converted into shares of Common Stock immediately prior to the Liquidation Event pursuant to Section 5, together, in each case, with payment to any class or series of stock ranking on liquidation on a parity with the Series Preferred Stock, before any payment shall be made to the holders of any other class or series of stock ranking on liquidation junior to the Series Preferred Stock. If upon any Liquidation Event, the assets to be distributed to the holders of the Series Preferred Stock and any class or series of stock ranking on liquidation

on a parity with the Series Preferred Stock shall be insufficient to permit payment to such stockholders of the full preferential amounts to which they are entitled, then all of the assets of the Corporation available for distribution to such holders shall be distributed to such holders pro rata, so that each holder receives that portion of the assets available for distribution as the amount of the full liquidation preference to which such holder would otherwise be entitled bears to the amount of the full liquidation preference to which all such holders would otherwise be entitled.

3B. Upon any Liquidation Event, immediately after the holders of Series Preferred Stock and any class or series of stock ranking on liquidation on a parity with the Series Preferred Stock have been paid the full liquidation preference to which such holders are entitled, the remaining net assets of the Corporation available for distribution shall be distributed ratably among the holders of the shares of Common Stock and any other class or series of stock entitled to participate in liquidation distributions with the holders of Common Stock, pro rata based on the number of shares of Common Stock held by each such holder (assuming, where applicable, conversion into Common Stock of all such shares).

3C. Written notice of a Liquidation Event, stating a payment date and the place where said payments shall be made, shall be given by mail, postage prepaid, or by facsimile to non-U.S. residents, not less than 20 days prior to the payment date stated therein, to the holders of record of Series Preferred Stock, such notice to be addressed to each such holder at its address as shown by the records of the Corporation.

3D. The (x) consolidation or merger of the Corporation into or with any other entity or entities (except (A) a consolidation or merger into a Subsidiary (as defined in paragraph 6 below) where the Corporation is the surviving entity and this Certificate of Incorporation is not altered, or (B) a consolidation or merger in which the holders of the Corporation's voting stock outstanding immediately prior to the transaction constitute the holders of a majority of the voting stock outstanding immediately following the transaction of the surviving or resulting entity in such transaction or the parent entity of such surviving or resulting entity and which does not violate the provisions of Section 4A(a)(i) of this Article FOURTH); (y) the sale or transfer by the Corporation of all or substantially all its assets; or (z) the sale, exchange or transfer by the Corporation's stockholders, in a single transaction or series of related transactions to which the Corporation is a party, of capital stock representing a majority of the voting power at elections of directors of the Corporation, shall be deemed to be a Liquidation Event within the meaning of the provisions of this paragraph 3 (subject to the provisions of this paragraph 3 and not the provisions of subparagraph 5G hereof, unless subparagraph 5G is elected in accordance with the following proviso); provided, however, that (i) the holders of at least a majority of the then outstanding shares of Series A Preferred Stock shall have the right to elect the benefits of the provisions of subparagraph 5G in lieu of receiving payment in a Liquidation Event pursuant to this paragraph 3 with respect to the Series A Preferred Stock, on behalf of all holders of Series A Preferred Stock, (ii) the holders of at least a majority of the then outstanding shares of Series B Preferred Stock shall have the right to elect the benefits of the provisions of subparagraph 5G in lieu of receiving payment in a Liquidation Event pursuant to this paragraph 3 with respect to the Series B Preferred Stock, on behalf of all holders of Series B Preferred Stock, and (iii) the holders of at least a majority of the then outstanding shares of Series C Preferred Stock shall

have the right to elect the benefits of the provisions of subparagraph 5G in lieu of receiving payment in a Liquidation Event pursuant to this paragraph 3 with respect to the Series C Preferred Stock, on behalf of all holders of Series C Preferred Stock. In the event of a deemed Liquidation Event within the meaning of this Section 3D, if any portion of the consideration payable to the stockholders of the Corporation is placed in escrow and/or is payable to the stockholders of the Corporation subject to contingencies, the definitive agreement governing such transaction shall provide that (A) the portion of the consideration that is not placed in escrow and not subject to any contingencies (the "Initial Consideration") shall be allocated among the holders of capital stock of the Corporation in accordance with Sections 3A and 3B as if the Initial Consideration were the only consideration payable in connection with such deemed Liquidation Event and (B) any additional consideration that becomes payable to the stockholders of the Corporation upon release from escrow or satisfaction of contingencies shall be allocated among the holders of capital stock of the Corporation in accordance with Sections 3A and 3B after taking into account the previous payment of the Initial Consideration as part of the same transaction.

3E. Whenever the distribution provided for in this paragraph 3 shall be payable in property other than cash, the value of such distribution shall be the fair market value of such property as determined reasonably and in good faith by the Board of Directors of the Corporation, and the same form of property shall be distributed, on a *pari passu* basis in accordance with this paragraph 3, to the holders of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, provided, however, that (i) with respect to such distribution allocable to the Series A Preferred Stock, the holders of at least a majority of the then outstanding shares of Series A Preferred Stock, voting together as a single class, may consent otherwise, on behalf of all holders of Series A Preferred Stock, (ii) with respect to such distribution allocable to the Series B Preferred Stock, a majority of the then outstanding shares of Series B Preferred Stock, voting together as a single class, may consent otherwise, on behalf of all holders of Series B Preferred Stock and (iii) with respect to such distribution allocable to the Series C Preferred Stock, a majority of the then outstanding shares of Series C Preferred Stock, voting together as a single class, may consent otherwise, on behalf of all holders of Series C Preferred Stock.

3F. The Corporation shall not effect any transaction constituting a deemed Liquidation Event pursuant to subparagraph 3D above unless the agreement or plan of merger or consolidation provides that the consideration payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with subparagraphs 3A and 3B above, provided, however, that the holders of at least (i) a majority of the votes represented by the outstanding shares of Series A Preferred Stock, voting together as a single class, may specifically consent in writing to the allocation of such consideration with respect to the Series A Preferred Stock in a manner different from that provided in subparagraphs 3A and 3B above, on behalf of all holders of Series A Preferred Stock, (B) a majority of the votes represented by the outstanding shares of Series B Preferred Stock, voting together as a single class, may specifically consent in writing to the allocation of such consideration with respect to the Series B Preferred Stock in a manner different from that provided in subparagraphs 3A and 3B above, on behalf of all holders of Series B Preferred Stock, and (C) a majority of the votes represented by the outstanding shares of Series C Preferred Stock, voting together as a

single class, may specifically consent in writing to the allocation of such consideration with respect to the Series C Preferred Stock in a manner different from that provided in subparagraphs 3A and 3B above, on behalf of all holders of Series C Preferred Stock.

3G. In the event of a deemed Liquidation Event pursuant to subparagraph 3D above, if the Corporation docs not effect a dissolution of the Corporation under the General Corporation Law within 60 days after such deemed Liquidation Event, then (i) the Corporation shall deliver a written notice to each holder of Series Preferred Stock no later than the 60th day after the deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause (ii) to require the redemption of such shares of Series Preferred Stock, and (ii) if the holders of shares of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, voting together as a single class on an as converted to Common Stock basis, representing at least a majority of the votes represented by the then outstanding shares of Series Preferred Stock so request in a written instrument delivered to the Corporation not later than 75 days after such deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such deemed Liquidation Event (net of any liabilities associated with the assets sold, as determined reasonably and in good faith by the Board of Directors of the Corporation), to the extent legally available therefor (the "Net Proceeds''), to redeem, on the 90th day after such deemed Liquidation Event (the "Liquidation Redemption Date"), (i) all outstanding shares of Series A Preferred Stock at a price per share equal to the maximum amount payable to each holder of Series A Preferred Stock pursuant to subparagraph 3A as of the date of the deemed Liquidation Event, (ii) all outstanding shares of Series B Preferred Stock at a price per share equal to the maximum amount payable to each holder of Series B Preferred Stock pursuant to subparagraph 3A as of the date of the deemed Liquidation Event and (iii) all outstanding shares of Series C Preferred Stock at a price per share equal to the maximum amount payable to each holder of Series C Preferred Stock pursuant to subparagraph 3A as of the date of the deemed Liquidation Event. If the Net Proceeds are not sufficient to so redeem all outstanding shares of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, the Corporation shall redeem a pro rata portion (based on the aggregate amounts that would have been payable on redemption of the Series A Preferred Stock, the Series B Preferred Stock and the Series C Preferred Stock) of each holder's shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, out of the Net Proceeds. Prior to the distribution or redemption provided for in this subparagraph 3G, the Corporation shall not expend or dissipate the consideration received for such deemed Liquidation Event, except to discharge expenses incurred in the ordinary course of business. At any time and from time to time thereafter, when additional funds of the Corporation are legally available for such purpose, such funds shall immediately be used to redeem the shares of Series Preferred Stock which were required to be redeemed pursuant to this subparagraph 3G. but which the Corporation failed to so redeem, until the balance of such shares have been redeemed. The redemption of shares pursuant to the immediately preceding sentence shall be made, as nearly as practicable, on a pro rata basis among the holders of shares of Series Preferred Stock.

4. Restrictions.

4A. At any time when shares of Series Preferred Stock are outstanding, except where the vote or written consent of the holders of a greater number of shares of Series Preferred Stock of the Corporation is required by law or by this Certificate of Incorporation, and in addition to any other vote required by law or this Certificate of Incorporation, without the written consent of the holders of at least a majority of the votes represented by the then outstanding shares of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, voting together as a single class on an as converted to Common Stock basis, given in writing or by vote at a meeting, the Corporation will not, and will not permit any Subsidiary to:

(a) (i) Amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise) or the Corporation's By-laws to change the powers, preferences or rights of the Series A Preferred Stock, the Series B Preferred Stock or the Series C Preferred Stock; or (ii) amend, alter or repeal any provision of, or add any provision to, any organizational document of any Subsidiary in a manner adverse to the holders of Series Preferred Stock;

(b) Create or authorize the creation of any additional class or series of shares of stock which ranks senior to the Series A Preferred Stock, the Series B Preferred Stock or the Series C Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation, or provide such stock with a redemption right not provided to the Series A Preferred Stock, the Series B Preferred Stock or the Series C Preferred Stock pursuant to this Certificate of Incorporation; increase the authorized number of shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock; or increase the authorized amount of any additional class or series of shares of stock that ranks senior to the Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation, or create or authorize any obligation or security convertible into shares of any series of Series Preferred Stock or into shares of any other class or series of stock that ranks senior to such Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation, whether any such creation, authorization or increase shall be by means of amendment to this Certificate of Incorporation or by merger, consolidation or otherwise;

(c) Create, or authorize the creation of, or issue, or authorize the issuance of, any debt security of the Corporation which by its terms is convertible into or exchangeable for any equity security of the Corporation or any security of the Corporation which is a combination of debt and equity, if such equity security ranks senior to the Series A Preferred Stock, the Series B Preferred Stock or the Series C Preferred Stock as to dividends or the distribution of assets on the liquidation, dissolution or winding up of the Corporation;

(d) Purchase or redeem, or set aside any sums for the purchase or redemption of, or pay any dividend or make any distribution on, any shares of stock, except for dividends or other distributions payable on the Common Stock solely in the form of additional shares of Common Stock and other than (i) shares of Common Stock repurchased from employees, advisors, officers, directors or consultants or service providers of the Corporation at the original purchase price thereof, (ii) shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock redeemed pursuant to Section 3G of Article FOURTH of this Certificate of

Incorporation and (iii) up to 3,859,200 shares of capital stock of the Corporation repurchased at a price of $24.9949 per share (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event) as part of the Redemption (as such term is defined in the Series C Convertible Preferred Stock Purchase Agreement, by and between the Corporation and the purchasers party thereto, dated on or around the date hereof);

(e) Change the nature of the Corporation's or any Subsidiary's business;

(f) Acquire, directly or indirectly, all or substantially all of the properties, assets or stock of any other company or entity (except if the amount of consideration involved represents less than 10% of the Corporation's consolidated stockholders equity (determined in accordance with U.S. generally accepted accounting principles, consistently applied) as of the end of the most recent fiscal quarter);

(g) Incur any indebtedness for borrowed money (other than indebtedness for borrowed money of any Subsidiary owed to the Corporation), if the amount of indebtedness for borrowed money of the Corporation and its Subsidiaries exceeds, in the aggregate, 10% of the Corporation's consolidated stockholders equity (determined in accordance with U.S. generally accepted accounting principles, consistently applied) as of the end of the most recent fiscal quarter (for purposes of this clause (g), indebtedness for borrowed money shall include notes, bonds, capital leases and deferred purchase price for assets); or

(h) Effect a Liquidation Event, unless, in connection with such Liquidation Event, the holders of the then outstanding shares of Series C Preferred Stock receive at the closing of such transaction an amount in cash (not including any amounts held in escrow) equal to or greater than $49.9898 per share (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series C Preferred Stock).

4B. Notwithstanding anything in subparagraph 4A to the contrary, at any time when shares of Series A Preferred Stock are outstanding, except where the vote or written consent of the holders of a greater number of shares of Series A Preferred Stock of the Corporation is required by law or by this Certificate of Incorporation, and in addition to any other vote required by law or this Certificate of incorporation, without the written consent of the holders of at least a majority of the then outstanding shares of Series A Preferred Stock, voting as a separate class, given in writing or by vote at a meeting, the Corporation will not (i) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise), in a manner that alters or changes the powers, preferences, or special rights of the Series A Preferred Stock so as to affect the Series A Preferred Stock adversely, but does not similarly adversely affect each other series of Preferred Stock, or (ii) amend, alter or repeal any provision of, or add any provision to, this Certificate of incorporation (by means of amendment or by merger, consolidation or otherwise) to change the rights of the Series A Preferred Stock with respect to (A) the distribution of assets on the liquidation, dissolution or winding up of the Corporation, (B) the payment of dividends or (C) conversion.

4C. Notwithstanding anything in subparagraph 4A to the contrary, at any time when shares of Series B Preferred Stock are outstanding, except where the vote or written consent of the holders of a greater number of shares of Series B Preferred Stock of the Corporation is required by law or by this Certificate of Incorporation, and in addition to any other vote required by law or this Certificate of Incorporation, without the written consent of the holders of at least a majority of the then outstanding shares of Series B Preferred Stock, voting as a separate class, given in writing or by vote at a meeting, the Corporation will not (i) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise), in a manner that alters or changes the powers, preferences, or special rights of the Series B Preferred Stock so as to affect the Series B Preferred Stock adversely, but does not similarly adversely affect each other series of Preferred Stock, or (ii) amend, alter or repeal any provision of, or add any provision to, this Certificate of lncorporation (by means of amendment or by merger, consolidation or otherwise) to change the rights of the Series B Preferred Stock with respect to (A) the distribution of assets on the liquidation, dissolution or winding up of the Corporation, (B) the payment of dividends or (C) conversion.

4D. Notwithstanding anything in subparagraph 4A to the contrary, at any time when shares of Series C Preferred Stock are outstanding, except where the vote or written consent of the holders of a greater number of shares of Series C Preferred Stock of the Corporation is required by law or by this Certificate of Incorporation, and in addition to any other vote required by law or this Certificate of Incorporation, without the written consent of the holders of at least a majority of the then outstanding shares of Series C Preferred Stock, voting as a separate class, given in writing or by vote at a meeting, the Corporation will not (i) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise), in a manner that alters or changes the powers, preferences, or special rights of the Series C Preferred Stock so as to affect the Series C Preferred Stock adversely, but does not similarly adversely affect each other series of Preferred Stock; (ii) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise) to change the rights of the Series C Preferred Stock with respect to (A) the distribution of assets on the liquidation, dissolution or winding up of the Corporation, (B) the payment of dividends or (C) conversion; or (iii) amend, alter or repeal any provision of, or add any provision to, this Certificate of Incorporation (by means of amendment or by merger, consolidation or otherwise) in a manner that adversely affects the powers, prefercnces or rights of the Series C Preferred Stock.

5. Conversion of the Series Preferred Stock. The holders of shares of Series Preferred Stock shall have the following conversion rights:

5A. Right to Convert. Subject to the terms and conditions of this paragraph 5, the holder of any share or shares of Series A Preferred Stock shall have the right, at its option at any time, to convert any such shares of Series A Preferred Stock (except that upon any liquidation, dissolution or winding up of the Corporation the right of conversion shall terminate at the close of business on the business day fixed for payment of the amounts distributable on the Series A Preferred Stock) into such number of fully paid and nonassessable shares of Common

Stock as is obtained by (i) multiplying the number of shares of Series A Preferred Stock so to be converted by $6.3868 (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series A Preferred Stock) and (ii) dividing the result by the conversion price of $6.3868 per share or in case an adjustment of such price has taken place pursuant to the further provisions of this paragraph 5, then by the conversion price as last adjusted and in effect at the date any share or shares of Series A Preferred Stock are surrendered for conversion (such price, or such price as last adjusted, being referred to as the "Series A Conversion Price"). Subject to the terms and conditions of this paragraph 5, the holder of any share or shares of Series B Preferred Stock shall have the right, at its option at any time, to convert any such shares of Series B Preferred Stock (except that upon any liquidation, dissolution or winding up of the Corporation the right of conversion shall terminate at the close of business on the business day fixed for payment of the amounts distributable on the Series B Preferred Stock) into such number of fully paid and nonassessable shares of Common Stock as is obtained by (i) multiplying the number of shares of Series B Preferred Stock so to be converted by $8.96 (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series B Preferred Stock) and (ii) dividing the result by the conversion price of $8.96 per share or in case an adjustment of such price has taken place pursuant to the further provisions of this paragraph 5, then by the conversion price as last adjusted and in effect at the date any share or shares of Series B Preferred Stock are surrendered for conversion (such price, or such price as last adjusted, being referred to as the "Series B Conversion Price"). Subject to the terms and conditions of this paragraph 5, the holder of any share or shares of Series C Preferred Stock shall have the right, at its option at any time, to convert any such shares of Series C Preferred Stock (except that upon any liquidation, dissolution or winding up of the Corporation the right of conversion shall terminate at the close of business on the business day fixed for payment of the amounts distributable on the Series C Preferred Stock) into such number of fully paid and nonassessable shares of Common Stock as is obtained by (i) multiplying the number of shares of Series C Preferred Stock so to be converted by $24.9949 (subject to appropriate adjustment to reflect any stock split, stock dividend, reverse stock split or similar corporate event affecting the Series C Preferred Stock) and (ii) dividing the result by the conversion price of $24.9949 per share or in case an adjustment of such price has taken place pursuant to the further provisions of this paragraph 5, then by the conversion price as last adjusted and in effect at the date any share or shares of Series C Preferred Stock are surrendered for conversion (such price, or such price as last adjusted, being referred to as the "Series C Conversion Price"). Such rights of conversion shall be exercised by the holder thereof by giving written notice to the Corporation at its principal office that the holder elects to convert a stated number of shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, into Common Stock and by surrender of a certificate or certificates for the shares so to be converted to the Corporation at its principal office (or such other office or agency of the Corporation as the Corporation may designate by notice in writing to the holders of the Series Preferred Stock) at any time during its usual business hours on the date set forth in such notice, together with a statement of the name or names (with address) in which the certificate or certificates for shares of Common Stock shall be issued. Notwithstanding any other provisions hereof, if a conversion of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock is to be made in connection with any transaction affecting the Corporation, the conversion of any shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may

be, may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until immediately prior to the time such transaction has been consummated, subject in all events to the terms hereof applicable to such transaction.

5B. Issuance of Certificates; Time Conversion Effected. Promptly after the receipt of the written notice referred to in subparagraph 5A and surrender of the certificate or certificates for the share or shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, to be converted, the Corporation shall issue and deliver, or cause to be issued and delivered, to the holder, registered in such name or names as such holder may direct, a certificate or certificates for the number of whole shares of Common Stock issuable upon the conversion of such share or shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be. To the extent permitted by law, such conversion shall be deemed to have been effected and the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, as the case may be, shall be determined as of the close of business on the date on which such written notice shall have been received by the Corporation and the certificate or certificates for such share or shares shall have been surrendered as aforesaid, and at such time the rights of the holder of such share or shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, shall cease, and the person or persons in whose name or names any certificate or certificates for shares of Common Stock shall be issuable upon such conversion shall be deemed to have become the holder or holders of record of the shares represented thereby.

5C. Fractional Shares; Partial Conversion. No fractional shares shall be issued upon conversion of Series Preferred Stock into Common Stock and no payment or adjustment shall be made upon any such conversion with respect to any cash dividends previously payable on the Common Stock issued upon such conversion. In case the number of shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, represented by the certificate or certificates surrendered pursuant to subparagraph 5A exceeds the number of shares converted, the Corporation shall, upon such conversion, execute and deliver to the holder, at the expense of the Corporation, a new certificate or certificates for the number of shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, represented by the certificate or certificates surrendered which arc not to be converted. If any fractional share of Common Stock would, except for the provisions of the first sentence of this subparagraph 5C, be delivered upon such conversion, the Corporation, in lieu of delivering such fractional share, shall pay to the holder surrendering the Series Preferred Stock for conversion an amount in cash equal to the fair market value of such fractional share as determined reasonably and in good faith by the Board of Directors of the Corporation, and based upon the aggregate number of shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, surrendered by any one holder.

5D. Adjustment of Conversion Price Upon Issuance of Common Stock. Except as provided in subparagraphs 5E and 5F, if and whenever the Corporation shall issue or sell, or is, in accordance with subparagraphs 5D(1) through 5D(7), deemed to have issued or sold, any shares of Common Stock for a consideration per share less than the Series A Conversion Price in effect immediately prior to the time of such issue or sale (such number being

appropriately adjusted to reflect the occurrence of any event described in subparagraph 5F), then, forthwith upon such issue or sale, such Series A Conversion Price shall be reduced to the price determined by dividing (i) an amount equal to the sum of (a) the number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) multiplied by the then existing Series A Conversion Price and (b) the consideration, if any, received by the Corporation upon such issue or sale, by (ii) an amount equal to the sum of (a) the total number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) and (b) the total number of shares of Common Stock issuable in such issue or sale. Except as provided in subparagraphs 5E and 5F, if and whenever the Corporation shall issue or sell, or is, in accordance with subparagraphs 5D(1) through 5D(7), deemed to have issued or sold, any shares of Common Stock for a consideration per share less than the Series B Conversion Price in effect immediately prior to the time of such issue or sale (such number being appropriately adjusted to reflect the occurrence of any event described in subparagraph 5F), then, forthwith upon such issue or sale, such Series B Conversion Price shall be reduced to the price determined by dividing (i) an amount equal to the sum of (a) the number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) multiplied by the then existing Series B Conversion Price and (b) the consideration, if any, received by the Corporation upon such issue or sale, by (ii) an amount equal to the sum of (a) the total number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) and (b) the total number of shares of Common Stock issuable in such issue or sale. Except as provided in subparagraphs 5E and 5F, if and whenever the Corporation shall issue or sell, or is, in accordance with subparagraphs 5D(1) through 5D(7), deemed to have issued or sold, any shares of Common Stock for a consideration per share less than the Series C Conversion Price in effect immediately prior to the time of such issue or sale (such number being appropriately adjusted to reflect the occurrence of any event described in subparagraph 5F), then, forthwith upon such issue or sale, such Series C Conversion Price shall be reduced to the price determined by dividing (i) an amount equal to the sum of (a) the number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) multiplied by the then existing Series C Conversion Price and (b) the consideration, if any, received by the Corporation upon such issue or sale, by (ii) an amount equal to the sum of (a) the total number of shares of Common Stock outstanding immediately prior to such issue or sale (including, for this purpose, shares of Common Stock issuable upon conversion of the Preferred Stock) and (b) the total number of shares of Common Stock issuable in such issue or sale.

For purposes of this subparagraph 5D, the following subparagraphs 5D(1) to 5D(7) shall also be applicable:

5D(1) Issuance of Rights or Options. In case at any time the Corporation shall in any manner grant (whether directly or by assumption in a merger or otherwise) any warrants or other rights to subscribe for or to purchase, or any options for the purchase of, Common Stock or any stock or security convertible into or exchangeable for Common Stock (such

warrants, rights or options being called "Options" and such convertible or exchangeable stock or securities being called "Convertible Securities") whether or not such Options or the right to convert or exchange any such Convertible Securities are immediately exercisable, and the price per share for which Common Stock is issuable upon the exercise of such Options (determined by dividing (i) the total amount, if any, received or receivable by the Corporation as consideration for the granting of such Options, plus the minimum aggregate amount of additional consideration payable to the Corporation upon the exercise of all such Options, plus, in the case of such Options which relate to Convertible Securities, the minimum aggregate amount of additional consideration, if any, payable upon the issue or sale of such Convertible Securities and upon the conversion or exchange thereof, by (ii) the total maximum number of shares of Common Stock issuable upon the exercise of such Options or upon the conversion or exchange of all such Convertible Securities issuable upon the exercise of such Options) shall be less than the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price in effect immediately prior to the time of the granting of such Options, then the total maximum number of shares of Common Stock issuable upon the exercise of such Options or upon conversion or exchange of the total maximum amount of such Convertible Securities issuable upon the exercise of such Options shall be deemed to have been issued for such price per share as of the date of granting of such Options and thereafter shall be deemed to be outstanding. Except as otherwise provided in subparagraph 5D(3), no adjustment of the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price shall be made upon the actual issue of such Common Stock or of such Convertible Securities upon exercise of such Options or upon the actual issue of such Common Stock upon conversion or exchange of such Convertible Securities.

5D(2) Issuance of Convertible Securities. In case the Corporation shall in any manner issue (whether directly or by assumption in a merger or otherwise) or sell any Convertible Securities, except as provided in subparagraph 5D(1), whether or not the rights to exchange or convert any such Convertible Securities are immediately exercisable, and the price per share for which Common Stock is issuable upon such conversion or exchange (determined by dividing (i) the total amount received or receivable by the Corporation as consideration for the issue or sale of such Convertible Securities, plus the minimum aggregate amount of additional consideration, if any, payable to the Corporation upon the conversion or exchange thereof, by (ii) the total maximum number of shares of Common Stock issuable upon the conversion or exchange of all such Convertible Securities) shall be less than the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price in effect immediately prior to the time of such issue or sale, then the total maximum number of shares of Common Stock issuable upon conversion or exchange of all such Convertible Securities shall be deemed to have been issued for such price per share as of the date of the issue or sale of such Convertible Securities and thereafter shall be deemed to be outstanding, provided that (a) except as otherwise provided in subparagraph 5D(3), no adjustment of the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price shall be made upon the actual issue of such Common Stock upon conversion or exchange of such Convertible Securities and (b) if any such issue or sale of such Convertible Securities is made upon exercise of any Options to purchase any such Convertible Securities for which adjustments of the Series A Conversion Price, the Series B

Conversion Price or the Series C Conversion Price, as the case may be, have been or are to be made pursuant to other provisions of this subparagraph 5D, no further adjustment of the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, as the case may be, shall be made by reason of such issue or sale.

5D(3) Change in Option Price or Conversion Rate. Upon the happening of any of the following events, namely, if the purchase price provided for in any Option referred to in subparagraph 5D(1), the additional consideration, if any, payable upon the conversion or exchange of any Convertible Securities referred to in subparagraphs 5D(1) or 5D(2), or the rate at which Convertible Securities referred to in subparagraphs 5D(1) or 5D(2) are convertible into or exchangeable for Common Stock shall change at any time (including, but not limited to, changes under or by reason of provisions designed to protect against dilution), the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, as applicable, in effect at the time of such event shall forthwith be readjusted (in each case by an amount equal to not less than one cent ($.01)) to the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, as the case may be, which would have been in effect at such time had such Options or Convertible Securities still outstanding provided for such changed purchase price, additional consideration or conversion rate, as the case may be, at the time initially granted, issued or sold; and on the expiration of any such Option or the termination of any such right to convert or exchange such Convertible Securities, the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, as applicable, then in effect hereunder shall forthwith be increased to the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, as the case may be, which would have been in effect at the time of such expiration or termination had such Option or Convertible Securities, to the extent outstanding immediately prior to such expiration or termination, never been issued.

5D(4) Stock Dividends. In case the Corporation shall declare a dividend or make any other distribution upon any stock of the Corporation payable in Common Stock (except for the issue of stock dividends or distributions upon the outstanding Common Stock for which adjustment is made pursuant to subparagraph 5F), Options or Convertible Securities, any Common Stock, Options or Convertible Securities, as the case may be, issuable in payment of such dividend or distribution shall be deemed to have been issued or sold without consideration.

5D(5) Consideration for Stock. In case any shares of Common Stock, Options or Convertible Securities shall be issued or sold for cash, the consideration received therefor shall be deemed to be the amount received by the Corporation therefor, without deduction therefrom of any expenses incurred or any underwriting commissions or concessions paid or allowed by the Corporation in connection therewith. In case any shares of Common Stock, Options or Convertible Securities shall be issued or sold for a consideration other than cash, the amount of the consideration other than cash received by the Corporation shall be deemed to be the fair market value of such consideration as determined reasonably and in good faith by the Board of Directors of the Corporation, without deduction of any expenses incurred or any underwriting commissions or concessions paid or allowed by the Corporation in connection therewith. In case any Options shall be issued in connection with

the issue and sale of other securities of the Corporation, together comprising one integral transaction in which no specific consideration is allocated to such Options by the parties thereto, such Options shall be deemed to have been issued for such consideration as determined reasonably and in good faith by the Board of Directors of the Corporation.

5D(6) Record Date. In case the Corporation shall take a record of the holders of its Common Stock for the purpose of entitling them (i) to receive a dividend or other distribution payable in Common Stock, Options or Convertible Securities or (ii) to subscribe for or purchase Common Stock, Options or Convertible Securities, then such record date shall be deemed to be the date of the issue or sale of the shares of Common Stock deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase, as the case may be.

5D(7) Treasury Shares. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the disposition of any such shares (other than the retirement and cancellation thereof) shall be considered an issue or sale of Common Stock for the purpose of this subparagraph 5D.

5E. Certain Issues of Common Stock Excepted. Anything herein to the contrary notwithstanding, the Corporation shall not be required to make any adjustment of the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price in the case of the issuance of (i) shares of Series C Preferred Stock, (ii) shares of Common Stock issuable upon conversion of the Series Preferred Stock, (iii) shares of Common Stock issuable upon exercise of a warrant to purchase up to 396,431 shares of Common Stock issued pursuant to that certain Securities Purchase Agreement entered into on or about June 26, 2009 between the Corporation, LGI Ventures B.V. and UPC Broadband Operations B.V., (iv) up to 475,000 shares of Common Stock actually issued upon the exercise of options to purchase Common Stock outstanding as of April 26, 2010, provided such issuance is pursuant to the terms of such option and (v) Reserved Employee Shares (as defined in paragraph 6 hereof).

5F. Subdivision or Combination of Common Stock. In case the Corporation shall at any time subdivide (by any stock split, stock dividend or otherwise) its outstanding shares of Common Stock into a greater number of shares, the Series A Conversion Price, the Series B Conversion Price and the Series C Conversion Price in effect immediately prior to such subdivision shall be proportionately reduced, and, conversely, in case the outstanding shares of Common Stock shall be combined into a smaller number of shares, the Series A Conversion Price, the Series B Conversion Price and the Series C Conversion Price in effect immediately prior to such combination shall be proportionately increased. In the event both subparagraph 5D(4) and this subparagraph 5F would require an adjustment to the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, then such adjustment shall be made by applying this subparagraph 5F in lieu of subparagraph 5D(4).

5G. Reorganization or Reclassification. If any capital reorganization, reclassification, recapitalization, consolidation, merger, sale of all or substantially all of the Corporation’s assets or other similar transaction (any such transaction being referred to herein as

an "Organic Change") shall be effected in such a way that holders of Common Stock shall be entitled to receive (either directly or upon subsequent liquidation) stock, securities or assets with respect to or in exchange for Common Stock, then, as a condition of such Organic Change, lawful and adequate provisions shall be made whereby each holder of a share or shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, shall thereupon have the right to receive, upon the basis and upon the terms and conditions specified herein and in lieu of or in addition to, as the case may be, the shares of Common Stock immediately theretofore receivable upon the conversion of such share or shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, such shares of stock, securities or assets as may be issued or payable with respect to or in exchange for a number of outstanding shares of such Common Stock equal to the number of shares of such Common Stock immediately theretofore receivable upon such conversion had such Organic Change not taken place, and in any case of a reorganization or reclassification only appropriate provisions shall be made with respect to the rights and interests of such holder to the end that the provisions hereof (including without limitation provisions for adjustments of the Series A Conversion Price, the Series B Conversion Price and the Series C Conversion Price) shall thereafter be applicable, as nearly as may be, in relation to any shares of stock, securities or assets thereafter deliverable upon the exercise of such conversion rights.

5H. Notice of Adjustment. Upon any adjustment of the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, then, and in each such case, the Corporation shall give written notice thereof, by first class mail, postage prepaid, or by facsimile transmission to non-U.S. residents, addressed to each holder of shares of Series A Preferred Stock, Series B Preferred Stock or Series C Preferred Stock, as the case may be, at the address of such holder as shown on the books of the Corporation, which notice shall state the Series A Conversion Price, the Series B Conversion Price or the Series C Conversion Price, as the case may be, as applicable, resulting from such adjustment, setting forth in reasonable detail the method upon which such calculation is based.

5I. Other Notices. In case at any time:

(1) the Corporation shall declare any dividend upon its Common Stock payable in cash or stock or make any other distribution to the holders of its Common Stock;

(2) the Corporation shall offer for subscription pro rata to the holders of its Common Stock any additional shares of stock of any class or other rights;

(3) there shall be any capital reorganization or reclassification of the capital stock of the Corporation, or a consolidation or merger of the Corporation with or into, or a sale of all or substantially all its assets to, another entity or entities; or

(4) there shall be a voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then, in any one or more of said cases, the Corporation shall give, by first class mail, postage prepaid, or by facsimile transmission to non-U.S. residents, addressed to each holder of any

shares of Series Preferred Stock at the address of such holder as shown on the books of the Corporation, (a) at least 20 days' prior written notice of the date on which the books of the Corporation shall close or a record shall be taken for such dividend, distribution or subscription rights or for determining rights to vote in respect of any such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, and (b) in the case of any such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, at least 20 days' prior written notice of the date when the same shall take place. Such notice in accordance with the foregoing clause (a) shall also specify, in the case of any such dividend, distribution or subscription rights, the date on which the holders of Common Stock shall be entitled thereto and such notice in accordance with the foregoing clause (b) shall also specify the date on which the holders of Common Stock shall be entitled to exchange their Common Stock for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, as the case may be.

5J. Stock to be Reserved. The Corporation will at all times reserve and keep available out of its authorized Common Stock, solely for the purpose of issuance upon the conversion of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock as herein provided, such number of shares of Common Stock as shall then be issuable upon the conversion of all outstanding shares of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock. The Corporation covenants that all shares of Common Stock which shall be so issued shall be duly and validly issued and fully paid and nonassessable and free from all taxes, liens and charges with respect to the issue thereof, and, without limiting the generality of the foregoing, the Corporation covenants that it will from time to time take all such action as may be requisite to assure that the par value per share of the Common Stock is at all times equal to or less than the Series A Conversion Price, the Series B Conversion Price and the Series C Conversion Price in effect at the time. The Corporation will take all such action as may be necessary to assure that all such shares of Common Stock may be so issued without violation of any applicable law or regulation, or of any requirement of any national securities exchange upon which the Common Stock may be listed.

5K. No Reissuance of Series Preferred Stock. Shares of Series Preferred Stock which are converted into shares of Common Stock as provided herein shall not be reissued.

5L. Issue Tax. The issuance of certificates for shares of Common Stock upon conversion of Series Preferred Stock shall be made without charge to the holders thereof for any issuance tax in respect thereof, provided that the Corporation shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of any certificate in a name other than that of the holder of the Series Preferred Stock which is being converted.

5M. Closing of Books. The Corporation will at no time close its transfer books against the transfer of any shares of Series Preferred Stock or of any shares of Common Stock issued or issuable upon the conversion of any shares of Series Preferred Stock, in any manner which interferes with the timely conversion of such Series Preferred Stock except as may otherwise be required to comply with applicable securities laws.

5N. Definition of Common Stock. As used in this paragraph 5, the term "Common Stock" shall mean and include the Corporation's authorized Common Stock, par value $.001 per share, as constituted on the date of filing of these terms of the Series Preferred Stock, and shall also include any capital stock of any class of the Corporation thereafter authorized which shall neither be limited to a fixed sum or percentage of par value in respect of the rights of the holders thereof to participate in dividends nor entitled to a preference in the distribution of assets upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation; provided that the shares of Common Stock receivable upon conversion of shares of Series Preferred Stock shall include only shares designated as Common Stock of the Corporation on the date of filing of this instrument, or in case of any reorganization or reclassification of the outstanding shares thereof, the stock, securities or assets provided for in subparagraph 5G.

5O. Mandatory Conversion. All outstanding shares of Series Preferred Stock shall automatically convert to shares of Common Stock at the then effective conversion rate for such series of Series Preferred Stock upon either (a) the closing of a firm commitment underwritten public offering of shares of Common Stock in which (i) the aggregate gross proceeds from such offering to the Corporation shall be at least $100,000,000 and (ii) the price paid by the public for such shares shall be at least $49.9898 (appropriately adjusted to reflect the occurrence of any event described in subparagraph 5F) (a "Qualified Public Offering") or (b) the date and time, or the occurrence of an event, specified by vote or written consent of the holders of at least a majority of the votes represented by the then outstanding shares of Series Preferred Stock, voting together as a single class on an as converted to Common Stock basis.

6. Definitions. As used herein, the following terms shall have the following meanings:

(a) The term "Reserved Employee Shares" shall mean shares of Common Stock reserved by the Corporation from time to time for (i) the sale of shares of Common Stock to employees, consultants or non-employee directors (other than representatives of the holders of Preferred Stock) of the Corporation or (ii) the issuance and/or exercise of options to purchase Common Stock granted to employees, consultants or non-employee directors (other than representatives of the holders of Preferred Stock) of the Corporation, not to exceed in the aggregate 214,000 shares (appropriately adjusted to reflect an event described in subparagraph 5F hereof) of Common Stock after the date hereof (provided that any options for such shares that expire or terminate unexercised or any restricted stock repurchased by the Corporation at cost shall not be counted toward such maximum number unless and until such shares are regranted as new stock grants (or as new options)).

(b) The term "Subsidiary" shall mean any corporation, partnership, trust or other entity of which the Corporation and/or any of its other Subsidiaries directly or indirectly owns at the time outstanding equity securities of such corporation, partnership, trust or other entity, other than directors' qualifying shares, comprising at least fifty percent (50%) of the voting power of such corporation, partnership, trust or other entity.

7. Common Stock.

(a) All preferences, voting powers, relative, participating, optional or other special rights and privileges, and qualifications, limitations, or restrictions of the Common Stock are expressly made subject to those that may be fixed with respect to any shares of Preferred Stock.

(b) The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law."

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its President this 26th day of April, 2010.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Jerry Guo
President

CERTIFICATE OF AMENDMENT
OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
CASA SYSTEMS, INC.

Casa Systems, Inc. (hereinafter, the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

1. The name of the Corporation is Casa Systems, Inc. The original Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on February 28, 2003.

2. This Certificate of Amendment of Amended and Restated Certificate of Incorporation was duly adopted by the Board of Directors and stockholders of the Corporation in accordance with the applicable provisions of Sections 141, 228 and 242 of the General Corporation Law of the State of Delaware.

3. The Amended and Restated Certificate of Incorporation, as amended, is hereby further amended by deleting clauses (iv) and (v) of Section 5E of Article FOURTH in their entirety and by substituting in lieu thereof the following:

   "and (iv) Reserved Employee Shares (as defined in paragraph 6 hereof)."

4. The Amended and Restated Certificate of Incorporation, as amended, is hereby further amended by deleting the number "214,000" contained in Section 6(a) of Article FOURTH and by substituting in lieu thereof the number "935,871".

5. The Amended and Restated Certificate of Incorporation, as amended, is hereby further amended by inserting the following language at the end of the sentence constituting Section 6(a) of Article FOURTH:

   "or such other aggregate number of shares as may be approved from time to time by the Board of Directors of the Corporation, including both Series C Designees (as defined in that certain Stockholders' Voting Agreement, dated April 26, 2010, by and among the Corporation and certain of its stockholders, as amended and/or restated from time to time)."

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State of Delaware
Secretary of State
Division of Corporations
Delivered 11:38 AM 11/01/2011
FILED 10:58 AM 11/01/2011
SRV 111153688 - 3630717 FILE

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its President this 27th day of October, 2011.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Jerry Guo
President

State of Delaware
Secretary of State
Division of Corporations
Delivered 07:38 PM 11/19/2012
FILED 07:13 PM 11/19/2012
SRV 121245849 - 3630717 FILE

CERTIFICATE OF AMENDMENT
OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
CASA SYSTEMS, INC.

Casa Systems, Inc. (hereinafter, the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

1. The name of the Corporation is Casa Systems, Inc. The original Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on February 28, 2003.

2. This Certificate of Amendment of Amended and Restated Certificate of Incorporation was duly adopted by the Board of Directors and stockholders of the Corporation in accordance with the applicable provisions of Sections 141, 228 and 242 of the General Corporation Law of the State of Delaware.

3. The Amended and Restated Certificate of Incorporation, as amended, is hereby further amended by deleting the second sentence of the first paragraph of Article FOURTH in its entirety and by substituting in lieu thereof the following:

"The total number of shares of Common Stock which the Corporation is authorized to issue is 20,000,000, and the par value of each of the shares of Common Stock is one tenth of one cent ($.001)."

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IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its President this 16th day of November, 2012.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Jerry Guo
President

Exhibit 3.2

BY-LAWS

OF

CASA SYSTEMS, INC.

BY-LAWS

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BY-LAWS

OF

CASA SYSTEMS, INC.

ARTICLE I

STOCKHOLDERS

1.1 Place of Meetings. All meetings of stockholders shall be held at such place as may be designated from time to time by the Board of Directors, the Chairman of the Board or the President or, if not so designated, at the principal office of the corporation. The Board of Directors may, in its sole discretion, determine that a meeting shall not be held at any place, but may instead be held solely by means of remote communication in a manner consistent with the General Corporation Law of the State of Delaware.

1.2 Annual Meeting. Unless directors are elected by consent in lieu of an annual meeting, the annual meeting of stockholders for the election of directors and for the transaction of such other business as may properly be brought before the meeting shall be held on a date and at a time designated by the Board of Directors, the Chairman of the Board or the President (which date shall not be a legal holiday in the place where the meeting is to be held). If no annual meeting is held in accordance with the foregoing provisions, a special meeting may be held in lieu of the annual meeting, and any action taken at that special meeting shall have the same effect as if it had been taken at the annual meeting, and in such case all references in these By-laws to the annual meeting of the stockholders shall be deemed to refer to such special meeting.

1.3 Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time by the Board of Directors, the Chairman of the Board or the President, but such special meetings may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting.

1.4 Notice of Meetings. Except as otherwise provided by law, notice of each meeting of stockholders, whether annual or special, shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. Without limiting the manner by which notice otherwise may be given to stockholders, any notice shall be effective if given by a form of electronic transmission consented to (in a manner consistent with the General Corporation Law of the State of Delaware) by the stockholder to whom the notice is given. The notices of all meetings shall state the place, if any, date and time of the meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting. The notice of a special meeting shall

state, in addition, the purpose or purposes for which the meeting is called. If notice is given by mail, such notice shall be deemed given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. If notice is given by electronic transmission, such notice shall be deemed given at the time specified in Section 232 of the General Corporation Law of the State of Delaware.

1.5 Voting List. The Secretary shall prepare, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting for a period of at least 10 days prior to the meeting: (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the principal place of business of the corporation. If the meeting is to be held at a place, then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting.

1.6 Quorum. Except as otherwise provided by law, the Certificate of Incorporation or these By-laws, the holders of a majority of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at the meeting, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion or represented by proxy, shall constitute a quorum for the transaction of business. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

1.7 Adjournments. Any meeting of stockholders may be adjourned from time to time to any other time and to any other place at which a meeting of stockholders may be held under these By-laws by the stockholders present or represented at the meeting and entitled to vote, although less than a quorum, or, if no stockholder is present, by any officer entitled to preside at or to act as secretary of such meeting. It shall not be necessary to notify any stockholder of any adjournment of less than 30 days if the time and place, if any, of the adjourned meeting, and the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting, are announced at the meeting at which adjournment is taken, unless after the adjournment a new record date is fixed for the adjourned meeting. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting.

1.8 Voting and Proxies. Each stockholder shall have one vote for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by law or the Certificate of Incorporation. Each stockholder of record entitled to vote at a meeting of stockholders, or to express consent or dissent to corporate action without a meeting, may vote or express such consent or dissent in person (including by means of remote communications, if any, by which stockholders may be deemed to be present in person and vote at such meeting) or may authorize another person or persons to vote or act for such stockholder by a proxy executed or transmitted in a manner permitted by the General Corporation Law of the State of Delaware by the stockholder or such stockholder's authorized agent and delivered (including by electronic transmission) to the Secretary of the corporation. No such proxy shall be voted or acted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period.

1.9 Action at Meeting. When a quorum is present at any meeting, any matter other than the election of directors to be voted upon by the stockholders at such meeting shall be decided by the vote of the holders of shares of stock having a majority of the votes cast by the holders of all of the shares of stock present or represented and voting on such matter (or if there are two or more classes of stock entitled to vote as separate classes, then in the case of each such class, the holders of a majority of the stock of that class present or represented and voting on such matter), except when a different vote is required by law, the Certificate of Incorporation or these By-Laws. When a quorum is present at any meeting, any election by stockholders of directors shall be determined by a plurality of the votes cast on the election.

1.10 Conduct of Meetings.

(a) Chairman of Meeting. Meetings of stockholders shall be presided over by the Chairman of the Board, if any, or in the Chairman's absence by the Vice Chairman of the Board, if any, or in the Vice Chairman's absence by the President, or in the President's absence by a Vice President, or in the absence of all of the foregoing persons by a chairman designated by the Board of Directors, or in the absence of such designation by a chairman chosen by vote of the stockholders at the meeting. The Secretary shall act as secretary of the meeting, but in the Secretary's absence the chairman of the meeting may appoint any person to act as secretary of the meeting.

(b) Rules, Regulations and Procedures. The Board of Directors of the corporation may adopt by resolution such rules, regulations and procedures for the conduct of any meeting of stockholders of the corporation as it shall deem appropriate including, without limitation, such guidelines and procedures as it may deem appropriate regarding the participation by means of remote communication of stockholders and proxyholders not physically present at a meeting. Except to the extent inconsistent with such rules, regulations and procedures as adopted by the Board of Directors, the chairman of any meeting of stockholders shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as,

in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders of record of the corporation, their duly authorized and constituted proxies or such other persons as shall be determined; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

1.11 Action without Meeting.

(a) Taking of Action by Consent. Any action required or permitted to be taken at any annual or special meeting of stockholders of the corporation may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote on such action were present and voted. Except as otherwise provided by the Certificate of Incorporation, stockholders may act by written consent to elect directors; provided, however, that, if such consent is less than unanimous, such action by written consent may be in lieu of holding an annual meeting only if all of the directorships to which directors could be elected at an annual meeting held at the effective time of such action are vacant and are filled by such action.

(b) Electronic Transmission of Consents. A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, or by a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the corporation can determine (A) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and (B) the date on which such stockholder or proxyholder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by telegram, cablegram or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation’s

registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by telegram, cablegram or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the Board of Directors. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

(c) Notice of Taking of Corporate Action. Prompt notice of the taking of corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by a sufficient number of holders to take the action were delivered to the corporation.

ARTICLE II

DIRECTORS

2.1 General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation except as otherwise provided by law, the Certificate of Incorporation or these By-laws.

2.2 Number; Election and Qualification. The number of directors which shall constitute the whole Board of Directors shall be determined from time to time by resolution of the stockholders or the Board of Directors, but in no event shall be less than one. The number of directors may be decreased at any time and from time to time either by the stockholders or by a majority of the directors then in office, but only to eliminate vacancies existing by reason of the death, resignation, removal or expiration of the term of one or more directors. The directors shall be elected at the annual meeting of stockholders by such stockholders as have the right to vote on such election. Directors need not be stockholders of the corporation.

2.3 Enlargement of the Board. The number of directors may be increased at any time and from time to time by the stockholders or by a majority of the directors then in office.

2.4 Tenure. Each director shall hold office until the next annual meeting and until a successor is elected and qualified, or until such director’s earlier death, resignation or removal.

2.5 Vacancies. Unless and until filled by the stockholders, any vacancy in the Board of Directors, however occurring, including a vacancy resulting from an enlargement of the Board, may be filled by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A director elected to fill a vacancy shall be elected for the unexpired term of such director's predecessor in office, and a director chosen to fill a position resulting from an increase in the number of directors shall hold office until the next annual meeting of stockholders and until a successor is elected and qualified, or until such director's earlier death, resignation or removal.

2.6 Resignation. Any director may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal office or to the Chairman of the Board, the President or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event.

2.7 Regular Meetings. Regular meetings of the Board of Directors may be held without notice at such time and place as shall be determined from time to time by the Board of Directors; provided that any director who is absent when such a determination is made shall be given notice of the determination. A regular meeting of the Board of Directors may be held without notice immediately after and at the same place as the annual meeting of stockholders.

2.8 Special Meetings. Special meetings of the Board of Directors may be held at any time and place designated in a call by the Chairman of the Board, the President, two or more directors, or by one director in the event that there is only a single director in office.

2.9 Notice of Special Meetings. Notice of any special meeting of directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (i) by giving notice to such director in person or by telephone at least 24 hours in advance of the meeting, (ii) by sending a telegram, telecopy or electronic mail, or delivering written notice by hand, to such director's last known business, home or electronic mail address at least 48 hours in advance of the meeting, or (iii) by sending written notice, via first-class mail or reputable overnight courier, to such director's last known business or home address at least 72 hours in advance of the meeting. A notice or waiver of notice of a meeting of the Board of Directors need not specify the purposes of the meeting.

2.10 Meetings by Conference Communications Equipment. Directors may participate in meetings of the Board of Directors or any committee thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.11 Quorum. A majority of the directors at any time in office shall constitute a quorum for the transaction of business. In the event one or more of the directors shall be disqualified to vote at any meeting, then the required quorum shall be reduced by one for each

such director so disqualified. In no case, however, shall less than one-third of the number of directors fixed pursuant to Section 2.2 of these By-laws constitute a quorum. In the absence of a quorum at any such meeting, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

2.12 Action at Meeting. At any meeting of the Board of Directors at which a quorum is present, the vote of a majority of those present shall be sufficient to take any action, unless a different vote is specified by law, the Certificate of Incorporation or these By-laws.

2.13 Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board or committee, as the case may be, consent to the action in writing or by electronic transmission, and the written consents or electronic transmissions are filed with the minutes of proceedings of the Board or committee.

2.14 Removal. Except as otherwise provided by the General Corporation Law of the State of Delaware, any one or more or all of the directors may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors, except that the directors elected by the holders of a particular class or series of stock may be removed without cause only by vote of the holders of a majority of the outstanding shares of such class or series.

2.15 Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members of the committee present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board of Directors and subject to the provisions of law, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation and may authorize the seal of the corporation to be affixed to all papers which may require it. Each such committee shall keep minutes and make such reports as the Board of Directors may from time to time request. Except as the Board of Directors may otherwise determine, any committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided in these By-laws for the Board of Directors.

2.16 Compensation of Directors. Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board of

Directors may from time to time determine. No such payment shall preclude any director from serving the corporation or any of its parent or subsidiary corporations in any other capacity and receiving compensation for such service.

ARTICLE III

OFFICERS

3.1 Titles. The officers of the corporation shall consist of a President, a Secretary, a Treasurer and such other officers with such other titles as the Board of Directors may determine, including a Chairman of the Board, a Vice Chairman of the Board, and one or more Vice Presidents, Assistant Treasurers, and Assistant Secretaries. The Board of Directors may appoint such other officers as it may deem appropriate.

3.2 Election. The President, Treasurer and Secretary shall be elected annually by the Board of Directors at its first meeting following the annual meeting of stockholders. Other officers may be appointed by the Board of Directors at such meeting or at any other meeting.

3.3 Qualification. No officer need be a stockholder. Any two or more offices may be held by the same person.

3.4 Tenure. Except as otherwise provided by law, by the Certificate of Incorporation or by these By-laws, each officer shall hold office until such officer's successor is elected and qualified, unless a different term is specified in the resolution electing or appointing such officer, or until such officer's earlier death, resignation or removal.

3.5 Resignation and Removal. Any officer may resign by delivering a written resignation to the corporation at its principal office or to the Chief Executive Officer or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event.

Any officer may be removed at any time, with or without cause, by vote of a majority of the entire number of directors then in office.

Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following such officer's resignation or removal, or any right to damages on account of such removal, whether such officer's compensation be by the month or by the year or otherwise, unless such compensation is expressly provided in a duly authorized written agreement with the corporation.

3.6 Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any

offices other than those of President, Treasurer and Secretary. Each such successor shall hold office for the unexpired term of such officer's predecessor and until a successor is elected and qualified, or until such officer's earlier death, resignation or removal.

3.7 Chairman of the Board. The Board of Directors may appoint from its members a Chairman of the Board. If the Board of Directors appoints a Chairman of the Board, such Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors and, if the Chairman of the Board is also designated as the corporation's Chief Executive Officer, shall have the powers and duties of the Chief Executive Officer prescribed in Section 3.8 of these By-laws. Unless otherwise provided by the Board of Directors, the Chairman of the Board shall preside at all meetings of the Board of Directors and stockholders.

3.8 President; Chief Executive Officer. Unless the Board of Directors has designated the Chairman of the Board or another person as the corporation's Chief Executive Officer, the President shall be the Chief Executive Officer of the corporation. The Chief Executive Officer shall have general charge and supervision of the business of the Corporation subject to the direction of the Board of Directors. The President shall perform such other duties and shall have such other powers as the Board of Directors and the Chief Executive Officer (if the Chairman of the Board or another person is serving in such position) may from time to time prescribe.

3.9 Vice Presidents. Any Vice President shall perform such duties and possess such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Chief Executive Officer or the President (if the President is not the Chief Executive Officer), the Vice President (or if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the Chief Executive Officer and when so performing shall have all the powers of and be subject to all the restrictions upon the Chief Executive Officer. The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

3.10 Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall have such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. In addition, the Secretary shall perform such duties and have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and special meetings of the Board of Directors, to attend all meetings of stockholders and the Board of Directors and keep a record of the proceedings, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary, (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or directors, the chairman of the meeting shall designate a temporary secretary to keep a record of the meeting.

3.11 Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned by the Board of Directors or the Chief Executive Officer. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the corporation, to deposit funds of the corporation in depositories selected in accordance with these By-laws, to disburse such funds as ordered by the Board of Directors, to make proper accounts of such funds, and to render as required by the Board of Directors statements of all such transactions and of the financial condition of the corporation.

The Assistant Treasurers shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer, (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

3.12 Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

ARTICLE IV

CAPITAL STOCK

4.1 Issuance of Stock. Unless otherwise voted by the stockholders and subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the corporation or the whole or any part of any shares of the authorized capital stock of the corporation held in the corporation's treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board of Directors in such manner, for such lawful consideration and on such terms as the Board of Directors may determine.

4.2 Certificates of Stock. Every holder of stock of the corporation shall be entitled to have a certificate, in such form as may be prescribed by law and by the Board of Directors, certifying the number and class of shares owned by such holder in the corporation. Each such certificate shall be signed by, or in the name of the corporation by, the Chairman or Vice-Chairman,

if any, of the Board of Directors, or the President or a Vice President, and the Treasurer or an Assistant Treasurer, or the Secretary or an Assistant Secretary of the corporation. Any or all of the signatures on the certificate may be a facsimile.

Each certificate for shares of stock which are subject to any restriction on transfer pursuant to the Certificate of incorporation, these By-laws, applicable securities laws or any agreement among any number of stockholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of each certificate representing shares of such class or series of stock, provided that in lieu of the foregoing requirements there may be set forth on the face or back of each certificate representing shares of such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests a copy of the full text of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

4.3 Transfers. Except as otherwise established by rules and regulations adopted by the Board of Directors, and subject to applicable law, shares of stock may be transferred on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, by the Certificate of Incorporation or by these By-laws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the corporation in accordance with the requirements of these By-laws.

4.4 Lost, Stolen or Destroyed Certificates. The corporation may issue a new certificate of stock in place of any previously issued certificate alleged to have been lost, stolen, or destroyed, upon such terms and conditions as the Board of Directors may prescribe, including the presentation of reasonable evidence of such loss, theft or destruction and the giving of such indemnity as the Board of Directors may require for the protection of the corporation or any transfer agent or registrar.

4.5 Record Date. The Board of Directors may fix in advance a date as a record date for the determination of the stockholders entitled to notice of or to vote at any meeting of stockholders or to express consent (or dissent) to corporate action without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action. Such record date shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 10 days after the date of adoption of a record date for a consent without a meeting, nor more than 60 days prior to any other action to which such record date relates.

If no record date is fixed, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day before the day on which notice is given, or, if notice is waived, at the close of business on the day before the day on which the meeting is held. If no record date is fixed, the record date for determining stockholders entitled to express consent to corporate action without a meeting, when no prior action by the Board of Directors is necessary, shall be the day on which the first consent is properly delivered to the corporation. If no record date is fixed, the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such purpose.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

ARTICLE V

GENERAL PROVISIONS

5.1 Fiscal Year. Except as from time to time otherwise designated by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January of each year and end on the last day of December in each year.

5.2 Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors.

5.3 Waiver of Notice. Whenever notice is required to be given by law, by the Certificate of Incorporation or by these By-laws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before, at or after the time stated in such notice, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

5.4 Voting of Securities. Except as the Board of Directors may otherwise designate, the President or the Treasurer may waive notice of, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at, any meeting of stockholders or shareholders of any other corporation or organization, the securities of which may be held by this corporation.

5.5 Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary Secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

5.6 Certificate of Incorporation. All references in these By-laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and in effect from time to time.

5.7 Transactions with Interested Parties. No contract or transaction between the corporation and one or more of the directors or officers, or between the corporation and any other corporation, partnership, association, or other organization in which one or more of the directors or officers are directors or officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the meeting of the Board of Directors or a committee of the Board of Directors at which the contract or transaction is authorized or solely because any such director's or officer's votes are counted for such purpose, if:

(a) The material facts as to the director's or officer's relationship or interest and as to the contract or transaction are disclosed or are known to the Board of Directors or the committee, and the Board or committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum;

(b) The material facts as to the director's or officer's relationship or interest and as to the contract or transaction are disclosed or are known to the stockholders entitled to vote thereon, and the contract or transaction is specifically approved in good faith by vote of the stockholders; or

(c) The contract or transaction is fair as to the corporation as of the time it is authorized, approved or ratified, by the Board of Directors, a committee of the Board of Directors, or the stockholders.

Common or interested directors may be counted in determining the presence of a quorum at a meeting of the Board of Directors or of a committee which authorizes the contract or transaction.

5.8 Severability. Any determination that any provision of these By-laws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these By-laws.

5.9 Pronouns. All pronouns used in these By-laws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

ARTICLE VI

AMENDMENTS

6.1 By the Board of Directors. These By-laws may be altered, amended or repealed or new by-laws may be adopted by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present.

6.2 By the Stockholders. These By-laws may be altered, amended or repealed or new by-laws may be adopted by the affirmative vote of the holders of a majority of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at any regular meeting of stockholders, or at any special meeting of stockholders, provided notice of such alteration, amendment, repeal or adoption of new by-laws shall have been stated in the notice of such special meeting.

Exhibit 3.3

RESTATED CERTIFICATE OF INCORPORATION

OF

CASA SYSTEMS, INC.

FIRST: The name of the Corporation is Casa Systems, Inc.

SECOND: The address of the Corporation's registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, 19801. The name of its registered agent at that address is The Corporation Trust Company.

THIRD: The nature of the business or purposes to be conducted or promoted by the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH: The total number of shares of all classes of stock that the Corporation shall have authority to issue is 105,000,00 shares, consisting of (i) 100,000,000 shares of Common Stock, $0.001 par value per share ("Common Stock"), and (ii) 5,000,000 shares of Preferred Stock, $0.001 par value per share ("Preferred Stock").

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A COMMON STOCK.

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights of the holders of the Preferred Stock of any series as may be designated by the Board of Directors upon any issuance of the Preferred Stock of any series.

2. Voting. The holders of the Common Stock shall have voting rights at all meetings of stockholders, each such holder being entitled to one vote for each share thereof held by such holder; provided, however, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Certificate of Incorporation (which, as used herein, shall mean the certificate of incorporation of the Corporation, as amended from time to time, including the terms of any certificate of designations of any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon pursuant to this Certificate of Incorporation or the General Corporation Law of the State of Delaware. There shall be no cumulative voting.

The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

3. Dividends. Dividends may be declared and paid on the Common Stock from funds lawfully available therefor if, as and when determined by the Board of Directors and subject to any preferential dividend or other rights of any then outstanding Preferred Stock.

4. Liquidation. Upon the dissolution, liquidation or winding up of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation available for distribution to its stockholders, subject to any preferential or other rights of any then outstanding Preferred Stock.

B PREFERRED STOCK.

Preferred Stock may be issued from time to time in one or more series, each of such series to have such terms as stated or expressed herein and in the resolution or resolutions providing for the issue of such series adopted by the Board of Directors of the Corporation as hereinafter provided. Any shares of Preferred Stock that may be redeemed, purchased or acquired by the Corporation may be reissued except as otherwise provided by law.

Authority is hereby expressly granted to the Board of Directors from time to time to issue the Preferred Stock in one or more series, and in connection with the creation of any such series, by adopting a resolution or resolutions providing for the issuance of the shares thereof and by filing a certificate of designations relating thereto in accordance with the General Corporation Law of the State of Delaware, to determine and fix the number of shares of such series and such voting powers, full or limited, or no voting powers, and such designations, preferences and relative, participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by the General Corporation Law of the State of Delaware. Without limiting the generality of the foregoing, the resolutions providing for issuance of any series of Preferred Stock may provide that such series shall be superior or rank equally or be junior to any other series of Preferred Stock to the extent permitted by law. The powers, preferences and relative, participating, optional and other special rights of each series of Preferred Stock, and the qualifications, limitations or restrictions thereof, if any, may differ from those of any and all other series at any time outstanding.

The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares then outstanding) by the affirmative vote of the holders of a majority of the voting power of the capital stock of the Corporation entitled to vote thereon, voting as a single class, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

FIFTH: Except as otherwise provided herein, the Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute and this Certificate of Incorporation, and all rights conferred upon stockholders herein are granted subject to this reservation.

SIXTH: In furtherance and not in limitation of the powers conferred upon it by the General Corporation Law of the State of Delaware, and subject to the terms of any series of Preferred Stock, the Board of Directors shall have the power to adopt, amend, alter or repeal the Bylaws of the Corporation by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present. The stockholders may not adopt, amend, alter or repeal the Bylaws of the Corporation, or adopt any provision inconsistent therewith, unless such action is approved, in addition to any other vote required by this Certificate of Incorporation, by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors. Notwithstanding any other provisions of law, this Certificate of Incorporation or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article SIXTH.

SEVENTH: Except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty, no director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director of the Corporation for or with respect to any acts or omissions of such director occurring prior to such amendment or repeal. If the General Corporation Law of the State of Delaware is amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law of the State of Delaware as so amended.

EIGHTH: The Corporation shall provide indemnification and advancement of expenses as follows:

1. Actions, Suits and Proceedings Other than by or in the Right of the Corporation. The Corporation shall indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Corporation) by reason of the fact that he or she is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) (all such persons being referred to hereafter as an “Indemnitee”), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974), and amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or

her conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful.

2. Actions or Suits by or in the Right of the Corporation. The Corporation shall indemnify any Indemnitee who was or is a party to or threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that Indemnitee is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, except that no indemnification shall be made under this Section 2 in respect of any claim, issue or matter as to which Indemnitee shall have been adjudged to be liable to the Corporation, unless, and only to the extent, that the Court of Chancery of Delaware or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of such liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnity for such expenses (including attorneys' fees) which the Court of Chancery of Delaware or such other court shall deem proper.

3. Indemnification for Expenses of Successful Party. Notwithstanding any other provisions of this Article EIGHTH, to the extent that an Indemnitee has been successful, on the merits or otherwise, in defense of any action, suit or proceeding referred to in Sections 1 and 2 of this Article EIGHTH, or in defense of any claim, issue or matter therein, or on appeal from any such action, suit or proceeding, Indemnitee shall be indemnified against all expenses (including attorneys' fees) actually and reasonably incurred by or on behalf of Indemnitee in connection therewith.

4. Notification and Defense of Claim. As a condition precedent to an Indemnitee's right to be indemnified, such Indemnitee must notify the Corporation in writing as soon as practicable of any action, suit, proceeding or investigation involving such Indemnitee for which indemnity will or could be sought. With respect to any action, suit, proceeding or investigation of which the Corporation is so notified, the Corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to Indemnitee. After notice from the Corporation to Indemnitee of its election so to assume such defense, the Corporation shall not be liable to Indemnitee for any legal or other expenses subsequently incurred by Indemnitee in connection with such action, suit, proceeding or investigation, other than as provided below in this Section 4. Indemnitee shall have the right to employ his or her own counsel in connection with such action, suit, proceeding or investigation, but the fees and expenses of such counsel incurred after notice from the

Corporation of its assumption of the defense thereof shall be at the expense of Indemnitee unless (i) the employment of counsel by Indemnitee has been authorized by the Corporation, (ii) counsel to Indemnitee shall have reasonably concluded that there may be a conflict of interest or position on any significant issue between the Corporation and Indemnitee in the conduct of the defense of such action, suit, proceeding or investigation or (iii) the Corporation shall not in fact have employed counsel to assume the defense of such action, suit, proceeding or investigation, in each of which cases the fees and expenses of counsel for Indemnitee shall be at the expense of the Corporation, except as otherwise expressly provided by this Article EIGHTH. The Corporation shall not be entitled, without the consent of Indemnitee, to assume the defense of any claim brought by or in the right of the Corporation or as to which counsel for Indemnitee shall have reasonably made the conclusion provided for in clause (ii) above. The Corporation shall not be required to indemnify Indemnitee under this Article EIGHTH for any amounts paid in settlement of any action, suit, proceeding or investigation effected without its written consent. The Corporation shall not settle any action, suit, proceeding or investigation in any manner which would impose any penalty or limitation on Indemnitee without Indemnitee's written consent. Neither the Corporation nor Indemnitee will unreasonably withhold or delay its consent to any proposed settlement.

5. Advancement of Expenses. Subject to the provisions of Section 6 of this Article EIGHTH, in the event of any threatened or pending action, suit, proceeding or investigation of which the Corporation receives notice under this Article EIGHTH, any expenses (including attorneys' fees) incurred by or on behalf of Indemnitee in defending an action, suit, proceeding or investigation or any appeal therefrom shall be paid by the Corporation in advance of the final disposition of such matter; provided, however, that the payment of such expenses incurred by or on behalf of Indemnitee in advance of the final disposition of such matter shall be made only upon receipt of an undertaking by or on behalf of Indemnitee to repay all amounts so advanced in the event that it shall ultimately be determined that Indemnitee is not entitled to be indemnified by the Corporation as authorized in this Article EIGHTH; and provided further that no such advancement of expenses shall be made under this Article EIGHTH if it is determined (in the manner described in Section 6) that (i) Indemnitee did not act in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the Corporation, or (ii) with respect to any criminal action or proceeding, Indemnitee had reasonable cause to believe his or her conduct was unlawful. Such undertaking shall be accepted without reference to the financial ability of Indemnitee to make such repayment.

6. Procedure for Indemnification and Advancement of Expenses. In order to obtain indemnification or advancement of expenses pursuant to Section 1, 2, 3 or 5 of this Article EIGHTH, an Indemnitee shall submit to the Corporation a written request. Any such advancement of expenses shall be made promptly, and in any event within 60 days after receipt by the Corporation of the written request of Indemnitee, unless (i) the Corporation has assumed the defense pursuant to Section 4 of this Article EIGHTH (and none of the circumstances described in Section 4 of this Article EIGHTH that would nonetheless entitle the Indemnitee to indemnification for the fees and expenses of separate counsel have occurred) or (ii) the Corporation determines within such 60-day period that Indemnitee did not meet the applicable standard of conduct set forth in Section 1, 2 or 5 of this Article EIGHTH, as the case may be. Any such indemnification, unless ordered by a court, shall be made with respect to requests under Section 1 or 2 only as authorized in the specific case upon a determination by the

Corporation that the indemnification of Indemnitee is proper because Indemnitee has met the applicable standard of conduct set forth in Section 1 or 2, as the case may be. Such determination shall be made in each instance (a) by a majority vote of the directors of the Corporation consisting of persons who are not at that time parties to the action, suit or proceeding in question ("disinterested directors"), whether or not a quorum, (b) by a committee of disinterested directors designated by majority vote of disinterested directors, whether or not a quorum, (c) if there are no disinterested directors, or if the disinterested directors so direct, by independent legal counsel (who may, to the extent permitted by law, be regular legal counsel to the Corporation) in a written opinion, or (d) by the stockholders of the Corporation.

7. Remedies. Subject to Article TWELFTH, the right to indemnification or advancement of expenses as granted by this Article EIGHTH shall be enforceable by Indemnitee in any court of competent jurisdiction. Neither the failure of the Corporation to have made a determination prior to the commencement of such action that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Corporation pursuant to Section 6 of this Article EIGHTH that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct. Indemnitee's expenses (including attorneys' fees) reasonably incurred in connection with successfully establishing Indemnitee's right to indemnification or advancement of expenses, in whole or in part, in any such proceeding shall also be indemnified by the Corporation to the fullest extent permitted by applicable law. Notwithstanding the foregoing, in any suit brought by Indemnitee to enforce a right to indemnification or advancement of expenses hereunder it shall be a defense that the Indemnitee has not met any applicable standard for indemnification set forth in the General Corporation Law of the State of Delaware.

8. Limitations. Notwithstanding anything to the contrary in this Article EIGHTH, except as set forth in Section 7 of this Article EIGHTH, the Corporation shall not indemnify, or advance expenses to, an Indemnitee pursuant to this Article EIGHTH in connection with a proceeding (or part thereof) initiated by such Indemnitee unless the initiation thereof was approved by the Board of Directors. Notwithstanding anything to the contrary in this Article EIGHTH, the Corporation shall not indemnify or advance expenses to an Indemnitee to the extent such Indemnitee is reimbursed from the proceeds of insurance, and in the event the Corporation makes any indemnification or advancement payments to an Indemnitee and such Indemnitee is subsequently reimbursed from the proceeds of insurance, such Indemnitee shall promptly refund indemnification or advancement payments to the Corporation to the extent of such insurance reimbursement.

9. Subsequent Amendment. No amendment, termination or repeal of this Article EIGHTH or of the relevant provisions of the General Corporation Law of the State of Delaware or any other applicable laws shall adversely affect or diminish in any way the rights of any Indemnitee to indemnification or advancement of expenses under the provisions hereof with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the final adoption of such amendment, termination or repeal.

10. Other Rights. The indemnification and advancement of expenses provided by this Article EIGHTH shall not be deemed exclusive of any other rights to which an Indemnitee seeking indemnification or advancement of expenses may be entitled under any law (common or statutory), agreement or vote of stockholders or disinterested directors or otherwise, both as to action in Indemnitee's official capacity and as to action in any other capacity while holding office for the Corporation, and shall continue as to an Indemnitee who has ceased to be a director or officer, and shall inure to the benefit of the estate, heirs, executors and administrators of Indemnitee. Nothing contained in this Article EIGHTH shall be deemed to prohibit, and the Corporation is specifically authorized to enter into, agreements with officers and directors providing indemnification and advancement rights and procedures different from those set forth in this Article EIGHTH. In addition, the Corporation may, to the extent authorized from time to time by its Board of Directors, grant indemnification and advancement rights to other employees or agents of the Corporation or other persons serving the Corporation and such rights may be equivalent to, or greater or less than, those set forth in this Article EIGHTH.

11. Partial Indemnification. If an Indemnitee is entitled under any provision of this Article EIGHTH to indemnification by the Corporation for some or a portion of the expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) or amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with any action, suit, proceeding or investigation and any appeal therefrom but not, however, for the total amount thereof, the Corporation shall nevertheless indemnify Indemnitee for the portion of such expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) or amounts paid in settlement to which Indemnitee is entitled.

12. Insurance. The Corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) against any expense, liability or loss incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the General Corporation Law of the State of Delaware.

13. Savings Clause. If this Article EIGHTH or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each Indemnitee as to any expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) and amounts paid in settlement in connection with any action, suit, proceeding or investigation, whether civil, criminal or administrative, including an action by or in the right of the Corporation, to the fullest extent permitted by any applicable portion of this Article EIGHTH that shall not have been invalidated and to the fullest extent permitted by applicable law.

14. Definitions. Terms used herein and defined in Section 145(h) and Section 145(i) of the General Corporation Law of the State of Delaware shall have the respective meanings assigned to such terms in such Section 145(h) and Section 145(i).

NINTH: This Article NINTH is inserted for the management of the business and for the conduct of the affairs of the Corporation.

1. General Powers. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors.

2. Number of Directors; Election of Directors. Subject to the rights of holders of any series of Preferred Stock to elect directors, the number of directors of the Corporation shall be established from time to time by the Board of Directors. Election of directors need not be by written ballot, except as and to the extent provided in the Bylaws of the Corporation.

3. Classes of Directors. Subject to the rights of holders of any series of Preferred Stock to elect directors, the Board of Directors shall be and is divided into three classes, designated Class I, Class II and Class III. Each class shall consist, as nearly as may be possible, of one-third of the total number of directors constituting the entire Board of Directors. The Board of Directors is authorized to assign members of the Board of Directors already in office to Class I, Class II or Class III at the time such classification becomes effective.

4. Terms of Office. Subject to the rights of holders of any series of Preferred Stock to elect directors, each director shall serve for a term ending on the date of the third annual meeting of stockholders following the annual meeting of stockholders at which such director was elected; provided that each director initially assigned to Class I shall serve for a term expiring at the Corporation's first annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; each director initially assigned to Class II shall serve for a term expiring at the Corporation's second annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; and each director initially assigned to Class III shall serve for a term expiring at the Corporation's third annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; provided further, that the term of each director shall continue until the election and qualification of his or her successor and be subject to his or her earlier death, resignation or removal.

5. Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors fixed pursuant to Section 2 of this Article NINTH shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

6. Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting duly held at which a quorum is present shall be regarded as the act of the Board of Directors unless a greater number is required by law or by this Certificate of Incorporation.

7. Removal. Subject to the rights of holders of any series of Preferred Stock, directors of the Corporation may be removed only for cause and only by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors.

8. Vacancies. Subject to the rights of holders of any series of Preferred Stock, any vacancies or newly-created directorships on the Board of Directors, however occurring, shall be filled only by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director and shall not be filled by the stockholders. A director elected to fill a vacancy or to fill a position resulting from a newly-created directorship shall hold office until the next election of the class for which such director shall have been chosen, subject to the election and qualification of a successor and to such director's earlier death, resignation or removal.

9. Stockholder Nominations and Introduction of Business, Etc. Advance notice of stockholder nominations for election of directors and other business to be brought by stockholders before a meeting of stockholders shall be given in the manner provided by the Bylaws of the Corporation.

10. Amendments to Article. Notwithstanding any other provisions of law, this Certificate of Incorporation or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article NINTH.

TENTH: Stockholders of the Corporation may not take any action by written consent in lieu of a meeting. Notwithstanding any other provisions of law, this Certificate of Incorporation or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article TENTH.

ELEVENTH: Special meetings of stockholders for any purpose or purposes may be called at any time only by the Board of Directors, and may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting. Notwithstanding any other provisions of law, this Certificate of Incorporation or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article ELEVENTH.

TWELFTH: Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for: (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer, other employee or stockholder of the Corporation to the Corporation or the Corporation's stockholders, (iii) any action asserting a claim arising pursuant to any provision of the General Corporation Law of the State of Delaware or as to which the General Corporation Law of the State of Delaware confers jurisdiction on the Court of Chancery of the State of Delaware, or (iv) any action asserting a claim arising pursuant to any provision of this Certificate of Incorporation or the Bylaws of the Corporation (in each case, as they may be amended from time to time) or governed by the internal affairs doctrine.

Unless the Corporation consents in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act of 1933.

Any person or entity purchasing or otherwise acquiring or holding any interest in shares of capital stock of the Corporation shall be deemed to have notice of and consented to the provisions of this Article TWELFTH.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates, integrates and amends the certificate of incorporation of the Corporation, and which has been duly adopted in accordance with Sections 228, 242 and 245 of the General Corporation Law of the State of Delaware, has been executed by its duly authorized officer this day of , 2018.

CASA SYSTEMS, INC.

By: _____

Name: Jerry Guo
Title: President and Chief Executive Officer

Exhibit 3.4

AMENDED AND RESTATED BYLAWS

OF

CASA SYSTEMS, INC.

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ARTICLE I

STOCKHOLDERS

1.1 Place of Meetings. All meetings of stockholders shall be held at such place, if any, as may be designated from time to time by the Board of Directors, the Chairman of the Board or the Chief Executive Officer or, if not so designated, at the principal executive office of the corporation. The Board of Directors may, in its sole discretion, determine that a meeting shall not be held at any place, but shall instead be held solely by means of remote communication in a manner consistent with the General Corporation Law of the State of Delaware.

1.2 Annual Meeting. The annual meeting of stockholders for the election of directors to succeed those whose terms expire and for the transaction of such other business as may properly be brought before the meeting shall be held on a date and at a time designated by the Board of Directors, the Chairman of the Board or the Chief Executive Officer. The Board of Directors may postpone, reschedule or cancel any previously scheduled annual meeting of stockholders.

1.3 Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time only by the Board of Directors, and may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting. The Board of Directors may postpone, reschedule or cancel any previously scheduled special meeting of stockholders.

1.4 Record Date for Stockholder Meetings. In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall not be more than 60 nor less than 10 days before the date of such meeting. If the Board of Directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the Board of Directors

determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance herewith at the adjourned meeting.

1.5 Notice of Meetings. Except as otherwise provided by law, the Certificate of Incorporation or these bylaws, notice of each meeting of stockholders, whether annual or special, shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. Without limiting the manner by which notice otherwise may be given to stockholders, any notice shall be effective if given by a form of electronic transmission consented to (in a manner consistent with the General Corporation Law of the State of Delaware) by the stockholder to whom the notice is given. The notices of all meetings shall state the place, if any, date and time of the meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. If notice is given by mail, such notice shall be deemed given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. If notice is given by electronic transmission, such notice shall be deemed given at the time specified in Section 232 of the General Corporation Law of the State of Delaware.

1.6 Voting List. The corporation shall prepare, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting (provided, however, if the record date for determining the stockholders entitled to vote is less than 10 days

before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting), arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting for a period of at least 10 days prior to the meeting: (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the corporation. If the meeting is to be held at a physical location (and not solely be means of remote communication), then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be examined by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. Except as otherwise provided by law, such list shall be the only evidence as to who are the stockholders entitled to examine the list of stockholders required by this Section 1.6 or to vote in person or by proxy at any meeting of stockholders.

1.7 Quorum. Except as otherwise provided by law, the Certificate of Incorporation or these bylaws, the holders of a majority in voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at the meeting, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum for the transaction of business; provided, however, that where a separate vote by a class or classes or series of capital stock is required by law or the Certificate of Incorporation, the holders of a majority in voting power of the shares of such class or classes or series of the capital stock of the corporation issued and outstanding and entitled to vote on such matter, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum entitled to take action with respect to the vote on such matter. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

1.8 Adjournments. Any meeting of stockholders may be adjourned from time to time to reconvene at any other time and to any other place at which a meeting of stockholders may be held under these bylaws by the chairman of the meeting. It shall not be necessary to notify any stockholder of any adjournment of less than 30 days if the time and place, if any, of the adjourned meeting, and the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting, are announced at the meeting at which adjournment is taken, unless after the adjournment a new record date is fixed for the adjourned meeting. At the adjourned meeting, the corporation may transact any business that might have been transacted at the original meeting. If the adjournment is for more than 30 days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for determination of stockholders entitled to vote is fixed for the adjourned meeting, the Board of Directors shall fix as the record date for determining stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote at the adjourned meeting, and shall give notice of the adjourned meeting to each stockholder of record as of the record date so fixed for notice of such adjourned meeting.

1.9 Voting and Proxies. Each stockholder shall have one vote upon the matter in question for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by law or the Certificate of Incorporation. Each stockholder of record entitled to vote at a meeting of stockholders may vote in person (including by means of remote communications, if any, by which stockholders may be deemed to be present in person and vote at such meeting) or may authorize another person or persons to vote for such stockholder by a proxy executed or transmitted in a manner permitted by the General Corporation Law of the State of Delaware by the stockholder or such stockholder's authorized agent and delivered (including by electronic transmission) to the Secretary of the corporation. No such proxy shall be voted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period.

1.10 Action at Meeting. When a quorum is present at any meeting, any matter other than the election of directors to be voted upon by the stockholders at such meeting shall be decided by the vote of the holders of shares of stock having a majority in voting power of the

votes cast by the holders of all of the shares of stock present or represented at the meeting and voting affirmatively or negatively on such matter (or if there are two or more classes or series of stock entitled to vote as separate classes, then in the case of each such class or series, the holders of a majority in voting power of the shares of stock of that class or series present or represented at the meeting and voting affirmatively or negatively on such matter), except when a different vote is required by law, the Certificate of Incorporation or these bylaws. When a quorum is present at any meeting, any election by stockholders of directors shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

1.11 Nomination of Directors.

(a) Except for (1) any directors entitled to be elected by the holders of preferred stock, (2) any directors elected in accordance with Section 2.8 hereof by the Board of Directors to fill vacancies or newly-created directorships or (3) as otherwise required by applicable law or stock exchange regulation, at any meeting of stockholders, only persons who are nominated in accordance with the procedures in this Section 1.11 shall be eligible for election as directors. Nomination for election to the Board of Directors at a meeting of stockholders may be made (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the corporation who (x) timely complies with the notice procedures in Section 1.11(b), (y) is a stockholder of record who is entitled to vote for the election of such nominee on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such meeting and (z) is entitled to vote at such meeting.

(b) To be timely, a stockholder's notice must be received in writing by the Secretary at the principal executive office of the corporation as follows: (1) in the case of an election of directors at an annual meeting of stockholders, not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced by more than 30 days, or delayed by more than 60 days, from the first anniversary of the preceding year's annual meeting, or if no annual meeting was held in the preceding year, a stockholder's notice must be so received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (x) the 90th day prior to such annual meeting and (y) the tenth

day following the day on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever first occurs; or (2) in the case of an election of directors at a special meeting of stockholders, provided that the Board of Directors has determined, in accordance with Section 1.3, that directors shall be elected at such special meeting and provided further that the nomination made by the stockholder is for one of the director positions that the Board of Directors has determined will be filled at such special meeting, not earlier than the 120th day prior to such special meeting and not later than the close of business on the later of (x) the 90th day prior to such special meeting and (y) the tenth day following the day on which notice of the date of such special meeting was mailed or public disclosure of the date of such special meeting was made, whichever first occurs. In no event shall the adjournment or postponement of a meeting (or the public disclosure thereof) commence a new time period (or extend any time period) for the giving of a stockholder's notice.

The stockholder's notice to the Secretary shall set forth: (A) as to each proposed nominee (1) such person's name, age, business address and, if known, residence address, (2) such person's principal occupation or employment, (3) the class and series and number of shares of stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such person, (4) a description of all direct and indirect compensation and other material monetary agreements, arrangements and understandings during the past three years, and any other material relationships, between or among (x) the stockholder, the beneficial owner, if any, on whose behalf the nomination is being made and the respective affiliates and associates of, or others acting in concert with, such stockholder and such beneficial owner, on the one hand, and (y) each proposed nominee, and his or her respective affiliates and associates, or others acting in concert with such nominee(s), on the other hand, including all information that would be required to be disclosed pursuant to Item 404 of Regulation S-K if the stockholder making the nomination and any beneficial owner on whose behalf the nomination is made or any affiliate or associate thereof or person acting in concert therewith were the "registrant" for purposes of such Item and the proposed nominee were a director or executive officer of such registrant, and (5) any other information concerning such person that must be disclosed as to nominees in proxy solicitations pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "Exchange Act"); and (B) as to the stockholder giving the notice and the beneficial owner, if

any, on whose behalf the nomination is being made (1) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (2) the class and series and number of shares of stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such stockholder and such beneficial owner, (3) a description of any agreement, arrangement or understanding between or among such stockholder and/or such beneficial owner and each proposed nominee and any other person or persons (including their names) pursuant to which the nomination(s) are being made or who may participate in the solicitation of proxies or votes in favor of electing such nominee(s), (4) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profit interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder or such beneficial owner, the effect or intent of which is to mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder or such beneficial owner with respect to shares of stock of the corporation, (5) any other information relating to such stockholder and such beneficial owner that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder, (6) a representation that such stockholder intends to appear in person or by proxy at the meeting to nominate the person(s) named in its notice and (7) a representation whether such stockholder and/or such beneficial owner intends or is part of a group that intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's outstanding capital stock reasonably believed by such stockholder or such beneficial owner to be sufficient to elect the nominee (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies or votes from stockholders in support of such nomination (and such representation shall be included in any such solicitation materials). Not later than 10 days after the record date for the meeting, the information required by Items (A)(1)-(5) and (B)(1)-(5) of the prior sentence shall be supplemented by the stockholder giving the notice to provide updated information as of the record date. In addition, to be effective, the stockholder's notice must be accompanied by the written consent of the proposed nominee to serve as a director if elected. The corporation may require any proposed nominee to

furnish such other information as the corporation may reasonably require to determine the eligibility of such proposed nominee to serve as a director of the corporation or whether such nominee would be independent under applicable Securities and Exchange Commission and stock exchange rules and the corporation's publicly disclosed corporate governance guidelines. A stockholder shall not have complied with this Section 1.11(b) if the stockholder (or beneficial owner, if any, on whose behalf the nomination is made) solicits or does not solicit, as the case may be, proxies or votes in support of such stockholder's nominee in contravention of the representations with respect thereto required by this Section 1.11.

(c) The chairman of any meeting shall have the power and duty to determine whether a nomination was made in accordance with the provisions of this Section 1.11 (including whether the stockholder or beneficial owner, if any, on whose behalf the nomination is made solicited (or is part of a group that solicited) or did not so solicit, as the case may be, proxies or votes in support of such stockholder's nominee in compliance with the representations with respect thereto required by this Section 1.11), and if the chairman should determine that a nomination was not made in accordance with the provisions of this Section 1.11, the chairman shall so declare to the meeting and such nomination shall not be brought before the meeting.

(d) Except as otherwise required by law, nothing in this Section 1.11 shall obligate the corporation or the Board of Directors to include in any proxy statement or other stockholder communication distributed on behalf of the corporation or the Board of Directors information with respect to any nominee for director submitted by a stockholder.

(e) Notwithstanding the foregoing provisions of this Section 1.11, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the meeting to present a nomination, such nomination shall not be brought before the meeting, notwithstanding that proxies in respect of such nominee may have been received by the corporation. For purposes of this Section 1.11, to be considered a "qualified representative of the stockholder", a person must be a duly authorized officer, manager or partner of such stockholder or must be authorized by a written instrument executed by such stockholder or an electronic transmission delivered by such stockholder to act for such

stockholder as proxy at the meeting of stockholders and such person must produce such written instrument or electronic transmission, or a reliable reproduction of the written instrument or electronic transmission, at the meeting of stockholders.

(f) For purposes of this Section 1.11, "public disclosure" shall include disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

1.12 Notice of Business at Annual Meetings.

(a) At any annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be (1) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Board of Directors, (2) otherwise properly brought before the meeting by or at the direction of the Board of Directors, or (3) properly brought before the meeting by a stockholder. For business to be properly brought before an annual meeting by a stockholder, (i) if such business relates to the nomination of a person for election as a director of the corporation, the procedures in Section 1.11 must be complied with and (ii) if such business relates to any other matter, the business must constitute a proper matter under Delaware law for stockholder action and the stockholder must (x) have given timely notice thereof in writing to the Secretary in accordance with the procedures in Section 1.12(b), (y) be a stockholder of record who is entitled to vote on such business on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such annual meeting and (z) be entitled to vote at such annual meeting.

(b) To be timely, a stockholder's notice must be received in writing by the Secretary at the principal executive office of the corporation not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced by more than 30 days, or delayed by more than 60 days, from the first anniversary of the preceding year's annual meeting, or if no annual meeting was held in the preceding year, a stockholder's notice must be so received not earlier than the 120th day prior to such annual meeting and not later than the

close of business on the later of (x) the 90th day prior to such annual meeting and (y) the tenth day following the day on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever first occurs. In no event shall the adjournment or postponement of an annual meeting (or the public disclosure thereof) commence a new time period (or extend any time period) for the giving of a stockholder's notice.

The stockholder's notice to the Secretary shall set forth: (A) as to each matter the stockholder proposes to bring before the annual meeting (1) a brief description of the business desired to be brought before the annual meeting, (2) the text of the proposal (including the exact text of any resolutions proposed for consideration and, in the event that such business includes a proposal to amend the bylaws, the exact text of the proposed amendment), and (3) the reasons for conducting such business at the annual meeting, and (B) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the proposal is being made (1) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (2) the class and series and number of shares of stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such stockholder and such beneficial owner, (3) a description of any material interest of such stockholder or such beneficial owner and the respective affiliates and associates of, or others acting in concert with, such stockholder or such beneficial owner in such business, (4) a description of any agreement, arrangement or understanding between or among such stockholder and/or such beneficial owner and any other person or persons (including their names) in connection with the proposal of such business or who may participate in the solicitation of proxies in favor of such proposal, (5) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profit interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder or such beneficial owner, the effect or intent of which is to mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder or such beneficial owner with respect to shares of stock of the corporation, (6) any other information relating to such stockholder and such beneficial owner that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the business proposed pursuant to Section 14 of

the Exchange Act and the rules and regulations promulgated thereunder, (7) a representation that such stockholder intends to appear in person or by proxy at the annual meeting to bring such business before the meeting and (8) a representation whether such stockholder and/or such beneficial owner intends or is part of a group that intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's outstanding capital stock required to approve or adopt the proposal (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies or votes from stockholders in support of such proposal (and such representation shall be included in any such solicitation materials). Not later than 10 days after the record date for the meeting, the information required by Items (A)(3) and (B)(1)-(6) of the prior sentence shall be supplemented by the stockholder giving the notice to provide updated information as of the record date. Notwithstanding anything in these bylaws to the contrary, no business shall be conducted at any annual meeting of stockholders except in accordance with the procedures in this Section 1.12; provided that any stockholder proposal that complies with Rule 14a-8 of the proxy rules (or any successor provision) promulgated under the Exchange Act and is to be included in the corporation's proxy statement for an annual meeting of stockholders shall be deemed to comply with the notice requirements of this Section 1.12. A stockholder shall not have complied with this Section 1.12(b) if the stockholder (or beneficial owner, if any, on whose behalf the proposal is made) solicits or does not solicit, as the case may be, proxies or votes in support of such stockholder's proposal in contravention of the representations with respect thereto required by this Section 1.12.

(c) The chairman of any annual meeting shall have the power and duty to determine whether business was properly brought before the annual meeting in accordance with the provisions of this Section 1.12 (including whether the stockholder or beneficial owner, if any, on whose behalf the proposal is made solicited (or is part of a group that solicited) or did not so solicit, as the case may be, proxies or votes in support of such stockholder's proposal in compliance with the representation with respect thereto required by this Section 1.12), and if the chairman should determine that business was not properly brought before the annual meeting in accordance with the provisions of this Section 1.12, the chairman shall so declare to the meeting and such business shall not be brought before the annual meeting.

(d) Except as otherwise required by law, nothing in this Section 1.12 shall obligate the corporation or the Board of Directors to include in any proxy statement or other stockholder communication distributed on behalf of the corporation or the Board of Directors information with respect to any proposal submitted by a stockholder.

(e) Notwithstanding the foregoing provisions of this Section 1.12, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual meeting to present business, such business shall not be considered, notwithstanding that proxies in respect of such business may have been received by the corporation.

(f) For purposes of this Section 1.12, the terms "qualified representative of the stockholder" and "public disclosure" shall have the same meaning as in Section 1.11.

1.13 Conduct of Meetings.

(a) Unless otherwise provided by the Board of Directors, meetings of stockholders shall be presided over by the Chairman of the Board, if any, or in the Chairman's absence by the Vice Chairman of the Board, if any, or in the Vice Chairman's absence by the Chief Executive Officer, or in the Chief Executive Officer's absence by the President, or in the President's absence by a Vice President, or in the absence of all of the foregoing persons by a chairman designated by the Board of Directors. The Secretary shall act as secretary of the meeting, but in the Secretary's absence the chairman of the meeting may appoint any person to act as secretary of the meeting.

(b) The Board of Directors may adopt by resolution such rules, regulations and procedures for the conduct of any meeting of stockholders of the corporation as it shall deem appropriate including, without limitation, such guidelines and procedures as it may deem appropriate regarding the participation by means of remote communication of stockholders and proxyholders not physically present at a meeting. Except to the extent inconsistent with such rules, regulations and procedures as adopted by the Board of Directors, the chairman of any meeting of stockholders shall have the right and authority to convene and (for any or no reason) to recess and/or adjourn the meeting and prescribe such rules, regulations and procedures and to

do all such acts as, in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders entitled to vote at the meeting, their duly authorized and constituted proxies or such other persons as shall be determined; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

(c) The chairman of the meeting shall announce at the meeting when the polls for each matter to be voted upon at the meeting will be opened and closed. After the polls close, no ballots, proxies or votes or any revocations or changes thereto may be accepted.

(d) In advance of any meeting of stockholders, the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President shall appoint one or more inspectors of election to act at the meeting and make a written report thereof. One or more other persons may be designated as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is present, ready and willing to act at a meeting of stockholders, the chairman of the meeting shall appoint one or more inspectors to act at the meeting. Unless otherwise required by law, inspectors may be officers, employees or agents of the corporation. Each inspector, before entering upon the discharge of such inspector’s duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of such inspector’s ability. The inspector shall have the duties prescribed by law and shall take charge of the polls and, when the vote is completed, shall make a certificate of the result of the vote taken and of such other facts as may be required by law. Every vote taken by ballots shall be counted by a duly appointed inspector or duly appointed inspectors.

1.14 No Action by Consent in Lieu of a Meeting. Stockholders of the corporation may not take any action by written consent in lieu of a meeting.

ARTICLE II

DIRECTORS

2.1 General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation except as otherwise provided by law or the Certificate of Incorporation.

2.2 Number, Election and Qualification. The number of directors of the corporation shall be the number fixed by, or determined in the manner provided in, the Certificate of Incorporation. Election of directors need not be by written ballot. Directors need not be stockholders of the corporation.

2.3 Chairman of the Board; Vice Chairman of the Board. The Board of Directors may appoint from its members a Chairman of the Board and a Vice Chairman of the Board, neither of whom need be an employee or officer of the corporation. If the Board of Directors appoints a Chairman of the Board, such Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors and, if the Chairman of the Board is also designated as the corporation's Chief Executive Officer, shall have the powers and duties of the Chief Executive Officer prescribed in Section 3.7 of these bylaws. If the Board of Directors appoints a Vice Chairman of the Board, such Vice Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors or the Chairman of the Board. Unless otherwise provided by the Board of Directors, the Chairman of the Board or, in the Chairman's absence, the Vice Chairman of the Board, if any, shall preside at all meetings of the Board of Directors.

2.4 Terms of Office. Directors shall be elected for such terms and in the manner provided by the Certificate of Incorporation and applicable law. The term of each director shall continue until the election and qualification of his or her successor and be subject to his or her earlier death, resignation or removal.

2.5 Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors established by the Board of Directors pursuant to the Certificate of Incorporation shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

2.6 Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting duly held at which a quorum is present shall be regarded as the act of the Board of Directors, unless a greater number is required by law or by the Certificate of Incorporation.

2.7 Removal. Directors of the corporation may be removed in the manner specified by the Certificate of Incorporation and applicable law.

2.8 Vacancies. Any vacancy or newly-created directorship on the Board of Directors, however occurring, shall be filled in the manner specified by the Certificate of Incorporation and applicable law.

2.9 Resignation. Any director may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal executive office or to the Chairman of the Board, the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event.

2.10 Regular Meetings. Regular meetings of the Board of Directors may be held without notice at such time and place as shall be determined from time to time by the Board of Directors; provided that any director who is absent when such a determination is made shall be given notice of the determination. A regular meeting of the Board of Directors may be held without notice immediately after and at the same place as the annual meeting of stockholders.

2.11 Special Meetings. Special meetings of the Board of Directors may be held at any time and place designated in a call by the Chairman of the Board, the Chief Executive Officer, the President, two or more directors, or by one director in the event that there is only a single director in office.

2.12 Notice of Special Meetings. Notice of the date, place and time of any special meeting of directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (a) in person or by telephone at least 24 hours in advance of the meeting, (b) by sending an electronic transmission, or delivering written notice by hand, to such director's last known business, home or electronic transmission address at least 48 hours in advance of the meeting, or (c) by sending written notice by first-class mail to such director's last known business or home address at least 72 hours in advance of the meeting. A notice or waiver of notice of a meeting of the Board of Directors need not specify the purposes of the meeting.

2.13 Meetings by Conference Communications Equipment. Directors may participate in meetings of the Board of Directors or any committee thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.14 Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent to the action in writing or by electronic transmission, and the written consents or electronic transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

2.15 Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation with such lawfully delegable powers and duties as the Board of Directors thereby confers, to serve at the pleasure of the Board of Directors. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or

members of the committee present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board of Directors and subject to the provisions of law, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation and may authorize the seal of the corporation to be affixed to all papers that may require it. Each such committee shall keep minutes and make such reports as the Board of Directors may from time to time request. Except as the Board of Directors may otherwise determine, any committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided in these bylaws for the Board of Directors. Except as otherwise provided in the Certificate of Incorporation, these bylaws, or the resolution of the Board of Directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

2.16 Compensation of Directors. Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board of Directors may from time to time determine. No such payment shall preclude any director from serving the corporation or any of its parent or subsidiary entities in any other capacity and receiving compensation for such service.

ARTICLE III

OFFICERS

3.1 Titles. The officers of the corporation shall consist of a Chief Executive Officer, a President, a Secretary, a Treasurer and such other officers with such other titles as the Board of Directors shall determine, including one or more Vice Presidents, Assistant Treasurers and Assistant Secretaries. The Board of Directors may appoint such other officers as it may deem appropriate.

3.2 Election. The Chief Executive Officer, President, Treasurer and Secretary shall be elected annually by the Board of Directors at its first meeting following the annual meeting of stockholders. Other officers may be appointed by the Board of Directors at such meeting or at any other meeting.

3.3 Qualification. No officer need be a stockholder. Any two or more offices may be held by the same person.

3.4 Tenure. Except as otherwise provided by law, by the Certificate of Incorporation or by these bylaws, each officer shall hold office until such officer's successor is elected and qualified, unless a different term is specified in the resolution electing or appointing such officer, or until such officer's earlier death, resignation or removal.

3.5 Resignation and Removal. Any officer may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal executive office or to the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event. Any officer may be removed at any time, with or without cause, by vote of a majority of the directors then in office. Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following such officer's resignation or removal, or any right to damages on account of such removal, whether such officer's compensation be by the month or by the year or otherwise, unless such compensation is expressly provided for in a duly authorized written agreement with the corporation.

3.6 Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any offices. Each such successor shall hold office for the unexpired term of such officer's predecessor and until a successor is elected and qualified, or until such officer's earlier death, resignation or removal.

3.7 President; Chief Executive Officer. Unless the Board of Directors has designated another person as the corporation's Chief Executive Officer, the President shall be the Chief

Executive Officer of the corporation. The Chief Executive Officer shall have general charge and supervision of the business of the corporation subject to the direction of the Board of Directors, and shall perform all duties and have all powers that are commonly incident to the office of the chief executive or that are delegated to such officer by the Board of Directors. The President shall perform such other duties and shall have such other powers as the Board of Directors or the Chief Executive Officer (if the President is not the Chief Executive Officer) may from time to time prescribe. In the event of the absence, inability or refusal to act of the Chief Executive Officer or the President (if the President is not the Chief Executive Officer), the Vice President (or if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the Chief Executive Officer and when so performing such duties shall have all the powers of and be subject to all the restrictions upon the Chief Executive Officer.

3.8 Vice Presidents. Each Vice President shall perform such duties and possess such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

3.9 Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall have such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. In addition, the Secretary shall perform such duties and have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and special meetings of the Board of Directors, to attend all meetings of stockholders and the Board of Directors and keep a record of the proceedings, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or directors, the chairman of the meeting shall designate a temporary secretary to keep a record of the meeting.

3.10 Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned by the Board of Directors or the Chief Executive Officer. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the corporation, to deposit funds of the corporation in depositories selected in accordance with these bylaws, to disburse such funds as ordered by the Board of Directors, to make proper accounts of such funds, and to render as required by the Board of Directors statements of all such transactions and of the financial condition of the corporation.

The Assistant Treasurers shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

3.11 Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

3.12 Delegation of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

ARTICLE IV

CAPITAL STOCK

4.1 Issuance of Stock. Subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the corporation or the whole or any part of any shares of the authorized capital stock of the corporation held in the corporation's treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board of Directors in such manner, for such lawful consideration and on such terms as the Board of Directors may determine.

4.2 Stock Certificates; Uncertificated Shares. The shares of the corporation shall be represented by certificates, provided that the Board of Directors may provide by resolution or resolutions that some or all of any or all classes or series of the corporation's stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Every holder of stock of the corporation represented by certificates shall be entitled to have a certificate, in such form as may be prescribed by law and by the Board of Directors, representing the number of shares held by such holder registered in certificate form. Each such certificate shall be signed in a manner that complies with Section 158 of the General Corporation Law of the State of Delaware.

Each certificate for shares of stock that are subject to any restriction on transfer pursuant to the Certificate of Incorporation, these bylaws, applicable securities laws or any agreement among any number of stockholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of each certificate representing shares of such class or series of stock, provided that in lieu of the foregoing requirements there may be set forth on the face or back of each certificate

representing shares of such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests a copy of the full text of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

Within a reasonable time after the issuance or transfer of uncertificated shares, the registered owner thereof shall be given a notice, in writing or by electronic transmission, containing the information required to be set forth or stated on certificates pursuant to Sections 151, 156, 202(a) or 218(a) of the General Corporation Law of the State of Delaware or, with respect to Section 151 of the General Corporation Law of the State of Delaware, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

4.3 Transfers. Shares of stock of the corporation shall be transferable in the manner prescribed by law and in these bylaws. Transfers of shares of stock of the corporation shall be made only on the books of the corporation or by transfer agents designated to transfer shares of stock of the corporation. Subject to applicable law, shares of stock represented by certificates shall be transferred only on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Uncertificated shares may be transferred by delivery of a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, by the Certificate of Incorporation or by these bylaws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the corporation in accordance with the requirements of these bylaws.

4.4 Lost, Stolen or Destroyed Certificates. The corporation may issue a new certificate of stock in place of any previously issued certificate alleged to have been lost, stolen or destroyed, upon such terms and conditions as the corporation may prescribe, including the presentation of reasonable evidence of such loss, theft or destruction and the giving of such indemnity and posting of such bond as the corporation may require for the protection of the corporation or any transfer agent or registrar.

4.5 Regulations. The issue, transfer, conversion and registration of shares of stock of the corporation shall be governed by such other regulations as the Board of Directors may establish.

ARTICLE V

GENERAL PROVISIONS

5.1 Fiscal Year. Except as from time to time otherwise designated by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January of each year and end on the last day of December in each year.

5.2 Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors.

5.3 Record Date for Purposes Other Than Stockholder Meetings. In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights, entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action (other than with respect to determining stockholders entitled to notice of or to vote at a meeting of stockholders, which is addressed in Section 1.4 of these bylaws), the Board of Directors may fix a record date, which shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall not be more than 60 days prior to such action. If no such record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

5.4 Waiver of Notice. Whenever notice is required to be given by law, by the Certificate of Incorporation or by these bylaws, a written waiver signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether provided before, at or after the time of the event for which notice is to be given, shall be deemed equivalent to notice required to be given to such person. Neither the business nor the purpose of any meeting need be specified in any such waiver. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

5.5 Voting of Securities. Except as the Board of Directors may otherwise designate, the Chief Executive Officer, the President or the Treasurer may waive notice of, vote, or appoint any person or persons to vote, on behalf of the corporation at, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at, any meeting of stockholders or securityholders of any other entity, the securities of which may be held by this corporation, or with respect to the execution of any written or electronic consent in the name of the corporation as a holder of such securities.

5.6 Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary Secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

5.7 Certificate of Incorporation. All references in these bylaws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and/or restated and in effect from time to time.

5.8 Severability. Any determination that any provision of these bylaws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these bylaws.

5.9 Pronouns. All pronouns used in these bylaws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

ARTICLE VI

AMENDMENTS

These bylaws may be altered, amended or repealed, in whole or in part, or new bylaws may be adopted by the Board of Directors or by the stockholders as provided in the Certificate of Incorporation.

Exhibit 10.1

INDEMNIFICATION AGREEMENT

THIS INDEMNIFICATION AGREEMENT (this "Agreement") is made and entered into as of [DATE], between Casa Systems, Inc., a Delaware corporation (the "Company"), and [NAME] ("Indemnitee").

WITNESSETH THAT:

WHEREAS, highly competent persons have become more reluctant to serve corporations as directors or officers or in other capacities unless they are provided with adequate protection through insurance or adequate indemnification against inordinate risks of claims and actions against them arising out of their service to and activities on behalf of the corporation;

WHEREAS, the Board of Directors of the Company (the "Board") has determined that, in order to attract and retain qualified individuals, the Company will attempt to maintain on an ongoing basis, at its sole expense, liability insurance to protect persons serving the Company and its subsidiaries from certain liabilities. Although the furnishing of such insurance has been a customary and widespread practice among United States-based corporations and other business enterprises, the Company believes that, given current market conditions and trends, such insurance may be available to it in the future only at higher premiums and with more exclusions. At the same time, directors, officers, and other persons in service to corporations or business enterprises are being increasingly subjected to expensive and time-consuming litigation relating to, among other things, matters that traditionally would have been brought only against the Company or business enterprise itself. Indemnitee may also be entitled to indemnification pursuant to the General Corporation Law of the State of Delaware ("DGCL") or the Company's certificate of incorporation (as amended and restated from time to time) (the "Certificate of Incorporation"). The Certificate of Incorporation and the DGCL expressly provide that the indemnification provisions set forth therein are not exclusive, and thereby contemplate that contracts may be entered into between the Company and members of the Board, officers and other persons with respect to indemnification;

WHEREAS, the uncertainties relating to such insurance and to indemnification have increased the difficulty of attracting and retaining such persons;

WHEREAS, the Board has determined that the increased difficulty in attracting and retaining such persons is detrimental to the best interests of the Company's stockholders and that the Company should act to assure such persons that there will be increased certainty of such protection in the future;

WHEREAS, it is reasonable, prudent and necessary for the Company contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law so that they will serve or continue to serve the Company free from undue concern that they will not be so indemnified;

WHEREAS, this Agreement is a supplement to and in furtherance of the Certificate of Incorporation and any resolutions adopted pursuant thereto, and shall not be deemed a substitute

therefor, nor to diminish or abrogate any rights of Indemnitee thereunder; [and]

WHEREAS, Indemnitee does not regard the protection available under the Company's Certificate of Incorporation and insurance as adequate in the present circumstances, and may not be willing to serve as an officer or director without adequate protection, and the Company desires Indemnitee to serve in such capacity. Indemnitee is willing to serve, continue to serve and to take on additional service for or on behalf of the Company on the condition that he be so indemnified[; and

WHEREAS, Indemnitee has certain rights to indemnification and/or insurance provided by [*name of fund/sponsor*] which Indemnitee and [*name of fund/sponsor*] intend to be secondary to the primary obligation of the Company to indemnify Indemnitee as provided herein, with the Company's acknowledgment and agreement to the foregoing being a material condition to Indemnitee's willingness to serve on the Board].

NOW, THEREFORE, in consideration of Indemnitee's agreement to serve as a director after the date hereof, the parties hereto agree as follows:

1. **INDEMNITY OF INDEMNITEE**. The Company hereby agrees to hold harmless and indemnify Indemnitee to the fullest extent permitted by law, as such may be amended from time to time. In furtherance of the foregoing indemnification, and without limiting the generality thereof:

(a) **Proceedings Other Than Proceedings by or in the Right of the Company**. Indemnitee shall be entitled to the rights of indemnification provided in this Section l(a) if, by reason of Indemnitee's Corporate Status (as hereinafter defined), Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding (as hereinafter defined) other than a Proceeding by or in the right of the Company. Pursuant to this Section 1(a), Indemnitee shall be indemnified against all Expenses (as hereinafter defined), judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee, or on Indemnitee's behalf, in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, and with respect to any criminal Proceeding, had no reasonable cause to believe Indemnitee's conduct was unlawful.

(b) **Proceedings by or in the Right of the Company**. Indemnitee shall be entitled to the rights of indemnification provided in this Section 1(b) if, by reason of Indemnitee's Corporate Status, Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding brought by or in the right of the Company. Pursuant to this Section 1(b), Indemnitee shall be indemnified against all Expenses actually and reasonably incurred by Indemnitee, or on Indemnitee's behalf, in connection with such Proceeding if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company; provided, however, if applicable law so provides, no indemnification against such Expenses shall be made in respect of any claim, issue or matter in such Proceeding as to which Indemnitee shall have been adjudged to be liable to the Company unless and to the extent that the Court of Chancery of the State of Delaware shall determine that such indemnification may be made.

(c) **Indemnification for Expenses of a Party Who is Wholly or Partly Successful**. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of Indemnitee's Corporate Status, a party to and is successful, on the merits or otherwise, in any Proceeding, he shall be indemnified to the maximum extent permitted by law, as such may be amended from time to time, against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with each successfully resolved claim, issue or matter. For purposes of this Section 1 and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

2. **Additional Indemnity**. In addition to, and without regard to any limitations on, the indemnification provided for in Section 1 of this Agreement, the Company shall and hereby does indemnify and hold harmless Indemnitee against all Expenses, judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee or on Indemnitee's behalf if, by reason of Indemnitee's Corporate Status, he is, or is threatened to be made, a party to or participant in any Proceeding (including a Proceeding by or in the right of the Company), including, without limitation, all liability arising out of the negligence or active or passive wrongdoing of Indemnitee. The only limitation that shall exist upon the Company's obligations pursuant to this Agreement shall be that the Company shall not be obligated to make any payment to Indemnitee that is finally determined (under the procedures, and subject to the presumptions, set forth in Sections 6 and 7 hereof) to be unlawful.

3. **CONTRIBUTION**.

(a) Whether or not the indemnification provided in Sections 1 and 2 hereof is available, in respect of any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall pay, in the first instance, the entire amount of any judgment or settlement of such action, suit or proceeding without requiring Indemnitee to contribute to such payment and the Company hereby waives and relinquishes any right of contribution it may have against Indemnitee. The Company shall not enter into any settlement of any action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding) unless such settlement provides for a full and final release of all claims asserted against Indemnitee.

(b) Without diminishing or impairing the obligations of the Company set forth in the preceding subparagraph, if, for any reason, Indemnitee shall elect or be required to pay all or any portion of any judgment or settlement in any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall contribute to the amount of Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred and paid or payable by Indemnitee in proportion to the relative benefits received by the Company and all officers, directors or employees of the Company, other than Indemnitee, who are jointly

liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, from the transaction from which such action, suit or proceeding arose; provided, however, that the proportion determined on the basis of relative benefits may, to the extent necessary to conform to law, be further adjusted by reference to the relative fault of the Company and all officers, directors or employees of the Company other than Indemnitee who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, in connection with the events that resulted in such Expenses, judgments, fines or settlement amounts, as well as any other equitable considerations that the Law may require to be considered. The relative fault of the Company and all officers, directors or employees of the Company, other than Indemnitee, who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, shall be determined by reference to, among other things, the degree to which their actions were motivated by intent to gain personal profit or advantage, the degree to which their liability is primary or secondary and the degree to which their conduct is active or passive.

(c) The Company hereby agrees to fully indemnify and hold Indemnitee harmless from any claims of contribution that may be brought by officers, directors or employees of the Company, other than Indemnitee, who may be jointly liable with Indemnitee.

(d) To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such Proceeding; and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transaction(s).

4. **INDEMNIFICATION FOR EXPENSES OF A WITNESS**. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of Indemnitee's Corporate Status, a witness, or is made (or asked to) respond to discovery requests, in any Proceeding to which Indemnitee is not a party, Indemnitee shall be indemnified against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection therewith.

5. **ADVANCEMENT OF EXPENSES**. Notwithstanding any other provision of this Agreement, the Company shall advance all Expenses incurred by or on behalf of Indemnitee in connection with any Proceeding by reason of Indemnitee's Corporate Status within thirty (30) days after the receipt by the Company of a statement or statements from Indemnitee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by Indemnitee and shall include or be preceded or accompanied by a written undertaking by or on behalf of Indemnitee to repay any Expenses advanced if it shall ultimately be determined that

Indemnitee is not entitled to be indemnified against such Expenses. Any advances and undertakings to repay pursuant to this Section 5 shall be unsecured and interest free.

6. **PROCEDURES AND PRESUMPTIONS FOR DETERMINATION OF ENTITLEMENT TO INDEMNIFICATION**. It is the intent of this Agreement to secure for Indemnitee rights of indemnity that are as favorable as may be permitted under applicable law, including without limitation, the DGCL and public policy of the State of Delaware. Accordingly, the parties agree that the following procedures and presumptions shall apply in the event of any question as to whether Indemnitee is entitled to indemnification under this Agreement:

(a) To obtain indemnification under this Agreement, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification. The Secretary of the Company shall, promptly upon receipt of such a request for indemnification, advise the Board in writing that Indemnitee has requested indemnification. Notwithstanding the foregoing, any failure of Indemnitee to provide such a request to the Company, or to provide such a request in a timely fashion, shall not relieve the Company of any liability that it may have to Indemnitee unless, and to the extent that, such failure actually and materially prejudices the interests of the Company.

(b) Upon written request by Indemnitee for indemnification pursuant to the first sentence of Section 6(a) hereof, a determination, if required by applicable law, with respect to Indemnitee's entitlement thereto shall be made in the specific case by one of the following three methods, which shall be at the election of Indemnitee by: (1) a majority vote of the Disinterested Directors (as hereinafter defined), even though less than a quorum, or by a committee of Disinterested Directors designated by a majority vote of the Disinterested Directors, even though less than a quorum; (2) Independent Counsel (as hereinafter defined) in a written opinion to the Board, a copy of which shall be delivered to Indemnitee; or (3) the stockholders of the Company.

(c) If the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 6(b) hereof, the Independent Counsel shall be selected as provided in this Section 6(c). The Independent Counsel shall be selected by the Board and written notice of such selection shall be provided to Indemnitee. Indemnitee may, within 10 days after such written notice of selection shall have been given, deliver to the Company a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 13 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected by the Board shall act as Independent Counsel. If a written objection is made and substantiated, the Independent Counsel selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court of competent jurisdiction has determined that such objection is without merit. If, within twenty (20) days after submission by Indemnitee of a written request for indemnification pursuant to Section 6(a) hereof, no Independent Counsel shall have been selected and not objected to, either the Company or Indemnitee may petition the Court of Chancery of the State of Delaware or other court of

competent jurisdiction for resolution of any objection that shall have been made by Indemnitee to the Company's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 6(b) hereof. The Company shall pay any and all reasonable fees and expenses of Independent Counsel incurred by such Independent Counsel in connection with acting pursuant to Section 6(b) hereof, and the Company shall pay all reasonable fees and expenses incident to the procedures of this Section 6(c), regardless of the manner in which such Independent Counsel was selected or appointed.

(d) In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall presume that Indemnitee is entitled to indemnification under this Agreement. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence. Neither the failure of the Company (including by its directors or Independent Counsel) to have made a determination prior to the commencement of any action pursuant to this Agreement that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Company (including by its directors or Independent Counsel) that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct.

(e) Indemnitee shall be deemed to have acted in good faith if Indemnitee's action is based on the records or books of account of the Enterprise (as hereinafter defined), including financial statements, or on information supplied to Indemnitee by the officers of the Enterprise in the course of their duties, or on the advice of legal counsel for the Enterprise or on information or records given or reports made to the Enterprise by an independent certified public accountant or by an appraiser or other expert selected with reasonable care by the Enterprise. In addition, the knowledge and/or actions, or failure to act, of any director, officer, agent or employee of the Enterprise shall not be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement. Whether or not the foregoing provisions of this Section 6(e) are satisfied, it shall in any event be presumed that Indemnitee has at all times acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

(f) If the person, persons or entity empowered or selected under Section 6 to determine whether Indemnitee is entitled to indemnification shall not have made a determination within sixty (60) days after receipt by the Company of the request therefor, the requisite determination of entitlement to indemnification shall be deemed to have been made and Indemnitee shall be entitled to such indemnification absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law; provided, however, that such 60-day period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person, persons or entity making such determination with respect to entitlement to indemnification in good faith requires such additional time to obtain or evaluate documentation and/or information

relating thereto; and provided, further, that the foregoing provisions of this Section 6(f) shall not apply if the determination of entitlement to indemnification is to be made by the stockholders pursuant to Section 6(b) of this Agreement and if (A) within fifteen (15) days after receipt by the Company of the request for such determination, the Board or the Disinterested Directors, if appropriate, resolve to submit such determination to the stockholders for their consideration at an annual meeting thereof to be held within seventy-five (75) days after such receipt and such determination is made thereat, or (B) a special meeting of stockholders is called within fifteen (15) days after such receipt for the purpose of making such determination, such meeting is held for such purpose within sixty (60) days after having been so called and such determination is made thereat.

(g) Indemnitee shall cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information that is not privileged or otherwise protected from disclosure and that is reasonably available to Indemnitee and reasonably necessary to such determination. Any Independent Counsel, member of the Board or stockholder of the Company shall act reasonably and in good faith in making a determination regarding Indemnitee's entitlement to indemnification under this Agreement. Any costs or expenses (including attorneys' fees and disbursements) incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom.

(h) The Company acknowledges that a settlement or other disposition short of final judgment may be successful if it permits a party to avoid expense, delay, distraction, disruption and uncertainty. In the event that any action, claim or proceeding to which Indemnitee is a party is resolved in any manner other than by adverse judgment against Indemnitee (including, without limitation, settlement of such action, claim or proceeding with or without payment of money or other consideration) it shall be presumed that Indemnitee has been successful on the merits or otherwise in such action, suit or proceeding. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

(i) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not act in good faith and in a manner that he reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that Indemnitee's conduct was unlawful.

7. **REMEDIES OF INDEMNITEE**.

(a) In the event that (i) a determination is made pursuant to Section 6 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 5 of this Agreement, (iii) no

determination of entitlement to indemnification is made pursuant to Section 6(b) of this Agreement within ninety (90) days after receipt by the Company of the request for indemnification, (iv) payment of indemnification is not made pursuant to this Agreement within ten (10) days after receipt by the Company of a written request therefor, (v) payment of indemnification is not made within ten (10) days after a determination has been made that Indemnitee is entitled to indemnification or such determination is deemed to have been made pursuant to Section 6 of this Agreement, or (vi) in the event the Company or any other person takes or threatens to take any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or Proceeding designed to deny, or to recover from, Indemnitee the benefits provided or intended to be provided to Indemnitee hereunder, Indemnitee shall be entitled to an adjudication in an appropriate court of the State of Delaware, or in any other court of competent jurisdiction, for an adjudication of Indemnitee's entitlement to such indemnification or to otherwise enforce the Company's obligations under this Agreement. Indemnitee shall commence such proceeding seeking an adjudication within 180 days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 7(a). The Company shall not oppose Indemnitee's right to seek any such adjudication.

(b) In the event that a determination shall have been made pursuant to Section 6(b) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding commenced pursuant to this Section 7 shall be conducted in all respects as a de novo trial on the merits, and Indemnitee shall not be prejudiced by reason of the adverse determination under Section 6(b).

(c) If a determination shall have been made pursuant to Section 6(b) of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding commenced pursuant to this Section 7, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's misstatement not materially misleading in connection with the application for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) In the event that Indemnitee, pursuant to this Section 7, seeks a judicial adjudication of Indemnitee's rights under, or to recover damages for breach of, this Agreement, or to recover under any directors' and officers' liability insurance policies maintained by the Company, the Company shall pay on Indemnitee's behalf, in advance, any and all expenses (of the types described in the definition of Expenses in Section 13 of this Agreement) actually and reasonably incurred by Indemnitee in such judicial adjudication, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of expenses or insurance recovery.

(e) The Company shall be precluded from asserting in any judicial proceeding commenced pursuant to this Section 7 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court that the Company is bound by all the provisions of this Agreement. The Company shall indemnify Indemnitee against any and all Expenses and, if requested by Indemnitee, shall (within ten (10) days after receipt by the Company of a written request therefor) advance, to the extent not prohibited by law, such Expenses to Indemnitee, which are incurred by Indemnitee in connection with any action brought by Indemnitee for indemnification or advance of Expenses from the

Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of Expenses or insurance recovery, as the case may be.

(f) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding.

8. **NON-EXCLUSIVITY; SURVIVAL OF RIGHTS; INSURANCE; PRIMACY OF INDEMNIFICATION; SUBROGATION**.

(a) The rights of indemnification and the right to receive advancement of Expenses as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Certificate of Incorporation, the Bylaws, any agreement, a vote of stockholders, a resolution of directors or otherwise. No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in Indemnitee's Corporate Status prior to such amendment, alteration or repeal. To the extent that a change in the DGCL, whether by statute or judicial decision, permits greater indemnification or advancement than would be afforded currently under the Certificate of Incorporation, the Bylaws and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, officers, employees, or agents or fiduciaries of the Company or of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that such person serves at the request of the Company, Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any director, officer, employee, agent or fiduciary under such policy or policies. If, at the time of the receipt of a notice of a claim pursuant to the terms hereof, the Company has director and officer liability insurance in effect, the Company shall give prompt notice of the commencement of such proceeding to the insurers in accordance with the procedures set forth in the respective policies. The Company shall thereafter take all necessary or desirable action to cause such insurers to pay, on behalf of Indemnitee, all amounts payable as a result of such proceeding in accordance with the terms of such policies.

(c) The Company hereby acknowledges that Indemnitee [may have/has] certain rights to indemnification, advancement of expenses and/or insurance provided by [a corporate entity engaged in the venture capital investment business, including its affiliates] (collectively[with any of such entity's affiliates], the "Fund Indemnitors"). The Company hereby agrees (i) that it is the indemnitor of first resort (i.e., its obligations to

Indemnitee are primary and any obligations of the Fund Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by Indemnitee are secondary); (ii) that it shall be required to advance the full amount of Expenses incurred by Indemnitee and be liable for the full amount of all Expenses, judgments, penalties, fines and amounts paid in settlement to the extent legally permitted and as required by the terms of this Agreement and the Certificate of Incorporation or Bylaws of the Company (or any other agreement between the Company and Indemnitee), without regard to any rights Indemnitee may have against the Fund Indemnitors; and (iii) that it irrevocably waives, relinquishes and releases the Fund Indemnitors from any and all claims against the Fund Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Fund Indemnitors on behalf of Indemnitee with respect to any claim for which Indemnitee has sought indemnification from the Company shall affect the foregoing and the Fund Indemnitors shall have a right to contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of Indemnitee against the Company. The Company and Indemnitee agree that the Fund Indemnitors are express third party beneficiaries of the terms of this Section 8(c).

(d) Except as provided in paragraph (c) above, in the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee (other than against the Fund Indemnitors), who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

(e) Except as provided in paragraph (c) above, the Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable hereunder if and to the extent that Indemnitee has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise.

(f) Except as provided in paragraph (c) above, the Company's obligation to indemnify or advance Expenses hereunder to Indemnitee who is or was serving at the request of the Company as a director, officer, employee or agent of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise shall be reduced by any amount Indemnitee has actually received as indemnification or advancement of expenses from or on behalf of or with respect to such other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise.

9. **EXCEPTION TO RIGHT OF INDEMNIFICATION**. Notwithstanding any provision in this Agreement, the Company shall not be obligated under this Agreement to indemnify Indemnitee in connection with any claim made against Indemnitee:

(a) for which payment has actually been made to or on behalf of Indemnitee under any insurance policy or other indemnity provision, except with respect to any excess beyond the amount paid under any insurance policy or other indemnity provision, provided, that the foregoing shall not affect the rights of Indemnitee or the Fund Indemnitors set forth in Section 8(c) above; or

(b) for an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Securities Exchange Act of 1934, as amended, or similar provisions of state statutory law or common law; or

(c) in connection with any Proceeding (or any part of any Proceeding) initiated by Indemnitee, including, without limitation, any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees or other indemnitees (but excluding any Proceeding brought to enforce Indemnitee's rights under this Agreement, the Certificate of Incorporation, the Company's Bylaws or any Company insurance policy), unless (i) the Board of the Company authorized the Proceeding (or any part of any Proceeding) prior to its initiation or (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law.

10. **DURATION OF AGREEMENT**. All agreements and obligations of the Company contained herein shall continue during the period Indemnitee is an officer or director of the Company (or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise) and shall survive the termination of such period, and shall be applicable to any Proceeding (or any proceeding commenced under Section 7 hereof) to which Indemnitee is or becomes subject by reason of Indemnitee's Corporate Status, whether or not he is acting or serving in any such capacity at the time any liability or expense is incurred for which indemnification can be provided under this Agreement. This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto and their respective successors (including any transferee of all or substantially all of the business, stock and/or assets of the Company and any direct or indirect successor by purchase, merger, consolidation or otherwise by operation of law), assigns, spouses, heirs, executors and personal and legal representatives.

11. **SECURITY**. To the extent requested by Indemnitee and approved by the Board, the Company may at any time and from time to time provide security to Indemnitee for the Company's obligations hereunder through an irrevocable bank line of credit, funded trust or other collateral. Any such security, once provided to Indemnitee, may not be revoked or released without the prior written consent of Indemnitee.

12. **ENFORCEMENT**.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumes the obligations imposed on it hereby in order to induce Indemnitee to serve as an officer or director of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as an officer or director of the Company.

(b) This Agreement, together with the Certificate of Incorporation, constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof.

13. **DEFINITIONS**. For purposes of this Agreement:

(a) "Corporate Status" describes the status of a person who is or was a director, officer, employee, agent or fiduciary of the Company or of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that such person is or was serving at the express written request of the Company.

(b) "Disinterested Director" means a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(c) "Enterprise" shall mean the Company and any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that Indemnitee is or was serving at the express written request of the Company as a director, officer, employee, agent or fiduciary.

(d) "Expenses" shall include all reasonable attorneys' fees, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, participating, or being or preparing to be a witness in a Proceeding, or responding to, or objecting to, a request to provide discovery in any Proceeding. Expenses also shall include Expenses incurred in connection with any appeal resulting from any Proceeding, including without limitation the premium, security for, and other costs relating to any cost bond, surety bond, or other appeal bond or its equivalent and, for purposes of Section 7(e) only, Expenses reasonably incurred by Indemnitee in connection with the interpretation, enforcement or defense of Indemnitee's rights under this Agreement by litigation or otherwise. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(e) "Independent Counsel" means a law firm, or a member of a law firm that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent: (i) the Company or Indemnitee in any matter material to either such party (other than with respect to matters concerning Indemnitee under this Agreement, or of other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement. The Company agrees to pay the reasonable fees of the Independent Counsel referred to above and to fully indemnify such counsel against any and all Expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(f) "Proceeding" includes any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought

by or in the right of the Company or otherwise and whether civil, criminal, administrative or investigative, in which Indemnitee was, is or will be involved as a party or otherwise, by reason of the fact that Indemnitee is or was an officer or director of the Company, by reason of any action taken by Indemnitee or of any inaction on Indemnitee's part while acting as an officer or director of the Company, or by reason of the fact that he is or was serving at the request of the Company as a director, officer, employee, agent or fiduciary of another corporation, partnership, joint venture, trust or other Enterprise; in each case whether or not he is acting or serving in any such capacity at the time any liability or expense is incurred for which indemnification can be provided under this Agreement; including one pending on or before the date of this Agreement, but excluding one initiated by an Indemnitee pursuant to Section 7 of this Agreement to enforce Indemnitee's rights under this Agreement.

14. **SEVERABILITY**. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision. Without limiting the generality of the foregoing, this Agreement is intended to confer upon Indemnitee indemnification rights to the fullest extent permitted by applicable laws. In the event any provision hereof conflicts with any applicable law, such provision shall be deemed modified, consistent with the aforementioned intent, to the extent necessary to resolve such conflict.

15. **MODIFICATION AND WAIVER**. No supplement, modification, termination or amendment of this Agreement shall be binding unless executed in writing by both of the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions hereof (whether or not similar) nor shall such waiver constitute a continuing waiver.

16. **NOTICE BY INDEMNITEE**. Indemnitee agrees promptly to notify the Company in writing upon being served with or otherwise receiving any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter that may be subject to indemnification covered hereunder. The failure to so notify the Company shall not relieve the Company of any obligation that it may have to Indemnitee under this Agreement or otherwise unless and only to the extent that such failure or delay materially prejudices the Company.

17. **NOTICES**. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient, and if not so confirmed, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent:

(a) To Indemnitee at the address set forth below Indemnitee signature hereto.

(b) To the Company at:

Casa Systems, Inc.
100 Old River Road, Suite 100
Andover, MA 01810
Attention: Chief Executive Officer

with a copy (which shall not constitute notice) to:

Wilmer Cutler Pickering Hale and Dorr LLP
1100 Winter Street
Waltham, MA 02451
Attention: Michael D. Bain

or to such other address as may have been furnished to Indemnitee by the Company or to the Company by Indemnitee, as the case may be.

18. **COUNTERPARTS**. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same Agreement. This Agreement may also be executed and delivered by facsimile signature and in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

19. **HEADINGS**. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

20. **GOVERNING LAW AND CONSENT TO JURISDICTION**. This Agreement, the performance of this Agreement and any and all matters arising directly or indirectly herefrom or therefrom, and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. The Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Chancery Court of the State of Delaware (the "Delaware Court"), and not in any other state or federal court in the United States of America or any court in any other country; (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement; (iii) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court; and (iv) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on and as of the day and year first above written.

COMPANY:

CASA SYSTEMS, INC.

By: _____
Name: Jerry Guo
Title: President and CEO

INDEMNITEE:

_____
Name:

Address:

Exhibit 10.2

CASA SYSTEMS, INC.

2003 STOCK INCENTIVE PLAN

1. Purpose

The purpose of this 2003 Stock Incentive Plan (the "Plan") of Casa Systems, Inc., a Delaware corporation (the "Company"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who make (or are expected to make) important contributions to the Company by providing such persons with equity ownership opportunities and performance-based incentives and thereby better aligning the interests of such persons with those of the Company's stockholders. Except where the context otherwise requires, the term "Company" shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the "Board").

2. Eligibility

All of the Company's employees, officers, directors, consultants and advisors are eligible to be granted options, restricted stock awards, or other stock-based awards (each, an "Award") under the Plan. Each person who has been granted an Award under the Plan shall be deemed a "Participant".

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient to carry the Plan into effect and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award. No director or person acting pursuant to the authority delegated by the Board shall be liable for any action or determination relating to or under the Plan made in good faith.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a "Committee"). All references in the Plan to the "Board" shall mean the Board or a Committee of the Board or the executive officers referred to in Section 3(c) to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or executive officers.

(c) Delegation to Executive Officers. To the extent permitted by applicable law, the Board may delegate to one or more executive officers of the Company the power to grant

Awards to employees or officers of the Company or any of its present or future subsidiary corporations and to exercise such other powers under the Plan as the Board may determine, provided that the Board shall fix the terms of the Awards to be granted by such executive officers (including the exercise price of such Awards, which may include a formula by which the exercise price will be determined) and the maximum number of shares subject to Awards that the executive officers may grant; provided further, however, that no executive officer shall be authorized to grant Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) or to any "officer" of the Company (as defined by Rule 16a-1 under the Exchange Act).

4. Stock Available for Awards. Subject to adjustment under Section 8, Awards may be made under the Plan for up to 1,900,000 shares of common stock, $.001 par value per share, of the Company (the "Common Stock"). If any Award expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right) or results in any Common Stock not being issued, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan, subject, however, in the case of Incentive Stock Options (as hereinafter defined), to any limitations under the Code. Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares. At no time while there is any Option (as defined below) outstanding and held by a Participant who was a resident of the State of California on the date of grant of such Option, shall the total number of shares of Common Stock issuable upon exercise of all outstanding options and the total number of shares provided for under any stock bonus or similar plan of the Company exceed the applicable percentage as calculated in accordance with the conditions and exclusions of Section 260.140.45 of the California Code of Regulations, based on the shares of the Company which are outstanding at the time the calculation is made.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "Option") and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable. An Option which is not intended to be an Incentive Stock Option (as hereinafter defined) shall be designated a "Nonstatutory Stock Option".

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "Incentive Stock Option") shall only be granted to employees of the Company and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) which is intended to be an Incentive Stock Option is not an Incentive Stock Option.

(c) Exercise Price. The Board shall establish the exercise price at the time each Option is granted and specify it in the applicable option agreement.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement.

(e) Exercise of Option. Options may be exercised by delivery to the Company of a written notice of exercise signed by the proper person or by any other form of notice (including electronic notice) approved by the Board together with payment in full as specified in Section 5(f) for the number of shares for which the Option is exercised.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) except as the Board may, in its sole discretion, otherwise provide in an option agreement, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) when the Common Stock is registered under the Securities Exchange Act of 1934 (the "Exchange Act"), by delivery of shares of Common Stock owned by the Participant valued at their fair market value as determined by (or in a manner approved by) the Board in good faith ("Fair Market Value"), provided (i) such method of payment is then permitted under applicable law and (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant at least six months prior to such delivery;

(4) to the extent permitted by the Board, in its sole discretion by (i) delivery of a promissory note of the Participant to the Company on terms determined by the Board, or (ii) payment of such other lawful consideration as the Board may determine; or

(5) by any combination of the above permitted forms of payment.

(g) Substitute Options. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Options in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Options may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Options contained in the other sections of this Section 5 or in Section 2.

6. Restricted Stock

(a) Grants. The Board may grant Awards entitling recipients to acquire shares of Common Stock, subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award (each, a "Restricted Stock Award").

(b) Terms and Conditions. The Board shall determine the terms and conditions of any such Restricted Stock Award, including the conditions for repurchase (or forfeiture) and the issue price, if any.

(c) Stock Certificates. Any stock certificates issued in respect of a Restricted Stock Award shall be registered in the name of the Participant and, unless otherwise determined by the Board, deposited by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death (the "Designated Beneficiary"). In the absence of an effective designation by a Participant, Designated Beneficiary shall mean the Participant's estate.

7. Other Stock-Based Awards

The Board shall have the right to grant other Awards based upon the Common Stock having such terms and conditions as the Board may determine, including the grant of shares based upon certain conditions, the grant of securities convertible into Common Stock and the grant of stock appreciation rights.

8. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any distribution to holders of Common Stock other than a normal cash dividend, (i) the number and class of securities available under this Plan, (ii) the number and class of securities and exercise price per share subject to each outstanding Option, (iii) the repurchase price per share subject to each outstanding Restricted Stock Award, and (iv) the terms of each other outstanding Award shall be appropriately adjusted by the Company (or substituted Awards may be made, if applicable) to the extent the Board shall determine, in good faith, that such an adjustment (or substitution) is necessary and appropriate. If this Section 8(a) applies and Section 8(c) also applies to any event, Section 8(c) shall be applicable to such event, and this Section 8(a) shall not be applicable.

(b) Liquidation or Dissolution. In the event of a proposed liquidation or dissolution of the Company, the Board shall upon written notice to the Participants provide that all then unexercised Options will (i) become exercisable in full as of a specified time at least 10 business days prior to the effective date of such liquidation or dissolution and (ii) terminate effective upon such liquidation or dissolution, except to the extent exercised before such effective date. The Board may specify the effect of a liquidation or dissolution on any Restricted Stock Award or other Award granted under the Plan at the time of the grant of such Award.

(c) Reorganization Events

(1) Definition. A "Reorganization Event" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or (b) any exchange of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange transaction.

(2) Consequences of a Reorganization Event on Options. Upon the occurrence of a Reorganization Event, or the execution by the Company of any agreement with respect to a Reorganization Event, the Board shall provide that all outstanding Options shall be assumed, or equivalent options shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof). For purposes hereof, an Option shall be considered to be assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of common stock of the acquiring or succeeding corporation (or an affiliate thereof) equivalent in fair market value to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

Notwithstanding the foregoing, if the acquiring or succeeding corporation (or an affiliate thereof) does not agree to assume, or substitute for, such Options, then the Board shall, upon written notice to the Participants, provide that all then unexercised Options will become exercisable in full as of a specified time prior to the Reorganization Event and will terminate immediately prior to the consummation of such Reorganization Event, except to the extent exercised by the Participants before the consummation of such Reorganization Event; provided, however, that in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share of Common Stock surrendered pursuant to such Reorganization Event (the "Acquisition Price"), then the Board may instead provide that all outstanding Options shall terminate upon consummation of such Reorganization Event and that each Participant shall receive, in exchange therefor, a cash payment equal to the amount (if any) by which (A) the Acquisition Price multiplied by the number of shares of Common Stock subject to such outstanding Options (whether or not then exercisable), exceeds (B) the aggregate exercise price of such Options. To the extent all or any portion of an Option becomes exercisable solely as a result of the first sentence of this paragraph, upon exercise of such Option the Participant shall receive shares subject to a right of repurchase by the Company or its successor at the Option exercise price. Such repurchase right (1) shall lapse at the same rate as the Option would have become exercisable under its terms and (2) shall not apply to any shares subject to the Option that were exercisable under its terms without regard to the first sentence of this paragraph.

If any Option provides that it may be exercised for shares of Common Stock which remain subject to a repurchase right in favor of the Company, upon the occurrence of a Reorganization Event, any shares of restricted stock received upon exercise of such Option shall be treated in accordance with Section 8(c)(3) as if they were a Restricted Stock Award.

(3) Consequences of a Reorganization Event on Restricted Stock Awards. Upon the occurrence of a Reorganization Event, the repurchase and other rights of the Company under each outstanding Restricted Stock Award shall inure to the benefit of the Company's successor and shall apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to the Common Stock subject to such Restricted Stock Award.

(4) Consequences of a Reorganization Event on Other Awards. The Board shall specify the effect of a Reorganization Event on any other Award granted under the Plan at the time of the grant of such Award.

9. General Provisions Applicable to Awards

(a) Transferability of Awards. Except as the Board may otherwise determine or provide in an Award, Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the life of the Participant, shall be exercisable only by the Participant. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, retirement, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, the Participant's legal representative, conservator, guardian or Designated Beneficiary may exercise rights under the Award.

(e) Withholding. Each Participant shall pay to the Company, or make provision satisfactory to the Board for payment of, any taxes required by law to be withheld in connection with Awards to such Participant no later than the date of the event creating the tax liability. Except as the Board may otherwise provide in an Award, when the Common Stock is registered under the Exchange Act, Participants may satisfy such tax obligations in whole or in part by delivery of shares of Common Stock, including shares retained from the Award creating the tax

obligation, valued at their Fair Market Value; provided, however, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income). Company may, to the extent permitted by law, deduct any such tax obligations from any payment of any kind otherwise due to a Participant.

(f) Amendment of Award. The Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option, provided that the Participant's consent to such action shall be required unless the Board determines that the action, taking into account any related action, would not materially and adversely affect the Participant.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be.

10. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares. Notwithstanding the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to such Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date on which it is adopted by the Board. No Awards shall be granted under the Plan after the completion of ten years from the earlier of (i) the date on which the Plan was adopted by the Board or (ii) the date the Plan was approved by the Company's stockholders, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time.

(e) Authorization of Sub-Plans. The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable blue sky, securities or tax laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to this Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, without regard to any applicable conflicts of law.

CASA SYSTEMS, INC.

2003 STOCK INCENTIVE PLAN

CALIFORNIA SUPPLEMENT

Pursuant to Section 10(e) of the Plan, the Board has adopted this supplement for purposes of satisfying the requirements of Section 25102(o) of the California Corporations Code:

Any Awards granted under the Plan to a Participant who is a resident of the State of California on the date of grant (a "California Participant") shall be subject to the following additional limitations, terms and conditions:

1. Additional Limitations on Options.

(a) Minimum Vesting Rate. Except in the case of Options granted to California Participants who are officers, directors, consultants or advisors of the Company or its affiliates (which Options may become exercisable at whatever rate is determined by the Board), Options granted to California Participants shall become exercisable at a rate of no less than 20% per year over five years from the date of grant; provided, that, such Options may be subject to such reasonable forfeiture conditions as the Board may choose to impose and which are not inconsistent with Section 260.140.41 of the California Code of Regulations.

(b) Minimum Exercise Price. The exercise price of Options granted to California Participants may not be less than 85% of the Fair Market Value of the Common Stock on the date of grant in the case of a Nonstatutory Stock Option or less than 100% of the Fair Market Value of the Common Stock on the date of grant in the case of an Incentive Stock Option; provided, however, that if the California Participant is a person who owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or its parent or subsidiary corporations, the exercise price shall be not less than 110% of the Fair Market Value of the Common Stock on the date of grant.

(c) Maximum Duration of Options. No Options granted to California Participants will be granted for a term in excess of 10 years.

(d) Minimum Exercise Period Following Termination. Unless a California Participant's employment is terminated for cause (as defined in any contract of employment between the Company and such Participant, or if none, in the instrument evidencing the grant of such Participant's Option), in the event of termination of employment of such Participant, he or she shall have the right to exercise an Option, to the extent that he or she was otherwise entitled to exercise such Option on the date employment terminated, as follows: (i) at least six months from the date of termination, if termination was caused by such Participant's death or "permanent and total disability" (within the meaning of Section 22(e)(3) of the Code) and (ii) at least 30 days from the date of termination, if termination was caused other than by such Participant's death or "permanent and total disability" (within the meaning of Section 22(e)(3) of the Code).

(e) Limitation on Repurchase Rights. If an Option granted to a California Participant gives the Company the right to repurchase shares of Common Stock issued pursuant to the Plan upon termination of employment of such Participant, the terms of such repurchase right must comply with Section 260.140.41(k) of the California Code of Regulations.

2. Additional Limitations for Restricted Stock Awards.

(a) Minimum Purchase Price. The purchase price for a Restricted Stock Award granted to a California Participant shall be not less than 85% of the Fair Market Value of the Common Stock at the time such Participant is granted the right to purchase shares under the Plan or at the time the purchase is consummated; provided, however, that if such Participant is a person who owns stock possessing more than 10% of the total combined voting power or value of all classes of stock of the Company or its parent or subsidiary corporations, the purchase price shall be not less than 100% of the Fair Market Value of the Common Stock at the time such Participant is granted the right to purchase shares under the Plan or at the time the purchase is consummated.

(b) Limitation of Repurchase Rights. If a Restricted Stock Award granted to a California Participant gives the Company the right to repurchase shares of Common Stock issued pursuant to the Plan upon termination of employment of such Participant, the terms of such repurchase right must comply with Section 260.140.42(h) of the California Code of Regulations.

3. Additional Limitations for Other Stock-Based Awards. The terms of all Awards granted to a California Participant under Section 7 of the Plan shall comply, to the extent applicable, with Section 260.140.41 or Section 260.140.42 of the California Code of Regulations.

4. Additional Requirement to Provide Information to California Participants. The Company shall provide to each California Participant and to each California Participant who acquires Common Stock pursuant to the Plan, not less frequently than annually, copies of annual financial statements (which need not be audited). The Company shall not be required to provide such statements to key employees whose duties in connection with the Company assure their access to equivalent information.

5. Additional Limitations on Timing of Awards. No Award granted to a California Participant shall become exercisable, vested or realizable, as applicable to such Award, unless the Plan has been approved by the Company's stockholders within 12 months before or after the date the Plan was adopted by the Board.

6. Additional Limitations Relating to Definition of Fair Market Value. For purposes of Section 1(b) and 2(a) of this supplement, "Fair Market Value" shall be determined in a manner not inconsistent with Section 260.140.50 of the California Code of Regulations.

7. Additional Restriction Regarding Recapitalizations, Stock Splits, Etc. For purposes of Section 8 of the Plan, in the event of a stock split, reverse stock split, stock dividend, recapitalization, combination, reclassification or other distribution of the Company's securities, the number of securities allocated to each California Participant must be adjusted proportionately and without the receipt by the Company of any consideration from any California participant.

CASA SYSTEMS, INC.

Amendment No. 1 To
2003 Stock Incentive Plan

The 2003 Stock Incentive Plan (the "Plan") of Casa Systems, Inc. (the "Company") is hereby amended, pursuant to Section 10(d) of the Plan, as follows:

1. Section 4 of the Plan be and hereby is amended by increasing the maximum number of awards of Common Stock of the Company which may be made thereunder from 1,900,000 to 3,120,000 shares pursuant to the terms and provisions of the Plan.

Adopted by the Board of Directors: April 26, 2004
Adopted by the Stockholders: April 26, 2004

CASA SYSTEMS, INC.

Amendment No. 2 To
2003 Stock Incentive Plan

The 2003 Stock Incentive Plan (the "Plan") of Casa Systems, Inc. (the "Company") is hereby amended, pursuant to Section 10(d) of the Plan, as follows:

2. Section 4 of the Plan be and hereby is amended by increasing the maximum number of awards of Common Stock of the Company which may be made thereunder from 3,120,000 to 3,250,000 shares pursuant to the terms and provisions of the Plan.

Adopted by the Board of Directors: July 1, 2005
Adopted by the Stockholders: July 1, 2005

Exhibit 10.3

CASA SYSTEMS, INC.

Incentive Stock Option Agreement
Granted Under 2003 Stock Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Casa Systems, Inc., a Delaware corporation (the "Company"), on _____, 200__ (the "Grant Date") to _____, an employee of the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2003 Stock Incentive Plan (the "Plan"), a total of _____ shares (the "Shares") of common stock, $.001 par value per share, of the Company ("Common Stock") at $_____ per Share. Unless earlier terminated, this option shall expire on _____ (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") as to 25% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Shares at the end of each successive one-month period following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date. For purposes of this Agreement, the "Vesting Commencement Date" shall mean _____, 200__.

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, officer or director of, or consultant or advisor to, the Company or any parent or subsidiary of the Company as defined in Section 424(e) or (f) of the Code (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Discharge for Cause. If the Participant, prior to the Final Exercise Date, is discharged by the Company for "cause" (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such discharge. "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant shall be considered to have been discharged for "Cause" if the Company determines, within 30 days after the Participant's resignation, that discharge for cause was warranted.

4. Right of First Refusal and Restrictions on Transfer.

(a) If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) For 60 days following its receipt of such Transfer Notice, the Company shall have the option to purchase some or all of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase any Offered Shares (the Offered Shares to be purchased by the Company hereunder are referred to as the "Purchased

Shares"), it shall give written notice of such election to the Participant within such 60-day period. Within 10 days after his receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Purchased Shares, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Purchased Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for the Purchased Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Purchased Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Purchased Shares.

(c) If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares (other than the Purchased Shares) to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred to a third party pursuant to this Section 4 shall remain subject to the right of first refusal and transfer restrictions set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) After the time at which the Purchased Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Purchased Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Purchased Shares, but shall, in so far as permitted by law, treat the Company as the owner of such Purchased Shares.

(e) The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of the Participant's spouse or any of his or his spouse's parents, children, siblings, nieces, nephews or grandchildren, or to a trust or similar entity for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) any transfer made as part of the sale of all or substantially all of the shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal and transfer restrictions set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(f) The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Common Stock immediately prior to such transaction beneficially own, directly or indirectly, more than 50% of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) The Participant shall not transfer any Shares, or any interest therein, to any person or entity that is a competitor of the Company, as determined by the Board of Directors of the Company in its sole discretion, unless such transfer is made in connection with the sale of all or substantially all of the capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise.

(i) The Company shall not be required (a) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (b) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(j) The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

“The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain stock option agreement with the Company.”

5. Agreement in Connection with Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Company’s securities pursuant to a registration statement under the Securities Act, (i) not to sell, make short sale of, loan, grant any options for the purchase of, or otherwise dispose of any shares of Common Stock held by the Participant (other than those shares included in the offering) without the prior written consent of the Company or the underwriters managing such initial underwritten public offering of the Company’s securities for a period of 180 days from the effective date of such registration statement, and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering.

6. Withholding.

No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

7. Nontransferability of Option.

This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

8. Disqualifying Disposition.

If the Participant disposes of Shares acquired upon exercise of this option within two years from the Grant Date or one year after such Shares were acquired pursuant to exercise of this option, the Participant shall notify the Company in writing of such disposition.

9. Provisions of the Plan.

This option is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this option.

IN WITNESS WHEREOF, the Company has caused this option to be executed under its corporate seal by its duly authorized officer. This option shall take effect as a sealed instrument.

CASA SYSTEMS, INC.

Dated: _____

By: _____
Name: _____
Title: _____

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's 2003 Stock Incentive Plan.

PARTICIPANT:

Address:

Exhibit A

NOTICE OF STOCK OPTION EXERCISE

Date: _____[1]

Casa Systems, Inc.
100 Old River Road, Suite 100
Andover, MA 01810

Attention: Treasurer

Dear Sir or Madam:

I am the holder of _____[2] Stock Option granted to me under the Casa Systems, Inc. (the "Company") 2003 Stock Incentive Plan on _____[3] for the purchase of _____[4] shares of Common Stock of the Company at a purchase price of $_____[5] per share.

I hereby exercise my option to purchase _____[6] shares of Common Stock (the "Shares"), for which I have enclosed _____[7] in the amount of _____[8]. Please register my stock certificate as follows:

Name(s): _____[9]

_____

Address: _____

Tax I.D. #: _____[10]

_____

1 Enter the date of exercise.
2 Enter either "an Incentive" or "a Nonstatutory".
3 Enter the date of grant.
4 Enter the total number of shares of Common Stock for which the option was granted.
5 Enter the option exercise price per share of Common Stock.
6 Enter the number of shares of Common Stock to be purchased upon exercise of all or part of the option.
7 Enter "cash", "personal check" or if permitted by the option or Plan, "stock certificates No. XXXX and XXXX".
8 Enter the dollar amount (price per share of Common Stock times the number of shares of Common Stock to be purchased), or the number of shares tendered. Fair market value of shares tendered, together with cash or check, must cover the purchase price of the shares issued upon exercise.
9 Enter name(s) to appear on stock certificate: (a) Your name only; (b) Your name and other name (i.e., John Doe and Jane Doe, Joint Tenants With Right of Survivorship); or (c) In the case of a Nonstatutory option only, a Child's name, with you as custodian (i.e., Jane Doe, Custodian for Tommy Doe). Note: There may be income and/or gift tax consequences of registering shares in a Child's name.
10 Social Security Number of Holder(s).

I represent, warrant and covenant as follows:

10. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the “Securities Act”), or any rule or regulation under the Securities Act.

11. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

12. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

13. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

14. I understand that (i) the Shares have not been registered under the Securities Act and are “restricted securities” within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____

(Signature)

Exhibit 10.4

CASA SYSTEMS, INC.

Nonstatutory Stock Option Agreement
Granted Under 2003 Stock Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Casa Systems, Inc., a Delaware corporation (the "Company"), on _____, 200__ (the "Grant Date") to _____, an employee, consultant or director of the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2003 Stock Incentive Plan (the "Plan"), a total of _____ shares (the "Shares") of common stock, $.001 par value per share, of the Company ("Common Stock") at $_____ per Share. Unless earlier terminated, this option shall expire on _____ (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall not be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") as to 25% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Shares at the end of each successive one-month period following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date. For purposes of this Agreement, the "Vesting Commencement Date" shall mean _____, 200__.

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, officer or director of, or consultant or advisor to, the Company or any parent or subsidiary of the Company as defined in Section 424(e) or (f) of the Code (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Discharge for Cause. If the Participant, prior to the Final Exercise Date, is discharged by the Company for "cause" (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such discharge. "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant shall be considered to have been discharged for "Cause" if the Company determines, within 30 days after the Participant's resignation, that discharge for cause was warranted.

4. Right of First Refusal and Restrictions on Transfer.

(a) If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) For 60 days following its receipt of such Transfer Notice, the Company shall have the option to purchase some or all of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase any Offered Shares (the Offered Shares to be purchased by the Company hereunder are referred to as the "Purchased

Shares"), it shall give written notice of such election to the Participant within such 60-day period. Within 10 days after his receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Purchased Shares, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Purchased Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for the Purchased Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Purchased Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Purchased Shares.

(c) If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares (other than the Purchased Shares) to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred to a third party pursuant to this Section 4 shall remain subject to the right of first refusal and transfer restrictions set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) After the time at which the Purchased Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Purchased Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Purchased Shares, but shall, in so far as permitted by law, treat the Company as the owner of such Purchased Shares.

(e) The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of the Participant's spouse or any of his or his spouse's parents, children, siblings, nieces, nephews or grandchildren, or to a trust or similar entity for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) any transfer made as part of the sale of all or substantially all of the shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal and transfer restrictions set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(f) The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Common Stock immediately prior to such transaction beneficially own, directly or indirectly, more than 50% of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) The Participant shall not transfer any Shares, or any interest therein, to any person or entity that is a competitor of the Company, as determined by the Board of Directors of the Company in its sole discretion, unless such transfer is made in connection with the sale of all or substantially all of the capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise.

(i) The Company shall not be required (a) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (b) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(j) The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

“The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain stock option agreement with the Company.”

5. Agreement in Connection with Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Company’s securities pursuant to a registration statement under the Securities Act, (i) not to sell, make short sale of, loan, grant any options for the purchase of, or otherwise dispose of any shares of Common Stock held by the Participant (other than those shares included in the offering) without the prior written consent of the Company or the underwriters managing such initial underwritten public offering of the Company’s securities for a period of 180 days from the effective date of such registration statement, and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering.

6. Withholding.

No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

7. Nontransferability of Option.

This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

8. Provisions of the Plan.

This option is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this option.

IN WITNESS WHEREOF, the Company has caused this option to be executed under its corporate seal by its duly authorized officer. This option shall take effect as a sealed instrument.

CASA SYSTEMS, INC.

Dated: _____

By: _____

Name: _____

Title: _____

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's 2003 Stock Incentive Plan.

PARTICIPANT:

Address:

Exhibit A

NOTICE OF STOCK OPTION EXERCISE

Date: _____[1]

Casa Systems, Inc.
100 Old River Road, Suite 100
Andover, MA 01810

Attention: Treasurer

Dear Sir or Madam:

I am the holder of _____[2] Stock Option granted to me under the Casa Systems, Inc. (the "Company") 2003 Stock Incentive Plan on _____[3] for the purchase of _____[4] shares of Common Stock of the Company at a purchase price of $_____[5] per share.

I hereby exercise my option to purchase _____[6] shares of Common Stock (the "Shares"), for which I have enclosed _____[7] in the amount of _____[8]. Please register my stock certificate as follows:

Name(s): _____[9]

_____

Address: _____

Tax I.D. #: _____[10]

_____

1 Enter the date of exercise.
2 Enter either "an Incentive" or "a Nonstatutory".
3 Enter the date of grant.
4 Enter the total number of shares of Common Stock for which the option was granted.
5 Enter the option exercise price per share of Common Stock.
6 Enter the number of shares of Common Stock to be purchased upon exercise of all or part of the option.
7 Enter "cash", "personal check" or if permitted by the option or Plan, "stock certificates No. XXXX and XXXX".
8 Enter the dollar amount (price per share of Common Stock times the number of shares of Common Stock to be purchased), or the number of shares tendered. Fair market value of shares tendered, together with cash or check, must cover the purchase price of the shares issued upon exercise.
9 Enter name(s) to appear on stock certificate: (a) Your name only; (b) Your name and other name (i.e., John Doe and Jane Doe, Joint Tenants With Right of Survivorship); or (c) In the case of a Nonstatutory option only, a Child's name, with you as custodian (i.e., Jane Doe, Custodian for Tommy Doe). Note: There may be income and/or gift tax consequences of registering shares in a Child's name.
10 Social Security Number of Holder(s).

I represent, warrant and covenant as follows:

9. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the “Securities Act”), or any rule or regulation under the Securities Act.

10. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

11. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

12. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

13. I understand that (i) the Shares have not been registered under the Securities Act and are “restricted securities” within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____

(Signature)

Exhibit 10.5

CASA SYSTEMS, INC.

Restricted Stock Agreement
Granted Under 2003 Stock Incentive Plan

AGREEMENT made this _____ day of _____, 200__, between Casa Systems, Inc., a Delaware corporation (the "Company"), and _____ _____ (the "Participant").

For valuable consideration, receipt of which is acknowledged, the parties hereto agree as follows:

1. Purchase of Shares.

The Company shall issue and sell to the Participant, and the Participant shall purchase from the Company, subject to the terms and conditions set forth in this Agreement and in the Company's 2003 Stock Incentive Plan (the "Plan"), _____ shares (the "Shares") of common stock, $.001 par value, of the Company ("Common Stock"), at a purchase price of $____ per share. The aggregate purchase price for the Shares shall be paid by the Participant by check payable to the order of the Company or such other method as may be acceptable to the Company. Upon receipt by the Company of payment for the Shares, the Company shall issue to the Participant one or more certificates in the name of the Participant for that number of Shares purchased by the Participant. The Participant agrees that the Shares shall be subject to the purchase options set forth in Sections 2 and 5 of this Agreement and the restrictions on transfer set forth in Section 4 of this Agreement.

2. Purchase Option.

(a) In the event that the Participant ceases to be employed by the Company for any reason or no reason, with or without cause, prior to _____, 200__ ***[date that is four years after the vesting commencement date]***, the Company shall have the right and option (the "Purchase Option") to purchase from the Participant, for a sum of $____ per share (the "Option Price"), some or all of the Unvested Shares (as defined below).

"Unvested Shares" means the total number of Shares multiplied by the Applicable Percentage at the time the Purchase Option becomes exercisable by the Company. The "Applicable Percentage" shall be (i) 100% during the 12-month period ending _____, 200__ ***[date that is one year after vesting commencement date]***, (ii) 75% less 2.0833% for each one month of employment completed by the Participant with the Company from and after _____, 200__ ***[date that is one year after vesting commencement date]***, and (iii) zero on or after _____, 200__ ***[date that is four years after vesting commencement date]***.

(b) For purposes of this Agreement, employment with the Company shall include employment with a parent or subsidiary of the Company and services to the Company as an advisor, consultant or member of the Board of Directors.

3. Exercise of Purchase Option and Closing.

(a) The Company may exercise the Purchase Option by delivering or mailing to the Participant (or his estate), within 60 days after the termination of the employment of the Participant with the Company, a written notice of exercise of the Purchase Option. Such notice shall specify the number of Shares to be purchased. If and to the extent the Purchase Option is not so exercised by the giving of such a notice within such 60-day period, the Purchase Option shall automatically expire and terminate effective upon the expiration of such 60-day period.

(b) Within 10 days after delivery to the Participant of the Company's notice of the exercise of the Purchase Option pursuant to subsection (a) above, the Participant (or his estate) shall, pursuant to the provisions of the Joint Escrow Instructions referred to in Section 7 below, tender to the Company at its principal offices the certificate or certificates representing the Shares which the Company has elected to purchase in accordance with the terms of this Agreement, duly endorsed in blank or with duly endorsed stock powers attached thereto, all in form suitable for the transfer of such Shares to the Company. Promptly following its receipt of such certificate or certificates, the Company shall pay to the Participant the aggregate Option Price for such Shares (provided that any delay in making such payment shall not invalidate the Company's exercise of the Purchase Option with respect to such Shares).

(c) After the time at which any Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Shares, but shall, in so far as permitted by law, treat the Company as the owner of such Shares.

(d) The Option Price may be payable, at the option of the Company, in cancellation of all or a portion of any outstanding indebtedness of the Participant to the Company or in cash (by check) or both.

(e) The Company shall not purchase any fraction of a Share upon exercise of the Purchase Option, and any fraction of a Share resulting from a computation made pursuant to Section 2 of this Agreement shall be rounded to the nearest whole Share (with any one-half Share being rounded upward).

(f) The Company may assign its Purchase Option to one or more persons or entities.

4. Restrictions on Transfer.

(a) The Participant shall not sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively "transfer") any Shares, or any interest therein, that are subject to the Purchase Option, except that the Participant may transfer such Shares (i) to or for the benefit of any spouse or any of his or his spouse's children, parents, uncles, aunts, siblings, grandchildren and any other relatives approved by the Board of Directors (collectively, "Approved Relatives") or to a trust or similar entity established solely for the benefit of the Participant and/or Approved Relatives, provided that such Shares shall remain subject to this Agreement (including without limitation the restrictions on transfer set forth in

this Section 4, the Purchase Option and the right of first refusal set forth in Section 5) and such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement or (ii) as part of the sale of all or substantially all of the shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise, provided that, in accordance with the Plan, the securities or other property received by the Participant in connection with such transaction shall remain subject to this Agreement.

(b) The Participant shall not transfer any Shares, or any interest therein, that are no longer subject to the Purchase Option, except in accordance with Section 5 below.

(c) The Participant shall not transfer any Shares, or any interest therein, whether or not such Shares are subject to the Purchase Option, to any person or entity that is a competitor of the Company, as determined by the Board of Directors of the Company in its sole discretion, unless such transfer is made in connection with the sale of all or substantially all of the capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise.

5. Right of First Refusal.

(a) If the Participant proposes to transfer any Shares that are no longer subject to the Purchase Option (either because they are no longer Unvested Shares or because the Purchase Option expired unexercised), then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) For 60 days following its receipt of such Transfer Notice, the Company shall have the option to purchase some or all of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase any Offered Shares (the Offered Shares to be purchased by the Company hereunder are referred to as the "Purchased Shares"), it shall give written notice of such election to the Participant within such 60-day period. Within 10 days his receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Purchased Shares, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in form suitable for transfer of the Purchased Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for the Purchased Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Purchased Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Purchased Shares.

(c) If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares (other than the Purchased Shares) to the proposed transferee, provided that such transfer shall not be on terms and

conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred to a third party pursuant to this Section 5 shall remain subject to this Agreement (including without limitation the restrictions on transfer set forth in Section 4 and the right of first refusal set forth in this Section 5) and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement.

(d) After the time at which the Purchased Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Purchased Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Purchased Shares, but shall, in so far as permitted by law, treat the Company as the owner of such Purchased Shares.

(e) The following transactions shall be exempt from the provisions of this Section 5:

(1) a transfer of Shares to or for the benefit of any Approved Relatives, or to a trust or similar entity established solely for the benefit of the Participant and/or Approved Relatives;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the shares of capital stock of the Company (including pursuant to a merger or consolidation);

(4) provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to this Agreement (including without limitation the restrictions on transfer set forth in Section 4 and the right of first refusal set forth in this Section 5) and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement.

(f) The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 5 to one or more persons or entities.

(g) The provisions of this Section 5 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the capital stock (other than the sale of capital stock to one or more venture capitalists or other institutional investors pursuant to an equity financing (including a debt financing that is convertible into equity) of the Company

approved by a majority of the Board of Directors of the Company), assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Common Stock immediately prior to such transaction beneficially own, directly or indirectly, more than 50% of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) The Company shall not be required (i) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Agreement, or (ii) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

6. Agreement in Connection with Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Company's securities pursuant to a registration statement under the Securities Act, (i) not to sell, make short sale of, loan, grant any options for the purchase of, or otherwise dispose of any shares of Common Stock held by the Participant (other than those shares included in the offering) without the prior written consent of the Company or the underwriters managing such initial underwritten public offering of the Company's securities for a period of 180 days from the effective date of such registration statement, and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering.

7. Escrow.

The Participant shall, upon the execution of this Agreement, execute Joint Escrow Instructions in the form attached to this Agreement as Exhibit A. The Joint Escrow Instructions shall be delivered to the Secretary of the Company, as escrow agent thereunder. The Participant shall deliver to such escrow agent a stock assignment duly endorsed in blank, in the form attached to this Agreement as Exhibit B, and hereby instructs the Company to deliver to such escrow agent, on behalf of the Participant, the certificate(s) evidencing the Shares issued hereunder. Such materials shall be held by such escrow agent pursuant to the terms of such Joint Escrow Instructions.

8. Restrictive Legends.

All certificates representing Shares shall have affixed thereto legends in substantially the following form, in addition to any other legends that may be required under federal or state securities laws:

> "The shares of stock represented by this certificate are subject to restrictions on transfer and an option to purchase set forth in a certain Restricted Stock Agreement between the corporation and the registered owner of these shares (or his predecessor in interest), and such Agreement is available for inspection without charge at the office of the Secretary of the corporation."

"The shares represented by this certificate have not been registered under the Securities Act of 1933, as amended, and may not be sold, transferred or otherwise disposed of in the absence of an effective registration statement under such Act or an opinion of counsel satisfactory to the corporation to the effect that such registration is not required."

9. Provisions of the Plan.

(a) This Agreement is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this Agreement.

(b) As provided in the Plan, upon the occurrence of a Reorganization Event (as defined in the Plan), the repurchase and other rights of the Company hereunder shall inure to the benefit of the Company's successor and shall apply to the cash, securities or other property which the Shares were converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to the Shares under this Agreement. If, in connection with a Reorganization Event, a portion of the cash, securities and/or other property received upon the conversion or exchange of the Shares is to be placed into escrow to secure indemnification or similar obligations, the mix between the vested and unvested portion of such cash, securities and/or other property that is placed into escrow shall be the same as the mix between the vested and unvested portion of such cash, securities and/or other property that is not subject to escrow.

10. Investment Representations.

The Participant represents, warrants and covenants as follows:

(a) The Participant is purchasing the Shares for his own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act, or any rule or regulation under the Securities Act.

(b) The Participant has had such opportunity as he has deemed adequate to obtain from representatives of the Company such information as is necessary to permit him to evaluate the merits and risks of his investment in the Company.

(c) The Participant has sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

(d) The Participant can afford a complete loss of the value of the Shares and is able to bear the economic risk of holding such Shares for an indefinite period.

(e) The Participant understands that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act; (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available

for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

11. Withholding Taxes; Section 83(b) Election.

(a) The Participant acknowledges and agrees that the Company has the right to deduct from payments of any kind otherwise due to the Participant any federal, state or local taxes of any kind required by law to be withheld with respect to the purchase of the Shares by the Participant or the lapse of the Purchase Option.

(b) The Participant has reviewed with the Participant's own tax advisors the federal, state, local and foreign tax consequences of this investment and the transactions contemplated by this Agreement. The Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. The Participant understands that the Participant (and not the Company) shall be responsible for the Participant's own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement. The Participant understands that it may be beneficial in many circumstances to elect to be taxed at the time the Shares are purchased rather than when and as the Company's Purchase Option expires by filing an election under Section 83(b) of the Code with the I.R.S. within 30 days from the date of purchase.

THE PARTICIPANT ACKNOWLEDGES THAT IT IS THE PARTICIPANT'S SOLE RESPONSIBILITY AND NOT THE COMPANY'S TO FILE TIMELY THE ELECTION UNDER SECTION 83(b), EVEN IF THE PARTICIPANT REQUESTS THE COMPANY OR ITS REPRESENTATIVES TO MAKE THIS FILING ON THE PARTICIPANT'S BEHALF.

12. Miscellaneous.

(a) No Rights to Employment. The Participant acknowledges and agrees that the vesting of the Shares pursuant to Section 2 hereof is earned only by continuing service as an employee at the will of the Company (not through the act of being hired or purchasing shares hereunder). The Participant further acknowledges and agrees that the transactions contemplated hereunder and the vesting schedule set forth herein do not constitute an express or implied promise of continued engagement as an employee or consultant for the vesting period, for any period, or at all.

(b) Severability. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, and each other provision of this Agreement shall be severable and enforceable to the extent permitted by law.

(c) Waiver. Any provision for the benefit of the Company contained in this Agreement may be waived, either generally or in any particular instance, by the Board of Directors of the Company.

(d) Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Company and the Participant and their respective heirs, executors, administrators, legal representatives, successors and assigns, subject to the restrictions on transfer set forth in Sections 4 and 5 of this Agreement.

(e) Notice. All notices required or permitted hereunder shall be in writing and deemed effectively given upon personal delivery or five days after deposit in the United States Post Office, by registered or certified mail, postage prepaid, if to the Participant, to the address set forth below or at the address shown on the records of the Company, and if to the Company, to the Company's principal executive offices, attention of the Corporate Secretary.

(f) Pronouns. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns and pronouns shall include the plural, and vice versa.

(g) Entire Agreement. This Agreement and the Plan constitute the entire agreement between the parties, and supersedes all prior agreements and understandings, relating to the subject matter of this Agreement.

(h) Amendment. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Participant.

(i) Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the State of Delaware without regard to any applicable conflicts of laws.

(j) Participant's Acknowledgments. The Participant acknowledges that he or she: (i) has read this Agreement; (ii) has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of the Participant's own choice or has voluntarily declined to seek such counsel; (iii) understands the terms and consequences of this Agreement; (iv) is fully aware of the legal and binding effect of this Agreement; and (v) understands that the law firm of Hale and Dorr LLP, is acting as counsel to the Company in connection with the transactions contemplated by the Agreement, and is not acting as counsel for the Participant.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

CASA SYSTEMS, INC.

By: _____
Name: _____
Title: _____
Address: _____
_____

_____
Name of Participant

Address: _____
_____

Exhibit A

CASA SYSTEMS, INC.

Joint Escrow Instructions

_____, 200__

Casa Systems, Inc.
100 Old River Road, Suite 100
Andover, MA 01810
Attention: Secretary

Dear Sir:

As Escrow Agent for Casa Systems, Inc., a Delaware corporation, and its successors in interest under the Restricted Stock Agreement (the "Agreement") of even date herewith, to which a copy of these Joint Escrow Instructions is attached (the "Company"), and the undersigned person ("Holder"), you are hereby authorized and directed to hold the documents delivered to you pursuant to the terms of the Agreement in accordance with the following instructions:

1. Appointment. Holder irrevocably authorizes the Company to deposit with you any certificates evidencing Shares (as defined in the Agreement) to be held by you hereunder and any additions and substitutions to said Shares. For purposes of these Joint Escrow Instructions, "Shares" shall be deemed to include any additional or substitute property. Holder does hereby irrevocably constitute and appoint you as his attorney-in-fact and agent for the term of this escrow to execute with respect to such Shares all documents necessary or appropriate to make such Shares negotiable and to complete any transaction herein contemplated. Subject to the provisions of this paragraph 1 and the terms of the Agreement, Holder shall exercise all rights and privileges of a stockholder of the Company while the Shares are held by you.

2. Closing of Purchase.

(a) Upon any purchase by the Company of the Shares pursuant to the Agreement, the Company shall give to Holder and you a written notice specifying the purchase price for the Shares, as determined pursuant to the Agreement, and the time for a closing hereunder (the "Closing") at the principal office of the Company. Holder and the Company hereby irrevocably authorize and direct you to close the transaction contemplated by such notice in accordance with the terms of said notice.

(b) At the Closing, you are directed (a) to date the stock assignment form or forms necessary for the transfer of the Shares, (b) to fill in on such form or forms the number of Shares being transferred, and (c) to deliver same, together with the certificate or certificates evidencing the Shares to be transferred, to the Company against the simultaneous delivery to you of the purchase price for the Shares being purchased pursuant to the Agreement.

3. Withdrawal. The Holder shall have the right to withdraw from this escrow any Shares as to which the Purchase Option (as defined in the Agreement) has terminated or expired.

4. Duties of Escrow Agent.

(a) Your duties hereunder may be altered, amended, modified or revoked only by a writing signed by all of the parties hereto.

(b) You shall be obligated only for the performance of such duties as are specifically set forth herein and may rely and shall be protected in relying or refraining from acting on any instrument reasonably believed by you to be genuine and to have been signed or presented by the proper party or parties. You shall not be personally liable for any act you may do or omit to do hereunder as Escrow Agent or as attorney-in-fact of Holder while acting in good faith and in the exercise of your own good judgment, and any act done or omitted by you pursuant to the advice of your own attorneys shall be conclusive evidence of such good faith.

(c) You are hereby expressly authorized to disregard any and all warnings given by any of the parties hereto or by any other person or Company, excepting only orders or process of courts of law, and are hereby expressly authorized to comply with and obey orders, judgments or decrees of any court. In case you obey or comply with any such order, judgment or decree of any court, you shall not be liable to any of the parties hereto or to any other person, firm or Company by reason of such compliance, notwithstanding any such order, judgment or decree being subsequently reversed, modified, annulled, set aside, vacated or found to have been entered without jurisdiction.

(d) You shall not be liable in any respect on account of the identity, authority or rights of the parties executing or delivering or purporting to execute or deliver the Agreement or any documents or papers deposited or called for hereunder.

(e) You shall be entitled to employ such legal counsel and other experts as you may deem necessary properly to advise you in connection with your obligations hereunder and may rely upon the advice of such counsel.

(f) Your rights and responsibilities as Escrow Agent hereunder shall terminate if (i) you cease to be Secretary of the Company or (ii) you resign by written notice to each party. In the event of a termination under clause (i), your successor as Secretary shall become Escrow Agent hereunder; in the event of a termination under clause (ii), the Company shall appoint a successor Escrow Agent hereunder.

(g) If you reasonably require other or further instruments in connection with these Joint Escrow Instructions or obligations in respect hereto, the necessary parties hereto shall join in furnishing such instruments.

(h) It is understood and agreed that should any dispute arise with respect to the delivery and/or ownership or right of possession of the securities held by you hereunder, you are

authorized and directed to retain in your possession without liability to anyone all or any part of said securities until such dispute shall have been settled either by mutual written agreement of the parties concerned or by a final order, decree or judgment of a court of competent jurisdiction after the time for appeal has expired and no appeal has been perfected, but you shall be under no duty whatsoever to institute or defend any such proceedings.

(i) These Joint Escrow Instructions set forth your sole duties with respect to any and all matters pertinent hereto and no implied duties or obligations shall be read into these Joint Escrow Instructions against you.

(j) The Company shall indemnify you and hold you harmless against any and all damages, losses, liabilities, costs, and expenses, including attorneys' fees and disbursements, for anything done or omitted to be done by you as Escrow Agent in connection with this Agreement or the performance of your duties hereunder, except such as shall result from your gross negligence or willful misconduct.

5. Notice. Any notice required or permitted hereunder shall be given in writing and shall be deemed effectively given upon personal delivery or upon deposit in the United States Post Office, by registered or certified mail with postage and fees prepaid, addressed to each of the other parties thereunto entitled at the following addresses, or at such other addresses as a party may designate by ten days' advance written notice to each of the other parties hereto.

COMPANY:	Casa Systems, Inc. 100 Old River Road, Suite 100 Andover, MA 01810
HOLDER:	Notices to Holder shall be sent to the address set forth below Holder's signature below.
ESCROW AGENT:	Casa Systems, Inc. 100 Old River Road, Suite 100 Andover, MA 01810 Attn: Secretary

6. Miscellaneous.

(a) By signing these Joint Escrow Instructions, you become a party hereto only for the purpose of said Joint Escrow Instructions, and you do not become a party to the Agreement.

(b) This instrument shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns.

Very truly yours,

CASA SYSTEMS, INC.

By: _____
Name: _____
Title: _____

HOLDER:

_____
(Signature)

_____
Print Name

Address: _____
_____

Date Signed: _____

ESCROW AGENT:

_____
Jerry Guo
Secretary
Casa Systems, Inc.
100 Old River Road, Suite 100
Andover, MA 01810

Exhibit B

(STOCK ASSIGNMENT SEPARATE FROM CERTIFICATE)

FOR VALUE RECEIVED, I hereby sell, assign and transfer unto _____ (_____) shares of Common Stock, $.001 par value per share, of Casa Systems, Inc. (the "Corporation") standing in my name on the books of said Corporation represented by Certificate(s) Number _____ herewith, and do hereby irrevocably constitute and appoint _____ attorney to transfer the said stock on the books of the within named Corporation with full power of substitution in the premises.

Dated: _____

IN PRESENCE OF _____

_____

NOTICE: The signature(s) to this assignment must correspond with the name as written upon the face of the certificate, in every particular, without alteration, enlargement, or any change whatever and must be guaranteed by a commercial bank, trust company or member firm of the Boston, New York or Midwest Stock Exchange.

CASA SYSTEMS, INC.

2011 STOCK INCENTIVE PLAN

1. Purpose

The purpose of this 2011 Stock Incentive Plan (the "***Plan***") of Casa Systems, Inc., a Delaware corporation (the "***Company***"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align the interests of such persons with those of the Company's stockholders. Except where the context otherwise requires, the term "***Company***" shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations thereunder (the "***Code***") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the "***Board***"); *provided*, *however*, that such other business ventures shall be limited to entities that, where required by Section 409A of the Code, are eligible issuers of service recipient stock (as defined in Treas. Reg. Section 1.409A-1(b)(5)(iii)(E), or applicable successor regulation).

2. Eligibility

All of the Company's employees, officers and directors, as well as consultants and advisors to the Company (as such terms are defined and interpreted for purposes of Rule 701 under the Securities Act of 1933, as amended (the "***Securities Act***") (or any successor rule)) are eligible to be granted Awards under the Plan. Each person who is granted an Award under the Plan is deemed a "***Participant***." "***Award***" means Options (as defined in Section 5), SARs (as defined in Section 6), Restricted Stock (as defined in Section 7), Restricted Stock Units (as defined in Section 7) and Other Stock-Based Awards (as defined in Section 8).

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient to carry the Plan into effect and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a "***Committee***"). All references in the Plan to the "***Board***" shall mean the Board or a Committee of the Board or the officers referred to in Section 3(c) to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or officers.

(c) Delegation to Officers. To the extent permitted by applicable law, the Board may delegate to one or more officers of the Company the power to grant Options and other Awards that constitute rights under Delaware law (subject to any limitations under the Plan) to employees or officers of the Company and to exercise such other powers under the Plan as the Board may determine, *provided* that the Board shall fix the terms of such Awards to be granted by such officers (including the exercise price of such Awards, which may include a formula by which the exercise price will be determined) and the maximum number of shares subject to such Awards that the officers may grant; *provided* further, however, that no officer shall be authorized to grant such Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "***Exchange Act***")) or to any "officer" of the Company (as defined by Rule 16a-1 under the Exchange Act). The Board may not delegate authority under this Section 3(c) to grant Restricted Stock, unless Delaware law then permits such delegation.

4. Stock Available for Awards

(a) Number of Shares. Subject to adjustment under Section 9, Awards may be made under the Plan for up to a number of shares of common stock, $0.001 par value per share, of the Company (the "***Common Stock***"), equal to the sum of (a) 298,371, plus (b) such additional number of shares of Common Stock as is equal to the sum of (x) the number of shares of Common Stock reserved for issuance under the Company's 2003 Stock Incentive Plan, as amended (the "2003 Plan") that remain available for issuance under the 2003 Plan as of the time immediately before termination of the 2003 Plan and (y) the number of shares of Common Stock subject to awards granted under the 2003 Plan which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of Incentive Stock Options (as hereinafter defined) to any limitations of the Code); provided, however, that the maximum number of shares of Common Stock available for issuance under the Plan (including any shares becoming available by reason of clause (y)) shall be 935,871. Any or all of the Awards described in the preceding sentence may be in the form of Incentive Stock Options (as defined in Section 5(b)). If any Award expires or is terminated, surrendered or canceled without having been fully exercised, is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right), or results in any Common Stock not being issued, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan. Further, shares of Common Stock tendered to the Company by a Participant to exercise an Award shall be added to the number of shares of Common Stock available for the grant of Awards under the Plan. However, in the case of Incentive Stock Options, the two immediately preceding sentences shall be subject to any limitations under the Code. Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares.

(b) Substitute Awards. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a), except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "***Option***") and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable.

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "***Incentive Stock Option***") shall only be granted to employees of Casa Systems, Inc., any of Casa Systems, Inc.'s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. An Option that is not intended to be an Incentive Stock Option shall be designated a "***Nonstatutory Stock Option***." The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or if the Company converts an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify the exercise price in the applicable Option agreement. The exercise price shall be not less than 100% of the fair market value per share of Common Stock, as determined by (or in a manner approved by) the Board ("***Fair Market Value***"), on the date the Option is granted.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement; *provided*, *however*, that no Option will be granted with a term in excess of 10 years.

(e) Exercise of Options. Options may be exercised by delivery to the Company of a notice of exercise in a form of notice (which may be electronic) approved by the Company, together with payment in full (in a manner specified in Section 5(f)) of the exercise price for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) when the Common Stock is registered under the Exchange Act, except as may otherwise be provided in the applicable Option agreement or approved by the Board, in its sole discretion, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) when the Common Stock is registered under the Exchange Act and to the extent provided for in the applicable Option agreement or approved by the Board, in its sole discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their Fair Market Value, *provided* (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent provided for in the applicable Option agreement or approved by the Board in its sole discretion, by delivery of a notice of "net exercise" to the Company, as a result of which the Participant would pay the exercise price for the portion of the Option being exercised by cancelling a portion of the Option for such number of shares as is equal to the exercise price divided by the excess of the Fair Market Value on the date of exercise over the Option exercise price per share.

(5) to the extent permitted by applicable law and provided for in the applicable Option agreement or approved by the Board, in its sole discretion, by (i) delivery of a promissory note of the Participant to the Company on terms determined by the Board, or (ii) payment of such other lawful consideration as the Board may determine; or

(6) by any combination of the above permitted forms of payment.

6. Stock Appreciation Rights

(a) General. The Board may grant Awards consisting of stock appreciation rights ("***SARs***") entitling the holder, upon exercise, to receive an amount of Common Stock or cash or a combination thereof (such form to be determined by the Board) determined by reference to appreciation, from and after the date of grant, in the Fair Market Value of a share of Common Stock over the measurement price established pursuant to Section 6(b). The date as of which such appreciation is determined shall be the exercise date.

(b) Measurement Price. The Board shall establish the measurement price of each SAR and specify it in the applicable SAR agreement. The measurement price shall not be less than 100% of the Fair Market Value on the date the SAR is granted.

(c) Duration of SARs. Each SAR shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable SAR agreement; *provided*, *however*, that no SAR will be granted with a term in excess of 10 years.

(d) Exercise of SARs. SARs may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with any other documents required by the Board.

7. Restricted Stock; Restricted Stock Units

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock ("***Restricted Stock***"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. The Board may also grant Awards entitling the recipient to receive shares of Common Stock or cash to be delivered at the time such Award vests ("***Restricted Stock Units***") (Restricted Stock and Restricted Stock Units are each referred to herein as a "***Restricted Stock Award***").

(b) Terms and Conditions for All Restricted Stock Awards. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, if any.

(c) Additional Provisions Relating to Restricted Stock.

(1) Dividends. Unless otherwise provided in the applicable Award agreement, any dividends (whether paid in cash, stock or property) declared and paid by the Company with respect to shares of Restricted Stock ("***Accrued Dividends***") shall be paid to the Participant only if and when such shares become free from the restrictions on transferability and forfeitability that apply to such shares. Each payment of Accrued Dividends will be made no later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the lapsing of the restrictions on transferability and the forfeitability provisions applicable to the underlying shares of Restricted Stock.

(2) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock, as well as dividends or distributions paid on such Restricted Stock, shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to his or her Designated Beneficiary. "***Designated Beneficiary***" means (i) the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death or (ii) in the absence of an effective designation by a Participant, "***Designated Beneficiary***" the Participant's estate.

(d) Additional Provisions Relating to Restricted Stock Units.

(1) Settlement. Upon the vesting of and/or lapsing of any other restrictions (i.e., settlement) with respect to each Restricted Stock Unit, the Participant shall be entitled to receive from the Company one share of Common Stock or (if so provided in the applicable

Award agreement) an amount of cash equal to the Fair Market Value of one share of Common Stock. The Board may, in its discretion, provide that settlement of Restricted Stock Units shall be deferred, on a mandatory basis or at the election of the Participant in a manner that complies with Section 409A of the Code.

(2) Voting Rights. A Participant shall have no voting rights with respect to any Restricted Stock Units.

(3) Dividend Equivalents. The Award agreement for Restricted Stock Units may provide Participants with the right to receive an amount equal to any dividends or other distributions declared and paid on an equal number of outstanding shares of Common Stock ("***Dividend Equivalents***"). Dividend Equivalents may be paid currently or credited to an account for the Participants, may be settled in cash and/or shares of Common Stock and may be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which paid, in each case to the extent provided in the applicable Award agreement.

8. Other Stock-Based Awards

(a) General. Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants ("***Other Stock-Based Awards***"). Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock or cash, as the Board shall determine.

(b) Terms and Conditions. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price applicable thereto.

9. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under the Plan, (ii) the number and class of securities and exercise price per share of each outstanding Option, (iii) the share and per-share provisions and the measurement price of each outstanding SAR, (iv) the number of shares subject to and the repurchase price per share subject to each outstanding Restricted Stock Award and (v) the share and per-share-related provisions and the purchase price, if any, of each outstanding Other Stock-Based Award, shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such

stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events.

(1) Definition. A "***Reorganization Event***" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock.

(i) In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock on such terms as the Board determines (except to the extent specifically provided otherwise in an applicable Award agreement or another agreement between the Company and the Participant): (i) provide that such Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that all of the Participant's unexercised Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant (to the extent then exercisable) within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "***Acquisition Price***"), make or provide for a cash payment to Participants with respect to each Award held by a Participant equal to (A) the number of shares of Common Stock subject to the vested portion of the Award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) the exercise, measurement or purchase price of such Award and any applicable tax withholdings, in exchange for the termination of such Award, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 9(b)(2), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

(ii) Notwithstanding the terms of Section 9(b)(2)(A), in the case of outstanding Restricted Stock Units that are subject to Section 409A of the Code: (i) if the applicable Restricted Stock Unit agreement provides that the Restricted Stock Units shall be settled upon a "change in control event" within the meaning of Treasury Regulation Section 1.409A-3(i)(5)(i), and the Reorganization Event constitutes such a "change in control event", then no assumption or substitution shall be permitted pursuant to Section 9(b)(2)(A)(i) and the Restricted Stock Units shall instead be settled in accordance with the terms of the applicable Restricted Stock Unit agreement; and (ii) the Board may only undertake the actions set forth in clauses (iii), (iv) or (v) of Section 9(b)(2)(A) if the Reorganization Event constitutes a "change in control event" as defined under Treasury Regulation Section 1.409A-3(i)(5)(i) and such action is permitted or required by Section 409A of the Code; if the Reorganization Event is not a "change in control event" as so defined or such action is not permitted or required by Section 409A of the Code, and the acquiring or succeeding corporation does not assume or substitute the Restricted Stock Units pursuant to clause (i) of Section 9(b)(2)(A), then the unvested Restricted Stock Units shall terminate immediately prior to the consummation of the Reorganization Event without any payment in exchange therefor.

(iii) For purposes of Section 9(b)(2)(A)(i), an Award (other than Restricted Stock) shall be considered assumed if, following consummation of the Reorganization Event, such Award confers the right to purchase or receive pursuant to the terms of such Award, for each share of Common Stock subject to the Award immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); *provided, however*, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise or settlement of the Award to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determined to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company with respect to outstanding Restricted Stock shall inure to the benefit of the Company's successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to such Restricted Stock; *provided, however*, that the Board may provide for termination or deemed satisfaction of such repurchase or other rights under the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, either initially or by amendment. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock then outstanding shall automatically be deemed terminated or satisfied.

10. General Provisions Applicable to Awards

(a) Transferability of Awards. Awards (or any interest in an Award, including, prior to exercise, any interest in shares of Common Stock issuable upon exercise of an Option or SAR) shall not be sold, assigned, transferred (including by establishing any short position, put equivalent position (as defined in Rule 16a-1 issued under the Exchange Act) or call equivalent position (as defined in Rule 16a-1 issued under the Exchange Act)), pledged, hypothecated or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, and, during the life of the Participant, shall be exercisable only by the Participant; except that Awards may be transferred to family members (as defined in Rule 701(c)(3) under the Securities Act) through gifts or (other than Incentive Stock Options) domestic relations orders or to an executor or guardian upon the death or disability of the Participant. The Company shall not be required to recognize any such permitted transfer until such time as such permitted transferee shall deliver to the Company a written instrument, as a condition to such transfer, in form and substance satisfactory to the Company confirming that such transferee shall be bound by all of the terms and conditions of the Award. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees. For the avoidance of doubt, nothing contained in this Section 10(a) shall be deemed to restrict a transfer to the Company.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under an Award. The Company may decide to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise, vesting or release from forfeiture of an Award or at the same time as payment of the exercise or purchase price unless the Company determines otherwise. If provided for in an Award or approved by the Board in its sole discretion, a Participant may satisfy such tax obligations in whole or in part by delivery (either by actual delivery or attestation) of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value; *provided, however*, except as otherwise provided by the Board, that the total tax withholding where stock is

being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income). Shares used to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(f) Amendment of Award.

(1) The Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, does not materially and adversely affect the Participant's rights under the Plan or (ii) the change is permitted under Section 9.

(2) The Board may, without stockholder approval, amend any outstanding Award granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Award. The Board may also, without stockholder approval, cancel any outstanding award (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled award.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously issued or delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and regulations and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

11. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award by virtue of the adoption of the Plan, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date on which it is adopted by the Board. No Awards shall be granted under the Plan after the expiration of 10 years from the earlier of (i) the date on which the Plan was adopted by the Board or (ii) the date the Plan was approved by the Company's stockholders, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time; *provided* that if at any time the approval of the Company's stockholders is required as to any modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 11(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment, taking into account any related action, does not materially and adversely affect the rights of Participants under the Plan.

(e) Authorization of Sub-Plans (including Grants to non-U.S. Employees). The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to the Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with 409A of the Code. Except as provided in individual Award agreements initially or by amendment, if and to the extent (i) any portion of any payment, compensation or other benefit provided to a Participant pursuant to the Plan in connection with his or her employment termination constitutes "nonqualified deferred compensation" within the meaning of Section 409A of the Code and (ii) the Participant is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, in each case as determined by the Company in accordance with its procedures, by which determinations the Participant (through accepting the Award) agrees that he or she is bound, such portion of the payment, compensation or other benefit shall not be paid before the day that is six months plus one day after the date of "separation from service" (as determined under Section 409A of the Code) (the "***New Payment Date***"), except as Section 409A of the Code may then permit. The aggregate of any payments that otherwise would have been paid to the Participant during the period between the date of separation from service and the New Payment Date shall be paid to the Participant in a lump sum on such New Payment Date, and any remaining payments will be paid on their original schedule.

The Company makes no representations or warranty and shall have no liability to the Participant or any other person if any provisions of or payments, compensation or other benefits under the Plan are determined to constitute nonqualified deferred compensation subject to Section 409A of the Code but do not to satisfy the conditions of that section.

(g) Limitations on Liability. Notwithstanding any other provisions of the Plan, no individual acting as a director, officer, other employee, or agent of the Company will be liable to any Participant, former Participant, spouse, beneficiary, or any other person for any claim, loss, liability, or expense incurred in connection with the Plan, nor will such individual be personally liable with respect to the Plan because of any contract or other instrument he or she executes in his or her capacity as a director, officer, other employee, or agent of the Company. The Company will indemnify and hold harmless each director, officer, other employee, or agent of the Company to whom any duty or power relating to the administration or interpretation of the Plan has been or will be delegated, against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the Board's approval) arising out of any act or omission to act concerning the Plan unless arising out of such person's own fraud or bad faith.

(h) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than the State of Delaware.

CASA SYSTEMS, INC.
2011 STOCK INCENTIVE PLAN

CALIFORNIA SUPPLEMENT

Pursuant to Section 11(e) of the Plan, the Board has adopted this supplement for purposes of satisfying the requirements of Section 25102(o) of the California Law:

Any Awards granted under the Plan to a Participant who is a resident of the State of California on the date of grant (a "***California Participant***") shall be subject to the following additional limitations, terms and conditions:

1. Additional Limitations on Options.

(a) Maximum Duration of Options. No Options granted to California Participants shall have a term in excess of 10 years measured from the Option grant date.

(b) Minimum Exercise Period Following Termination. Unless a California Participant's employment is terminated for cause (as defined by applicable law, the terms of the Plan or option grant or a contract of employment), in the event of termination of employment of such Participant, such Participant shall have the right to exercise an Option, to the extent that such Participant is entitled to exercise such Option on the date employment terminated, until the earlier of: (i) at least six months from the date of termination, if termination was caused by such Participant's death or disability, (ii) at least 30 days from the date of termination, if termination was caused other than by such Participant's death or disability and (iii) the Option expiration date.

2. Additional Limitations for Other Stock-Based Awards. The terms of all Awards granted to a California Participant under Section 8 of the Plan shall comply, to the extent applicable, with Sections 260.140.42, 260.140.45 and 260.140.46 of the California Code of Regulations.

3. Additional Limitations on Timing of Awards. No Award granted to a California Participant shall become exercisable, vested or realizable, as applicable to such Award, unless the Plan has been approved by the holders of a majority of the Company's outstanding voting securities by the later of (i) within 12 months before or after the date the Plan was adopted by the Board, or (ii) prior to or within 12 months of the granting of any Award to a California Participant.

4. Additional Restriction Regarding Recapitalizations, Stock Splits, Etc. For purposes of Section 9 of the Plan, in the event of a stock split, reverse stock split, stock dividend, recapitalization, combination, reclassification or other distribution of the Company's securities underlying the Award without the receipt of consideration by the Company, the number of securities purchasable, and in the case of Options, the exercise price of such Options, must be proportionately adjusted.

5. Additional Limitations on Transferability of Awards. Notwithstanding the provisions of Section 10(a) of the Plan, an Award granted to a California Participant may not be transferred to an executor or guardian upon the disability of the Participant.

CASA SYSTEMS, INC.

Amendment No. 1 To 2011 Stock Incentive Plan

The 2011 Stock Incentive Plan (the "Plan") of Casa Systems, Inc. (the "Company") is hereby amended, pursuant to Section 11(d) of the Plan, as follows:

1. Section 4(a) of the Plan be and hereby is amended by deleting the first sentence thereof and replacing it with the following:

"Subject to adjustment under Section 9, Awards may be made under the Plan for up to a number of shares of common stock, $0.001 par value per share, of the Company (the "***Common Stock***"), equal to the sum of (a) 698,371, plus (b) such additional number of shares of Common Stock as is equal to the sum of (x) the number of shares of Common Stock reserved for issuance under the Company's 2003 Stock Incentive Plan, as amended (the "2003 Plan") that remain available for issuance under the 2003 Plan as of the time immediately before termination of the 2003 Plan and (y) the number of shares of Common Stock subject to awards granted under the 2003 Plan which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of Incentive Stock Options (as hereinafter defined) to any limitations of the Code); provided, however, that the maximum number of shares of Common Stock available for issuance under the Plan (including any shares becoming available by reason of clause (y)) shall be 1,335,871." [1]

Adopted by the Board of Directors: May 25, 2011
Adopted by the Stockholders: May 25, 2011

[1] Subsequent to the amendment of the Plan referred to above, the Company effected a two-for-one split of the Common Stock. As a result of the split, the number of shares of Common Stock reserved for Awards under clause (a) above has been adjusted to 1,396,742, and the maximum number of shares of Common Stock available for issuance under the Plan has been adjusted to 2,671,742.

CASA SYSTEMS, INC.

Amendment No. 2 To 2011 Stock Incentive Plan

The 2011 Stock Incentive Plan (the "Plan") of Casa Systems, Inc. (the "Company") is hereby amended, pursuant to Section 11(d) of the Plan, as follows:

2. Section 4(a) of the Plan be and hereby is amended by deleting the first sentence thereof and replacing it with the following:

"Subject to adjustment under Section 9, Awards may be made under the Plan for up to a number of shares of common stock, $0.001 par value per share, of the Company (the "***Common Stock***"), equal to the sum of (a) 2,396,742, plus (b) such additional number of shares of Common Stock as is equal to the sum of (x) the number of shares of Common Stock reserved for issuance under the Company's 2003 Stock Incentive Plan, as amended (the "2003 Plan") that remain available for issuance under the 2003 Plan as of the time immediately before termination of the 2003 Plan and (y) the number of shares of Common Stock subject to awards granted under the 2003 Plan which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of Incentive Stock Options (as hereinafter defined) to any limitations of the Code); provided, however, that the maximum number of shares of Common Stock available for issuance under the Plan (including any shares becoming available by reason of clause (y)) shall be 3,671,742."

Adopted by the Board of Directors: June 11, 2014
Adopted by the Stockholders: June 11, 2014

CASA SYSTEMS, INC.

Amendment No. 3 To 2011 Stock Incentive Plan

The 2011 Stock Incentive Plan (the "Plan") of Casa Systems, Inc. (the "Company") is hereby amended, pursuant to Section 11(d) of the Plan, as follows:

3. Section 4(a) of the Plan be and hereby is amended by deleting the first sentence thereof and replacing it with the following:

"Subject to adjustment under Section 9, Awards may be made under the Plan for up to a number of shares of common stock, $0.001 par value per share, of the Company (the "***Common Stock***"), equal to the sum of (a) 3,396,742, plus (b) such additional number of shares of Common Stock as is equal to the sum of (x) the number of shares of Common Stock reserved for issuance under the Company's 2003 Stock Incentive Plan, as amended (the "2003 Plan") that remain available for issuance under the 2003 Plan as of the time immediately before termination of the 2003 Plan and (y) the number of shares of Common Stock subject to awards granted under the 2003 Plan which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of Incentive Stock Options (as hereinafter defined) to any limitations of the Code); provided, however, that the maximum number of shares of Common Stock available for issuance under the Plan (including any shares becoming available by reason of clause (y)) shall be 4,671,742."

Adopted by the Board of Directors: June 29, 2015
Adopted by the Stockholders: June 29, 2015

Exhibit 10.7

CASA SYSTEMS, INC.

Incentive Stock Option Agreement
Granted Under 2011 Stock Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Casa Systems, Inc., a Delaware corporation (the "Company"), on _____, 201__ (the "Grant Date") to _____, an employee of the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2011 Stock Incentive Plan (the "Plan"), a total of _____ shares (the "Shares") of common stock, $0.001 par value per share, of the Company ("Common Stock") at $____ per Share. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on _____ (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") as to 25% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Shares at the end of each successive month following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date. For purposes of this Agreement, "Vesting Commencement Date" shall mean _____.

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee or officer of, or consultant or advisor to, the Company or any parent or subsidiary of the Company as defined in Section 424(e) or (f) of the Code (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to

exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment is terminated by the Company for Cause (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment by the Company for Cause, and the effective date of such employment termination is subsequent to the date of delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate upon the effective date of such termination of employment). If the Participant is party to an employment or severance agreement with the Company that contains a definition of "cause" for termination of employment, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant's employment shall be considered to have been terminated for Cause if the Company determines, within 30 days after the Participant's resignation, that termination for Cause was warranted.

4. Company Right of First Refusal.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its

principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) Termination. The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, more than 75% (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) No Obligation to Recognize Invalid Transfer. The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(i) Legends. The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

> "The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain stock option agreement with the Company."

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4) or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. Tax Matters.

(a) Withholding. No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

(b) Disqualifying Disposition. If the Participant disposes of Shares acquired upon exercise of this option within two years from the Grant Date or one year after such Shares were acquired pursuant to exercise of this option, the Participant shall notify the Company in writing of such disposition.

7. Transfer Restrictions.

(a) This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

(b) The Participant agrees that he or she will not transfer any Shares issued pursuant to the exercise of this option unless the transferee, as a condition to such transfer, delivers to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of Section 4 and Section 5; provided that such a written confirmation shall not be required with respect to (1) Section 4 after such provision has terminated in accordance with Section 4(g) or (2) Section 5 after the completion of the lock-up period in connection with the Company's initial underwritten public offering.

8. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

IN WITNESS WHEREOF, the Company has caused this option to be executed under its corporate seal by its duly authorized officer. This option shall take effect as a sealed instrument.

CASA SYSTEMS, INC.

By: _____
Name: _____
Title: _____

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's 2011 Stock Incentive Plan.

PARTICIPANT:

_____

Address: _____

_____

NOTICE OF STOCK OPTION EXERCISE

Date: _____[1]

Casa Systems, Inc.
100 Old River Road, Unit 100
Andover, MA 01810

Attention: Treasurer

Dear Sir or Madam:

I am the holder of _____[2] Stock Option granted to me under the Casa Systems, Inc. (the "Company") 2011 Stock Incentive Plan on _____[3] for the purchase of _____[4] shares of Common Stock of the Company at a purchase price of $____[5] per share.

I hereby exercise my option to purchase _____[6] shares of Common Stock (the "Shares"), for which I have enclosed _____[7] in the amount of _____[8]. Please register my stock certificate as follows:

Name(s): _____[9]

_____

Address: _____[10]

_____

I represent, warrant and covenant as follows:

1. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the "Securities Act"), or any rule or regulation under the Securities Act.

---

1 Enter the date of exercise.
2 Enter either "an Incentive" or "a Nonstatutory".
3 Enter the date of grant.
4 Enter the total number of shares of Common Stock for which the option was granted.
5 Enter the option exercise price per share of Common Stock.
6 Enter the number of shares of Common Stock to be purchased upon exercise of all or part of the option.
7 Enter "cash", "personal check" or if permitted by the option or Plan, "stock certificates No. XXXX and XXXX".
8 Enter the dollar amount (price per share of Common Stock times the number of shares of Common Stock to be purchased), or the number of shares tendered. Fair market value of shares tendered, together with cash or check, must cover the purchase price of the shares issued upon exercise.
9 Enter name(s) to appear on stock certificate: (a) Your name only; (b) Your name and other name (i.e., John Doe and Jane Doe, Joint Tenants With Right of Survivorship); or (c) In the case of a Nonstatutory option only, a Child's name, with you as custodian (i.e., Jane Doe, Custodian for Tommy Doe). Note: There may be income and/or gift tax consequences of registering shares in a Child's name.
10 Social Security Number of Holder(s).

2. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

3. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

4. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

5. I understand that (i) the Shares have not been registered under the Securities Act and are “restricted securities” within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____

(Signature)

Exhibit 10.8

CASA SYSTEMS, INC.

Nonstatutory Stock Option Agreement
Granted Under 2011 Stock Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Casa Systems, Inc., a Delaware corporation (the "Company"), on _____, 20__ (the "Grant Date") to _____, an employee, consultant or director of the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2011 Stock Incentive Plan (the "Plan"), a total of _____ shares (the "Shares") of common stock, $0.001 par value per share, of the Company ("Common Stock") at $__ per Share. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on _____ (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall not be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") as to 25% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Shares at the end of each successive month following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date. For purposes of this Agreement, "Vesting Commencement Date" shall mean _____.

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, officer or director of, or consultant or advisor to, the Company or any other entity the employees, officers, directors, consultants, or advisors of which are eligible to receive option grants under the Plan (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment or other relationship with the Company is terminated by the Company for Cause (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment or other relationship. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment or other relationship by the Company for Cause, and the effective date of such employment or other termination is subsequent to the date of the delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment or other relationship shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment or other relationship (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate immediately upon the effective date of such termination of employment or other relationship). If the Participant is party to an employment, consulting or severance agreement with the Company that contains a definition of "cause" for termination of employment or other relationship, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant's employment or other relationship shall be considered to have been terminated for "Cause" if the Company determines, within 30 days after the Participant's resignation, that termination for Cause was warranted.

4. Company Right of First Refusal.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the

Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) Termination. The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, more than 75% (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) No Obligation to Recognize Invalid Transfer. The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(i) Legends. The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

> "The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain stock option agreement with the Company."

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4) or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. Withholding.

No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

7. Transfer Restrictions.

(a) This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

(b) The Participant agrees that he or she will not transfer any Shares issued pursuant to the exercise of this option unless the transferee, as a condition to such transfer, delivers to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of Section 4 and Section 5; provided that such a written confirmation shall not be required with respect to (1) Section 4 after such provision has terminated in accordance with Section 4(g) or (2) Section 5 after the completion of the lock-up period in connection with the Company's initial underwritten public offering.

8. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

IN WITNESS WHEREOF, the Company has caused this option to be executed under its corporate seal by its duly authorized officer. This option shall take effect as a sealed instrument.

CASA SYSTEMS, INC.

By: _____

Name: _____

Title: _____

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's 2011 Stock Incentive Plan.

PARTICIPANT:

_____

Address: _____

_____

_____

NOTICE OF STOCK OPTION EXERCISE

Date: _____[1]

Casa Systems, Inc.
100 Old River Road, Unit 100
Andover, MA 01810

Attention: Treasurer

Dear Sir or Madam:

I am the holder of _____[2] Stock Option granted to me under the Casa Systems, Inc. (the "Company") 2011 Stock Incentive Plan on _____[3] for the purchase of _____[4] shares of Common Stock of the Company at a purchase price of $____[5] per share.

I hereby exercise my option to purchase _____[6] shares of Common Stock (the "Shares"), for which I have enclosed _____[7] in the amount of _____[8]. Please register my stock certificate as follows:

Name(s): _____ [9]

_____

Address: _____

_____ [10]

1 Enter the date of exercise.
2 Enter either "an Incentive" or "a Nonstatutory".
3 Enter the date of grant.
4 Enter the total number of shares of Common Stock for which the option was granted.
5 Enter the option exercise price per share of Common Stock.
6 Enter the number of shares of Common Stock to be purchased upon exercise of all or part of the option.
7 Enter "cash", "personal check" or if permitted by the option or Plan, "stock certificates No. XXXX and XXXX".
8 Enter the dollar amount (price per share of Common Stock times the number of shares of Common Stock to be purchased), or the number of shares tendered. Fair market value of shares tendered, together with cash or check, must cover the purchase price of the shares issued upon exercise.
9 Enter name(s) to appear on stock certificate: (a) Your name only; (b) Your name and other name (i.e., John Doe and Jane Doe, Joint Tenants With Right of Survivorship); or (c) In the case of a Nonstatutory option only, a Child's name, with you as custodian (i.e., Jane Doe, Custodian for Tommy Doe). Note: There may be income and/or gift tax consequences of registering shares in a Child's name.
10 Social Security Number of Holder(s).

I represent, warrant and covenant as follows:

1. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the "Securities Act"), or any rule or regulation under the Securities Act.

2. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

3. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

4. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

5. I understand that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____

(Signature)

Exhibit 10.9

CASA SYSTEMS, INC.

Restricted Stock Agreement
Granted Under 2011 Stock Incentive Plan

AGREEMENT made this ____ day of _____, 20__, between Casa Systems, Inc., a Delaware corporation (the "Company"), and _____ (the "Participant").

For valuable consideration, receipt of which is acknowledged, the parties hereto agree as follows:

1. Purchase of Shares.

The Company shall issue and sell to the Participant, and the Participant shall purchase from the Company, subject to the terms and conditions set forth in this Agreement and in the Company's 2011 Stock Incentive Plan (the "Plan"), _____ shares (the "Shares") of common stock, $0.001 par value, of the Company ("Common Stock"), at a purchase price of $____ per share. The aggregate purchase price for the Shares shall be paid by the Participant by check payable to the order of the Company or such other method as may be acceptable to the Company. Upon receipt by the Company of payment for the Shares, the Company shall issue to the Participant one or more certificates in the name of the Participant for that number of Shares purchased by the Participant. The Participant agrees that the Shares shall be subject to the purchase options set forth in Sections 2 and 5 of this Agreement and the restrictions on transfer set forth in Section 4 of this Agreement.

2. Purchase Option.

(a) In the event that the Participant ceases to be employed by the Company for any reason or no reason, with or without cause, prior to the fourth anniversary of the Vesting Commencement Date (as defined below), the Company shall have the right and option (the "Purchase Option") to purchase from the Participant, for a sum of $____ per share (the "Option Price"), some or all of the Unvested Shares (as defined below).

"Unvested Shares" means the total number of Shares multiplied by the Applicable Percentage at the time the Purchase Option becomes exercisable by the Company. The "Applicable Percentage" shall be (i) 100% during the period ending on the first anniversary of the Vesting Commencement Date, (ii) 75% less 2.0833% for each month of employment completed by the Participant with the Company from and after the first anniversary of the Vesting Commencement Date, and (iii) zero on or after the fourth anniversary of the Vesting Commencement Date. For purposes of this Agreement, "Vesting Commencement Date" shall mean _____.

(b) If the Participant is employed by a parent or subsidiary of the Company, any references in this Agreement to employment with the Company or termination of employment by or with the Company shall instead be deemed to refer to such parent or subsidiary.

3. Exercise of Purchase Option and Closing.

(a) The Company may exercise the Purchase Option by delivering or mailing to the Participant (or his estate), within 90 days after the termination of the employment of the Participant with the Company, a written notice of exercise of the Purchase Option. Such notice shall specify the number of Shares to be purchased. If and to the extent the Purchase Option is not so exercised by the giving of such a notice within such 90-day period, the Purchase Option shall automatically expire and terminate effective upon the expiration of such 90-day period.

(b) Within 10 days after delivery to the Participant of the Company's notice of the exercise of the Purchase Option pursuant to subsection (a) above, the Participant (or his estate) shall, pursuant to the provisions of the Joint Escrow Instructions referred to in Section 7 below, tender to the Company at its principal offices the certificate or certificates representing the Shares which the Company has elected to purchase in accordance with the terms of this Agreement, duly endorsed in blank or with duly endorsed stock powers attached thereto, all in form suitable for the transfer of such Shares to the Company. Promptly following its receipt of such certificate or certificates, the Company shall pay to the Participant the aggregate Option Price for such Shares (provided that any delay in making such payment shall not invalidate the Company's exercise of the Purchase Option with respect to such Shares).

(c) After the time at which any Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Shares, but shall, in so far as permitted by law, treat the Company as the owner of such Shares.

(d) The Option Price may be payable, at the option of the Company, in cancellation of all or a portion of any outstanding indebtedness of the Participant to the Company or in cash (by check) or both.

(e) The Company shall not purchase any fraction of a Share upon exercise of the Purchase Option, and any fraction of a Share resulting from a computation made pursuant to Section 2 of this Agreement shall be rounded to the nearest whole Share (with any one-half Share being rounded upward).

(f) The Company may assign its Purchase Option to one or more persons or entities.

4. Restrictions on Transfer.

(a) The Participant shall not sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively "transfer") any Shares, or any interest therein, that are subject to the Purchase Option, except that the Participant may transfer such Shares (i) to or for the benefit of any spouse, children, parents, uncles, aunts, siblings, grandchildren and any other relatives approved by the Board of Directors (collectively, "Approved Relatives") or to a trust established solely for the benefit of the Participant and/or Approved Relatives, provided that such Shares shall remain subject to this Agreement (including without limitation the restrictions on transfer set forth in this Section 4, the Purchase Option and the right of first refusal set forth in Section 5) and such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement or (ii) as part of the sale of all or substantially all of the shares of capital stock of the Company (including pursuant to a merger or consolidation), provided that, in accordance with the Plan, the securities or other property received by the Participant in connection with such transaction shall remain subject to this Agreement.

(b) The Participant shall not transfer any Shares, or any interest therein, that are no longer subject to the Purchase Option, except in accordance with Section 5 below.

5. Right of First Refusal.

(a) If the Participant proposes to transfer any Shares that are no longer subject to the Purchase Option (either because they are no longer Unvested Shares or because the Purchase Option expired unexercised), then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 5 shall remain subject to this Agreement (including without limitation the restrictions on transfer set forth in Section 4 and the right of first refusal set forth in this Section 5) and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement.

(d) After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) The following transactions shall be exempt from the provisions of this Section 5:

(1) a transfer of Shares to or for the benefit of any Approved Relatives, or to a trust established solely for the benefit of the Participant and/or Approved Relatives;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to this Agreement (including without limitation the restrictions on transfer set forth in Section 4 and the right of first refusal set forth in this Section 5) and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement.

(f) The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 5 to one or more persons or entities.

(g) The provisions of this Section 5 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, more than 75% (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Agreement, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

6. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for shares of Common Stock or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock, whether any transaction described in clause (a) or (b) is to be settled by delivery of shares of Common Stock or other securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days from the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4) or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

7. Escrow.

The Participant shall, upon the execution of this Agreement, execute Joint Escrow Instructions in the form attached to this Agreement as Exhibit A. The Joint Escrow Instructions shall be delivered to the Secretary of the Company, as escrow agent thereunder. The Participant shall deliver to such escrow agent

a stock assignment duly endorsed in blank, in the form attached to this Agreement as Exhibit B, and hereby instructs the Company to deliver to such escrow agent, on behalf of the Participant, the certificate(s) evidencing the Shares issued hereunder. Such materials shall be held by such escrow agent pursuant to the terms of such Joint Escrow Instructions.

8. Restrictive Legends.

All certificates representing Shares shall have affixed thereto legends in substantially the following form, in addition to any other legends that may be required under federal or state securities laws:

> "The shares of stock represented by this certificate are subject to restrictions on transfer and an option to purchase set forth in a certain Restricted Stock Agreement between the corporation and the registered owner of these shares (or his predecessor in interest), and such Agreement is available for inspection without charge at the office of the Secretary of the corporation."
>
> "The shares represented by this certificate have not been registered under the Securities Act of 1933, as amended, and may not be sold, transferred or otherwise disposed of in the absence of an effective registration statement under such Act or an opinion of counsel satisfactory to the corporation to the effect that such registration is not required."

9. Provisions of the Plan.

(a) This Agreement is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this Agreement.

(b) As provided in the Plan, upon the occurrence of a Reorganization Event (as defined in the Plan), the repurchase and other rights of the Company hereunder shall inure to the benefit of the Company's successor and shall apply to the cash, securities or other property which the Shares were converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to the Shares under this Agreement. If, in connection with a Reorganization Event, a portion of the cash, securities and/or other property received upon the conversion or exchange of the Shares is to be placed into escrow to secure indemnification or similar obligations, the mix between the vested and unvested portion of such cash, securities and/or other property that is placed into escrow shall be the same as the mix between the vested and unvested portion of such cash, securities and/or other property that is not subject to escrow.

10. Investment Representations.

The Participant represents, warrants and covenants as follows:

(a) The Participant is purchasing the Shares for his own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act, or any rule or regulation under the Securities Act.

(b) The Participant has had such opportunity as he has deemed adequate to obtain from representatives of the Company such information as is necessary to permit him to evaluate the merits and risks of his investment in the Company.

(c) The Participant has sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

(d) The Participant can afford a complete loss of the value of the Shares and is able to bear the economic risk of holding such Shares for an indefinite period.

(e) The Participant understands that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act; (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

11. Withholding Taxes; Section 83(b) Election.

(a) The Participant acknowledges and agrees that the Company has the right to deduct from payments of any kind otherwise due to the Participant any federal, state or local taxes of any kind required by law to be withheld with respect to the purchase of the Shares by the Participant or the lapse of the Purchase Option.

(b) The Participant has reviewed with the Participant's own tax advisors the federal, state, local and foreign tax consequences of this investment and the transactions contemplated by this Agreement. The Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. The Participant understands that the Participant (and not the Company) shall be responsible for the Participant's own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement. The Participant understands that it may be beneficial in many circumstances to elect to be taxed at the time the Shares are purchased rather than when and as the Company's Purchase Option expires by filing an election under Section 83(b) of the Internal Revenue Code of 1986 with the I.R.S. within 30 days from the date of purchase.

THE PARTICIPANT ACKNOWLEDGES THAT IT IS SOLELY THE PARTICIPANT'S RESPONSIBILITY AND NOT THE COMPANY'S TO FILE TIMELY THE ELECTION UNDER SECTION 83(b), EVEN IF THE PARTICIPANT REQUESTS THE COMPANY OR ITS REPRESENTATIVES TO MAKE THIS FILING ON THE PARTICIPANT'S BEHALF.

12. Miscellaneous.

(a) No Rights to Employment. The Participant acknowledges and agrees that the vesting of the Shares pursuant to Section 2 hereof is earned only by continuing service as an employee at the will of the Company (not through the act of being hired or purchasing shares hereunder). The

Participant further acknowledges and agrees that the transactions contemplated hereunder and the vesting schedule set forth herein do not constitute an express or implied promise of continued engagement as an employee or consultant for the vesting period, for any period, or at all.

(b) Severability. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, and each other provision of this Agreement shall be severable and enforceable to the extent permitted by law.

(c) Waiver. Any provision for the benefit of the Company contained in this Agreement may be waived, either generally or in any particular instance, by the Board of Directors of the Company.

(d) Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Company and the Participant and their respective heirs, executors, administrators, legal representatives, successors and assigns, subject to the restrictions on transfer set forth in Sections 4 and 5 of this Agreement.

(e) Notice. All notices required or permitted hereunder shall be in writing and deemed effectively given upon personal delivery or five days after deposit in the United States Post Office, by registered or certified mail, postage prepaid, addressed to the other party hereto at the address shown beneath his or its respective signature to this Agreement, or at such other address or addresses as either party shall designate to the other in accordance with this Section 12(e).

(f) Pronouns. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns and pronouns shall include the plural, and vice versa.

(g) Entire Agreement. This Agreement and the Plan constitute the entire agreement between the parties, and supersedes all prior agreements and understandings, relating to the subject matter of this Agreement.

(h) Amendment. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Participant.

(i) Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the State of Delaware without regard to any applicable conflicts of laws.

(j) Participant’s Acknowledgments. The Participant acknowledges that he or she: (i) has read this Agreement; (ii) has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of the Participant’s own choice or has voluntarily declined to seek such counsel; (iii) understands the terms and consequences of this Agreement; (iv) is fully aware of the legal and binding effect of this Agreement; and (v) understands that the law firm of WilmerHale, is acting as counsel to the Company in connection with the transactions contemplated by the Agreement, and is not acting as counsel for the Participant.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

CASA SYSTEMS, INC.

By: _____

Title: _____

Address:

_____

[Name of Participant]

Address: _____

_____

Exhibit A

CASA SYSTEMS, INC.

Joint Escrow Instructions

_____, 20__

Casa Systems, Inc.
100 Old River Road, Unit 100
Andover, MA 01810
Attn: Secretary

Dear Sir:

As Escrow Agent for Casa Systems, Inc., a Delaware corporation (the "Company"), and its successors in interest under the Restricted Stock Agreement (the "Agreement") of even date herewith, to which a copy of these Joint Escrow Instructions is attached, and the undersigned person ("Holder"), you are hereby authorized and directed to hold the documents delivered to you pursuant to the terms of the Agreement in accordance with the following instructions:

1. Appointment. Holder irrevocably authorizes the Company to deposit with you any certificates evidencing Shares (as defined in the Agreement) to be held by you hereunder and any additions and substitutions to said Shares. For purposes of these Joint Escrow Instructions, "Shares" shall be deemed to include any additional or substitute property. Holder does hereby irrevocably constitute and appoint you as his attorney-in-fact and agent for the term of this escrow to execute with respect to such Shares all documents necessary or appropriate to make such Shares negotiable and to complete any transaction herein contemplated. Subject to the provisions of this Section 1 and the terms of the Agreement, Holder shall exercise all rights and privileges of a stockholder of the Company while the Shares are held by you.

2. Closing of Purchase.

(a) Upon any purchase by the Company of the Shares pursuant to the Agreement, the Company shall give to Holder and you a written notice specifying the number of Shares to be purchased, the purchase price for the Shares, as determined pursuant to the Agreement, and the time for a closing hereunder (the "Closing") at the principal office of the Company. Holder and the Company hereby irrevocably authorize and direct you to close the transaction contemplated by such notice in accordance with the terms of said notice.

(b) At the Closing, you are directed (i) to date the stock assignment form or forms necessary for the transfer of the Shares, (ii) to fill in on such form or forms the number of Shares being transferred, and (iii) to deliver the same, together with the certificate or certificates evidencing the Shares to be transferred, to the Company against the simultaneous delivery to you of the purchase price for the Shares being purchased pursuant to the Agreement.

3. Withdrawal. The Holder shall have the right to withdraw from this escrow any Shares as to which the Purchase Option (as defined in the Agreement) has terminated or expired.

4. Duties of Escrow Agent.

(a) Your duties hereunder may be altered, amended, modified or revoked only by a writing signed by all of the parties hereto.

(b) You shall be obligated only for the performance of such duties as are specifically set forth herein and may rely and shall be protected in relying or refraining from acting on any instrument reasonably believed by you to be genuine and to have been signed or presented by the proper party or parties. You shall not be personally liable for any act you may do or omit to do hereunder as Escrow Agent or as attorney-in-fact of Holder while acting in good faith and in the exercise of your own good judgment, and any act done or omitted by you pursuant to the advice of your own attorneys shall be conclusive evidence of such good faith.

(c) You are hereby expressly authorized to disregard any and all warnings given by any of the parties hereto or by any other person or entity, excepting only orders or process of courts of law, and are hereby expressly authorized to comply with and obey orders, judgments or decrees of any court. If you are uncertain of any actions to be taken or instructions to be followed, you may refuse to act in the absence of an order, judgment or decrees of a court. In case you obey or comply with any such order, judgment or decree of any court, you shall not be liable to any of the parties hereto or to any other person or entity, by reason of such compliance, notwithstanding any such order, judgment or decree being subsequently reversed, modified, annulled, set aside, vacated or found to have been entered without jurisdiction.

(d) You shall not be liable in any respect on account of the identity, authority or rights of the parties executing or delivering or purporting to execute or deliver the Agreement or any documents or papers deposited or called for hereunder.

(e) You shall be entitled to employ such legal counsel and other experts as you may deem necessary properly to advise you in connection with your obligations hereunder and may rely upon the advice of such counsel.

(f) Your rights and responsibilities as Escrow Agent hereunder shall terminate if (i) you cease to be Secretary of the Company or (ii) you resign by written notice to each party. In the event of a termination under clause (i), your successor as Secretary shall become Escrow Agent hereunder; in the event of a termination under clause (ii), the Company shall appoint a successor Escrow Agent hereunder.

(g) If you reasonably require other or further instruments in connection with these Joint Escrow Instructions or obligations in respect hereto, the necessary parties hereto shall join in furnishing such instruments.

(h) It is understood and agreed that if you believe a dispute has arisen with respect to the delivery and/or ownership or right of possession of the securities held by you hereunder, you are authorized and directed to retain in your possession without liability to anyone all or any part of said securities until such dispute shall have been settled either by mutual written agreement of the parties concerned or by a final order, decree or judgment of a court of competent jurisdiction after the time for appeal has expired and no appeal has been perfected, but you shall be under no duty whatsoever to institute or defend any such proceedings.

(i) These Joint Escrow Instructions set forth your sole duties with respect to any and all matters pertinent hereto and no implied duties or obligations shall be read into these Joint Escrow Instructions against you.

(j) The Company shall indemnify you and hold you harmless against any and all damages, losses, liabilities, costs, and expenses, including attorneys' fees and disbursements, (including without limitation the fees of counsel retained pursuant to Section 4(e) above, for anything done or omitted to be done by you as Escrow Agent in connection with this Agreement or the performance of your duties hereunder, except such as shall result from your gross negligence or willful misconduct.

5. Notice. Any notice required or permitted hereunder shall be given in writing and shall be deemed effectively given upon personal delivery or upon deposit in the United States Post Office, by registered or certified mail with postage and fees prepaid, addressed to each of the other parties thereunto entitled at the following addresses, or at such other addresses as a party may designate by ten days' advance written notice to each of the other parties hereto.

COMPANY:	Notices to the Company shall be sent to the address set forth in the salutation hereto, Attn: President
HOLDER:	Notices to Holder shall be sent to the address set forth below Holder's signature below.
ESCROW AGENT:	Notices to the Escrow Agent shall be sent to the address set forth in the salutation hereto.

6. Miscellaneous.

(a) By signing these Joint Escrow Instructions, you become a party hereto only for the purpose of said Joint Escrow Instructions, and you do not become a party to the Agreement.

(b) This instrument shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns.

[Remainder of Page Intentionally Left Blank]

Very truly yours,

CASA SYSTEMS, INC.

By: _____
Title: _____

HOLDER:

_____
(Signature)

_____
Print Name

Address: _____

_____

Date Signed: _____

ESCROW AGENT:

_____
, Secretary

Exhibit B

(STOCK ASSIGNMENT SEPARATE FROM CERTIFICATE)

FOR VALUE RECEIVED, I hereby sell, assign and transfer unto _____ (_____) shares of Common Stock, $0.001 par value per share, of Casa Systems, Inc. (the "Corporation") standing in my name on the books of the Corporation represented by Certificate(s) Number _____ herewith, and do hereby irrevocably constitute and appoint _____ attorney to transfer the said stock on the books of the Corporation with full power of substitution in the premises.

Dated: _____

_____
[Name of Participant]

NOTICE: The signature(s) to this assignment must correspond with the name as written upon the face of the certificate, in every particular, without alteration, enlargement, or any change whatever and must be guaranteed by a commercial bank, trust company or member firm of the Boston, New York or Midwest Stock Exchange.

Exhibit 10.10

CASA SYSTEMS, INC.

Restricted Stock Unit Award Agreement
Granted Under 2011 Stock Incentive Plan

1. Grant of RSUs.

This agreement (this "Agreement") evidences the grant by Casa Systems, Inc., a Delaware corporation (the "Company"), on , 201 to , an employee of the Company (the "Participant"), of an award of a total of restricted stock units (the "Award"), on the terms provided herein and in the Company's 2011 Stock Incentive Plan (the "Plan"). Each restricted stock unit entitles the Participant to one share of common stock, $0.001 par value per share ("Common Stock"), of the Company, subject to continued employment, upon vesting.

2. Vesting Schedule.

(a) Upon the vesting of this Award, as described in this Section, the Company shall deliver to the Participant for each restricted stock unit that becomes vested, one (1) share of Common Stock (each such share, a "Share," and such shares collectively, the "Shares"); provided, however, that the Company shall withhold from the Participant at the time of delivery of the Shares the amount that the Company determines necessary to pay applicable withholding taxes as and to the extent provided in Section 8 below; and provided, further, that any fraction of a Share otherwise deliverable to the Participant as a result of a computation made pursuant to this Section or Section 8 shall be rounded down to the nearest whole Share. The Common Stock shall be delivered as soon as practicable following each vesting date or event set forth below, but in any case within 30 days after such date or event.

(b) Subject to Sections 2(c), 2(d) and 3, [25%] of the Restricted Stock Units shall become vested and payable to the Participant on the first anniversary of the Vesting Commencement Date (as defined below), [25%] of the Restricted Stock Units shall become vested and payable to the Participant on the second anniversary of the Vesting Commencement Date, [25%] of the Restricted Stock Units shall become vested and payable to the Participant on the third anniversary of the Vesting Commencement Date, and [25%] of the Restricted Stock Units shall become vested and payable to the Participant on the fourth anniversary of the Vesting Commencement Date, in each case so long as the Participant remains employed with the Company through each such vesting date.

(c) Notwithstanding Section 2(b), if the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the date on which all Restricted Stock Units have become vested and prior to the date on which the unvested portion of this Award has been terminated pursuant to Section 3, upon the Participant's death or disability, this Award shall become immediately and fully vested.

(d) Notwithstanding Section 2(b), if within twelve months following a Sale (as defined below) of the Company, the Participant's employment with the Company or the acquiring or succeeding corporation is terminated for Good Reason (as defined below) by the Participant in accordance with Good Reason Process (as defined below) or is terminated without

Cause (as defined below) by the Company or the acquiring or succeeding corporation, this Award shall become immediately and fully vested.

For purposes of this agreement, the following term shall have the following meaning:

"Good Reason" shall exist upon (i) a material diminution in Participant's base compensation; (ii) a material diminution in Participant's then authority, duties or responsibilities; (iii) a material change in geographic location at which participant performs services; or (iv) any material breach by the Company of this Agreement.

"Good Reason Process" means the following series of actions: (i) the Participant reasonably determines in good faith that Good Reason exists, (ii) the Participant notifies the Company or the acquiring or succeeding corporation in writing of the existence of Good Reason within 60 days of the occurrence of the event that gave rise to the existence of Good Reason, (iii) the Participant cooperates in good faith with the Company's (or the acquiring or succeeding corporation's) efforts to remedy the conditions that gave rise to the existence of Good Reason for a period of 30 days following such notice (such 30 day period, the "Cure Period"), (iv) notwithstanding such efforts, Good Reason continues to exist and (v) the Participant terminates his employment within 30 days after the end of the Cure Period. For the avoidance of doubt, if the Company or the acquiring or succeeding corporation successfully remedies the conditions that gave rise to the existence of Good Reason during the Cure Period, Good Reason shall be deemed not to have existed.

If the Participant is party to an employment, consulting or severance agreement with the Company that contains a definition of "cause" for termination of employment or other relationship, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant's employment or other relationship shall be considered to have been terminated for "Cause" if the Company determines, within 30 days after the Participant's resignation, that termination for Cause was warranted.

3. Termination of Employment.

Notwithstanding any other provision of the Plan to the contrary, upon the termination of the Participant's employment with the Company and its subsidiaries for any reason whatsoever, this Award, to the extent not yet vested, shall immediately and automatically terminate; provided, however, that the Board of Directors of the Company (the "Board") may, in its sole and absolute discretion and pursuant to the terms and provisions of the Plan, agree to accelerate the vesting of this Award, upon termination of employment or otherwise, for any reason or no reason, but shall have no obligation to do so.

For purposes of the Plan and this Award, a termination of employment shall be deemed to have occurred on the date upon which the Participant ceases to perform active employment

duties for the Company following the provision of any notification of termination or resignation from employment, and without regard to any period of notice of termination of employment (whether expressed or implied) or any period of severance or salary continuation. Notwithstanding any other provision of the Plan, or this Agreement or any other agreement (written or oral) to the contrary, the Participant shall not be entitled (and by accepting an Award, thereby irrevocably waives any such entitlement) to any payment or other benefit to compensate the Participant for the loss of any rights under the Plan as a result of the termination or expiration of an Award in connection with any termination of employment. No amounts earned pursuant to the Plan or any Award shall be deemed to be eligible compensation in respect of any other plan of the Company or any of its subsidiaries.

4. Company Right of First Refusal.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon the vesting of this Award, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities

(g) The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, more than 75% (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction). A transaction of the type contemplated in this Section 4(g)(2) is referred to herein as a "Sale" of the Company.

(h) The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(i) Legends. The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

"The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain restricted stock unit award agreement with the Company."

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4) or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. No Assignment; Transfer Restrictions.

(a) Except as expressly permitted under the Plan, this Agreement may not be assigned by the Participant by operation of law or otherwise.

(b) The Participant agrees that he or she will not transfer any Shares issued pursuant to this Award unless the transferee, as a condition to such transfer, delivers to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of Section 4 and Section 5; provided that such a written confirmation shall not be required with respect to (1) Section 4 after such provision has terminated in accordance with Section 4(g) or (2) Section 5 after the completion of the lock-up period in connection with the Company's initial underwritten public offering.

7. No Rights to Continued Employment.

Neither this Agreement nor this Award shall be construed as giving the Participant any right to continue in the employ of the Company or any of its subsidiaries, or shall interfere in any way with the right of the Company to terminate such employment.

8. Tax Obligations.

As a condition to the granting of this Award and the vesting thereof, the Participant acknowledges and agrees that he/she is responsible for the payment of income and employment taxes (and any other taxes required to be withheld) payable in connection with the vesting of an Award. The Company shall retain and withhold from delivery at the time of vesting that number of Shares having a fair market value equal to the taxes owed by the Participant, which retained Shares shall fund the payment of such taxes by the Company on behalf of the Participant. Notwithstanding the immediately preceding sentence, the Participant may, by written notice to the Company delivered not less than five days prior to a vesting date, elect to remit to the Company or any applicable subsidiary an amount sufficient to pay such taxes in lieu of the Company retaining and withholding Shares to fund the payment of such taxes. If the Participant makes such an election, the Participant shall make such payment to the Company or the applicable subsidiary of the Company on or before the applicable vesting date in a form that is reasonably acceptable to the Company, as the Company may determine in its sole discretion.

9. Notices.

All notices required or permitted hereunder shall be in writing and deemed effectively given upon personal delivery or five days after deposit in the United States Post Office, by registered or certified mail, postage prepaid, addressed to the other party hereto at the address shown beneath his or its respective signature to this Agreement, or at such other address or addresses as either party shall designate to the other in accordance with this Section 9.

10. Failure to Enforce Not a Waiver.

The failure of the Company to enforce at any time any provision of this Agreement shall in no way be construed to be a waiver of such provision or of any other provision hereof.

11. Amendments.

This Agreement may be amended or modified at any time by an instrument in writing signed by the parties hereto.

12. Authority.

The Board has complete authority and discretion to determine Awards, and to interpret and construe the terms of the Plan and this Agreement. The determination of the Board as to any matter relating to the interpretation or construction of the Plan or this Agreement shall be final, binding and conclusive on all parties.

13. Rights as a Stockholder.

The Participant shall have no rights as a stockholder of the Company with respect to any shares of common stock of the Company underlying or relating to any Award until the issuance of a stock certificate to the Participant in respect of such Award.

14. Provisions of the Plan.

This Award is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this Award.

IN WITNESS WHEREOF, the Company has caused this Award to be executed under its corporate seal by its duly authorized officer. This Award shall take effect as a sealed instrument.

CASA SYSTEMS, INC.

By: _____

Name: _____

Title: _____

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing Award and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's 2011 Stock Incentive Plan.

PARTICIPANT:

_____

Address: _____

_____

Exhibit 10.11

CASA SYSTEMS, INC.

Stock Appreciation Rights Agreement
Granted under 2011 Stock Incentive Plan

This Agreement evidences the grant by Casa Systems, Inc., a Delaware corporation (the "Company"), on , 20[ ] (the "Grant Date") to (the "Participant") of a stock appreciation right of the Company (this "SAR") on the terms provided herein and in the Company's 2011 Stock Incentive Plan (the "Plan"). This SAR represents the right to receive, upon exercise of such right, cash in an amount equal to the appreciation from and after the Grant Date in the Fair Market Value of a share of Common Stock, $0.001 par value per share ("Common Stock"), of the Company over the Measurement Price, as provided in this Agreement, with respect to the number of shares of Common Stock with respect to which this SAR is exercised. Unless earlier terminated, this SAR shall expire on , 20[ ] (the "Final Exercise Date"). All capitalized terms used herein and not otherwise defined shall have the same meaning ascribed thereto in the Plan.

1. Definitions. Solely for the purposes of, and as used in, this Agreement:

   (a) "Board" means the Board of Directors of the Company.

   (b) "Exercise Date" has the meaning given thereto in Section 3 hereof.

   (c) "Expiration Date" means the earliest of (i) the Final Exercise Date, (ii) that date on which the Participant is terminated for Cause (as defined below), (iii) the date on which this SAR terminates pursuant to Section 3(d) hereof and (iv) any other date, event or reason provided for hereunder or under the Plan.

   (d) "Expiration Time" means 5:00 p.m. (local time) on the Expiration Date.

   (e) "Fair Market Value" means the market value of one share of Common Stock, as determined by such means as reasonably determined to be appropriate by the Board.

   (f) "Measurement Price" shall be $[ ] per share.

   (g) "Vesting Date" means each of those dates which is specified in Section 2 hereof.

2. Grant, Vesting and Expiration of SAR. Subject to the terms and conditions set forth in the Plan and this Agreement:

   (a) The Company has granted to the Participant an SAR entitling the Participant, upon exercise, to an amount in cash equal to the appreciation from and after the Grant Date in the Fair Market Value of [ ] shares of Common Stock (the "Measurement Shares") over the Measurement Price of this SAR.

(b) Except as provided below, this SAR will become exercisable ("vest") as to 25% of the original number of Measurement Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Measurement Shares at the end of each successive one-month period following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date. For purposes of this Agreement, the "Vesting Commencement Date" shall mean , 20[ ].

The right of exercise shall be cumulative so that to the extent this SAR is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Measurement Shares for which it is vested until the Expiration Time unless sooner exercised or terminated in accordance with this Agreement.

(c) Unless sooner exercised or terminated in accordance with this Agreement, this SAR shall expire and terminate at the Expiration Time and, thereafter, this SAR shall be null and void and have no further force or effect whatsoever.

3. Exercise of SAR. This SAR shall be exercised on the Exercise Date with respect to the number of Measurement Shares for which this SAR is vested as of such date or such lesser number as the Participant chooses, but not with respect to fewer than the lesser of (i) 100 shares or (ii) the number of remaining Measurement Shares covered by this SAR. To the extent that this SAR is not vested on the Final Exercise Date, any unvested portion shall immediately and automatically expire on such date, unless the Board determines in its sole discretion to accelerate the vesting of part or all of the unvested portion of this SAR and permit its immediate exercise. Notwithstanding anything to the contrary herein, in the event the Participant is terminated for Cause, any right that the Participant may have to exercise this SAR shall be automatically forfeited immediately upon such termination.

(a) Exercise Date. The "Exercise Date" shall be the actual date or dates specified by the Participant in a written notice of exercise provided to the Company pursuant to subsection 3(b).

(b) Notice of Exercise. The Participant shall provide to the Company a written notice of exercise in the form attached hereto as Exhibit A designating the Exercise Date pursuant to subsection 3(a), such notice to be provided no later than 15 days prior to any such designated Exercise Date. Such notice shall be irrevocable once received by the Company.

(c) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this SAR may not be exercised unless the Participant, at the time he or she exercises this SAR, is, and has been at all times since the Grant Date, an employee, officer or director of, or consultant or advisor to, the Company or any parent or subsidiary of the Company as defined in Section 424(e) or (f) of the Code and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest as determined by the Board (an "Eligible Participant").

(d) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraph (e) below, the right to exercise this SAR shall terminate three months after such cessation (but in no event after the Final Exercise Date); provided that this SAR shall be exercisable only for that number of Measurement Shares that were vested under this SAR on the date the Participant ceased to be an Eligible Participant. Notwithstanding anything to the contrary contained herein, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this SAR shall terminate immediately upon written notice to the Participant from the Company describing such violation.

(e) Discharge for Cause. Notwithstanding anything to the contrary contained herein, if the Participant, prior to the Final Exercise Date, is discharged by the Company for "Cause" (as defined below), the right to exercise this SAR shall terminate immediately upon the effective date of such discharge. "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant shall be considered to have been discharged for "Cause" if the Company determines, within 30 days after the Participant's resignation, that discharge for Cause was warranted.

4. Calculation of Cash Amount Deliverable on Exercise of SAR. The cash amount (if any) which the Participant may be entitled to receive in accordance with this Agreement in respect of any exercise of SARs shall be calculated by the Company in accordance with the provisions of this Agreement and the Plan as soon as is reasonably practicable following the Exercise Date of any portion of this SAR, but in no event later than the delivery date specified in Section 5 hereof; provided, however, that the cash amount as so calculated shall be subject to the review and approval by the Company's Chief Executive Officer, acting reasonably; and such amounts, as so finally approved by the Company's Chief Executive Officer, shall be final and binding upon the parties hereto.

5. Delivery of Cash Due on Exercise of SAR. The cash amount to which the Participant is entitled upon each exercise of this SAR shall be delivered by the Company to the Participant following the date on which the Fair Market Value has been determined pursuant to Section 1(e) hereof, but no later than 60 days following the Exercise Date. The delivery of the cash amount due upon each such exercise shall be subject to all applicable income and employment tax and social security contribution withholding.

6. Nontransferability of SAR. This SAR may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent (or jurisdictional equivalent) and distribution to a

transferee that has been approved by the Company, and, during the lifetime of the Participant, this SAR shall be exercisable only by the Participant.

7. No Right To Employment or Other Status. The grant of this SAR shall not be construed as giving the Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under this Agreement.

8. No Effect on Running the Business. The Participant understands and agrees that the existence of this SAR will not affect in any way the right or power of the Company or its stockholders to make or authorize any adjustments, recapitalizations, reorganizations, or other changes in the Company's capital structure or its business, or any merger or consolidation of the Company, or any issuance of bonds, debentures, preferred or other stock, with preference ahead of or convertible into, or otherwise affecting the Company's Common Stock or the rights thereof, or the dissolution or liquidation of the Company, or any sale or transfer of all or any part of its assets or business, or any other corporate act or proceeding, whether or not of a similar character to those described above.

9. Data Protection. The Participant agrees to the receipt, holding and processing of information in connection with the grant, vesting, exercise, taxation and general administration of the Plan and this SAR by the Company or any subsidiary of the Company and any of their advisers or agents and to the transmission of such information outside of [the People's Republic of China] for this purpose.

10. Provisions of the Plan. This SAR is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this SAR, as such Plan may be amended from time to time.

11. Participant's Acknowledgements. By acceptance of this SAR, the Participant agrees to the terms and conditions hereof and acknowledges receipt of a copy of the Plan.

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first set forth above.

CASA SYSTEMS, INC.

By: _____
Name:
Title:

PARTICIPANT

_____
[ ]
Address:

Exhibit A

SAR NOTICE OF EXERCISE

Date: _____[1]

Casa Systems, Inc.

_____

_____

Attention: Treasurer

Dear Sir or Madam:

I am the holder of a stock appreciation right ("SAR") granted to me under the Casa Systems, Inc. (the "Company") 2011 Stock Incentive Plan on _____[2] (the "Grant Date") measured by the appreciation from and after the Grant Date in the Fair Market Value of _____[3] shares of Common Stock of the Company.

I hereby exercise my SAR in relation to _____[4] shares of Common Stock.

Please deliver the cash amount of the appreciation with respect to such shares (after deduction of all applicable income and employment tax and social security contributions withholding) to the following bank account:

Name of bank: _____

Sort Code: _____

Account number: _____

Very truly yours,

_____
(Signature)

1 Enter the date of exercise.
2 Enter the date of grant.
3 Enter the total number of shares of Common Stock in relation to which the SAR was granted.
4 Enter the number of shares of Common Stock in relation to which the SAR is now being exercised.

Exhibit 10.12

CASA SYSTEMS, INC.

2017 STOCK INCENTIVE PLAN

1. Purpose

The purpose of this 2017 Stock Incentive Plan (the "***Plan***") of Casa Systems, Inc., a Delaware corporation (the "***Company***"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align the interests of such persons with those of the Company's stockholders. Except where the context otherwise requires, the term "***Company***" shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations thereunder (the "***Code***") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the "***Board***").

2. Eligibility

All of the Company's employees, officers and directors, as well as consultants and advisors to the Company (as such terms consultants and advisors are defined and interpreted for purposes of Form S-8 under the Securities Act of 1933, as amended (the "***Securities Act***"), or any successor form) are eligible to be granted Awards under the Plan. Each person who is granted an Award under the Plan is deemed a "***Participant***." "***Award***" means Options (as defined in Section 5), SARs (as defined in Section 6), Restricted Stock (as defined in Section 7), Restricted Stock Units (as defined in Section 7) and Other Stock-Based Awards (as defined in Section 8).

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a "***Committee***"). All references in the Plan to the "***Board***" shall mean the Board or a Committee of the Board or the officers referred to in Section 3(c) to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or officers.

(c) Delegation to Officers. Subject to any requirements of applicable law (including as applicable Sections 152 and 157(c) of the General Corporation Law of the State of Delaware), the Board may delegate to one or more officers of the Company the power to grant Awards (subject to any limitations under the Plan) to employees or officers of the Company and to exercise such other powers under the Plan as the Board may determine, provided that the Board shall fix the terms of Awards to be granted by such officers, the maximum number of shares subject to Awards that the officers may grant, and the time period in which such Awards may be granted; and provided further, that no officer shall be authorized to grant Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "***Exchange Act***")) or to any "officer" of the Company (as defined by Rule 16a-1(f) under the Exchange Act).

4. Stock Available for Awards

(a) Number of Shares; Share Counting.

(1) Authorized Number of Shares. Subject to adjustment under Section 9, Awards may be made under the Plan (any or all of which Awards may be in the form of Incentive Stock Options, as defined in Section 5(b)) for up to such number of shares of common stock, $0.001 par value per share, of the Company (the "***Common Stock***") as is equal to the sum of:

(A) 1,432,137 shares of Common Stock; plus

(B) such additional number of shares of Common Stock (up to 3,749,209 shares) as is equal to the sum of (x) the number of shares of Common Stock reserved for issuance under the Company's 2011 Stock Incentive Plan, as amended (the "***Existing Plan***") that remain available for grant under the Existing Plan immediately prior to the effectiveness of the registration statement for the Company's initial public offering and (y) the number of shares of Common Stock subject to awards granted under the Existing Plan which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of Incentive Stock Options to any limitations of the Code); plus

(C) an annual increase to be added on the first day of each fiscal year, beginning with the fiscal year ending December 31, 2019 and continuing for each fiscal year until, and including, the fiscal year ending December 31, 2027, equal to the least of (i) 4,000,000 shares of Common Stock, (ii) 4% of the outstanding shares on such date and (iii) an amount determined by the Board.

Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares.

(2) Share Counting. For purposes of counting the number of shares available for the grant of Awards under the Plan:

(A) all shares of Common Stock covered by SARs shall be counted against the number of shares available for the grant of Awards under the Plan; *provided, however*, that (i) SARs that may be settled only in cash shall not be so counted and (ii) if the Company grants an SAR in tandem with an Option for the same number of shares of Common Stock and provides that only one such Award may be exercised (a "***Tandem SAR***"), only the shares covered by the Option, and not the shares covered by the Tandem SAR, shall be so counted, and the expiration of one in connection with the other's exercise will not restore shares to the Plan;

(B) if any Award (i) expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right) or (ii) results in any Common Stock not being issued (including as a result of an SAR that was settleable either in cash or in stock actually being settled in cash), the unused Common Stock covered by such Award shall again be available for the grant of Awards; *provided, however*, that (1) in the case of Incentive Stock Options, the foregoing shall be subject to any limitations under the Code, (2) in the case of the exercise of an SAR, the number of shares counted against the shares available under the Plan shall be the full number of shares subject to the SAR multiplied by the percentage of the SAR actually exercised, regardless of the number of shares actually used to settle such SAR upon exercise and (3) the shares covered by a Tandem SAR shall not again become available for grant upon the expiration or termination of such Tandem SAR; and

(C) shares of Common Stock delivered (by actual delivery, attestation, or net exercise) to the Company by a Participant to (i) purchase shares of Common Stock upon the exercise of an Award or (ii) satisfy tax withholding obligations with respect to Awards (including shares retained from the Award creating the tax obligation) shall be added back to the number of shares available for the future grant of Awards.

(b) Substitute Awards. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a)(1), except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "***Option***") and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable.

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "***Incentive Stock Option***") shall only be

granted to employees of Casa Systems, Inc., any of Casa Systems, Inc.'s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. An Option that is not intended to be an Incentive Stock Option shall be designated a "***Nonstatutory Stock Option***." The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or if the Company converts an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option or the formula by which such exercise price will be determined. The exercise price shall be specified in the applicable Option agreement. The exercise price shall be not less than 100% of the Grant Date Fair Market Value (as defined below) of the Common Stock on the date the Option is granted; *provided* that if the Board approves the grant of an Option with an exercise price to be determined on a future date, the exercise price shall be not less than 100% of the Grant Date Fair Market Value on such future date. "***Grant Date Fair Market Value***" of a share of Common Stock for purposes of the Plan will be determined as follows:

(1) if the Common Stock trades on a national securities exchange, the closing sale price (for the primary trading session) on the date of grant; or

(2) if the Common Stock does not trade on any such exchange, the average of the closing bid and asked prices on the date of grant as reported by an over-the-counter marketplace designated by the Board; or

(3) if the Common Stock is not publicly traded, the Board will determine the Grant Date Fair Market Value for purposes of the Plan using any measure of value it determines to be appropriate (including, as it considers appropriate, relying on appraisals) in a manner consistent with the valuation principles under Code Section 409A, except as the Board may expressly determine otherwise.

For any date that is not a trading day, the Grant Date Fair Market Value of a share of Common Stock for such date will be determined by using the closing sale price or average of the bid and asked prices, as appropriate, for the immediately preceding trading day and with the timing in the formulas above adjusted accordingly. The Board can substitute a particular time of day or other measure of "closing sale price" or "bid and asked prices" if appropriate because of exchange or market procedures or can, in its sole discretion, use weighted averages either on a daily basis or such longer period as complies with Code Section 409A.

The Board has sole discretion to determine the Grant Date Fair Market Value for purposes of the Plan, and all Awards are conditioned on the Participants' agreement that the Administrator's determination is conclusive and binding even though others might make a different determination.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement; *provided*, *however*, that no Option will be granted with a term in excess of 10 years.

(e) Exercise of Options. Options may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with payment in full (in the manner specified in Section 5(f)) of the exercise price for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) except as may otherwise be provided in the applicable Option agreement or approved by the Board, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) to the extent provided for in the applicable Option agreement or approved by the Board, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their fair market value (valued in the manner determined by (or in a manner approved by) the Board), provided (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent provided for in the applicable Nonstatutory Stock Option agreement or approved by the Board in its sole discretion, by delivery of a notice of "net exercise" to the Company, as a result of which the Participant would receive (i) the number of shares underlying the portion of the Option being exercised, less (ii) such number of shares as is equal to (A) the aggregate exercise price for the portion of the Option being exercised divided by (B) the fair market value of the Common Stock (valued in the manner determined by (or in a manner approved by) the Board) on the date of exercise;

(5) to the extent permitted by applicable law and provided for in the applicable Option agreement or approved by the Board by payment of such other lawful consideration as the Board may determine; or

(6) by any combination of the above permitted forms of payment.

(g) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 9): (1) amend any outstanding Option granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option, (2) cancel any outstanding option (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(b)) covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled option, (3) cancel in exchange for a cash payment any outstanding Option with an exercise price per share above the then-current fair market value of the Common Stock (valued in the manner determined by (or in the manner approved by) the Board) or (4) take any other action under the Plan that constitutes a "repricing" within the meaning of the rules of the NASDAQ Stock Market ("***NASDAQ***").

6. Stock Appreciation Rights

(a) General. The Board may grant Awards consisting of stock appreciation rights ("***SARs***") entitling the holder, upon exercise, to receive an amount of Common Stock or cash or a combination thereof (such form to be determined by the Board) determined by reference to appreciation, from and after the date of grant, in the fair market value of a share of Common Stock (valued in the manner determined by (or in the manner approved by) the Board) over the measurement price established pursuant to Section 6(b). The date as of which such appreciation is determined shall be the exercise date.

(b) Measurement Price. The Board shall establish the measurement price of each SAR and specify it in the applicable SAR agreement. The measurement price shall not be less than 100% of the Grant Date Fair Market Value of the Common Stock on the date the SAR is granted; *provided* that if the Board approves the grant of an SAR effective as of a future date, the measurement price shall be not less than 100% of the Grant Date Fair Market Value on such future date.

(c) Duration of SARs. Each SAR shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable SAR agreement; *provided, however*, that no SAR will be granted with a term in excess of 10 years.

(d) Exercise of SARs. SARs may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with any other documents required by the Board.

(e) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 9): (1) amend any outstanding SAR granted under the Plan to provide a measurement price per share that is lower than the then-current measurement price per share of such outstanding SAR, (2) cancel any outstanding SAR (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(b)) covering the same or a different number of shares of Common Stock and having an exercise or measurement price per share lower than the then-current measurement price per share of the cancelled SAR, (3) cancel in exchange for a cash payment any outstanding SAR with a measurement price per share

above the then-current fair market value of the Common Stock (valued in the manner determined by (or in a manner approved by) the Board) or (4) take any other action under the Plan that constitutes a "repricing" within the meaning of the rules of NASDAQ.

7. Restricted Stock; Restricted Stock Units

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock ("***Restricted Stock***"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. The Board may also grant Awards entitling the recipient to receive shares of Common Stock or cash to be delivered at the time such Award vests or is settled ("***Restricted Stock Units***") (Restricted Stock and Restricted Stock Units are each referred to herein as a "***Restricted Stock Award***").

(b) Terms and Conditions for All Restricted Stock Awards. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, if any.

(c) Additional Provisions Relating to Restricted Stock.

(1) Dividends. Unless otherwise provided in the applicable Award agreement, any dividends (whether paid in cash, stock or property) declared and paid by the Company with respect to shares of Restricted Stock ("***Accrued Dividends***") shall be paid to the Participant only if and when such shares become free from the restrictions on transferability and forfeitability that apply to such shares. Each payment of Accrued Dividends will be made no later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the lapsing of the restrictions on transferability and the forfeitability provisions applicable to the underlying shares of Restricted Stock.

(2) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock, as well as dividends or distributions paid on such Restricted Stock, shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to his or her Designated Beneficiary. "***Designated Beneficiary***" means (i) the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death or (ii) in the absence of an effective designation by a Participant, the Participant's estate.

(d) Additional Provisions Relating to Restricted Stock Units.

(1) Settlement. Upon the vesting of and/or lapsing of any other restrictions (i.e., settlement) with respect to each Restricted Stock Unit, the Participant shall be entitled to

receive from the Company such number of shares of Common Stock or (if so provided in the applicable Award agreement) an amount of cash equal to the fair market value (valued in the manner determined by (or in a manner approved by) the Board) of such number of shares of Common Stock as are set forth in the applicable Restricted Stock Unit agreement. The Board may provide that settlement of Restricted Stock Units shall be deferred, on a mandatory basis or at the election of the Participant in a manner that complies with Section 409A of the Code.

(2) Voting Rights. A Participant shall have no voting rights with respect to any Restricted Stock Units.

(3) Dividend Equivalents. The Award agreement for Restricted Stock Units may provide Participants with the right to receive an amount equal to any dividends or other distributions declared and paid on an equal number of outstanding shares of Common Stock ("***Dividend Equivalents***"). Dividend Equivalents may be settled in cash and/or shares of Common Stock and shall be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which paid, in each case to the extent provided in the Award agreement.

8. Other Stock-Based Awards

(a) General. The Board may grant other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property ("***Other Stock-Based Awards***"). Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock or cash, as the Board shall determine.

(b) Terms and Conditions. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price applicable thereto.

9. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under the Plan, (ii) the share counting rules set forth in Section 4(a), (iii) the number and class of securities and exercise price per share of each outstanding Option, (iv) the share and per-share provisions and the measurement price of each outstanding SAR, (v) the number of shares subject to and the repurchase price per share subject to each outstanding Restricted Stock Award and (vi) the share and per-share-related provisions and the purchase price, if any, of each outstanding Other Stock-Based Award, shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares

subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events.

(1) Definition. A "***Reorganization Event***" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock.

(A) In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock on such terms as the Board determines (except to the extent specifically provided otherwise in an applicable Award agreement or another agreement between the Company and the Participant): (i) provide that such Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that all of the Participant's unvested Awards will be forfeited immediately prior to the consummation of such Reorganization Event and/or unexercised Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant (to the extent then exercisable) within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "***Acquisition Price***"), make or provide for a cash payment to Participants with respect to each Award held by a Participant equal to (A) the number of shares of Common Stock subject to the vested portion of the Award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) the exercise, measurement or purchase price of such Award and any applicable tax withholdings, in exchange for the termination of such Award, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 9(b)(2), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

(B) Notwithstanding the terms of Section 9(b)(2)(A), in the case of outstanding Restricted Stock Units that are subject to Section 409A of the Code: (i) if the applicable Restricted Stock Unit agreement provides that the Restricted Stock Units shall be settled upon a "change in control event" within the meaning of Treasury Regulation Section 1.409A-3(i)(5)(i), and the Reorganization Event constitutes such a "change in control event", then no assumption or substitution shall be permitted pursuant to Section 9(b)(2)(A)(i) and the Restricted Stock Units shall instead be settled in accordance with the terms of the applicable Restricted Stock Unit agreement; and (ii) the Board may only undertake the actions set forth in clauses (iii), (iv) or (v) of Section 9(b)(2)(A) if the Reorganization Event constitutes a "change in control event" as defined under Treasury Regulation Section 1.409A-3(i)(5)(i) and such action is permitted or required by Section 409A of the Code; if the Reorganization Event is not a "change in control event" as so defined or such action is not permitted or required by Section 409A of the Code, and the acquiring or succeeding corporation does not assume or substitute the Restricted Stock Units pursuant to clause (i) of Section 9(b)(2)(A), then the unvested Restricted Stock Units shall terminate immediately prior to the consummation of the Reorganization Event without any payment in exchange therefor.

(C) For purposes of Section 9(b)(2)(A)(i), an Award (other than Restricted Stock) shall be considered assumed if, following consummation of the Reorganization Event, such Award confers the right to purchase or receive pursuant to the terms of such Award, for each share of Common Stock subject to the Award immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); *provided, however*, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise or settlement of the Award to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determines to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company with respect to outstanding Restricted Stock shall inure to the benefit of the Company's successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to such Restricted Stock; *provided, however*, that the Board may provide for termination or deemed satisfaction of such repurchase or other rights under the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, either initially or by amendment. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock then outstanding shall automatically be deemed terminated or satisfied.

10. General Provisions Applicable to Awards

(a) Transferability of Awards. Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant; *provided*, *however*, that, except with respect to Awards subject to Section 409A of the Code, the Board may permit or provide in an Award for the gratuitous transfer of the Award by the Participant to or for the benefit of any immediate family member, family trust or other entity established for the benefit of the Participant and/or an immediate family member thereof if the Company would be eligible to use a Form S-8 under the Securities Act for the registration of the sale of the Common Stock subject to such Award to such proposed transferee; *provided further*, that the Company shall not be required to recognize any such permitted transfer until such time as such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument in form and substance satisfactory to the Company confirming that such transferee shall be bound by all of the terms and conditions of the Award. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees. For the avoidance of doubt, nothing contained in this Section 10(a) shall be deemed to restrict a transfer to the Company.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under an Award. The Company may elect to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise, vesting or release from forfeiture of an Award or at the same time as payment of the exercise or purchase price, unless the Company determines otherwise. If provided for in an Award or approved by the

Committee, a Participant may satisfy the tax obligations in whole or in part by delivery (either by actual delivery or attestation) of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their fair market value (valued in the manner determined by (or in a manner approved by) the Company); *provided*, *however*, except as otherwise provided by the Committee, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income), except that, to the extent that the Company is able to retain shares of Common Stock having a fair market value (determined by, or in a manner approved by, the Company) that exceeds the statutory minimum applicable withholding tax without financial accounting implications or the Company is withholding in a jurisdiction that does not have a statutory minimum withholding tax, the Company may retain such number of shares of Common Stock (up to the number of shares having a fair market value equal to the maximum individual statutory rate of tax (determined by, or in a manner approved by, the Company)) as the Company shall determine in its sole discretion to satisfy the tax liability associated with any Award. Shares used to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(f) Amendment of Award. Except as otherwise provided in Sections 5(g) and 6(e) with respect to repricings and Section 11(d) with respect to actions requiring stockholder approval, the Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, does not materially and adversely affect the Participant's rights under the Plan or (ii) the change is permitted under Section 9.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously issued or delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and regulations and any applicable stock exchange or stock market rules and regulations and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in whole or in part, free from some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

11. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award by virtue of the adoption of the Plan, and the grant of an Award

shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder; Clawback Policy. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be issued with respect to an Award until becoming the record holder of such shares. In accepting an Award under the Plan, a Participant agrees to be bound by any clawback policy the Company has in effect or may adopt in the future.

(c) Effective Date and Term of Plan. The Plan shall become effective immediately prior to the effectiveness of the Company's registration statement for its initial public offering (the "***Effective Date***"). No Awards shall be granted under the Plan after the expiration of 10 years from the Effective Date, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time provided that no amendment that would require stockholder approval under the rules of NASDAQ may be made effective unless and until the Company's stockholders approve such amendment. In addition, if at any time the approval of the Company's stockholders is required as to any other modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 11(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment, taking into account any related action, does not materially and adversely affect the rights of Participants under the Plan. No Award shall be made that is conditioned upon stockholder approval of any amendment to the Plan unless the Award provides that (i) it will terminate or be forfeited if stockholder approval of such amendment is not obtained within no more than 12 months from the date of grant and (2) it may not be exercised or settled (or otherwise result in the issuance of Common Stock) prior to such stockholder approval.

(e) Authorization of Sub-Plans (including for Grants to non-U.S. Employees). The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to the Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with Section 409A of the Code. If and to the extent (i) any portion of any payment, compensation or other benefit provided to a Participant pursuant to the Plan in

connection with his or her employment termination constitutes "nonqualified deferred compensation" within the meaning of Section 409A of the Code and (ii) the Participant is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, in each case as determined by the Company in accordance with its procedures, by which determinations the Participant (through accepting the Award) agrees that he or she is bound, such portion of the payment, compensation or other benefit shall not be paid before the day that is six months plus one day after the date of "separation from service" (as determined under Section 409A of the Code) (the "***New Payment Date***"), except as Section 409A of the Code may then permit. The aggregate of any payments that otherwise would have been paid to the Participant during the period between the date of separation from service and the New Payment Date shall be paid to the Participant in a lump sum on such New Payment Date, and any remaining payments will be paid on their original schedule.

The Company makes no representations or warranty and shall have no liability to the Participant or any other person if any provisions of or payments, compensation or other benefits under the Plan are determined to constitute nonqualified deferred compensation subject to Section 409A of the Code but do not to satisfy the conditions of that section.

(g) Limitations on Liability. Notwithstanding any other provisions of the Plan, no individual acting as a director, officer, employee or agent of the Company will be liable to any Participant, former Participant, spouse, beneficiary, or any other person for any claim, loss, liability, or expense incurred in connection with the Plan, nor will such individual be personally liable with respect to the Plan because of any contract or other instrument he or she executes in his or her capacity as a director, officer, employee or agent of the Company. The Company will indemnify and hold harmless each director, officer, employee or agent of the Company to whom any duty or power relating to the administration or interpretation of the Plan has been or will be delegated, against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the Board's approval) arising out of any act or omission to act concerning the Plan unless arising out of such person's own fraud or bad faith.

(h) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than the State of Delaware.

Exhibit 10.13

CASA SYSTEMS, INC.
STOCK OPTION AGREEMENT

Casa Systems, Inc. (the "Company") hereby grants the following stock option pursuant to its 2017 Stock Incentive Plan. The terms and conditions attached hereto are also a part hereof.

Notice of Grant

Name of optionee (the "Participant"):

Date of grant (the "Grant Date"):

Number of shares of the Company's Common Stock subject to this option ("Shares"):

Option exercise price per Share:[1]

Number, if any, of Shares that vest immediately on the grant date:

Shares that are subject to vesting schedule:

Vesting Start Date:

Final Exercise Date: [2]

Type of Option (Incentive Stock Option or Nonstatutory Stock Option):

Vesting Schedule:

This option satisfies in full all commitments that the Company has to the Participant with respect to the issuance of stock, stock options or other equity securities.

CASA SYSTEMS, INC.

Signature of Participant

By: _____

Street Address

Name of Officer
Title:

City/State/Zip Code

[1] This must be at least 100% of the fair market value of the Common Stock on the date of grant (or 110% in the case of a Participant that owns more than 10% of the total combined voting power of all classes of stock of the Company or its parent or subsidiary (a "10% Shareholder")) for the option to qualify as an incentive stock option (an "ISO") under Section 422 of the Code.

[2] The Final Exercise Date must be no more than 10 years (5 years in the case of a 10% Shareholder) from the date of grant for the option to qualify as an ISO. The correct approach to calculate the final exercise date is to use the day immediately prior to the date ten years out from the date of the stock option award grant (5 years in the case of a 10% stockholder). For example, an award granted to someone on February 1, 2017 would expire on January 31, 2027 (not on February 1, 2027).

CASA SYSTEMS, INC.

Stock Option Agreement
Incorporated Terms and Conditions

1. Grant of Option.

This agreement evidences the grant by the Company, on the Grant Date set forth in the Notice of Grant that forms part of this agreement (the "Notice of Grant"), to the Participant of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2017 Stock Incentive Plan (the "Plan"), the number of Shares set forth in the Notice of Grant of common stock, $0.001 par value per share, of the Company ("Common Stock"), at the exercise price per Share set forth in the Notice of Grant. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on the Final Exercise Date set forth in the Notice of Grant (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code") to the extent set forth in the Notice of Grant. If the option is intended to be an incentive stock option, the option is intended to so qualify to the maximum extent permitted by law. Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") in accordance with the vesting schedule set forth in the Notice of Grant.

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be in writing, in the form of the Stock Option Exercise Notice attached as Annex A, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, or in such other form (which may be electronic) as is approved by the Company, together with payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, director or officer of, or consultant or advisor to, the Company or any other entity the employees, officers, directors, consultants, or advisors of which are eligible to receive option grants under the Plan (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition, non-solicitation, or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or any other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment is terminated by the Company for Cause (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment by the Company for Cause, and the effective date of such employment termination is subsequent to the date of delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate upon the effective date of such termination of employment). If the Participant is subject to an individual employment or severance agreement with the Company or eligible to participate in a Company severance plan or arrangement, in any case which agreement, plan or arrangement contains a definition of "cause" for termination of employment, "Cause" shall have the meaning ascribed to such term in such agreement, plan or arrangement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant's employment shall be considered to have been terminated for Cause if the Company determines, within 30 days after the Participant's resignation, that termination for Cause was warranted.

4. Tax Matters.

(a) Withholding. No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

(b) Disqualifying Disposition. If the Participant disposes of Shares acquired upon exercise of this option within two years from the Grant Date or one year after such Shares were acquired pursuant to exercise of this option, the Participant shall notify the Company in writing of such disposition.

5. Transfer Restrictions; Clawback.

(a) This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

(b) In accepting this option, the Participant agrees to be bound by any clawback policy that the Company may adopt in the future.

6. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

ANNEX A

CASA SYSTEMS, INC.

Stock Option Exercise Notice

Casa Systems, Inc.
100 Old River Road, Unit 100
Andover, MA 01810

Dear Sir or Madam:

I, (the "Participant"), hereby irrevocably exercise the right to purchase shares of the Common Stock, $0.001 par value per share (the "Shares"), of Casa Systems, Inc. (the "Company") at $ per share pursuant to the Company's 2017 Stock Incentive Plan and a stock option agreement with the Company dated (the "Option Agreement"). Enclosed herewith is a payment of $____, the aggregate purchase price for the Shares. The certificate for the Shares should be registered in my name as it appears below or, if so indicated below, jointly in my name and the name of the person designated below, with right of survivorship.

Dated: _____

_____
Signature
Print Name:

Address:
_____

_____

Name and address of persons in whose name the Shares are to be jointly registered (if applicable):

_____

Exhibit 10.14

CASA SYSTEMS, INC.

Restricted Stock Unit Agreement (Time Vested)
2017 Stock Incentive Plan

NOTICE OF GRANT

This Restricted Stock Unit Agreement (this "Agreement") is made as of the Agreement Date between Casa Systems, Inc. (the "Company"), a Delaware corporation, and the Participant.

I. Agreement Date:

II. Participant Information

Participant:
Participant Address:

III. Grant Information

Grant Date:
Number of Restricted Stock Units:

IV. Vesting Table

Vesting Date	Number of Restricted Stock Units that Vest

This Agreement includes this Notice of Grant and the following Exhibit, which is expressly incorporated by reference in its entirety herein:

Exhibit A – General Terms and Conditions

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the Agreement Date. By executing this Notice of Grant, the Participant hereby acknowledges that the Participant has read this Notice of Grant and the Terms and Conditions in the following Exhibit, has received and read the Plan, and understands and agrees to comply with the terms and conditions of this Agreement and the Plan.

CASA SYSTEMS, INC.	PARTICIPANT
Name: Title:	Name:

EXHIBIT A

GENERAL TERMS AND CONDITIONS

For valuable consideration, receipt of which is acknowledged, the parties hereto agree as follows:

1. Award of Restricted Stock Units.

In consideration of services rendered and to be rendered to the Company by the Participant, the Company has granted to the Participant, subject to the terms and conditions set forth in this Agreement and in the Company's 2017 Stock Incentive Plan (the "Plan"), an award with respect to the number of restricted shares units (the "RSUs") set forth in the Notice of Grant that forms part of this Agreement (the "Notice of Grant"). Each RSU represents the right to receive one share of common stock, $0.001 par value per share, of the Company (the "Common Stock") upon vesting of the RSU, subject to the terms and conditions set forth herein.

2. Vesting.

(a) The RSUs shall vest in in accordance with the Vesting Table set forth in the Notice of Grant (the "Vesting Table"). Any fractional shares resulting from the application of the percentages in the Vesting Table shall be rounded down to the nearest whole number of RSUs.

(b) Upon the vesting of the RSU, the Company will deliver to the Participant, for each RSU that becomes vested, one share of Common Stock, subject to the payment of any taxes pursuant to Section 7. The Common Stock will be delivered to the Participant as soon as practicable following each vesting date, but in any event within 30 days of such date. Notwithstanding anything herein to the contrary, in the sole discretion of the Board, the Company may, with respect to any applicable vesting date of the RSU, deliver to the Participant cash having a fair market value equal to the number of shares of Common Stock underlying the portion of the RSU that vested on such date, payable within 30 days of the vesting date, less applicable taxes.

3. Forfeiture of Unvested RSUs Upon Cessation of Service.

In the event that the Participant ceases to perform services to the Company for any reason or no reason, with or without cause, all of the RSUs that are unvested as of the time of such cessation shall be forfeited immediately and automatically to the Company, without the payment of any consideration to the Participant, effective as of such cessation. The Participant shall have no further rights with respect to the unvested RSUs or any Common Stock that may have been issuable with respect thereto. If the Participant provides services to a subsidiary of the Company, any references in this Agreement to provision of services to the Company shall instead be deemed to refer to service with such subsidiary.

4. Restrictions on Transfer.

The Participant shall not sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively "transfer") any RSUs, or any interest therein.

The Company shall not be required to treat as the owner of any RSUs or issue any Common Stock to any transferee to whom such RSUs have been transferred in violation of any of the provisions of this Agreement.

5. Rights as a Shareholder.

The Participant shall have no rights as a stockholder of the Company with respect to any shares of Common Stock that may be issuable with respect to the RSUs until the issuance of the shares of Common Stock to the Participant following the vesting of the RSUs.

6. Provisions of the Plan.

This Agreement is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this Agreement.

7. Tax Matters.

(a) Acknowledgments; No Section 83(b) Election. The Participant acknowledges that he or she is responsible for obtaining the advice of the Participant's own tax advisors with respect to the award of RSUs and the Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents with respect to the tax consequences relating to the RSUs. The Participant understands that the Participant (and not the Company) shall be responsible for the Participant's tax liability that may arise in connection with the acquisition, vesting and/or disposition of the RSUs. The Participant acknowledges that no election under Section 83(b) of the Internal Revenue Code, as amended, is available with respect to RSUs.

(b) Withholding. The Participant acknowledges and agrees that the Company has the right to deduct from payments of any kind otherwise due to the Participant any federal, state, local or other taxes of any kind required by law to be withheld with respect to the vesting of the RSUs. On each vesting date (or other date or time at which the Company is required to withhold taxes associated with the RSUs), the Company will retain from the shares of Common Stock otherwise issuable on such date a number of shares having a fair market value (as determined by the Company in its sole discretion) equal to the Company's minimum statutory withholding obligation. If the Company is unable to retain sufficient shares of Common Stock to satisfy such tax withholding obligations, the Participant acknowledges and agrees that the Company or an affiliate of the Company has the right to deduct from payments of any kind otherwise due to the Participant any federal, state, local or other taxes of any kind required by law to be withheld for taxes relating to the RSUs. The Company shall not deliver any shares of Common Stock to the Participant until it is satisfied that all required withholdings have been made and if such withholding taxes cannot be timely satisfied, then the Participant shall forfeit the RSUs and have no further rights with respect to the award.

8. Miscellaneous.

(a) Authority of Compensation Committee. In making any decisions or taking any actions with respect to the matters covered by this Agreement, the Compensation Committee shall have all of the authority and discretion, and shall be subject to all of the

protections, provided for in the Plan. All decisions and actions by the Compensation Committee with respect to this Agreement shall be made in the Compensation Committee's discretion and shall be final and binding on the Participant.

(b) No Right to Continued Service. The Participant acknowledges and agrees that, notwithstanding the fact that the vesting of the RSUs is contingent upon his or her continued service to the Company, this Agreement does not constitute an express or implied promise of continued service relationship with the Participant or confer upon the Participant any rights with respect to a continued service relationship with the Company.

(c) Section 409A. The RSUs awarded pursuant to this Agreement are intended to be exempt from or comply with the requirements of Section 409A of the Internal Revenue Code and the Treasury Regulations issued thereunder ("Section 409A"). The delivery of shares of Common Stock on the vesting of the RSUs may not be accelerated or deferred unless permitted or required by Section 409A.

(d) Participant's Acknowledgements. The Participant acknowledges that he or she: (i) has read this Agreement; (ii) has been represented in the preparation, negotiation and execution of this Agreement by legal counsel of the Participant's own choice or has voluntarily declined to seek such counsel; (iii) understands the terms and consequences of this Agreement; and (iv) is fully aware of the legal and binding effect of this Agreement.

(e) Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the State of Delaware without regard to any applicable conflicts of laws provisions.

CASA

Casa Systems, Inc.
100 Old River Road, Unit 100
Andover, MA 01810
Telephone (978) 688-6706
Fax (978) 688-6584
Web http://www.casa-systems.com

May 25, 2011

Gary D. Hall
[ ]

Dear Gary:

On behalf of Casa Systems, Inc. (the "Company"), I am pleased to set forth the terms of your employment with the Company:

1. You will be employed to serve on a full-time basis as the Chief Financial Officer (CFO), effective June 27th, 2011. As the CFO of the Company, you will report to the Chief Executive Officer of the Company and be responsible for finance, accounting, treasury, tax plus such other duties as may from time to time be assigned to you by the Company.

2. Your total compensation will include base salary, bonus and stock options. Your starting base salary rate will be US$17,500 dollars per month, which annualized is equivalent to US$210,000 dollars, subject to taxes and other withholdings as required by law. Such salary and bonus may be adjusted from time to time in accordance with normal business practice and in the sole discretion of the Company. Your target annual bonus (prorated if less than twelve-month period) will be $60,000 based on the Company and you achieving goals set by the Board of Directors.

3. Subject to the approval of the Board of Directors of the Company, the Company may grant to you an incentive stock option (the "Option") under the Company's 2003 Stock Incentive Plan (the "Plan") fur the purchase of an aggregate of 60,000 shares of common stock of the Company at a price per share equal to the fair market value at the time of Board approval. The Option shall be subject to all terms, vesting schedules and other provisions set forth in the Plan and in a separate option agreement.

4. You may participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided that you are eligible under (and subject to all provisions of) the plan documents governing those programs. The benefits made available by the Company, and the rules, terms and conditions for participation in such programs, may be changed by the Company at any time without advance notice.

5. You will be eligible for a maximum of fifteen (15) days of vacation per calendar year subject to proration to your date of hire and to be taken at such times as may be approved by the Company. The number of vacation days for which you are eligible shall accrue at the rate of 1.25 days per month that you are employed during such calendar year.

6. Following a Sale of the Company, should you be discharged by the Company or the acquiring company without Cause or if you terminate your employment with the Company for Good Reason within six (6) months of the Sale of the Company, then, subject to the Company's receipt of an effective general release in a form and scope acceptable to the Company within 30 days after your termination, you will be provided with the following severance package:

- 12 months base salary (total US$210,000) and 12 months medical and dental insurance coverage.
- One-year acceleration of your stock option grant specified in this offer.

"Cause" shall mean willful misconduct by the employee or willful failure by the employee to perform his or her responsibilities to the Company (including, without limitation, breach by the employee of any provision of any employment, consulting, advisory, nondisclosure, non on or other similar agreement between the employee and the Company), as determined by the Company, which determination shall be conclusive. The employee shall be considered to have been discharged for "Cause" if the Company determines, within 30 days after the employee's resignation, that termination for Cause was warranted.

"Good Reason" shall mean that you have complied with the Good Reason Process following the occurrence of any of the following events:

1. The demotion of your title or a material reduction in your responsibility or authority for the operations of the Company, which includes not serving as the Chief Financial Officer of the acquiring or surviving entity, without your written consent,

2. A material reduction in your then current base salary without your written consent, or

3. The relocation of your office more than 30 miles from your then current office location without your written consent.

"Good Reason Process" means that (i) you have reasonably determined in good faith that a Good Reason condition has occurred; (ii) you notify the Company in writing of the occurrence of the Good Reason condition within 60 days of the occurrence of such condition; (iii) you cooperate in good faith with the Company's efforts, for a period of 30 days following such notice (the 'Cure Period'), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) you terminate your employment within 30 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed out to have occurred."

"Sale" shall mean the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Common Stock immediately prior to such transaction beneficially own, directly or indirectly, more than 50% of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

7. You will be required to execute an Assignment, Invention and Non-Disclosure Agreement and a Non-Competition and Non-Solicitation Agreement in the forms attached as a condition of employment

8. You represent that you are not bound by any employment contract, restrictive covenant or other restriction preventing you from entering into employment with or carrying out your responsibilities for the Company, or which is in any way inconsistent with the terms of this letter.

9. In accordance with federal law, you will be required to provide the Company with documentation of your identity and eligibility to work in the United States. You agree to provide to the Company, within three days following your hire date, such documentation, as required by the Immigration Reform and Control Act of 1986. This documentation can be a U.S. Passport or a valid driver's license and a U.S. birth certificate or U.S. Social Security card. Please refer to the I-9 Form enclosed for all other types of acceptable documentation. You may need to obtain a work visa in order to be eligible to work in the United States. If that is the case, your employment with the Company will be conditioned upon your obtaining a work visa in a timely manner as determined by the Company.

10. This offer is contingent upon a satisfactory background check. This letter shall not be construed as an agreement, either expressed or implied, to employ you for any stated term, and shall in no way alter the Company's policy of "employment at will", under which both you and the Company remain free to terminate the employment relationship, with or without cause, at any time, with or without notice. Similarly, nothing in this letter shall be construed as an agreement, either express or implied, to pay you any compensation or grant you any benefit beyond the end of your employment with the Company.

If you agree with the initial terms of your employment with the Company as set forth in this letter, please sign the enclosed duplicate of this letter in the space provided below and return it to me or, by June 18th, 2011. If you do not accept this offer by June 18th, 2011, this offer will be revoked.

Very Truly Yours

/s/ Jerry Guo

By: _____

Name: Jerry Guo

Title: President and CEO

The foregoing correctly sets forth the initial terms of my at-will employment by Casa Systems Inc.

/s/ Gary D. Hall

Name: Gary D. Hall

Date: 6/16/11

Enclosures: Assignment, Invention and Non-Disclosure Agreement
Non-competition and Non-Solicitation Agreement
I-9 Form

Exhibit 10.16

100 Old River Road, Unit 100
Andover, MA 01810 USA
Phone: 978-688-6706 Fax: (978) 688-6584
Web: http://casa-systems.com

August 18, 2012

Abraham Pucheril
[ ]

Dear Abraham,

On behalf of Casa Systems, Inc. (the "Company"), I am pleased to set forth the terms of your employment with the Company:

1) You will be employed to serve on a full-time basis as Vice President of Worldwide Sales, effective August 20, 2012. In this role, you will report to the CEO of the Company or a senior operational executive designated by the CEO, and will be responsible for worldwide sales except China; plus such other duties as may from time to time be assigned to you by the Company.

2) Your total compensation includes base salary, management bonus, sales bonus, and stock options. Your starting cash compensation is specified below, subject to taxes and other withholdings as required by law. Such compensation may be adjusted from time to time in accordance with normal business practice and in the sole discretion of the Company. All compensations are in US dollars.

a) Base Salary: $19,167 per month, which annualized is equivalent to $230,004 dollars.

b) Management bonus of $30,000 per year depending on the performance of the Company and the performance of your management duties evaluated during the first quarter of the following year

c) Sales bonus: Target sales bonus is $60,000 per quarter (3-month period) payable quarterly, which is equivalent to $240,000 when annualized.

i) Your sales bonus for 2012 is specified below:

For the remaining period in Q3 2012, you will be paid the target bonus prorated based on the number of days you work

For Q4, 2012, your sales bonus are based on: 1) sales revenue to Liberty Global Inc. and all its subsidiaries on target sales revenue of $5,000,000; 2) company on target sales revenue of $15,500,000.

(a) LGI Accounts Q4 Revenue/$5,000,000*$30,000

(b) (LGI Accounts Q4 Revenue-$5,000,000)/$5,000,000* $30,000*1.5

(c) Company Q4 Revenue/$15,500,000*$30,000

(d) (Company Q4 Revenue-$15,500,000)/$15,500,000* $30,000*1.5

(e) Revenue is recognized when products are shipped according to GAAP

ii) Your sales bonus in 2013 will be calculated based on sales revenue worldwide except China with the target revenue determined by the Company and its Board

3) You may participate in any and all bonus and benefit programs that the Company establishes and makes available to its employees from time to time, provided that you are eligible under (and subject to all provisions of) the plan documents governing those programs. The benefits made available by the Company, and the rules, terms and conditions for participation in such programs, may be changed by the Company at any time without advance notice.

4) Subject to the approval of the Board of Directors of the Company, the Company may grant to you an incentive stock option (the "Option") under the Company's Stock Incentive Plan (the "Plan") for the purchase of an aggregate of sixty thousand (60,000) shares of common stock of the Company at a price per share equal to the fair market value at the time of Board approval. The Option shall be subject to all terms, vesting schedules and other provisions set forth in the Plan and in a separate option agreement.

5) You will be eligible for a maximum of fifteen (15) days of vacation per calendar year subject to proration to your date of hire and to be taken at such times as may be approved by the Company. The number of vacation days for which you are eligible shall accrue at the rate of .8333 day per month that you are employed during such calendar year.

6) You will be required to execute an Assignment, Invention and Non-Disclosure Agreement and a Non-Competition and Non-Solicitation Agreement in the forms attached as a condition of employment.

7) You represent that you are not bound by any employment contract, restrictive covenant or other restriction preventing you from entering into employment with or carrying out your responsibilities for the Company, or which is in any way inconsistent with the terms of this letter.

8) In accordance with federal law, you will be required to provide the Company with documentation of your identity and eligibility to work in the United States. You agree to provide to the Company, within three days following your hire date, such documentation, as required by the Immigration Reform and Control Act of 1986. This documentation can be a U.S. Passport **or** a valid driver's license **and** a U.S. birth certificate or U.S. Social Security card. Please refer to the I-9 Form enclosed for all other types of acceptable documentation. You may need to obtain a work visa in order to be eligible to work in the United States. If that is the case, your employment with the Company will be conditioned upon your obtaining a work visa in a timely manner as determined by the Company.

9) This letter shall not be construed as an agreement, either expressed or implied, to employ you for any stated term, and shall in no way alter the Company's policy of "employment at will", under which both you and the Company remain free to terminate the employment relationship, with or without cause, at any time, with or without notice. Similarly, nothing in this letter shall be construed as an agreement, either express or implied, to pay you any compensation or grant you any benefit beyond the end of your employment with the Company.

If you agree with the initial terms of your employment with the Company as set forth in this letter, please sign the enclosed duplicate of this letter in the space provided below and return it to me or Diane Brown, Director of Human Resources. If you do not accept this offer by August 20, 2012 this offer will be revoked.

Please plan on being available at 9:30 a.m. on your first day of employment for orientation with Diane Brown, Director of Human Resources. Your manager will be available following orientation to assist you with your initial introduction and assimilation to Casa Systems.

Very Truly Yours,

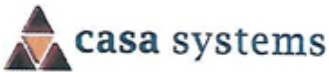
By: /s/ Jerry Guo
Name: Jerry Guo
Title: President & CEO

The foregoing correctly sets forth the initial terms of my at-will employment by Casa Systems, lnc.

/s/ Abraham Pucheril
Name: Abraham Pucheril

Date: Aug 20/2012

Enclosures:
Assignment, invention and Non-Disclosure Agreement
Non-Competition and Non-Solicitation Agreement
1-9 Form
Benefit Summary Sheet



CONSULTING AGREEMENT

THIS CONSULTING AGREEMENT (the "Agreement"), made this 5th day of March, 2012 is entered into by Casa Systems, Inc., a Delaware corporation with its principal place of business at 100 Old River Road, Andover, MA 01810, USA (the "Company"), and William Styslinger, an individual residing at [ ] (the "Consultant").

INTRODUCTION

The Company and the Consultant desire to establish the terms and conditions under which the Consultant will provide services to the Company. In consideration of the mutual covenants and promises contained herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the parties agree as follows:

1. Title and Services. The Consultant shall be a senior advisor to the CEO of Casa Systems. The Consultant agrees to perform sales management, corporate strategy and other advisory services to the CEO of the Company as may be requested from time to time by the CEO of the Company and at the CEO's sole discretion, including, but not limited to, the services specified on Schedule A to this Agreement. The Consultant shall report to the CEO of the Company. The Consultant agrees to devote at least 20 hours per week to the performance of such services. During the Consultation Period (as defined below) and for a period of twelve (12) months thereafter, the Consultant shall not engage in any activity that has a conflict of interest with the Company, including any competitive employment, business, or other activity, and he shall not assist any other person or organization that competes, or intends to compete, with the Company.

2. Term. This Agreement shall commence on the date of the 1ST of February, 2012 and shall continue until the 31ST of January, 2014 (such period, as it may be extended by one year through mutual agreement, being referred to as the "Consultation Period"), unless sooner terminated in accordance with the provisions of Section 4.

3. Compensation.

3.1 Base Fee: In connection with his engagement under this Agreement, the Consultant shall receive a consulting fee of USD$20,000 per month (equivalent to an annual base fee of $240,000), subject to the Consultant's continued service hereunder.

3.2 Bonus: In addition, he will be eligible to receive the following annual bonus if the Company's annual GAAP revenue in a calendar year (Annual Revenue) reaches the annual target (Target). The Target for 2012 is USD$50,000,000 recognizable revenue according to GAAP. The bonus is payable before the end of February of the following calendar year.

(a) None if Annual Revenue is below Target

(b) 25% x $240,000 = $60,000 when Annual Revenue reaches Target.

(c) (Annual Revenue – Target)/20,000,000 x $240,000 additional bonus if Annual Revenue is above Target

(d) The total annual bonus is capped at $480,000 for a calendar year

3.3 Stock option: Subject to the approval of the Board of Directors of the Company, a) the Company may grant to you a non-qualified incentive stock option (the "Option") under the Company's 2011 Stock Incentive Plan (the "Plan") for the purchase of an aggregate of 40,000 shares of common stock of the Company at a price per share equal to the fair market value at the time of Board approval; You shall be responsible for all personal income taxes related to the Option and Restricted Stock. The Option shall vest in 36 months and be subject to all terms, vesting schedules and other provisions set forth in the Plan and in a separate incentive stock agreement.

3.4 Benefits. The Consultant shall not be entitled to any benefits, coverages or privileges, including, without limitation, social security, unemployment, medical or pension payments, made available to employees of the Company. The Consultant's relationship with Company shall be that of independent contractor and nothing in this Agreement shall be construed to create a partnership, joint venture, or employer-employee relationship. The Consultant is not an agent of Company and is not authorized to make any representation, warranty, contract or commitment on behalf of Company or with respect to Company's products.

3.5 The Consultant shall not be entitled to any of the benefits which Company may make available to its employees, such as group insurance, profit-sharing or retirement benefits. The Consultant shall be solely responsible for all tax returns and payments required to be filed with or made to the appropriate taxing authority with respect to the Consultant's performance of the Services and receipt of Fees under this Agreement.

3.6 Because the Consultant is an independent contractor, the Company shall not withhold or make payments for social security, unemployment insurance or disability insurance, or obtain workers' compensation insurance on the Consultant's behalf, if the applicable law requires such withholdings or payments. The Consultant shall accept exclusive liability for complying with all applicable governing laws, including obligations such as payment of taxes, social security, disability and other contributions based on Fees paid to the Consultant under this Agreement. The Consultant shall indemnify and defend and hold Company harmless from and against any and all claims for such taxes or contributions, including penalties and interest as well as any claims related to payment of compensation to Contract Personnel.

4. Termination. The Company, may terminate the Consultation Agreement effective immediately upon receipt of written notice to the Consultant with or without Cause. If the Company terminates this Consulting Agreement without Cause before the end of the Consulting Period, the Consultant shall be entitled to receive the Base Fee and stock option vesting for the remaining time of the Consulting Period or for twelve (12) months, whichever is shorter.

"Cause" shall mean willful misconduct by the Consultant or willful failure by the Consultant to perform his or her responsibilities to the Company (including, without limitation, breach by the Consultant of any provision of any employment, consulting, advisory, nondisclosure, noncompetition or other similar agreement between the Consultant and the Company), as determined by the Company, which determination shall be conclusive. The Consultant shall be considered to have been terminated for "Cause" if the Company determines, within 30 days after the Consultant's termination, that termination for Cause was warranted.

4.1 Notwithstanding the foregoing, the Company may terminate the Consultation Period effective immediately upon receipt of written notice without any compensation due to cancellation, if the Consultant breaches or threatens to breach any provision of Section 6.

5. Cooperation. The Consultant shall use his best efforts in the performance of his obligations under this Agreement. The Company shall provide such access to its information and property as may be reasonably required in order to permit the Consultant to perform his obligations hereunder. The Consultant shall cooperate with the Company's personnel, shall not interfere with the conduct of the Company's business and shall observe all rules, regulations and security requirements of the Company concerning the safety of persons and property.

6. Inventions and Proprietary Information.

6.1 Inventions.

(a) All inventions, discoveries, computer programs, data, technology, designs, innovations and improvements (whether or not patentable and whether or not copyrightable) ("Inventions") related to the business of the Company which are made, conceived, reduced to practice, created, written, designed or developed by the Consultant, solely or jointly with others and whether during normal business hours or otherwise, (i) during the Consultation Period, (ii) thereafter if resulting or directly derived from Proprietary Information (as defined below) and (iii) prior the Consultation Period if listed on Schedule C to this Agreement, shall be the sole property of the Company. The Consultant hereby assigns to the Company all Inventions and any and all related patents, copyrights, trademarks, trade names, and other industrial and intellectual property rights and applications therefor, in the United States and elsewhere and appoints any officer of the Company as his duly authorized attorney to execute, file, prosecute and protect the same before any government agency, court or authority. Upon the request of the Company and at the Company's expense, the Consultant shall execute such further assignments, documents and other instruments as may be necessary or desirable to fully and completely assign all Inventions to the Company and to assist the Company in applying for, obtaining and enforcing patents or copyrights or other rights in the United States and in any foreign country with respect to any Invention. The Consultant also hereby waives all claims to moral rights in any Inventions.

(b) The Consultant shall promptly disclose to the Company all Inventions and will maintain adequate and current written records (in the form of notes, sketches, drawings and as may be specified by the Company) to document the conception and/or first actual reduction to practice of any Invention. Such written records shall be available to and remain the sole property of the Company at all times.

6.2 Proprietary Information.

(a) The Consultant acknowledges that his relationship with the Company is one of high trust and confidence and that in the course of his service to the Company it will have access to and contact with Proprietary Information. The Consultant agrees that he will not, during the Consultation Period or at any time thereafter, disclose to others, or use for his benefit or the benefit of others, any Proprietary Information or Invention.

(b) For purposes of this Agreement, Proprietary Information shall mean, by way of illustration and not limitation, all information (whether or not patentable and whether or not copyrightable) owned, possessed or used by the Company, including, without limitation, any Invention, formula, vendor information, customer information, apparatus, equipment, trade secret, process, research, report, technical data, know-how, computer program, software, software documentation, hardware design, technology, marketing or business plan, forecast, unpublished financial statement, budget, license, price, cost and employee list that is communicated to, learned of, developed or otherwise acquired by the Consultant in the course of his service as a consultant to the Company.

(c) The Consultant's obligations under this Section 6.2 shall not apply to any information that (i) is or becomes known to the general public under circumstances involving no breach by the Consultant or others of the terms of this Section 6.2, (ii) is generally disclosed to third parties by the Company without restriction on such third parties, or (iii) is approved for release by written authorization of an officer of the Company.

(d) Upon termination of this Agreement or at any other time upon request by the Company, the Consultant shall promptly deliver to the Company all records, files, memoranda, notes, designs, data, reports, price lists, customer lists, drawings, plans, computer programs, software, software documentation, sketches, laboratory and research notebooks and other documents (and all copies or reproductions of such materials) relating to the business of the Company.

(e) The Consultant represents that his retention as a consultant with the Company and his performance under this Agreement does not, and shall not, breach any agreement that obligates him to keep in confidence any trade secrets or confidential or proprietary information of his or of any other party or to refrain from competing, directly or indirectly, with the business of any other party or otherwise conflict with any of his agreements or obligations to any other party. The Consultant shall not disclose to the Company any trade secrets or confidential or proprietary information of any other party.

(f) The Consultant acknowledges that the Company from time to time may have agreements with other persons or with the United States Government, or agencies

thereof, that impose obligations or restrictions on the Company regarding inventions made during the course of work under such agreements or regarding the confidential nature of such work. The Consultant agrees to be bound by all such obligations and restrictions that are known to him and to take all action necessary to discharge the obligations of the Company under such agreements.

6.3 Remedies. The Consultant acknowledges that any breach of the provisions of this Section 6 shall result in serious and irreparable injury to the Company for which the Company cannot be adequately compensated by monetary damages alone. The Consultant agrees, therefore, that, in addition to any other remedy it may have, the Company shall be entitled to enforce the specific performance of this Agreement by the Consultant and to seek both temporary and permanent injunctive relief (to the extent permitted by law) without the necessity of proving actual damages.

7. Non-Solicitation. During the Consultation Period and for a period of twelve (12) months thereafter, the Consultant shall not, either alone or in association with others, (i) solicit, or permit any organization directly or indirectly controlled by the Consultant to solicit, any employee of the Company to leave the employ of the Company, or (ii) solicit for employment, hire or engage as an independent contractor, or permit any organization directly or indirectly controlled by the Consultant to solicit for employment, hire or engage as an independent contractor, any person who was employed by the Company at any time during the term of the Consultant's employment with the Company; provided, that this clause (ii) shall not apply to any individual whose employment with the Company has been terminated for a period of six months or longer.

8. Other Agreements. The Consultant hereby represents that, except as the Consultant has disclosed in writing to the Company, the Consultant is not bound by the terms of any agreement with any current or prior employer or other party to refrain from using or disclosing any trade secret or confidential or proprietary information in the course of his relationship with the Company, to refrain from competing, directly or indirectly, with the business of such employer or any other party or to refrain from soliciting employees, customers or suppliers of such employer or other party. The Consultant agrees to furnish the Company with a copy of any such agreement upon request.

9. Independent Contractor Status. The Consultant shall perform all services under this Agreement as an "independent contractor" and not as an employee or agent of the Company. The Consultant is not authorized to assume or create any obligation or responsibility, express or implied, on behalf of, or in the name of, the Company or to bind the Company in any manner.

10. Notices. All notices required or permitted under this Agreement shall be in writing and shall be deemed effective upon personal delivery or upon deposit in the United States Post Office, by registered or certified mail, postage prepaid, addressed to the other party at the address shown above, or at such other address or addresses as either party shall designate to the other in accordance with this Section 10.

11. Pronouns. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular forms of nouns and pronouns shall include the plural, and vice versa.

12. Entire Agreement. This Agreement constitutes the entire agreement between the parties and supersedes all prior agreements and understandings, whether written or oral, relating to the subject matter of this Agreement.

13. Amendment. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Consultant.

14. Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the laws of the Commonwealth of Massachusetts.

15. Successors and Assigns. This Agreement shall be binding upon, and inure to the benefit of, both parties and their respective successors and assigns, including any corporation with which, or into which, the Company may be merged or which may succeed to its assets or business, provided, however, that the obligations of the Consultant are personal and shall not be assigned by him.

16. Interpretation. If any restriction set forth in Section 1 or Section 7 is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

17. Miscellaneous.

17.1 No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar or waiver of any right on any other occasion.

17.2 The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement.

17.3 In the event that any provision of this Agreement shall be invalid, illegal or otherwise unenforceable, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year set forth above.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo

Name: Jerry Guo

Title: CEO

CONSULTANT

By: /s/ William Styslinger

William Styslinger

SCHEDULE A

Description of Services

1. Global sales management, recruiting, market development.
2. Corporate strategy
3. Other advices to the CEO on general company matters

CASA SYSTEMS, INC.

Nonstatutory Stock Option Agreement
Granted Under 2011 Stock Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Casa Systems, Inc., a Delaware corporation (the "Company"), on May 25, 2012 (the "Grant Date") to William Styslinger, an employee, consultant or director of the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2011 Stock Incentive Plan (the "Plan"), a total of 40,000 shares (the "Shares") of common stock, $0.001 par value per share, of the Company ("Common Stock") at $ 16.92 per Share. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on May 24, 2022 (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall not be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") as to 33.333% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.778% of the original number of Shares at the end of each successive month following the first anniversary of the Vesting Commencement Date until the third anniversary of the Vesting Commencement Date. For purposes of this Agreement, "Vesting Commencement Date" shall mean February 1, 2012.

If the Participant's engagement as a consultant to the Company pursuant to that certain Consulting Agreement, dated March 5, 2012, by and between the Company and the Participant (as the same may be amended and/or restated from time to time, the "Consulting Agreement") is terminated without Cause (as defined in the Consulting Agreement) by the Company, this option shall vest as to an additional number of Shares equal to the lesser of (i) 33.3333% of the original number of Shares and (ii) the number of Shares, if any, with respect to which this option has not vested as of such termination.

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

Addendum

THIS FIRST ADDENDUM to Consulting Agreement dated March 5, 2012, between Casa Systems, Inc. and William Styslinger is made and entered into this 1st day of January, 2016.

The Consulting Agreement will be extended for a period of twelve (12) months, January 1, 2016, through December 31, 2016.

IN WITNESS WHEREOF, the parties hereto have executed this Addendum as of the day and year set forth above.

CASA SYSTEMS, INC.

By: /s/ Lucy Xie
Lucy Xie, Senior Vice President

CONSULTANT

By: /s/ William Styslinger
William Styslinger

Return To:
Middlesex Savings Bank
Attn: Loan Servicing
120 Flanders Road
Westborough, MA 01851

MORTGAGE, SECURITY AGREEMENT AND FINANCING STATEMENT

This **MORTGAGE, SECURITY AGREEMENT AND FINANCING STATEMENT** (this "Mortgage") entered into as of July 1, 2015 between **Casa Properties LLC**, a Delaware limited liability company with an address of 100 Old River Road, Suite 100, Andover, Massachusetts 01810 (the "Borrower") and **Middlesex Savings Bank**, which is organized and existing under the laws of the Commonwealth of Massachusetts, and whose address is 6 Main Street, Natick, Massachusetts 01760 (the "Lender").

Property Address: 100 Old River Road, Andover, MA

The real property, which is the subject matter of this Mortgage, has the following address: 100 Old River Road, Andover, Massachusetts 01810. This Mortgage secures all Obligations (as hereinafter defined) including without limitation all liabilities pursuant to (i) that certain Term Note by Borrower in favor of the Lender with an original principal amount of SEVEN MILLION NINE HUNDRED FIFTY THOUSAND AND 00/100 DOLLARS ($7,950,000.00) even date (the "Note") as such Note may be modified, extended and/or amended; and (ii) that certain Commercial Mortgage Loan Agreement between Borrower and Lender of even date (the "Loan Agreement") as such Loan Agreement may be modified, extended and/or amended; and (iii) all other documents executed by Borrower in connection therewith. The Note, the Loan Agreement, and said other documents referred to in (iii) above are collectively referred to as the "Security Instruments".

1. Mortgage, Obligations, and Future Advances

1.1 **Mortgage**. For valuable consideration paid, the receipt and sufficiency of which is hereby acknowledged, the Borrower hereby grants to the Lender, with MORTGAGE COVENANTS, the "Property" described below, to secure the prompt payment and performance of the Obligations.

1.2 **Property**. The term "Property", as used in this Mortgage, shall mean: (a) the land described in Exhibit A attached hereto, and all easements, rights, privileges and appurtenances thereto, and including all of Borrower's right, title and interest in and to the rights-of-ways, streets, and alleys adjacent thereto, whether any of the same now exist or are hereafter acquired by reversion or otherwise; (b) the buildings and other structures and improvements now or hereafter upon the land, including all machinery, fixtures and equipment owned by the Borrower of every kind and nature whatsoever forming a part of said buildings or other structures (the "Improvements") including all materials stored on the land for incorporation into the Improvements; (c) the lease or leases, now in existence

or those which may be created in the future during the term of this Mortgage, which leases cover portions or all of the Property, and any extensions and renewals of any thereof and any guarantees of all present and future lessee's obligations under any thereof, and all rents, income and profits arising from the leases and extensions and renewals thereof, if any, and together with all rents, income and profits due or to become due from any and all other tenancies for the use or occupation of the Property or any part thereof which may be created in the future during the term of this Mortgage, whether or not recorded, specifically excluding all duties or obligations of the Lender of any kind arising there under (the "Leases"); (d) all of the licenses, permits, approvals, agreements, Special Permits, Orders of Condition, Certificates of Compliance, and all of the Lender's right, title and interest therein, whether now existing or hereafter acquired, related to the Property or the Improvements, either as constructed or to be constructed as part of any construction project contemplated in the Loan Agreement (the "Assigned Approvals"); and (e) all of the Borrower's right, title and interest in, to and under all architectural, design and construction agreements, and all other contracts, agreements, warranties, licenses, approvals, permits, plans and specifications whether now or hereafter existing and in any way relating, directly or indirectly to, or issued or prepared in connection with the Property, or in connection with any contemplated construction on the Property (the "Plans and Specifications").

1.3 Mortgage as Security Agreement and Financing Statement. This Mortgage shall be deemed to be a security agreement and financing statement pursuant to the terms of the Uniform Commercial Code of Massachusetts (M.G.L. c. 106). No modification to any other Security Instrument shall require modification of this Mortgage unless otherwise required by law, or unless there is a material change in the definition of "Property" hereunder.

1.4 Obligations. The term "Obligation(s)", as used in this Mortgage, shall mean, without limitation, all indebtedness, liabilities, commitments, and performances which the Borrower owes to the Lender, whether arising under this Mortgage, the Note, any other Security Instrument, or otherwise, now existing or hereafter arising, and whether direct or indirect, absolute or contingent, joint or several, due or not due.

1.5 Cross-Collateral and Future Advances. It is the express intention of the Borrower that this Mortgage secure payment and performance of all of the Obligations, whether now existing or hereinafter incurred by reason of any future advances by the Lender or otherwise, and regardless of whether such Obligations are or were contemplated by the parties at the time of the granting of this Mortgage. Notice of the continuing grant of this Mortgage shall not be required to be stated on the face of any document evidencing any of the Obligations, nor shall such documents be required to otherwise specify that they are secured hereby.

2. Representations, Warranties, Covenants

2.1 Representations and Warranties. The Borrower represents and warrants that:

(a) This Mortgage has been duly executed and delivered by the Borrower and is the legal, valid and binding obligation of the Borrower enforceable in accordance with its terms, except as limited by bankruptcy, insolvency, reorganization, moratorium and other laws affecting the enforcement of creditors' rights generally;

(b) The Borrower is the sole legal owner of the Property, holding good and marketable fee simple title to the Property, subject to no liens, encumbrances, leases, security interests or rights of others, other than as set forth in Exhibit A attached hereto.

(c) Each Obligation is a commercial obligation and does not represent a loan used for personal, family or household purposes and is not a consumer transaction or otherwise subject to the provisions of M.G.L. Chapter 140D, the Federal Truth in Lending Act or Federal Reserve Board Regulation Z, or other such consumer statutes or regulations.

2.2 Recording Further Assurances. The Borrower covenants that it shall, at its sole cost and expense and upon the request of the Lender, cause the Mortgage, and each amendment, modification or supplement hereto, to be recorded and filed in such manner and in such places, and shall at all times comply with all such statutes and regulations, as may be required by law in order to establish, preserve and protect the interest of the Lender in the Property and the rights of the Lender under this Mortgage. Upon the written request of the Lender, and at the sole expense of the Borrower, the Borrower will promptly execute and deliver such further instruments and documents and take such further actions as the Lender may deem desirable to obtain the full benefits of this Mortgage and of the rights and powers herein granted, including, without limitation, deliver of any certificate of title and filing any financing statement under the Uniform Commercial Code of Massachusetts (M.G.L. c. 106). The Borrower authorizes the Lender to file any such financing statement without the signature of the Borrower, to the extent permitted by applicable law, and to file a copy of this Agreement in lieu of a financing statement.

2.3 Restrictions on Sale by Borrower. The Borrower covenants that it will not, directly or indirectly, without the prior written approval of the Lender, which approval shall not be unreasonably withheld, conditioned, or delayed, in each instance sell, convey, assign, transfer, mortgage, pledge, hypothecate, lease or dispose of all or any part of any legal or beneficial interest in the Property or any part thereof or permit any of the foregoing, except as expressly permitted by the terms of the Security Instruments and except those transactions which are in the normal course of Borrower's business, or as permitted under the Loan Agreement.

2.4 Provisions Regarding the Leases. Except as permitted under the Loan Agreement, Borrower shall not materially alter, modify or change any of the Leases or terminate the term thereof or accept a surrender thereof or cancel any of the Leases or waive or release any Lessee from the performance or observance by such Lessee of any obligation or condition thereof, or execute an assignment of the Leases or the rents and profits there from, or agree, permit or consent to a subordination of any of the Leases to a mortgage or alter, amend or modify any guaranty of said Leases or cancel or terminate such guaranty or consent to an assignment or subletting under any Lease or anticipate rents, or any other payments thereunder for more than thirty (30) days prior to accrual without the prior written consent of the Lender, which consent shall not be unreasonably withheld, conditioned or delayed.

All subsequent Leases and tenancies for the use and occupation of the Property or any part thereof shall be and are hereby made subject to all of the terms of the assignment referred to in Section 1.2 above, and the Borrower shall further assign and transfer the same to the Lender by assignment satisfactory to Lender upon their creation, if Lender so requests.

Upon and during the continuation of an Event of Default, or any default in the covenants to be performed by Borrower as lessor under any Lease, the Lender may, at its option, without notice, and without regard to the adequacy of the security for the indebtedness hereby secured, in person or by agent, with or without bringing any action, suit or proceeding, enter upon and take possession of the Property, and have, hold, manage, lease and operate the same on such terms, employing such management agents and for such period of time as the Lender may deem proper; and may demand, collect and receive all rents, issues and profits of the Property, and to do all things required of or permitted to the Lender as lessor under the Leases. It is not the intention of the parties hereto that an entry by the Lender upon the Property under the terms of this instrument shall constitute the Lender a "mortgagee in possession" in contemplation of law, except at the option of the Lender.

Notwithstanding the foregoing, so long as there is no Event of Default which has not been cured, the Borrower shall have the right to collect, but not more than thirty (30) days prior to accrual, all rents, issues and profits from the Property and to retain, use and enjoy the same.

Nothing herein shall obligate Lender to perform the obligations of Landlord under any of the Leases or other tenancy arrangements, which obligations Borrower shall perform, and the Borrower hereby agrees to indemnify the Lender against and hold it harmless from any and all liability, loss or damage which it may or might incur under the Leases or under or by reason of the provisions hereof and of and from any and all claims and demands whatsoever which may be asserted against it by reason of any alleged obligation or undertaking on its part to perform or discharge any of the terms of the Leases. Should the Lender incur any such liability, loss or damage under any Lease or under or by reason of the provisions hereof, or in defense against any such claims or demands, the amount thereof, including costs, expenses and reasonable attorneys' fees, together with interest thereon at the rate set forth in the Note, shall be secured hereby and by the Mortgage, and the Borrower shall reimburse Lender therefor immediately upon demand and, upon failure to do so, the Lender may declare all sums evidenced by the Note and secured hereby immediately due and payable.

Lender shall have the right, by the execution of suitable written instruments, from time to time, to subordinate this Mortgage and the right of Lender to any Lease from time to time in force with reference to the Property, and, on the execution of any such instrument, this Mortgage shall be subordinate to the Lease for which such subordination is applicable with the same force and effect as if such Lease had been executed and delivered prior to the execution, delivery and recording of this Mortgage.

2.5 Provisions Regarding Assigned Approvals. The Borrower covenants, warrants and represents that it is and shall be the sole owner of the Assigned Approvals free and clear of all pledges, liens, security interests and other encumbrances of every nature whatsoever except those in favor of the Lender, has the full right, power and authority to assign, and to grant the security interest in the Assigned Approvals as herein provided, shall not make any other assignment of, or permit any pledge, lien, security interest or other encumbrance to exist with respect to, the Assigned Approvals except in favor of the Lender, and shall not transfer, assign, sell or exchange the Borrower's interest in the Assigned Approvals. No Assigned Approvals shall be amended, modified or changed in any material respect, or cancelled or terminated, without the Lender's prior written consent in each instance.

So long as there is no Event of Default, Borrower shall have and may exercise all rights as the owner or holder of the Assigned Approvals, which are lawful and are not inconsistent with the provisions of any of the Security Instruments. Immediately upon the occurrence of any Event of Default, and for so long as the Event of Default remains uncured, the right described in the preceding sentence shall cease and terminate, and in such event the Lender is hereby expressly and irrevocably authorized (but not required) to exercise every right, option, power or authority inuring to the Borrower under any one or more of the Assigned Approvals as fully as the Borrower could. In such event, the Borrower hereby irrevocably directs the grantor or licensor of, or the contracting party to, any such Assigned Approval, to the extent permitted by such Assigned Approval and under any recognition or other agreement executed by such grantor, licensor or contracting party, upon demand and after notice from the Lender of the Borrower's default, to recognize and accept the Lender as the holder of such as such grantor, licensor or contracting party would recognize and accept the Borrower and its performance there under.

Nothing contained herein shall operate to obligate or be construed to obligate the Lender to perform any of the terms, covenants or conditions contained in the Assigned Approvals or otherwise to impose any obligation upon the Lender with respect to the Assigned Approvals prior to written notice by the Lender to the Borrower of the Lender's election to assume the Borrower's obligations under one or more of the Assigned Approvals. Until such election, the payment, performance or observance of any obligation, requirement or condition under the Assigned Approvals is and shall be that of the Borrower.

2.6 Provisions Regarding Plans and Specifications. The Borrower hereby agrees to obtain consents to the assignment of Plans and Specifications provided for herein, and to obtain agreements to attorn directly to and recognize the Lender in place of the Borrower from and during the continuation of an Event of Default from construction contractor and from such other parties as may be from time to time required by the Lender, such consents and agreements to be in form and substance reasonably satisfactory to the Lender. The Borrower hereby authorizes the Lender, at the Lender's option, from and during the continuation of an Event of Default to act as owner in place of the Borrower under such contracts and permits and directs all such other parties to such contracts and permits to recognize and perform for the Lender thereafter as if the Lender were the Borrower hereunder and the Borrower hereby provides that such parties shall be fully protected from any liability to the Borrower in so doing.

2.7 Insurance. With respect to the Property and any tangible personal property owned by the Borrower comprising or intended to comprise any of the Collateral, Borrower shall obtain and maintain, and provide Lender with evidence of: (i) insurance coverages which meet all property, hazard and other insurance requirements of Lender (including but not limited to physical hazard insurance on an "all risks" basis in an amount not less than 100% of the full replacement cost of the Property and flood insurance if and as required by applicable federal law and as otherwise required by the Lender); and (ii) prepayment of the premiums for such insurance for at least one (1) year.

All policies regarding such insurance shall be issued by companies licensed to do business in the state where the policy is issued and also in the Commonwealth of Massachusetts, be otherwise acceptable to the Lender, provide deductible amounts acceptable to the Lender, name the Lender as mortgagee, loss payee and additional insured, and provide that no cancellation or material modification of such policies shall occur without at least thirty (30) days' prior written notice to the Lender. Such policies shall include: (i) a mortgage endorsement determined by the Lender in good faith to be equivalent to the "standard" mortgage endorsement so that the insurance, as to the interest of the Lender, shall not be invalidated by any act or neglect of the Borrower or the owner of the Property, any foreclosure or other proceedings or notice of sale relating to the Property, any change in the title to or ownership of the Property, or the occupation or use of the Property for purposes more hazardous than are permitted at the date of inception of such insurance policies; (ii) a replacement cost endorsement; (iii) an agreed amount endorsement; (iv) a contingent liability from operation endorsement; and (v) such other endorsements as the Lender may request. The Borrower will furnish to the Lender upon request such original policies, certificates of insurance or other evidence of the foregoing as are acceptable to the Lender. The terms of all insurance policies shall be such that no coinsurance provisions apply, or if a policy does contain a coinsurance provision, the Borrower shall insure the Property in an amount sufficient to prevent the application of the coinsurance provisions.

In the event of a casualty, so long as no Event of Default has occurred and remains uncured, Lender shall release such portion of the insurance proceeds as is necessary to restore the Property to its prior condition insofar as is practicable, so long as such insurance proceeds are sufficient to restore the Property and Borrower complies with Lender's then standard requirements with respect to the release of construction draws and so long as sufficient leases remain in place or Borrower has commitments for new leases such that sufficient revenues are generated to service the Note.

2.8 Operation of Property. The Borrower covenants and agrees as follows:

(a) unless Lender has otherwise consented in writing, not to allow changes in the nature of the occupancy or use for which the Property was intended at the time this Mortgage was executed, shall not initiate or acquiesce in a change in the zoning classification of the Property, or subject the Property to restrictive or negative covenants;

(b) not to permit the Property to be used for any unlawful or improper purpose, and at all times comply with all Federal, state and local laws, ordinances and regulations, and to obtain and maintain all governmental or other approvals relating to the Borrower, the Property or the use

thereof, including, without limitation, any applicable zoning or building codes or regulations and any laws or regulations relating to the handling, storage, release or cleanup of Hazardous Substances, and to provide prompt written notice to the Lender of: (i) any violation of any such law, ordinance or regulation by the Borrower or relating to the Property; (ii) receipt of notice from any Federal, state or local authority alleging any such violation; and (iii) the presence or release on the Property of any Hazardous Substances;

(c) at all times to keep the Property in at least the same condition as it is as of the date hereof (damage from reasonable wear and tear, eminent domain taking, and damage by fire or other casualty excepted) and not to commit or permit any strip, waste, impairment, deterioration or alteration of the Property or any part thereof; and

(d) to complete in a good and workmanlike manner, in accordance with all applicable governmental laws, regulations and requirements, all improvements to be made to the Property.

2.9 Inspection Rights. The Borrower hereby grants to the Lender and its representatives, agents, contractors and employees the right to from time to time, upon reasonable notice to Borrower, to: (i) enter upon the Property and conduct such inspections, testing, and studies of the Property as the Lender deems necessary or desirable; and (ii) examine all records and documents; including, without limitation, all test results or studies, reports, memoranda, licenses, permits and all other papers or materials relating to the Property.

2.10 Payment of Real Estate Taxes etc. The Borrower shall pay when due all Federal, state, municipal or other taxes, betterment assessments and other governmental levies, water rates, sewer charges, insurance premiums and other charges on the Property, the Mortgage or any Obligation that could, if unpaid, result in a lien on the Property or on any interest therein. Any time after the occurrence of an Event of Default, upon the demand of Lender, the Borrower shall deposit from time to time with the Lender sums determined by the Lender to be sufficient to pay when due the amounts referred to in this paragraph. Notwithstanding the establishment of any such escrow account, the Borrower shall have the right to contest any notice, lien, encumbrance, claim, tax, charge, betterment assessment or premium filed or asserted against or relating to the Property; provided that it contests the same diligently and in good faith and by proper proceedings and at the Lender's request, provides the Lender with adequate cash security, in the Lender's reasonable judgment, against the enforcement thereof. The Borrower shall furnish to the Lender the receipted real estate tax bills or other evidence of payment of real estate taxes for the Property within five (5) days prior to the date from which interest or penalty would accrue for nonpayment thereof. The Borrower shall also furnish to the Lender evidence of all other payments referred to above within fifteen (15) days after written request therefor by the Lender.

2.11 Hazardous Waste. The Borrower warrants and represents that neither Borrower or any of the Borrower's agents or employees have, as of this date, caused, or are aware of a release or threat of release of any "oil", "hazardous material", "hazardous wastes" or "hazardous substances" (the "Materials") as those terms are defined under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Sec. 9601 et seq., as

amended, the Massachusetts Hazardous Waste Management Act, M.G.L., Chapter 21C, as amended, and the Massachusetts Oil and Hazardous Material Release Prevention and Response Act, M.G.L., Chapter 21E, as amended, and regulations adopted there under (collectively the "Superfund and Hazardous Waste Laws") on the Property; or arranged for the transport of, or transported any Materials in such a manner as to violate, or result in potential liabilities under, any Superfund and Hazardous Waste Laws; or received any notification, order or demand from the Environmental Protection Agency or from the Commonwealth of Massachusetts (the "Commonwealth") Department of Environmental Quality Engineering under any of the Superfund and Hazardous Waste Laws; or incurred any liability under any Superfund and Hazardous Waste Laws in connection with the mismanagement, improper disposal, or release of any Materials; and, to the best of the Borrower's knowledge, no predecessor-in-title to the Property committed any act or omission which caused a release thereon which would give rise to a lien on the Property filed with the Commonwealth of Massachusetts or the Federal government; and that no statement of claim or lien affecting the Property has been recorded or filed by the Federal government or the Commonwealth of Massachusetts for costs incurred by such parties with respect to the Property or any other property owned by the undersigned; and that the Borrower is not aware of the presence of any Materials or the threat of a release of Materials on or in the Property which could give rise to liability under any Superfund and Hazardous Waste Laws or under any other applicable Federal, state or local law, rule or regulation. Notwithstanding the foregoing, nothing shall prohibit Borrower or any occupant of the Property from using any part thereof for the use, generation, treatment, storage or disposal of Hazardous Materials customarily used and in quantities customarily associated with the permitted use of the Property, so long as the same is in compliance with all applicable laws and regulations.

2.12 Indemnification. The Borrower warrants and guaranties that all certifications made in Section 2.11 above are true and correct to the best of the Borrower's knowledge and belief. The Borrower hereby covenants and guaranties to protect, indemnify, and hold the Lender harmless from and against all loss, damage, and expense, including attorney's fees and costs of litigation, suffered or incurred by Lender under or on account of any circumstance subject to the Superfund and Hazardous Waste Laws, including, without limitation, all loss, damage and expense incurred by the Lender on account of the filing of a lien against the Property by the Commonwealth of Massachusetts or the Federal government on account of the presence of any Materials located on or to be located on the Property. The obligations of the Borrower hereunder shall not cease or lapse unless and until all obligations, under all documents executed in connection with the above-captioned loan, including payment of indebtedness under the Note have been fully performed.

If in the event the Borrower shall receive notification of the presence of hazardous waste on the Property from any agency of the Commonwealth of Massachusetts or of the Government of the United States of America, then the Borrower shall within three (3) days of its receipt thereof forward to the Lender at its principal place of business a true and exact copy of the notice so received. Should the Borrower have reason to know that hazardous waste as defined in M.G.L. Chapter 21E, as amended, are present upon any or all of the Property, then the Borrower

shall immediately notify the Lender as recited above of the presence of the said hazardous waste. The failure of the Borrower to notify the Lender of notice of hazardous waste shall be deemed to be a default by the Borrower and the Lender shall have the right to exercise its statutory powers relative to foreclosure and/or entrance upon the Property.

In the event that there shall be a release of oil or hazardous materials or substances on, upon or into the Property, the Lender shall have the right (but not the obligation), upon five (5) business days advance written notice to the Borrower (or without notice in the case of emergencies), to cause the release to be contained and/or removed on behalf of the Borrower. The contractor(s) selected by the Lender shall have the right to enter upon the Property with such men, machinery and equipment as they shall deem necessary for such purpose and shall undertake such remedial containment and clean-up actions as they shall deem appropriate, without thereby incurring any liability to the Borrower on account thereof. The Borrower agrees to cooperate with any such contractor(s) and to render such assistance to such contractor(s) as may be requested to facilitate the remedial containment and clean-up actions. The Borrower should be liable to the Lender for all costs and expenses, including all attorneys fees incurred on account of such remedial action undertaken on the Borrower's behalf and shall reimburse the Lender therefor on demand. In the event that the Borrower fails to so reimburse the Lender on demand, such failure shall constitute an Event of Default hereunder. The Borrower hereby agrees to indemnify, defend and hold harmless the Lender from and against any and all loss, liability, damage and expense, including costs associated with the administrative and judicial proceedings and attorney fees to which the Lender may become exposed, or which the Lender may incur, in exercising in whole or in part of failing or neglecting to exercise any of its rights under this section.

2.13 Lender as Secured Party. In addition to the rights and remedies otherwise provided for by law or in equity and in any of the Security Instruments, upon the occurrence and during the continuation of any Event of Default, (i) the Lender shall have the rights and remedies of a secured party under the Uniform Commercial Code, as enacted in Massachusetts (M.G.L. c. 106), with respect to any of the Property owned by Borrower which constitutes personal property, subject to the applicable terms of the Loan Agreement; and (ii) the Borrower shall be deemed to have constituted and appointed the Lender its true and lawful attorney-in-fact with full power of substitution in the Borrower's name to do any act or to execute any document or instrument deemed by such attorney-in-fact to be necessary or desirable to be done or to be executed in order to accomplish and effectuate any term of the collateral assignments set out here. It is understood and agreed that this power of attorney shall be deemed to be a power coupled with an interest which cannot be revoked. Notwithstanding the foregoing, wherever Borrower appoints Lender as Borrower's "true and lawful attorney", such appointments shall only be effective five (5) days after Lender reasonably requests in writing that Borrower perform some act and Borrower fails to do so or after an Event of Default which remains uncured.

3. Certain Rights of the Lender

3.1 Legal Proceedings. The Lender shall have the right, but not the duty, to intervene or otherwise participate in any legal or equitable proceeding that, in the Lender's reasonable judgment, might affect the Property or any of the rights created or secured by this Mortgage. The Lender shall have such right whether or not there shall have occurred an Event of Default.

3.2 Appraisals/Assessments. The Lender shall have the right, at the Borrower's sole cost and expense, to obtain appraisals, environmental site assessments or other inspections of the portions of the Property that are real estate at such times as the Lender deems necessary or as may be required by applicable law, or prevailing Lender credit or underwriting policies. Notwithstanding the foregoing, so long as no Event of Default has occurred and remains uncured and any governmental regulatory agency does not require additional appraisals, Lender shall order no more than one appraisal at Borrower's expense during the term of the Note, and in the absence of the occurrence of a release of Materials giving rise to Lender's reasonable belief of contamination of the Property, Lender shall not order any environmental site assessments at Borrower's expense.

4. Defaults and Remedies

4.1 Events of Default. Event of Default shall mean the occurrence of any one or more of the Events of Default set forth in the Note or any of the Security Instruments.

4.2 Remedies. On the occurrence and during the continuation of any Event of Default the Lender may, at any time thereafter, at its option and, to the extent permitted by applicable law, without notice, exercise any or all of the remedies set forth in the Note or any of the Security Instruments, as applicable.

4.3 Cumulative Rights and Remedies. All of the foregoing rights, remedies and options are cumulative and in addition to any rights the Lender might otherwise have, whether at law or by agreement and may be exercised separately or concurrently. The Borrower further agrees that the Lender may exercise any or all of its rights or remedies set forth herein without having to pay the Borrower any sums for use or occupancy of the Property.

4.4 Borrower's Waiver of Certain Rights. To the extent permitted by applicable law, the Borrower hereby waives the benefit of all present and future laws (i) providing for any appraisal before sale of all or any portion of the Property, or (ii) in any way extending the time for the enforcement of the collection of the Obligations or creating or extending a period of redemption from any sale made hereunder.

5. Miscellaneous

5.1 Waiver of Homestead. The Borrower hereby waives and terminates any rights to any homestead exemptions on record as of the date of this Mortgage respecting the Property under the provisions of M.G.L. c. 188, § 1.

5.2 Severability. If any provision of this Mortgage or portion of such provision or the application thereof to any person or circumstance shall to any extent be held invalid or unenforceable, the remainder of this Mortgage (or the remainder of such provision) and the application thereof to other persons or circumstances shall not be affected thereby.

5.3 Exercise of Rights. Borrower agrees that all rights of the holder hereof as to personal property security and real estate security may be exercised together or separately and further agrees that, in exercising its power of sale, such holder may sell the personal property security or any part thereof either separately from, or together with, the real estate security or any part thereof, in such order as such holder may, in its discretion, elect, and whether or not the aggregate proceeds thereof exceed the indebtedness secured by this Mortgage. At any sale, any combination of or all of the security may be offered for sale for one total price and the proceeds of such sale accounted for in one account without distinguishing between the items of security or assigning to the separate securities proportions of the proceeds of such sale accounted for in one account without distinguishing proportions of the proceeds; and, in case such holder, in the exercise of the power of sale herein given, elects to sell in parts or parcels, said sales may be held from time to time and the power shall not be fully executed until all of the personal property security and real estate security not previously sold shall have been sold.

5.4 Condominium Provisions. If, and to the extent that any of the Property includes a unit in a condominium project (the "Condominium Project") the Property shall include Borrower's undivided interest in the common elements of the Condominium Project, the title to which is held by a unit owner's association (the "Owners' Association") and the uses, proceeds and benefits of Borrower's interest therein. In such case, and in addition to the covenants and agreements made elsewhere in this Mortgage, Borrower further covenant and agree as follows:

A. Borrower shall perform all of Borrower's obligations under the Condominium Project's Constituent Documents. The "Constituent Documents" are the (i) Master Deed or any other document which creates the Condominium Project; (ii) declaration of trust, by-laws, and regulations (or other equivalent documents) of or by the Owners' Association") Borrower shall promptly pay, when due, all dues and assessments imposed pursuant to the Constituent Documents.

B. Borrower shall take such actions as may be reasonable to insure that the Owners' Association maintains, with a generally accepted insurance carrier, a "master" or "blanket" policy which is satisfactory to the Lender and which provides hazard insurance coverage in the amounts, for the periods, and against the hazards the Lender requires, including fire hazards included within the term "extended coverage", and Borrower shall give the Lender prompt notice of any lapse in such required hazard insurance coverage. In the event of a distribution of hazard insurance proceeds in lieu of restoration or repair following a loss to the Property, whether to the unit or to common elements, any proceeds payable to Borrower are hereby assigned and shall be paid to the Lender for application to the Obligations, with any excess paid to Borrower.

C. Borrower shall take such actions as may be reasonable to insure that the Owners' Association maintains a public liability insurance policy acceptable in form, amount, and extent of coverage to the Lender.

D. The proceeds of any award or claim for damages, direct or consequential, payable to Borrower in connection with any condemnation or other taking of all or any part of the Property, whether of the unit or of the common elements, or for any conveyance in lieu of condemnation, are hereby assigned and shall be paid to the Lender. Such proceeds shall be applied by the Lender to the sums secured by the Mortgage as provided for in paragraph 2.7 of the Mortgage.

E. Borrower shall not, except after notice to the Lender and with the Lender's prior written consent, either partition or subdivide the Property or consent to:

(i) the abandonment or termination of the Condominium Project, except for abandonment or termination required by law in the case of substantial destruction by fire or other casualty or in the case of a taking by condemnation or eminent domain;

(ii) any amendment to any provision of the Constituent Documents if the provision is not for the express benefit of the Lender;

(iii) termination of professional management and assumption of self-management of the Owners Association; or

(iv) any action which would have the effect of rendering the public liability insurance coverage maintained by the Owners Association unacceptable to the Lender.

F. If Borrower does not pay condominium dues and assessments when due, then the Lender may pay them. Any amounts disbursed by the Lender under this paragraph F shall become additional debt of Borrower secured by the Mortgage. Unless Borrower and the Lender agree to other terms of payment, these amounts shall bear interest from the date of disbursement at the Note rate and shall be payable, with interest, upon notice from the Lender to Borrower requesting payment

5.5 <u>JURY WAIVER</u>. THE BORROWER AND LENDER EACH HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY, AND AFTER AN OPPORTUNITY TO CONSULT WITH LEGAL COUNSEL, WAIVE ANY AND ALL RIGHTS TO A TRIAL BY JURY IN ANY ACTION OR PROCEEDING IN CONNECTION WITH THIS MORTGAGE, THE OBLIGATIONS, ALL MATTERS CONTEMPLATED HEREBY AND DOCUMENTS EXECUTED IN CONNECTION HEREWITH. THE BORROWER CERTIFIES THAT NEITHER THE LENDER NOR ANY OF ITS REPRESENTATIVES, AGENTS OR COUNSEL HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT THE LENDER WOULD NOT IN THE EVENT OF ANY SUCH PROCEEDING SEEK TO ENFORCE THIS WAIVER OF RIGHT TO TRIAL BY JURY.

This Mortgage is upon the STATUTORY CONDITION, for any breach of which the Lender shall have the STATUTORY POWER OF SALE and any other remedies provided by applicable law, including, without limitation, the right to pursue a judicial sale of the Property or any portion thereof by deed, assignment or otherwise. The Borrower agrees and acknowledges that the acceptance by the Lender of any payments from either the Borrower or the Guarantor after the occurrence and during the continuation of any Event of Default, the exercise by the Lender of any remedy set forth herein or the commencement of foreclosure proceedings against the Property shall not waive the Lender's right to foreclose or operate as a bar or estoppel to the exercise of any other rights or remedies of the Lender. The Borrower agrees and acknowledges that the Lender, by making payments or incurring costs described herein, shall be subrogated to any right of the Borrower to seek reimbursement from any third parties, including, without limitation, any predecessor in interest to the Borrower's title or other party who may be responsible under any law, regulation or ordinance relating to the presence or cleanup of Hazardous Substances.

[Signatures contained on the following page]

EXECUTED under seal as of the date first above written.

Borrower:

CASA PROPERTIES LLC, a Delaware limited liability company

By: /s/ Gary Hall
Name: Gary Hall
Title: Duly Authorized Signatory

COMMONWEALTH OF MASSACHUSETTS

County of Suffolk

On this 1st day of July, 2015, before me, the undersigned notary public, personally appeared Gary Hall, duly authorized signatory of Casa Properties LLC, proved to me through satisfactory evidence of identification, which were ☐ driver's license, ☐ personally known to me or ☐ personally known to a 3rd party personally known to me, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

/s/ Brian Atherton
NOTARY PUBLIC
My Commission Expires: 4-28-17

EXHIBIT A

PROPERTY DESCRIPTION

A certain parcel of land in Andover, Essex County, Massachusetts, shown on a plan entitled “Plan of Land, Andover, Mass.” dated October 11, 1985 (Scale 1” = 40’) prepared by Harry R. Feldman, Inc., and recorded with the Essex North Registry of Deeds as Plan No. 10531, which land is bounded and described according to said plan as follows:

NORTHEASTERLY	by Old River Road, one thousand six hundred twenty-six and 85/100	(1,626.85) feet;
EASTERLY	by land now or formerly of the Town of Andover, eighty and 33/100	(80.33) feet;
SOUTHERLY	by River Road (relocated), three hundred ninety-six and 04/100	(396.04) feet; and
SOUTHWESTERLY	by the ramp to Route 93, one thousand three hundred eighty-six and	80/100 (1,386.80) feet.

LESS AND EXCEPT that land taken in Layout No. 7093 and Order of Taking by the Commonwealth of Massachusetts Department of Public Works, dated December 23, 1992, recorded with the Essex North District County Registry of Deeds in Book 3632, Page 114, with reference made to the plan recorded with said Deeds as Plan No. 12172.

The above-referenced land, less the land taken by Andover Layout No. 7093 and Order of Taking, is described as follows:

A certain parcel of land located at the intersection of Old River Road and River Road numbered 100 Old River Road in Andover (Essex County), MA, bounded and described as follows:

Beginning at a Massachusetts Highway Bound located on the northeasterly sideline of Route I-93;

Thence running southeasterly by a curve to the left having a radius of 207.61 feet, a length of 219.52 feet, the chord of which is 209.43 feet along a bearing of S 43°12’44” E, to a Massachusetts Highway Bound at a point of non-tangency on the northerly sideline of River Road;

Thence turning and running N 75°11’52” E, a distance of 170.10 feet along said sideline of River Road to a Massachusetts Highway Bound at a point of curvature;

Thence running more northeasterly by a curve to the right having a radius of 1,455.00 feet, a length of 109.79 feet along said sideline of River Road to a point of tangency;

Thence running N 79°31’16” E, a distance of 115.67 feet along said sideline of River Road to a point of curvature;

Thence running less northeasterly, northerly and northwesterly by a curve to the left having a radius of 71.00 feet, a length of 162.09 feet along said sideline, the chord of which is 129.11 feet along a bearing of N 14°07’20” E, to a Massachusetts Highway Bound at a point of tangency;

Thence running N 51°16’35” W, a distance of 324.13 feet to a Massachusetts Highway Bound;

Thence turning and running N 52°50’00” W, a distance of 47.72 feet to a point;

Thence turning and running N 54°46’20” W, a distance of 250.00 feet to a point;

Thence turning and running N 56°13’30” W, a distance of 242.00 feet to a point;

Thence turning and running N 56°04’40” W, a distance of 110.64 feet to a point of curvature;

Thence running more northwesterly by a curve to the left having a radius of 347.10 feet, a distance of 89.19 feet to a point of tangency.

Thence running N 70°48’00” W, a distance of 83.07 feet to a point of curvature;

Thence running more northwesterly by a curve to the left having a radius of 250.00 feet, a length of 89.99 feet, the chord of which is 89.50 feet along a bearing of N 81°06’44” W, to a point of compound curvature;

Thence running westerly by a curve to the left having a radius of 750.00 feet, a length of 307.96 feet, the chord of which is 305.80 feet along a bearing of S 76°48’45” W, to a point of non-tangency on the northeasterly sideline of Route I-93;

The above nine courses being along the southwesterly sideline of Old River Road;

Thence turning and running southeasterly by a curve to the left having a radius of 260.00 feet, a length of 230.00 feet along said sideline of Route I-93, the chord of which is 222.57 feet along a bearing of S 45°49’10” E, to a point of tangency;

Thence running S 71°09’43” E, a distance of 261.45 feet to a Massachusetts Highway Bound at a point of curvature;

Thence running southeasterly and southerly by a curve to the right having a radius of 560.00 feet, a length of 569.24 feet along said sideline of Route I-93, the chord of which is 545.05 feet along a bearing of S 42°02’29” E, to a point of compound curvature and the point of beginning;

Containing an area of 419,017 square feet or 9.619 acres.

Meaning and intending to convey all the property conveyed to Mortgagor by Quitclaim Deed of Q Old River Property, LLC recorded with the Essex North Registry of Deeds (the “Registry”) in Book 14158, Page 207.

Exhibit 10.19

REGISTRATION RIGHTS AGREEMENT

This REGISTRATION RIGHTS AGREEMENT, dated as of April 26, 2010 (this "Agreement"), is entered into by and among Casa Systems, Inc., a Delaware corporation (the "Company"), LGI Ventures BV, a company registered under the laws of the Netherlands ("LGIV"), SeaChange International, Inc., a Delaware corporation ("SeaChange"), and Summit Partners Private Equity Fund VII-A, L.P., a Delaware limited partnership, Summit Partners Private Equity Fund VII-B, L.P., a Delaware limited partnership, Summit Investors I, LLC, a Delaware limited liability company, and Summit Investors I (UK), L.P., a Cayman Islands exempted limited partnership (collectively, "Summit"). LGIV, SeaChange and Summit are collectively referred to herein as the "Investors" and, together with the Company, are referred to herein as the "Parties").

WHEREAS, pursuant to that certain Series A Convertible Preferred Stock Purchase Agreement, dated as of July 6, 2005, by and between the Company and SeaChange (the "SeaChange Series A Purchase Agreement"), the Company sold, issued and delivered to SeaChange, and SeaChange purchased and accepted, 1,290,679 shares of the Company's Series A Convertible Preferred Stock, par value $.001 per share (the "Series A Preferred Stock");

WHEREAS, pursuant to that certain Series B Convertible Preferred Stock Purchase Agreement, dated as of June 26, 2009, by and between the Company and SeaChange (the "SeaChange Series B Purchase Agreement"), the Company sold, issued and delivered to SeaChange, and SeaChange purchased and accepted, 73,000 shares of the Company's Series B Convertible Preferred Stock, par value $.001 per share (the "Series B Preferred Stock");

WHEREAS, pursuant to that certain Registration Rights Agreement, dated as of July 6, 2005, by and between the Company and SeaChange, the Company and SeaChange set the terms and conditions of the registration rights granted to SeaChange by the Company in connection with SeaChange's purchase of Series A Preferred Stock pursuant to the SeaChange Series A Purchase Agreement, which Registration Rights Agreement was amended on June 26, 2009, to, among other things, provide that such registration rights would also apply to the Series B Preferred Stock purchased by SeaChange pursuant to the SeaChange Series B Purchase Agreement (as amended, the "SeaChange Registration Rights Agreement");

WHEREAS, pursuant to that certain Securities Purchase Agreement, dated as of June 26, 2009, by and among the Company, LGIV and UPC Broadband Operations B.V., a company registered under the laws of the Netherlands (the "LGIV Series B Purchase Agreement"), the Company sold, issued and delivered to LGIV, and LGIV purchased and accepted, (i) 279,018 shares of Series B Preferred Stock and (ii) a Stock Purchase Warrant, dated June 26, 2009 (the "Warrant"), to purchase from the Company, up to an aggregate of 396,431 shares of the Company's Common Stock, par value $.001 per share (the "Common Stock");

WHEREAS, pursuant to that certain Registration Rights Agreement, dated as of June 26, 2009, by and between the Company and LGIV (the "LGIV Registration Rights Agreement"), the Company and LGIV set the terms and conditions of the registration rights granted to LGIV by the Company in connection with LGIV's purchase of Series B Preferred Stock and the Warrant;

WHEREAS, pursuant to that certain Series C Convertible Preferred Stock Purchase Agreement, dated as of the date hereof, by and between the Company and Summit (the "Summit Series C Purchase Agreement"), the Company is selling, issuing and delivering to Summit, and Summit is purchasing and accepting, 3,859,200 shares of the Company's Series C Convertible Preferred Stock, par value $.001 per share (the "Series C Preferred Stock" and, together with the Series A Preferred Stock and the Series B Preferred Stock, the "Preferred Stock");

WHEREAS, the Company has agreed to grant certain registration rights to Summit in connection with its purchase of Series C Preferred Stock, and the Company, SeaChange, LGIV and Summit desire to enter into this Registration Rights Agreement to reflect such rights and supersede each of the SeaChange Registration Rights Agreement and the LGIV Registration Rights Agreement; and

WHEREAS, this Agreement terminates and supersedes each of the SeaChange Registration Rights Agreement and the LGIV Registration Rights Agreement, and sets forth the registration rights of each of the Investors, all as more fully set forth herein.

NOW, THEREFORE, in consideration of the foregoing recitals, the mutual promises hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Certain Definitions. Certain capitalized terms used in this Agreement and not defined in this Section 1 are defined elsewhere in this Agreement. As used in this Agreement, the following terms shall have the meanings indicated:

"Affiliate" of any Person means any other Person who, directly or indirectly, controls, is controlled by or is under common control with such first Person.

"Board of Directors" means the board of directors of the Company (or any committee thereof authorized to take action with respect to matters contemplated by this Agreement), as constituted from time to time.

"Charter" means the Amended and Restated Certificate of Incorporation of the Company, as amended, as the same shall be in effect from time to time.

"Commission" means the Securities and Exchange Commission.

"Common Shares" means (i) shares of Common Stock that are issued or issuable upon conversion of shares of (A) Series B Preferred Stock purchased under the LGIV Series B Purchase Agreement, (B) Series A Preferred Stock purchased under the SeaChange Series A Purchase Agreement, (C) Series B Preferred Stock purchased under the SeaChange Series B Purchase Agreement and (D) Series C Preferred Stock purchased under the Summit Series C Purchase Agreement, (ii) the Warrant Shares, and (iii) all other shares of Common Stock held by Holders (or any of them) at any time, including without limitation any shares of Common Stock acquired (or which may be acquired upon the exercise or conversion of securities) by a Holder pursuant to any warrant, preemptive right, right of first refusal or otherwise, and including any shares of Common Stock issued as a result of stock splits, stock dividends, stock combinations, reclassifications, recapitalizations or other similar events.

"Exchange Act" means the Securities Exchange Act of 1934, as amended, or any similar successor federal statute and the rules and regulations promulgated thereunder, as the same shall be in effect from time to time.

"Free Writing Prospectus" means each "free writing prospectus" within the meaning of Rule 405 promulgated by the Commission under the Securities Act.

"Holder" means an Investor and any Permitted Transferee (as defined in Section 22) of an Investor hereunder, for so long as such Person owns Registrable Shares.

"Maximum Number of Shares" means, with respect to any underwritten offering, the maximum number of shares of Common Stock (including Registrable Shares) that the managing underwriter(s) advise the Company can be included in such offering without having an adverse effect on the marketing of such offering, including the price at which the shares can be sold.

"Other Shares" means shares of Common Stock (or securities convertible into or exercisable for Common Stock) that are held by Other Stockholders.

"Other Stockholders" means holders of Common Stock (or of securities convertible into or exercisable for Common Stock) that have obtained registration rights from the Company outside of this Agreement.

"Person" means an individual, entity, corporation, partnership, limited liability company, joint venture, trust, or unincorporated organization, or a government or any agency or political subdivision thereof.

"Preferred Shares" means, as of the date of determination, shares of (A) Series B Preferred Stock originally issued pursuant to the LGIV Series B Purchase Agreement, (B) Series A Preferred Stock originally issued pursuant to the SeaChange Series A Purchase Agreement, (C) Series B Preferred Stock originally issued pursuant to the SeaChange Series B Purchase Agreement and (D) Series C Preferred Stock originally issued pursuant to the Summit Series C Purchase Agreement.

"prospectus" means the prospectus related to any Registration Statement (including a prospectus that discloses information previously omitted from a prospectus filed as part of an effective Registration Statement in reliance on Rule 415), as amended or supplemented by any amendment (including post-effective amendments), pricing term sheet, Free Writing Prospectus or prospectus supplement, and all documents and materials incorporated by reference in such prospectus.

"Registrable Shares" means any Common Shares that are owned by a Holder; provided, that any particular shares will cease to be Registrable Shares: (i) if and when such shares have been registered under the Securities Act pursuant to an effective Registration Statement and disposed of in accordance with such Registration Statement; (ii) if and when such

shares have been disposed in compliance with the requirements of Rule 144; (iii) upon any sale in any manner to a Person which is not entitled to the rights under this Agreement; or (iv) for purposes of Sections 4 and 6 of this Agreement, at such time, following an initial underwritten public offering of shares of Common Stock pursuant to an effective Registration Statement, as such shares represent less than 1% of the Company's total outstanding Common Stock and become eligible for sale pursuant to Rule 144(b)(1)(i) under the Securities Act; provided, however, with respect to clause (iv), a period of at least one year, as determined in accordance with paragraph (d) of Rule 144 under the Securities Act, has elapsed since the later of the date such shares were acquired from the Company or an affiliate of the Company. For purposes of this defined term "Registrable Shares," a Holder shall be deemed to own any Common Shares that are issuable, on the date of determination, upon conversion of any Preferred Shares owned by such Holder.

"Registration Expenses" means all expenses incurred by the Company in complying with Sections 4, 5 and 6, including all registration and filing fees, costs and expenses associated with the listing of any Common Stock on any securities exchange, printing expenses, fees and disbursements of counsel and independent public accountants for the Company, fees and expenses (including counsel fees) incurred in connection with complying with state securities or "blue sky" laws, fees incident to any review by the Financial Industry Regulatory Authority, Inc., transfer taxes, fees of transfer agents and registrars, costs of insurance and fees and disbursements of one counsel for all Holders of Registrable Shares included in any Registration Statement, but excluding any Selling Expenses.

"Registration Statement" means a registration statement filed by the Company with the Commission for a public offering and sale of securities of the Company.

"Rule 144" means Rule 144 as promulgated by the Commission under the Securities Act, as such Rule may be amended from time to time, or any similar successor rule promulgated by the Commission.

"Rule 415" means Rule 415 as promulgated by the Commission under the Securities Act, as such Rule may be amended from time to time, or any similar successor rule promulgated by the Commission.

"Securities Act" means the Securities Act of 1933, as amended, or any similar successor federal statute and the rules and regulations promulgated thereunder, as the same shall be in effect from time to time.

"Selling Expenses" means, in connection with any sale of Registrable Shares, all underwriting discounts and selling commissions incurred by the Holder(s) of such Registrable Shares.

"Special Counsel" means Baker Botts L.L.P., Choate, Hall & Stewart LLP, or such other law firm of national reputation as may be selected by the Holder owning the highest percentage of the Registrable Shares to be included in a Registration Statement.

"Warrant Shares" means shares of Common Stock issued upon exercise of the Warrant.

2. Legend. The Parties agree and acknowledge that upon issuance by the Company of any shares pursuant to the SeaChange Series A Purchase Agreement, the SeaChange Series B Purchase Agreement, the LGIV Series B Purchase Agreement, the Warrant or the Summit Series C Purchase Agreement all certificates evidencing such shares (and any shares issued upon conversion or exercise thereof) shall bear a legend (the "Legend"), prominently stamped or printed thereon, reading substantially as follows:

> "THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 OR APPLICABLE STATE SECURITIES LAWS AND MAY NOT BE TRANSFERRED OR OTHERWISE DISPOSED OF UNLESS REGISTERED UNDER SUCH ACT AND ALL SUCH STATE SECURITIES LAWS OR AN EXEMPTION FROM REGISTRATION IS AVAILABLE."

The Company covenants and agrees that, upon request, it will remove the Legend from any such shares upon the earlier to occur of: (i) in the case of Common Shares, once such shares are registered under the Securities Act; or (ii) in the case of Common Shares or Preferred Shares covered by a Legend, promptly following the Company's receipt of an opinion of counsel satisfactory to the Company (it being agreed that Baker Botts L.L.P. or Choate, Hall & Stewart LLP shall be satisfactory to the Company for this purpose) to the effect that such shares may be publicly sold without registration under the Securities Act and any applicable state securities laws.

3. Notice of Proposed Transfer. Prior to any proposed transfer of any Preferred Shares or Common Shares (other than under the circumstances described in Sections 4, 5 or 6) owned by a Holder, such Holder shall give written notice to the Company of its intention to effect such transfer. Each such notice shall describe the manner of the proposed transfer and, if requested by the Company, shall be accompanied by an opinion of counsel satisfactory to the Company (it being agreed that Baker Botts L.L.P. or Choate, Hall & Stewart LLP shall be satisfactory for this purpose) to the effect that the proposed transfer may be effected without registration under the Securities Act and any applicable state securities laws, whereupon such Holder shall be entitled to transfer such stock in accordance with the terms of its notice; provided, however, that no such opinion of counsel shall be required for a transfer by the Investor to an Affiliate of the Investor. Notwithstanding the foregoing and subject to the restrictions contained in Section 22, Preferred Shares or Common Shares owned by a Holder may not be transferred to a Competitor (as such term is defined in the Second Amended and Restated Investor Rights Agreement, by and among the Company, SeaChange, LGIV and Summit, dated on or around the date hereof, as amended and/or restated from time to time). Each certificate for Preferred Shares or Common Shares transferred as above provided shall bear the Legend, except that such certificate shall not bear the Legend if (i) such transfer is in accordance with the provisions of Rule 144 (or any other rule permitting public sale without registration under the Securities Act) or (ii) the opinion of counsel referred to above is to the further effect that the transferee and any subsequent transferee would be entitled to transfer such securities in a public sale without registration under the Securities Act. The restrictions provided for in this Section 3 shall not apply to securities which are not required to bear the Legend prescribed by Section 2 in accordance with the provisions of that Section.

4. Required Registration.

(a) At any time after the earliest of (i) six months after the Company's initial registration statement covering a public offering of securities of the Company under the Securities Act shall have become effective and (ii) six months after the Company shall have initially become a reporting company under Section 12 of the Exchange Act, a Holder with a demand registration right (as set forth in Section 4(c)) may, by written notice to the Company (a "Demand Request"), request the Company to prepare and file a registration statement registering all or a portion of the Registrable Shares owned by such Holder under the Securities Act on an appropriate form under the Securities Act (a "Demand Registration Statement"), in each case, for the type of offering contemplated by the Demand Request (which may include an offering to be made on a delayed or continuous basis under Rule 415, if the Company is then permitted to rely upon such Rule), provided that the Registrable Shares for which registration has been requested shall constitute at least 20% of the total Registrable Shares held by such Holder issued and outstanding as of the date hereof if such Holder shall request the registration of less than all Registrable Shares owned by such Holder (or any lesser percentage if the reasonably anticipated aggregate price to the public of such public offering would exceed $5,000,000). For purposes of this Section 4 and Sections 5, 6, 15 and 18, solely for purposes of determining a percentage of Registrable Shares then outstanding, as of any date of determination, there shall be deemed outstanding the Warrant Shares and all Common Shares into which any Preferred Shares or other securities owned by a Holder are then exercisable or then convertible, as the case may be; provided, however, that the only securities which the Company shall be required to register pursuant hereto shall be shares of Common Stock; and provided, further, however, that, in any underwritten public offering contemplated by this Section 4 or Sections 5 and 6, the Holders shall be entitled to (i) in the case of Preferred Shares, to sell such shares to the underwriters for conversion into shares of Common Stock which are then sold in the offering or (ii) in the case of Preferred Shares and the Warrant, make the conversion or exercise thereof, as the case may be, contingent upon the Registration Statement for the offering being declared effective and the underwriting agreement being signed by the underwriters. Notwithstanding anything to the contrary contained herein, no request may be made under this Section 4 within 120 days after the effective date of a Registration Statement filed by the Company solely for the account of the Company covering a firm commitment underwritten public offering in which the Holders shall have been entitled to join pursuant to Section 5 or Section 6 and in which there shall have been registered all Registrable Shares as to which registration shall have been requested.

(b) Following receipt of any Demand Request under this Section 4, the Company shall immediately notify (each such notice, a "Demanded Registration Notice") all Holders of Registrable Shares (if any) from whom the applicable Demand Request was not received and shall use its best efforts to register under the Securities Act, for public sale in accordance with the method of disposition specified in such Demanded Registration Notice, the number of Registrable Shares specified in such Demanded Registration Notice (and in all notices received by the Company from other Holders within 30 days after the date of the Demanded Registration Notice). If such method of disposition shall be an underwritten public offering, Holders of a majority of the Registrable Shares to be sold in such offering may designate the managing underwriter of such offering, subject to the approval of the Company, which approval shall not be unreasonably withheld or delayed.

(c) The Company shall be obligated to register Registrable Shares pursuant to this Section 4 on only two occasions where the Demand Request is initiated by Summit, two occasions where the Demand Request is initiated by SeaChange and two occasions where the Demand Request is initiated by LGIV, provided, however, that such obligation shall be deemed satisfied when a Registration Statement covering all Registrable Shares specified in a Demand Request (and all notices in response to a Demanded Registration Notice) received by the Company shall have become effective and, (A) if such method of disposition is a firm commitment underwritten public offering, all such shares shall have been sold pursuant thereto or (B) if such method of disposition is not a firm commitment underwritten public offering, such Registration Statement has remained effective for a period of not less than 120 days (such 120-day period to be tolled during any period in which the prospectus included in a Registration Statement may not be used under the circumstances described in Section 7(a)(vi) or Section 17(c)) or, if shorter, until such time as all shares covered thereby have been sold pursuant thereto.

(d) The Company shall be entitled to include for sale in any Demand Registration Statement, whether for its own account or for the account of Other Stockholders, in accordance with the method of disposition specified in the applicable Demand Request, shares of Common Stock. If such method of disposition shall be an underwritten offering and the managing underwriter(s) advises the Company in writing that the number of Registrable Shares and Other Shares proposed to be registered exceeds the Maximum Number of Shares, then the following "cutback" rules shall apply: there will be included in such registration (x) first, (I) if the applicable Demand Request was made by Summit or LGIV in accordance with the provisions hereof, the shares requested to be included by the Holders, which shares shall be allocated, if the aggregate number of such shares exceeds the Maximum Number of Shares, pro rata among all Holders on the basis of the number of shares each Holder had originally requested to include in such registration, (II) if the applicable Demand Request was made by SeaChange in accordance with the provisions hereof and the aggregate number of shares requested to be included by SeaChange and Summit exceeds the Maximum Number of Shares, the shares requested to be included by SeaChange and Summit, which shares shall be allocated pro rata among SeaChange and Summit on the basis of the number of shares each such Holder had originally requested to include in such registration, and (III) if the applicable Demand Request was made by SeaChange in accordance with the provisions hereof and the aggregate number of shares requested to be included by SeaChange and Summit does not exceed the Maximum Number of Shares, the shares requested to be included by SeaChange and Summit, and then the shares requested to be included by LGIV to the extent that such shares of LGIV may be included in such registration without the amount of registered securities thereunder exceeding the Maximum Number of Shares, (y) second, to the extent that any additional shares of Common Stock may be included in such registration without the amount of registered securities thereunder exceeding the Maximum Number of Shares, the shares of Common Stock that the Company proposes to issue for its own account, the number of which shares may not exceed the difference between the Maximum Number of Shares and those shares proposed to be included pursuant to clause (x); and (z) third, to the extent that any additional shares of Common Stock may be included in such registration without the amount of registered securities thereunder exceeding the Maximum Number of Shares, the shares of Common Stock that the Company proposes to issue for the account of any Other Stockholder pro rata among such Persons on the basis of the number of shares such Persons had originally requested to include in such registration. If a Demand Registration

Statement involves an underwritten offering of Registrable Shares, then the Company and/or any Other Stockholders whose shares are included in such Demand Registration Statement shall sell their shares in the underwritten offering on the same terms and conditions as those applicable to the Registrable Shares. Except for registration statements on Form S-4, S-8 or any successor thereto, the Company will not file with the Commission any other registration statement with respect to its Common Stock, whether for its own account or that of Other Stockholders, from the date of receipt of a Demand Request until the completion of the period of distribution of the registration contemplated thereby.

(e) Notwithstanding anything to the contrary contained herein, at any time prior to the effective time of a Demand Registration Statement, the Holder that submitted the Demand Request in respect of such registration statement may request withdrawal of, and the Company shall withdraw, such Demand Registration Statement. Any withdrawn Demand Registration Statement shall count towards one of the demand registrations of such Holder referred to in the first sentence of Section 4(c), unless the Holder(s) reimburse the Company for its reasonable out-of-pocket expenses incurred in connection with the preparation and filing of such withdrawn Demand Registration Statement (insofar as such expenses relate to the registration of Registrable Shares).

(f) The right of any Holder to initiate a Demand Request shall automatically terminate if such Holder no longer owns any Registrable Shares.

5. Incidental Registration.

(a) If the Company at any time (other than pursuant to Section 4 or Section 6) proposes to register any of its securities under the Securities Act for sale to the public, whether for its own account or for the account of other security holders or both (except with respect to registration statements on Forms S-4, S-8 or another form not available for registering the offer and sale of restricted shares to the public), each such time the Company will give written notice to all Holders of Registrable Shares of its intention so to do. Upon the written request of any such Holder, received by the Company within 30 days after the giving of any such notice by the Company, to register any of such Holder's Registrable Shares, the Company will use its best efforts, subject to Section 5(b), to cause all the Registrable Shares as to which registration shall have been so requested to be included among the securities to be covered by the Registration Statement proposed to be filed by the Company, all to the extent requisite to permit the sale or other disposition by the Holder of such Registrable Shares so registered.

(b) In the event that any registration pursuant to this Section 5 shall involve an underwritten public offering of Common Stock and the number of shares proposed to be included therein exceeds the Maximum Number of Shares, then the following "cutback" rules shall apply:

(i) If the registration was originated by the Company for a primary offering, then there will be included in such registration: (x) first, all of the shares of Common Stock that the Company proposes to issue for its own account; and (y) second, to the extent that any additional shares of Common Stock may be included in such registration without the amount of registered securities thereunder exceeding the Maximum Number of Shares, the shares

proposed to be included by all Holders, if any, which shares shall be allocated, if the aggregate number of shares proposed to be included by clause (x) and this clause (y) exceeds the Maximum Number of Shares, *pro rata* among such Persons on the basis of the number of shares such Persons had originally requested to include in such registration; and (z) third, to the extent that any additional shares of Common Stock may be included in such registration without the amount of registered securities thereunder exceeding the Maximum Number of Shares, the shares proposed to be included by the Other Stockholders, if any, allocated *pro rata* among such Persons on the basis of the number of shares such Persons had originally requested to include in such registration;

(ii) If the registration was originated by a Holder, then there will be included in such registration: (x) first, all of the shares of Common Stock that each Holder proposes to register, which shares shall be allocated, if the aggregate number of shares exceeds the Maximum Number of Shares, in accordance with clause (x) of the second sentence of Section 4(d) above; (y) second, to the extent that any additional shares of Common Stock may be included in such registration without the amount of registered securities thereunder exceeding the Maximum Number of Shares, those shares of Common Stock proposed to be registered by the Company; and (z) if such number of shares described in the foregoing clauses (x) and (y) do not exceed the Maximum Number of Shares, the shares proposed to be included by Other Stockholders, if any, allocated *pro rata* among such Persons on the basis of the number of shares such Persons had requested to include in such registration; and

(iii) If the registration was originated by Other Stockholders, then there will be included in such registration: (x) first, all of the shares of Common Stock that such originating Other Stockholders, the Company and the Holders propose to register, which shares shall be allocated, if the aggregate number of shares proposed to be included by this clause (x) exceeds the Maximum Number of Shares, *pro rata* among such Persons on the basis of the number of shares such Persons had requested in include in such registration; and (y) if such number of shares described in the foregoing clause (x) does not exceed the Maximum Number of Shares, the shares proposed to be included by any Other Stockholders that are not included among such originating Other Stockholders, if any, allocated *pro rata* among such Persons on the basis of the number of shares such Persons had requested to include in such registration.

(c) Notwithstanding anything to the contrary contained herein, at any time prior to the effective time of a registration pursuant to this Section 5, (i) the Company may withdraw such registration without incurring any liability to any Holder and (ii) a Holder may withdraw the Registrable Shares that it had sought to have included therein without incurring any liability to the Company.

6. Registration on Form S-3. If at any time (i) one or more Holders request in a written notice that the Company file a registration statement on Form S-3 (or any successor thereto) for a public offering of all or any portion of the Registrable Shares held by such requesting Holder(s), the reasonably anticipated aggregate price to the public of which would exceed $5,000,000, and (ii) the Company is a registrant entitled to use Form S-3 (or any successor thereto) to register the offer and sale of such shares in accordance with the intended manner of disposition thereof, then the Company shall use its best efforts to promptly register under the Securities Act on a registration on Form S-3 (or any successor thereto), for public sale

in accordance with the method of disposition specified in such notice, the number of Registrable Shares specified in such notice. Whenever the Company is required by this Section 6 to use its best efforts to effect the registration of Registrable Shares, each of the procedures and requirements of Section 4 (including but not limited to (i) the requirement that the Company notify all other Holders of Registrable Shares from whom notice has not been received and provide them with the opportunity to participate in the offering, (ii) the provisions regarding allocations in Section 4(d) and (iii) the last sentence of Section 4(a)) shall apply to such registration, provided, however, that the Company shall not be required to effect more than two registrations in any twelve-month period under this Section 6, and provided, further, however, that the requirements contained in the first sentence of Section 4(a) shall not apply to any registration on Form S-3 which may be requested and obtained under this Section 6.

7. Registration Procedures.

(a) If and whenever the Company is required by the provisions of Sections 4, 5 or 6 to effect registration of the offer and sale of any Registrable Shares pursuant to a Registration Statement to be filed under the Securities Act, the Company will:

(i) at least three business days prior to the initial filing of the Registration Statement with the Commission, furnish to Special Counsel a copy of such Registration Statement as proposed to be filed, and the Company will in good faith consider incorporating into such Registration Statement any comments of Special Counsel received by the Company within three business days of furnishing such copy. If a Registration Statement is reviewed by the Commission: (A) the Company will as promptly as reasonably practicable provide Special Counsel with a copy of each comment letter issued in respect of such Registration Statement and a copy of the Company's proposed responses thereto; (B) the Company shall further provide Special Counsel with a copy of any proposed amendment to be filed with the Commission no less than four business days prior to the Company's proposed filing date; (C) the Company will in good faith consider incorporating into such amendment any comments of Special Counsel received by the Company within three business days of furnishing such copy; and (D) once the Registration Statement is cleared from review, the Company will as promptly inform Special Counsel of the effectiveness thereof. The Company will use its best efforts to cause a Registration Statement to become effective as promptly as practicable after the initial filing thereof with the Commission and use its best efforts to cause such Registration Statement to remain effective for the period of the distribution contemplated thereby (determined as hereinafter provided).

(ii) after a Registration Statement is initially declared effective, prepare and file with the Commission such amendments and supplements to such Registration Statement and the related prospectus as may be necessary to keep such Registration Statement effective for the period of the distribution contemplated thereby and comply with the provisions of the Securities Act with respect to the disposition of all Registrable Shares covered by such Registration Statement in accordance with the sellers' intended method of disposition set forth in such Registration Statement for such period. The Company shall, at least three business days prior to the filing of a post-effective amendment to the Registration Statement or a prospectus (including a prospectus supplement, a Free Writing Prospectus and any documents to be incorporated by reference in the prospectus to the extent they expressly relate to an offering

under the Registration Statement), furnish a copy of such proposed filing to Special Counsel and any underwriter (if such filing relates to an underwritten offering), and the Company will in good faith consider incorporating into such proposed filing any comments of Special Counsel received by the Company within two business days of furnishing such copy.

(iii) as promptly as reasonably practicable furnish to Special Counsel copies of any and all transmittal letters and other correspondence with the Commission and all correspondence from the Commission to the Company relating to the Registration Statement or any prospectus or any amendment or supplement thereto.

(iv) after a Registration Statement is declared effective, and in connection with any underwritten offering under the Registration Statement, furnish to the Holders whose Registrable Shares are included in such Registration Statement such number of copies of the Registration Statement, each amendment and supplement thereto (in each case including all exhibits thereto but excluding documents incorporated by reference therein other than those that expressly relate to the offering), the prospectus included in such Registration Statement (including any prospectus supplements) and such other documents as any such Holders or underwriters may reasonably request in order to facilitate the disposition of the Registrable Shares included in the Registration Statement.

(v) use its best efforts (i) to register or qualify the Registrable Shares under such other securities or blue sky laws of such jurisdictions in the United States (in the event an exemption is not available) as any Holder of Registrable Shares covered by a Registration Statement reasonably (in the light of such Holder's intended plan of distribution) requests and (ii) to do any and all other acts and things that may be reasonably necessary or advisable to enable such Holder to consummate the disposition in such jurisdictions of the Registrable Shares owned by such Holder; provided that the Company will not be required to (w) qualify generally to do business in any jurisdiction where it would not otherwise be required to qualify but for this Section 7(a)(v), (x) conform its capitalization or the composition of its assets at the time to the securities or blue sky laws of any such jurisdiction, (y) subject itself to taxation in any such jurisdiction or (z) consent to general service of process in any such jurisdiction.

(vi) as promptly as reasonably practicable notify each other Holder of Registrable Shares covered by the Registration Statement, at any time when a prospectus relating thereto is required to be delivered (or deemed delivered) under the Securities Act, of the occurrence of an event of which the Company has knowledge requiring the preparation of a supplement or amendment to such prospectus so that, as thereafter delivered (or deemed delivered) to the purchasers of such Registrable Shares, such prospectus will not contain an untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading, and the Company will as promptly as reasonably practicable prepare and furnish to such Holders a supplement to or an amendment of such prospectus so that, as thereafter delivered (or deemed delivered) to the purchasers of such Registrable Shares, such prospectus will not contain any untrue statement of material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances in which they were made, not misleading.

(vii) enter into reasonable and customary agreements (including an underwriting or other agreement in form customary in the securities business for companies of the size and investment stature of the Company) and use best efforts to take such other actions as are reasonably required or requested by a Holder or underwriter in order to expedite or facilitate the disposition of any Registrable Shares pursuant to a Registration Statement.

(viii) upon execution of a customary confidentiality agreement (if such Holder is not already bound by a confidentiality obligation to the Company), make available for inspection by any Holder of Registrable Shares covered by a Registration Statement, any underwriter participating in an underwritten offering pursuant to the Registration Statement, Special Counsel, and any attorney, accountant or other professional retained by any such Holder or underwriter (collectively, the "Inspectors"), all financial and other records, pertinent corporate documents and properties of the Company (collectively, the "Records") and cause the Company's and its significant subsidiaries' officers, directors and employees to, and shall use commercially reasonable efforts to cause the Company's independent accountants to, as promptly as reasonably practicable, supply all information reasonably requested by any Inspector in connection with such Registration Statement or underwritten offering, in each case, to the extent reasonably necessary to establish the applicable Person's due diligence defense under U.S. securities laws; provided that in no event shall the Company be required to make available to the Holders any information which the Board of Directors in its good faith judgment believes is competitively sensitive. The Inspectors shall coordinate with one another so that the inspection permitted hereunder will not unnecessarily interfere with the Company's conduct of business. In any event, Records which the Company determines, in good faith, to be confidential and which it notifies or otherwise identifies in writing to the Inspectors are confidential shall not be disclosed by the Inspectors unless (and only to the extent that) (i) the disclosure of such Records is necessary to permit a Holder to enforce its rights under this Agreement or (ii) the release of such Records is ordered pursuant to a subpoena or other order from a court of competent jurisdiction. Each Holder agrees that information obtained by it as a result of such inspections shall be deemed confidential and shall not be used by it as the basis for any market transactions in the securities of the Company (unless and until such is made generally available to the public by the Company) or for any reason not related to the registration of Registrable Securities. Each Holder further agrees that it will, upon learning that disclosure of such Records is sought in a court of competent jurisdiction, cause give notice to the Company and allow the Company, at its expense, to undertake appropriate action to prevent disclosure of the Records deemed confidential.

(ix) otherwise use best efforts (i) to comply with all applicable rules and regulations of the Commission to the extent necessary to permit it to lawfully fulfill its obligations under this Agreement, and (ii) to make available to its security holders, as promptly as reasonably practicable, an earnings statement covering a period of 12 months, beginning upon the first disposition of Registrable Shares pursuant to a Registration Statement, which earnings statement shall satisfy the provisions of Section 11(a) of the Securities Act.

(x) use its best efforts to cause all Registrable Shares to be listed on each securities exchange on which the Common Stock is then listed.

(b) For purposes of Section 7(a)(i) and 7(a)(ii), the period of distribution of Registrable Shares in a firm commitment underwritten public offering shall be deemed to extend until each underwriter has completed the distribution of all securities purchased by it, and the period of distribution of Registrable Shares in any other registration shall be deemed to extend until the earlier of the sale of all Registrable Shares covered thereby and 120 days after the effective date thereof (such 120-day period to be tolled during any period in which the prospectus included in a Registration Statement may not be used under the circumstances described in Section 7(a)(vi) or 17(c)).

(c) In connection with each Registration Statement filed hereunder covering Registrable Shares, the Holders of such shares will furnish to the Company in writing such information with respect to themselves and the proposed distribution by them as reasonably shall be necessary in order to assure compliance with federal and applicable state securities laws.

8. Expenses. The Company will pay all Registration Expenses incurred in connection with the performance of its obligations pursuant to Sections 4, 5 or 6. All Selling Expenses in connection with the offer and sale of Registrable Shares shall be borne by the selling Holders in proportion to the number of Registrable Shares sold by each, or in such other proportion as they may mutually agree among themselves.

9. Indemnification and Contribution. (a) The Company agrees to indemnify and hold harmless to the fullest extent permitted by law each Holder whose Registrable Shares are covered by a Registration Statement, its officers, directors and each Person, if any, who controls such Holder within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, from and against any and all losses, claims, damages, liabilities, and expenses, or any action or proceeding in respect thereof (each, a "Liability" and collectively, "Liabilities") (including reimbursement of such Holder for any legal or any other expenses reasonably incurred by it in investigating or defending such Liabilities) arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in such Registration Statement or any prospectus relating to such Registrable Shares (or in any amendment or supplement thereto), or arising out of or based upon any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any violation of any securities law by the Company or any officer or employee of the Company, except insofar as such Liabilities arise out of or are based upon any such untrue statement or omission or alleged untrue statement or omission based upon information furnished in writing to the Company by such Holder expressly for use therein or except insofar as such Liabilities arise out of any violation of any securities law by such Holder resulting from any action or omission of such Holder in connection with such Registration Statement.

(b) Each Holder whose Registrable Shares are included in a Registration Statement agrees, severally and not jointly, to indemnify and hold harmless to the fullest extent permitted by law the Company, its officers, directors, agents, and each Person, if any, who controls the Company within the meaning of either Section 15 of the Securities Act or Section 20 of the Exchange Act, to the same extent as the foregoing indemnity from the Company to such Holder in Section 9(a) (including reimbursement of the Company for any legal or any other expenses reasonably incurred by it in investigating or defending such Liabilities), but only to the extent such Liabilities arise out of or are based upon information furnished in writing by such Holder expressly for use in the Registration Statement, prospectus or in any amendment or

supplement thereto relating to such Holder's Registrable Shares or to the extent such Liabilities arise out of any violation of any securities law by such Holder resulting from any action or omission of such Holder in connection with such Registration Statement; provided, however, that the liability of such Holder hereunder shall be limited to the proportion of any such Liabilities which is equal to the proportion that the public offering price of the Registrable Shares sold by such Holder under such Registration Statement bears to the total public offering price of all securities sold thereunder, but not in any event to exceed the net proceeds received by such Holder from the sale of its Registrable Shares covered by such Registration Statement.

(c) After receipt by any Person (an "Indemnified Party") of any notice of the commencement of any action, suit, proceeding or investigation or threat thereof in respect of which indemnity may be sought pursuant to Section 9(a) or 9(b), such Indemnified Party shall as promptly as reasonably practicable notify the Person against whom such indemnity may be sought (the "Indemnifying Party") in writing. Following notice of commencement of any such action given to the Indemnifying Party as above provided, the Indemnifying Party shall be entitled to participate in and, to the extent it may wish, jointly with any other Indemnifying Party similarly notified, to assume the defense of such action at its own expense, with counsel reasonably satisfactory to such Indemnified Party. In any such proceeding so assumed by the Indemnifying Party, any Indemnified Party shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party unless (i) the Indemnifying Party and the Indemnified Party shall have mutually agreed to the retention of such counsel or (ii) representation of both parties by the same counsel would be inappropriate due to actual or potential differing or conflicting interests between them. It is understood that the Indemnifying Party, in connection with any proceeding or related proceedings in the same jurisdiction, shall be liable only for the reasonable fees and expenses of one firm of attorneys (in addition to any necessary local counsel) at any time for all such Indemnified Parties, and that all such fees and expenses shall be reimbursed as they are incurred upon submission of reasonably itemized invoices. In the case of any such separate firm for Holders who are entitled to indemnity pursuant to Section 9(a), such firm shall be designated in writing by the Indemnified Party who had the largest number of Registrable Shares included in the Registration Statement at issue. The Indemnifying Party shall not be liable for any settlement of any proceeding effected without its written consent, which consent shall not be unreasonably withheld, but if settled with such consent, or if there be a final judgment for the plaintiff, the Indemnifying Party shall indemnify and hold harmless such Indemnified Parties from and against any loss or liability (to the extent set forth in this Section 9) by reason of such settlement or judgment. No Indemnifying Party shall, without the prior written consent of the Indemnified Party, which consent shall not be unreasonably withheld, conditioned or delayed, effect any settlement of any pending or threatened proceeding in respect of which any Indemnified Party is or could have been a party and indemnity could have been sought hereunder by such Indemnified Party, unless such settlement includes an unconditional release of such Indemnified Party from all liability arising out of such proceeding.

(d) If the indemnification provided for hereunder shall for any reason be held by a court of competent jurisdiction to be unavailable to an Indemnified Party in respect of any Liability referred to herein, then each such Indemnifying Party, in lieu of indemnifying such Indemnified Party, shall contribute to the amount paid or payable by such Indemnified Party as a result of such Liabilities between the Company on the one hand and each Holder whose

Registrable Shares are covered by the Registration Statement in issue on the other, in such proportion as is appropriate to reflect the relative fault of the Company and of each such Holder in connection with any untrue statement of a material fact contained in the Registration Statement, any prospectus or any amendment or supplement thereto or caused by any omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, which resulted in such Liabilities, as well as any other relevant equitable considerations. The relative fault of the Company on the one hand and of each such Holder on the other shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by such party, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

(e) The Company and the Holders (including each Permitted Transferee) agree that it would not be just and equitable if contribution pursuant to Section 9(d) were determined by *pro rata* allocation or by any other method of allocation which does not take account of the equitable considerations referred to in Section 9(d). The amount paid or payable by an Indemnified Party as a result of the Liabilities referred to in Section 9(d) shall be deemed to include, subject to the limitations set forth above, any legal or other expenses reasonably incurred by such Indemnified Party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this Section 9, no Holder shall be required to contribute any amount in excess of the amount of the net proceeds received by such Holder from the sale of its Registrable Shares covered by the Registration Statement in issue. No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Exchange Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation.

10. Recapitalization, Exchanges, etc. The provisions of this Agreement shall (i) apply to the full extent set forth herein with respect to any and all securities into which any of the Registrable Shares are converted, exchanged or substituted in any recapitalization or other capital reorganization involving the Company and (ii) be appropriately adjusted for any dividends of Common Stock in respect of the Common Stock, stock splits, reverse splits, combinations, recapitalizations and the like occurring after the date hereof.

11. Rule 144 Reporting. In order to make available to the Holders the benefits of certain rules and regulations of the Commission which may permit the sale of Registrable Shares to the public without registration under the Securities Act, at all times after ninety (90) days after the effective date of any Registration Statement covering a public offering of securities of the Company under the Securities Act, the Company agrees to:

(a) make and keep public information available, as those terms are understood and defined in Rule 144 under the Securities Act;

(b) use its best efforts to file with the Commission in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act; and

(c) furnish to each Holder forthwith upon request a written statement by the Company as to its compliance with the reporting requirements of the Securities Act and the Exchange Act, and the rules and regulations thereunder, a copy of the most recent annual or quarterly report of the Company, and such other reports and documents so filed by the Company as such Holder may reasonably request in availing itself of any rule or regulation of the Commission allowing such Holder to sell any Registrable Shares without registration.

12. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Company and the Holders and their respective successors and Permitted Transferees.

13. Notices. All notices, requests, consents and other communications hereunder shall be in writing and shall be delivered in person, mailed by certified or registered mail, return receipt requested, or sent by telecopier or telex, addressed to such party at the address of such party set forth on the signature page hereto, or, in any case, at such other address or addresses as shall have been furnished in writing to the Company (in the case of a Holder) or to the Holders (in the case of the Company). In the case of any notice sent to Summit, a copy of such notice (which shall not be deemed notice) shall be sent to Choate, Hall & Stewart LLP, Two International Place, Boston, MA 02110, Attention T.J. Murphy, Fax: (617) 248-4000, Email: tmurphy@choate.com.

14. Governing Law. This Agreement shall be construed and enforced in accordance with and governed by the laws of the State of Massachusetts, without regard to its principles of conflicts of laws.

15. Amendments and Waivers. Any amendment, modification or supplement of or to, or any waiver of, any term or condition of this Agreement shall be effective only if in writing and signed by the Company and Holders owning a majority of the Registrable Shares then outstanding. Notwithstanding the foregoing, this Agreement may not be amended, modified or supplemented, and the observance of any term hereunder may not be waived, with respect to a Holder without the written consent of such Holder unless such amendment, modification, termination or waiver applies to all Holders in the same fashion and, in connection therewith, no Holder receives any consideration or other inducement that is not received by all Holders. No failure to enforce any provision of this Agreement shall be deemed to or shall constitute a waiver of such provision and no waiver of any of the provisions of this Agreement shall be deemed to or shall constitute a waiver of any other provision hereof (whether or not similar) nor shall such waiver constitute a continuing waiver.

16. Counterparts. This Agreement may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument, and any Party may execute this Agreement by signing any such counterpart.

17. Termination; Suspension.

(a) The obligations of the Company to register Registrable Shares under Sections 4, 5 or 6 shall terminate on the earlier to occur of (i) no Registrable Shares being outstanding and (ii) the seventh anniversary of the initial public offering of the Company's Common Stock.

(b) If requested in writing by the underwriters for the initial underwritten public offering of securities of the Company, no Holder shall sell publicly any Registrable Shares or any other shares of Common Stock (other than Registrable Shares or other shares of Common Stock being registered in such offering), without the consent of such underwriters, for a period of not more than one hundred and eighty (180) days following the effective date of the registration statement relating to such offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address NASD Rule 2711(f) of the Financial Industry Regulatory Authority, Inc. or any similar successor provision); provided, however, that all other Persons selling shares of Common Stock in such offering, all holders of at least 1% of the Company's outstanding shares of Common Stock (assuming for such purpose the conversion of all outstanding equity securities into Common Stock) and all officers and directors of the Company shall also have agreed not to sell publicly their Common Stock under the circumstances and pursuant to the terms set forth in this Section 17(b).

(c) Notwithstanding the provisions of Section 7(a), the Company's obligation to file a Registration Statement, or cause such Registration Statement to become and remain effective, may be suspended, for the shortest period practicable and in any event for a period not to exceed ninety (90) days in any 24-month period (a "Blackout Period"), if the Company determines, in good faith, that to file such Registration Statement, or for it to remain effective, would (i) require the public disclosure of material non-public information concerning any transaction or negotiations involving the Company or any of its consolidated subsidiaries that would materially interfere with such transaction or negotiations, (ii) require the public disclosure of material non-public information concerning the Company at a time when its directors and executive officers are restricted from trading in the Common Stock or (iii) otherwise materially interfere with financing plans, acquisition activities or business activities of the Company. If the Company declares a Blackout Period with respect to a Demand Registration Statement that has not yet been declared effective, then the Holder(s) that submitted the Demand Request in respect of such registration statement may request withdrawal of, and the Company shall withdraw, such Demand Registration Statement (i) without it counting towards one of the demand registrations referred to in the first sentence of Section 4(c) and (ii) without the Holders having any liability to the Company in respect of any expenses it incurred in connection with the preparation and filing of such withdrawn Demand Registration Statement.

18. Future Registration Rights. After the date hereof and for so long as this Agreement remains in effect, without the prior written consent of the holders of a majority of the Registrable Shares, the Company shall not grant to any Person the right to (a) require the Company to initiate the registration of any securities, or (b) require the Company to include in any registration securities owned by such Person, unless under the terms of such arrangement such Person may include securities in such registration only to the extent that the inclusion thereof does not limit the number of Registrable Shares included therein or adversely affect the offering price thereof (as determined by the managing underwriter(s) for such offering).

19. Severability. The provisions of this Agreement are severable and, in the event that any court of competent jurisdiction shall determine that any one or more of the provisions or part of a provision contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision or part of a provision of this Agreement; but this Agreement shall be reformed and construed as if such invalid or illegal or unenforceable provision, or part of a provision, had never been contained herein, and such provisions or part reformed so that it would be valid, legal and enforceable to the maximum extent possible.

20. Further Assurances. From and after the date of this Agreement, upon the request of any other Party, each Party shall execute and deliver such instruments, documents and other writings as may be reasonably necessary or desirable to confirm and carry out and to effectuate fully the intent and purposes of this Agreement.

21. Specific Enforcement. Each Party acknowledges and agrees that the other Parties would be irreparably damaged if any of the provisions of this Agreement are not performed in accordance with their specific terms and that any breach of this Agreement by the Parties could not be adequately compensated in all cases by monetary damages alone. Accordingly, in addition to any other right or remedy to which any Party may be entitled under this Agreement, at law or in equity, it shall be entitled to enforce any provision of this Agreement by a decree of specific performance and to temporary, preliminary and permanent injunctive relief to prevent breaches or threatened breaches of any of the provisions of this Agreement, without posting any bond or other undertaking.

22. Transfer of Registration Rights. Each Holder shall have the right to transfer, by written agreement, any or all of its rights granted under this Agreement to any direct or indirect transferee of such Holder's Registrable Shares (each Person to whom such Registrable Shares shall have been so transferred hereunder, a "Permitted Transferee"); provided, (i) such transferee is an Affiliate of the Investor or (ii) such transferee is transferred at least 100,000 Registrable Shares (subject to appropriate adjustment for stock splits, stock dividends, recapitalizations and similar events occurring after the date of this Agreement), and in either such case, (x) such transferee agrees, in writing in form and substance reasonably satisfactory to the Company, to be bound by the terms and provisions of this Agreement; and (y) such transfer of Registrable Shares shall be effected in accordance with applicable securities laws, this Agreement and any other agreements relating to the Registrable Shares between the Company and such Holder. A Permitted Transferee shall have all of the rights of a Holder hereunder as to any Registrable Shares owned by it. Following any transfer or assignment made pursuant to this Section 22 in connection with the transfer by a Holder of a portion of its Registrable Shares, such Holder shall retain all rights under this Agreement with respect to the remaining portion of its Registrable Shares.

23. Termination of SeaChange Registration Rights Agreement and LGIV Registration Rights Agreement. Each of the SeaChange Registration Rights Agreement and the LGIV Registration Rights Agreement is hereby terminated in its entirety. This Agreement constitutes and contains the entire agreement and understanding of the parties with respect to the subject matter hereof and supersedes any and all prior negotiations, correspondence, agreements, understandings, duties or obligations between the parties respecting the subject matter hereof, including the SeaChange Registration Rights Agreement and the LGIV Registration Rights Agreement.

24. Interpretation. When reference is made in this Agreement to a Section, such reference shall be to a Section of this Agreement, unless otherwise indicated. The headings contained in this Agreement are for convenience of reference only and shall not affect in any way the meaning or interpretation of this Agreement. The language used in this Agreement shall be deemed to be the language chosen by the Parties hereto to express their mutual intent, and no rule of strict construction shall be applied against any party. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns and pronouns shall include the plural, and vice versa. Any reference to any federal, state, local or foreign statute or law shall be deemed also to refer to all rules and regulations promulgated thereunder, unless the context requires otherwise. Whenever the words "include," "includes" or "including" are used in this Agreement, they shall be deemed to be followed by the words "without limitation."

25. Waiver of Jury Trial**.** EACH PARTY HERETO ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY THAT MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES, AND THEREFORE IT HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT AND ANY OF THE AGREEMENTS DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY.

26. Aggregation. All Registrable Shares held or acquired by Affiliates of a particular Investor shall be aggregated together for the purpose of determining the availability of any rights of such Investor under this Agreement and such Affiliates may apportion such rights as among themselves in any manner they deem appropriate.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Name: Jerry Guo
Title: President

Address: [ ]

LGI VENTURES BV

Represented by Chellomedia B.V., sole director of LGI Ventures B.V.,
in its turn duly represented by Liberty Global Europe Management B.V.,
in its turn duly represented by:

/s/ A.M. Tuijten
Name: A.M. Tuijten
Title: Director

/s/ W.E. Musselman
Name: W.E. Musselman
Title: Director

Address: [ ]

SEACHANGE INTERNATIONAL, INC.

By: /s/ William C. Styslinger
Name: William C. Styslinger
Title: CEO

Address: [ ]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

SUMMIT PARTNERS PRIVATE EQUITY FUND VII-A, L.P.

By: Summit Partners PE VII, L.P.
Its General Partner
By: Summit Partners PE VII, LLC
Its General Partner

By: /s/ Bruce R. Evans
Bruce R. Evans, Member

Address: 222 Berkeley Street, 18th Floor
Boston, MA 02116

SUMMIT PARTNERS PRIVATE EQUITY FUND VII-A, L.P.

By: Summit Partners PE VII, L.P.
Its General Partner
By: Summit Partners PE VII, LLC
Its General Partner

By: /s/ Bruce R. Evans
Bruce R. Evans, Member

Address: 222 Berkeley Street, 18th Floor
Boston, MA 02116

SUMMIT INVESTORS I, LLC

By: Summit Investors Management, LLC
Its Manager
By: Summit Partners L.P.
Its Manager
By: Summit Master Company, LLC
Its General Partner

By: /s/ Bruce R. Evans
Bruce R. Evans, Member

Address: 222 Berkeley Street, 18th Floor
Boston, MA 02116

SUMMIT INVESTORS I (UK), L.P.

By: Summit Investors Management, LLC
Its General Partner
By: Summit Partners L.P.
Its Manager
By: Summit Master Company, LLC
Its General Partner

By: /s/ Bruce R. Evans
Bruce R. Evans, Member

Address: 222 Berkeley Street, 18th Floor
Boston, MA 02116

Exhibit 10.20

$325,000,000
CREDIT AGREEMENT

Dated as of December 20, 2016

among

CASA SYSTEMS, INC.,
as the Borrower,

JPMORGAN CHASE BANK, N.A.,
as Administrative Agent, Collateral Agent and an L/C Issuer

BARCLAYS BANK PLC,
as Syndication Agent and an L/C Issuer

JPMORGAN CHASE BANK, N.A.,

and

BARCLAYS BANK PLC,
as Joint Lead Arrangers and as Joint Bookrunners,

and

THE LENDERS PARTY HERETO

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SCHEDULES

EXHIBITS

Form of

CREDIT AGREEMENT

This CREDIT AGREEMENT ("**Agreement**") is entered into as of December 20, 2016 among Casa Systems, Inc., a Delaware corporation (the "**Borrower**"), JPMorgan Chase Bank, N.A., as administrative agent (in such capacity, together with is affiliates, including any successor thereto, the "**Administrative Agent**") and as collateral agent (in such capacity, including any successor thereto, the "**Collateral Agent**") under the Loan Documents and as an L/C Issuer, and each lender from time to time party hereto (collectively, the "**Lenders**" and individually, a "**Lender**").

PRELIMINARY STATEMENTS

The Borrower has requested that the Lenders extend credit to the Borrower in the form of (i) Initial Term Loans on the Closing Date in an initial aggregate principal amount of $300,000,000 pursuant to this Agreement and (ii) a Revolving Credit Facility in an initial aggregate principal amount of $25,000,000 pursuant to this Agreement. The Revolving Credit Facility will include a separate sub-limit for the making of one or more Letters of Credit denominated in Dollars or, subject to the limitations set forth herein, Alternative Currencies from time to time.

The proceeds of the Initial Term Loans will be used to (i) refinance all outstanding indebtedness of the Borrower pursuant to the Existing Credit Agreement and terminate in full all outstanding commitments thereunder (the "**Refinancing**"), (ii) pay related Transaction Expenses, (iii) to pay (together with cash on hand) a dividend in an amount of up to $300,000,000 (the "**Dividend**"), (iv) fund cash on the Borrower's and its Subsidiaries' balance sheet and (v) for working capital and other general corporate purposes (including to fund OID or upfront fees in connection with the Transaction, capital expenditures, Permitted Acquisitions and other permitted Investments, Restricted Payments, refinancing of indebtedness and any other transaction not prohibited by this Agreement).

The Letters of Credit and proceeds of Borrowings under the Revolving Credit Facility will be used by the Borrower and its Subsidiaries for working capital and other general corporate purposes (including to fund OID or upfront fees in connection with the Transaction, capital expenditures, Permitted Acquisitions and other permitted Investments, Restricted Payments, refinancing of indebtedness and any other transaction not prohibited by this Agreement).

The Lenders have indicated their willingness to lend, and the L/C Issuers have indicated their willingness to issue Letters of Credit, in each case, on the terms and subject to the conditions set forth herein.

In consideration of the mutual covenants and agreements herein contained, the parties hereto covenant and agree as follows:

ARTICLE I

Definitions and Accounting Terms

Section 1.01 Defined Terms. As used in this Agreement, the following terms shall have the meanings set forth below:

"**Acceptable Discount**" has the meaning specified in Section 2.05(a)(iv)(D)(2).

"**Acceptable Prepayment Amount**" has the meaning specified in Section 2.05(a)(iv)(D)(3).

"**Acceptance and Prepayment Notice**" means a notice of the Borrower's acceptance of the Acceptable Discount in substantially the form of Exhibit P.

"**Acceptance Date**" has the meaning specified in Section 2.05(a)(iv)(D)(2).

"**Additional Lender**" means, at any time, any bank, other financial institution or institutional investor that, in any case, is not an existing Lender and that agrees to provide any portion of any (a) New Term Commitment, New Term Loan, New Revolving Credit Commitment or New Revolving Credit Loan in accordance with Section 2.14, (b) Refinancing Loans or Refinancing Commitments in accordance with Section 2.15 or (c) Replacement Term Loans pursuant to Section 10.01; *provided* that each Additional Lender shall be subject to the approval of the Administrative Agent (such approval not to be unreasonably withheld or delayed), in each case to the extent any such consent would be required from the Administrative Agent under Section 10.07(b)(iii)(B) for an assignment of Loans to such Additional Lender, and the consent of the Borrower, to the extent required under Section 10.07(b)(iii)(A); *provided further* that no Additional Lender shall be a Disqualified Institution.

"**Adjusted Eurocurrency Rate**" means, with respect to any Eurocurrency Rate Borrowing for any Interest Period, an interest rate per annum equal to the Eurocurrency Rate for such Interest Period, multiplied by the Statutory Reserve Rate; *provided* that the Eurocurrency Rate with respect to Initial Term Loans will be deemed not to be less than 1.00% per annum. The Adjusted Eurocurrency Rate will be adjusted automatically with respect to all Eurocurrency Rate Borrowings then outstanding as of the effective date of any change in the Statutory Reserve Rate.

"**Administrative Agent**" has the meaning specified in the introductory paragraph to this Agreement; it being understood that matters concerning Alternative Currencies will be administered by J.P. Morgan Europe Limited and therefore all notices concerning such Loans will be required to be given at the Administrative Agent's Office for J.P. Morgan Europe Limited as set forth on Schedule 10.02. Unless the context otherwise requires, the term "Administrative Agent" as used herein and in the other Loan Documents shall include the Collateral Agent.

"**Administrative Agent's Office**" means, with respect to any currency, the Administrative Agent's address and, as appropriate, account as set forth on Schedule 10.02 with respect to such currency, or such other address or account with respect to such currency as the Administrative Agent may from time to time notify the Borrower and the Lenders.

"**Administrative Questionnaire**" means an Administrative Questionnaire in a form supplied by the Administrative Agent.

"**Affiliate**" means, with respect to any Person, another Person that directly, or indirectly through one or more intermediaries, Controls or is Controlled by or is under common Control with the Person specified. "**Control**" means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of a Person, whether through the ability to exercise voting power, by contract or otherwise. "**Controls**" and "**Controlled**" have meanings correlative thereto. For the avoidance of doubt, none of the Lead Arrangers, the Agents or their respective lending Affiliates shall be deemed to be an Affiliate of the Borrower or any of its Subsidiaries.

"**Affiliated Debt Fund**" means any Affiliate of the Borrower (other than its Subsidiaries) that is a bona fide debt fund or an investment vehicle that is engaged in the making, purchasing, holding or otherwise investing in commercial loans, bonds and similar extensions of credit in the ordinary course of business and with respect to which Summit Partners Private Equity Fund VII A, L.P. and investment vehicles managed or advised by Summit Partners, L.P. that are not engaged primarily in making, purchasing, holding or otherwise investing in commercial loans, bonds and similar extensions of credit in the ordinary course of business do not make investment decisions for such Affiliate.

"**Affiliated Lender**" means, at any time, any Lender that is a Permitted Holder (other than the Borrower or any of its Subsidiaries and other than any Affiliated Debt Fund) at such time.

"**Affiliated Lender Cap**" has the meaning specified in Section 10.07(h)(iii).

"**Agent Parties**" has the meaning specified in Section 10.02(d).

"**Agent-Related Distress Event**" means with respect to the Administrative Agent or the Collateral Agent or any person that directly or indirectly controls the Administrative Agent or the Collateral Agent, as the case may be, (each, a "**Distressed Agent-Related Person**"), a voluntary or involuntary case with respect to such Distressed Agent-Related Person under any Debtor Relief Law, or a custodian, conservator, receiver or similar official is appointed for such Distressed Agent-Related Person or any substantial part of such Distressed Agent-Related Person's assets, or such Distressed Agent-Related Person makes a general assignment for the benefit of creditors or is otherwise adjudicated as, or determined by any Governmental Authority (having regulatory authority over such Distressed Agent-Related Person) to be, insolvent or bankrupt; *provided* that an Agent-Related Distress Event shall not be deemed to have occurred solely by virtue of the ownership or acquisition of any equity interests in the Administrative Agent or the Collateral Agent or any person that directly or indirectly controls the Administrative Agent or the Collateral Agent, as the case may be, by a Governmental Authority.

"**Agent-Related Persons**" means the Agents, together with their respective Affiliates, and the officers, directors, employees, agents, attorney-in-fact, partners, trustees and advisors of such Persons and of such Persons' Affiliates.

"**Agents**" means, collectively, the Administrative Agent and the Collateral Agent.

"**Aggregate Commitments**" means the Commitments of all the Lenders.

"**Agreement**" means has the meaning specified in the introductory paragraph to this Agreement.

"**Agreement Currency**" has the meaning specified in Section 10.18.

"**AHYDO Catch-Up Payment**" means any payment, including subordinated debt obligations, in each case to avoid the application of Section 163(e)(5) of the Code.

"**All-In Yield**" means, as to any Indebtedness, the yield thereof, whether in the form of interest rate, margin, OID, upfront fees, a Eurocurrency Rate floor or Base Rate floor or otherwise; *provided* that OID and upfront fees shall be equated to interest rate assuming a 4-year average life to maturity (or, if less, the stated life to maturity at the time of incurrence of the applicable Indebtedness); and *provided, further,* that "All-In Yield" shall not include (x) arrangement fees, commitment fees, structuring fees or underwriting or similar fees paid to arrangers or their affiliates for such Indebtedness (regardless of whether paid in whole or in part to any or all lenders under the applicable Indebtedness) or other fees that are not paid generally to all lenders of such Indebtedness, (y) bona fide ticking fees or unused line fees, it being understood, in each case, that whether such fee is bona fide is determined at the time the amount of such fee is agreed and (z) customary consent fees paid generally to consenting Lenders; *provided, further*, that any amendments to the margin on any Indebtedness that became effective subsequent to the date of the incurrence of such Indebtedness but on or prior to the time such All-In-Yield is being calculated shall be included in such calculation.

"**Allocable Revolving Share**" means, at any time, with respect to the Revolving Credit Commitments of any Class, the percentage of the total Revolving Credit Commitments represented at such time by such Class; *provided* that if any such Class of Revolving Credit Commitments has been terminated, then the Allocable Revolving Share of each applicable Lender shall be determined (except as otherwise provided in Section 2.06(d)) based on the Allocable Revolving Share of such Lender immediately prior to such termination and after giving effect to any subsequent assignments made pursuant to the terms hereof.

"**Alternative Currency**" means Euros and each other currency (other than Dollars and Euros) that is approved in accordance with Section 1.13.

"**Alternative Currency Limit**" means an amount not in excess of $25,000,000.

"**Annual Financial Statements**" means the audited consolidated balance sheets of the Borrower and its Subsidiaries as of each of December 31, 2014 and December 31, 2015, respectively, and the related consolidated statements of operations, stockholders' equity and cash flows for the Borrower and its Subsidiaries for the fiscal years then ended.

"**Anti-Corruption Laws**" has the meaning specified in Section 5.20(b).

"**Applicable Discount**" has the meaning specified in Section 2.05(a)(iv)(C)(2).

"**Applicable Indebtedness**" has the meaning specified in the definition of "Weighted Average Life to Maturity."

"**Applicable Rate**" means a percentage per annum equal to:

(a) with respect to Initial Term Loans, (i) 3.00%, in the case of Base Rate Loans and (ii) 4.00% in the case of Eurocurrency Rate Loans;

(b) with respect to Revolving Credit Loans and Letter of Credit fees, (i) until the occurrence of a Qualified IPO and (A) until delivery of financial statements for the first full fiscal quarter commencing on or after the Closing Date pursuant to Section 6.01, (I) 1.00% in the case of Base Rate Loans and (II) 2.00% in the case of Eurocurrency Rate Loans and Letter of Credit fees, and (B) thereafter, the following percentages per annum, based upon the Total Net Leverage Ratio as set forth in the most recent Compliance Certificate received by the Administrative Agent pursuant to Section 6.02(a):

Pricing Level	Total Net Leverage Ratio	Base Rate	Eurocurrency Rate/Letter of Credit Fees
1	> 1.75:1.00	1.00%	2.00%
2	£ 1.75:1.00 and > 1.25:1.00	0.75%	1.75%
3	£ 1.25:1.00	0.50%	1.50%

and (ii) after the occurrence of a Qualified IPO, each of the rates set forth in the pricing grid above shall be reduced by 0.25% per annum.

Any increase or decrease in the Applicable Rate pursuant to clause (b) above resulting from a change in the Total Net Leverage Ratio shall become effective as of the first Business Day immediately following the date a Compliance Certificate is delivered pursuant to Section 6.02(a); *provided* that, upon written notice to the Borrower from the Administrative Agent (at the direction of the Required Revolving Credit Lenders) or the Required Revolving Credit Lenders, the highest pricing level shall apply as of the first Business Day after the date on which a Compliance Certificate was required to have been delivered but was not delivered, and shall continue to so apply to and including the date on which such Compliance Certificate is so delivered (and thereafter the pricing level otherwise determined in accordance with this definition shall apply); and

(c) with respect to commitment fees payable in respect of unused Revolving Credit Commitments, 0.25%.

In the event that any financial statements under Section 6.01 or a Compliance Certificate are or is shown to be inaccurate at any time that this Agreement is in effect and any Loans or Commitments are outstanding hereunder when such inaccuracy is discovered and such inaccuracy, if corrected, would have led to a higher Applicable Rate for any period (an "**Applicable Period**") than the Applicable Rate applied for such Applicable Period, then (i) the Borrower shall promptly (and in no event later than five (5) Business Days after a Responsible Officer obtains actual knowledge of such inaccuracy) deliver to the Administrative Agent a correct Compliance Certificate for such Applicable Period, (ii) the Applicable Rate shall be determined by reference to the corrected Compliance Certificate (but in no event shall the Revolving Credit Lenders owe any amounts to the Borrower), and (iii) the Borrower shall pay to the Administrative Agent promptly upon demand (and in no event later than five (5) Business Days after demand) any additional interest owing as a result of such increased Applicable Rate for such Applicable Period, which payment shall be promptly applied by the Administrative Agent in accordance with the terms hereof. Any additional interest or fees under this paragraph shall not be due and payable until such demand is made for such payment by the Administrative Agent and accordingly, any nonpayment of such interest as result of any such demand not having been made shall not constitute a Default (whether retroactively or otherwise), and none of such additional amounts shall be deemed overdue or accrue interest at the Default Rate, in each case at any time prior to the date that is five (5) Business Days following such demand.

Notwithstanding the foregoing, the Applicable Rate in respect of Extended Term Loans of any Term Loan Extension Series, Extended Revolving Credit Loans of any Revolving Credit Loan Extension Series, Refinancing Term Loans, Refinancing Revolving Credit Loans, New Term Commitments, New Term Loans, New Revolving Credit Commitments, New Revolving Credit Loans or Replacement Term Loans shall be the applicable percentages per annum provided pursuant to the applicable Extension Amendment, Refinancing Amendment, Incremental Amendment or amendment to this Agreement in respect of Replacement Term Loans, as the case may be. The Applicable Rate in respect of Extended Term Loans of any Term Loan Extension Series, Extended Revolving Credit Loans of any Revolving Credit Loan Extension Series, Refinancing Term Loans, Refinancing Revolving Credit Loans, New Term Commitments, New Term Loans, New Revolving Credit Commitments, New Revolving Credit Loans or Replacement Term Loans may be further adjusted as may be agreed by the relevant Lenders and the Borrower in connection with any Extension Amendment, Refinancing Amendment, Incremental Amendment or amendment to this Agreement in respect of Replacement Term Loans, as the case may be.

"**Appropriate Lender**" means, at any time, (a) with respect to Loans of any Class, the Lenders of such Class and (b) with respect to any Letters of Credit, (i) the relevant L/C Issuers and (ii) with respect to any Letters of Credit issued hereunder the Revolving Credit Lenders.

"**Approved Fund**" means, with respect to any Lender, any Fund that is administered, advised or managed by (a) such Lender, (b) an Affiliate of such Lender or (c) an entity or an Affiliate of an entity that administers, advises or manages such Lender.

"**Assignee Group**" means two or more Eligible Assignees that are Affiliates of one another or two or more Approved Funds managed by the same investment advisor.

"**Assignment and Assumption**" means an Assignment and Assumption substantially in the form of Exhibit E-1 or any other form approved by the Administrative Agent and the Borrower.

"**Attorney Costs**" means all reasonable and documented in reasonable detail fees, expenses and disbursements of any law firm or other external legal counsel.

"**Attributable Indebtedness**" means, on any date, in respect of any Capitalized Lease of any Person, the capitalized amount thereof that would appear on a balance sheet of such Person prepared as of such date in accordance with GAAP.

"**Auction Agent**" means (a) the Administrative Agent or (b) any other financial institution or advisor employed by the Borrower (whether or not an Affiliate of the Administrative Agent) to act as an arranger in connection with any Discounted Loan Prepayment pursuant to Section 2.05(a)(iv); *provided* that the Borrower shall not designate the Administrative Agent as the Auction Agent without the prior written consent of the Administrative Agent (it being understood that the Administrative Agent shall be under no obligation to agree to act as the Auction Agent); *provided, further,* that neither the Borrower nor any of its Affiliates may act as the Auction Agent.

"**Auto-Extension Letter of Credit**" has the meaning specified in Section 2.03(b)(iii).

"**Available Amount**" means, at any time (the "**Reference Date**"), the sum of:

(a) $15,000,000; plus

(b) an amount equal to (x) the cumulative amount of Excess Cash Flow (which amount shall not be less than zero in any fiscal year) of the Borrower and its Restricted Subsidiaries for the Available Amount Reference Period minus (y) the portion of such Excess Cash Flow that has been (or is required to be) applied to the prepayment of Loans in accordance with Section 2.05(b)(i) after giving effect to any dollar for dollar reduction with respect to such prepayment requirement made pursuant to Section 2.05(b)(i)(B); plus

(c) to the extent not included in the definition of "Excluded Contribution", the amount of any capital contributions made in cash, Cash Equivalents or property (at the fair market value thereof as reasonably determined by the Borrower) or Net Cash Proceeds from Permitted Equity Issuances (or issuances of debt securities that have been converted into or exchanged for Qualified Equity Interests) received or made by the Borrower (or any Permitted Parent and contributed by such Permitted Parent to the Borrower) during the period from and including the Business Day immediately following the Closing Date through and including the Reference Date; plus

(d) to the extent not (x) included in clause (b) above or (y) already reflected as a return of capital with respect to such Investment for purposes of determining the amount of such Investment, the aggregate amount of all Returns (including all cash repayment of principal) received in cash or Cash Equivalents by the Borrower or any Restricted Subsidiary from any Investment or Unrestricted Subsidiary during the period from and including the Business Day immediately following the Closing Date through and including the Reference Date, in each case to the extent any such Investment was made using the Available Amount pursuant to Section 7.02(j); plus

(e) to the extent not (x) included in clause (b) above, (y) already reflected as a return of capital with respect to such Investment for purposes of determining the amount of such Investment or (C) required to be applied to prepay Term Loans in accordance with Section 2.05(b)(ii), the aggregate amount of all Net Cash Proceeds received by the Borrower or any Restricted Subsidiary in connection with the sale, transfer or other disposition of any Investment or its ownership interest in any Unrestricted Subsidiary during the period from and including the Business Day immediately following the Closing Date through and including the Reference Date, in each case to the extent any such Investment was made using the Available Amount pursuant to Section 7.02(j); plus

(f) to the extent not (x) included in clause (b) above or (y) already reflected as a return of capital with respect to such Investment for purposes of determining the amount of such Investment, in the event that the Borrower redesignates any Unrestricted Subsidiary as a Restricted Subsidiary after the Closing Date (which, for purposes hereof, shall be deemed to also include (A) the merger, consolidation, liquidation or similar amalgamation of any Unrestricted Subsidiary into the Borrower or any Restricted Subsidiary, so long as the Borrower or such Restricted Subsidiary is the surviving Person, and (B) the transfer of all or substantially all of the assets of an Unrestricted Subsidiary to the Borrower or any Restricted Subsidiary), the fair market value (as reasonably determined by the Borrower) of the Investment in such Unrestricted Subsidiary at the time of such redesignation, in each case to the extent such Investment in such Unrestricted Subsidiary was made using the Available Amount pursuant to Section 7.02(j); plus

(g) the Net Cash Proceeds received by the Borrower or any of its Restricted Subsidiaries of any Indebtedness or Disqualified Equity Interests incurred or issued by the Borrower or any of its Restricted Subsidiaries that is exchanged or converted into Qualified Equity Interests of the Borrower (or any Permitted Parent); plus

(h) Declined Amounts; minus

(i) any Investments made pursuant to Section 7.02(j), any Restricted Payment made pursuant to Section 7.06(c) or any payment made pursuant to Section 7.13(a)(v), in each case, during the period commencing on the Closing Date and ending on the Reference Date (and, for purposes of this clause (i), without taking account of the intended usage of the Available Amount on such Reference Date in the contemplated transaction), in each case, in reliance on the Available Amount.

"**Available Amount Reference Period**" means, with respect to any Reference Date, the period commencing on January 1, 2017 and ending on the last day of the most recent fiscal year for which financial statements required to be delivered pursuant to Section 6.01(a), and the related Compliance Certificate required to be delivered pursuant to Section 6.02(a), have been received by the Administrative Agent.

"**Available Incremental Amount**" means an aggregate principal amount of up to (a) an unlimited amount of New Term Loans, New Revolving Credit Commitments and any Incremental Equivalent Debt so long as at the time of incurrence of such amounts, the Total Net First Lien Leverage

Ratio is less than or equal to 2.75:1.00 after giving Pro Forma Effect to any such incurrence (or, in the case of Incremental Equivalent Debt, if such Incremental Equivalent Debt will (i) rank junior in right of security with the Revolving Credit Loans and Term Loans, an unlimited amount of Incremental Equivalent Debt so long as at the time of incurrence of such amounts, the Total Net Senior Secured Leverage Ratio is less than or equal to 4.00:1.00 after giving Pro Forma Effect to any such incurrence, or (ii) be unsecured, an unlimited amount of Incremental Equivalent Debt so long as at the time of incurrence of such amounts, the Total Net Leverage Ratio is less than or equal to 5.00:1.00 after giving Pro Forma Effect to any such incurrence); *provided* that in the case of any single transaction that provides for the incurrence of New Revolving Credit Commitments, New Term Commitments, New Term Loans and/or Incremental Equivalent Debt under this clause (a) and clause (c) below, compliance with the Total Net First Lien Leverage Ratio, Total Net Senior Secured Leverage Ratio or Total Net Leverage Ratio, as applicable, shall be determined for purposes of this clause (a) by giving the single transaction Pro Forma Effect but excluding in such determination of the Total Net First Lien Leverage Ratio, Total Net Senior Secured Leverage Ratio or Total Net Leverage Ratio, as applicable, the aggregate amount of Indebtedness (and deemed Indebtedness) incurred in reliance on clause (c) below; plus (b) $70,000,000 (or the equivalent thereof if denominated in a currency other than Dollars, determined in accordance with Section 1.09) (which shall not be reduced by any amount incurred in reliance on the immediately preceding clause (a)); *provided, further*, that the Borrower may elect to use clause (a) above prior to this clause (b), and if both clause (a) above and this clause (b) are available and the Borrower does not make an election, the Borrower will be deemed to have elected clause (a) above; plus (c) (i) the amount of any optional prepayment of any Term Loan in accordance with Section 2.05(a), (ii) the amount of any optional prepayment, redemption or repurchase of any Incremental Equivalent Debt or any Refinancing Equivalent Debt, (iii) the amount paid in cash in respect of any reduction in the outstanding amount of any Term Loan resulting from any assignment of such Term Loan to (and/or assignment and/or purchase of such Loan by) the Borrower and/or any Restricted Subsidiary which was subsequently cancelled and (iv) to the extent the Borrower has permanently reduced the Revolving Credit Commitments, the amount of any such reduction; provided that for each of clauses (i), (ii), (iii) and (iv), the relevant prepayment, redemption, repurchase, assignment, reduction and/or purchase was not funded with the proceeds of any long-term Indebtedness (other than (except if revolving Indebtedness is used to replace revolving Indebtedness) revolving Indebtedness).

"**Bail-In Action**" means the exercise of any Write-Down and Conversion Powers by the applicable EEA Resolution Authority in respect of any liability of an EEA Financial Institution.

"**Bail-In Legislation**" means, with respect to any EEA Member Country implementing Article 55 of Directive 2014/59/EU of the European Parliament and of the Council of the European Union, the implementing law for such EEA Member Country from time to time which is described in the EU Bail-In Legislation Schedule.

"**Base Rate**" means, for any day, a fluctuating rate per annum equal to the highest of (a) the Federal Funds Rate plus 0.50%, (b) the Prime Rate in effect on such day, and (c) to the extent ascertainable, the Adjusted Eurocurrency Rate on such day for an Interest Period of one (1) month plus 1.00% (or, if such day is not a Business Day, the immediately preceding Business Day); *provided* that for the purpose of this definition, the Adjusted Eurocurrency Rate for any day shall be based on the Eurocurrency Screen Rate (or if the Eurocurrency Screen Rate is not available for such one month Interest Period, the Interpolated Rate); *provided* further that the Base Rate with respect to Initial Term Loans will be deemed not to be less than 2.00% per annum. Any change in the Base Rate due to a change in the Prime Rate, the Federal Funds Rate or the Adjusted Eurocurrency Rate shall be effective on the day of such change in the Prime Rate, the Federal Funds Rate or the Adjusted Eurocurrency Rate, respectively.

"**Base Rate Loan**" means a Loan that bears interest based on the Base Rate.

"**Bookrunner**" means each of JPMorgan Chase Bank, N.A. and Barclays Bank PLC, each in its capacity as a joint bookrunner under this Agreement.

"**Borrower**" has the meaning specified in the introductory paragraph to this Agreement.

"**Borrower Materials**" has the meaning specified in the last paragraph of Section 6.02.

"**Borrower Offer of Specified Discount Prepayment**" means the offer by the Borrower to make a voluntary prepayment of Term Loans at a specified discount to par pursuant to Section 2.05(a)(iv)(B).

"**Borrower Parties**" means the collective reference to the Borrower and its Subsidiaries, and "**Borrower Party**" means any one of them.

"**Borrower Solicitation of Discount Range Prepayment Offers**" means the solicitation by the Borrower of offers for, and the corresponding acceptance by a Lender of, a voluntary prepayment of Term Loans at a specified range of discounts to par pursuant to Section 2.05(a)(iv)(C).

"**Borrower Solicitation of Discounted Prepayment Offers**" means the solicitation by the Borrower of offers for, and the subsequent acceptance, if any, by a Lender of, a voluntary prepayment of Term Loans at a discount to par pursuant to Section 2.05(a)(iv)(D).

"**Borrowing**" means a Revolving Credit Borrowing or a Term Borrowing, as the context may require.

"**Business Day**" means any day other than a Saturday, Sunday or other day on which commercial banks are authorized to close under the Laws of, or are in fact closed in, New York, New York or the jurisdiction where the Administrative Agent's Office with respect to Obligations denominated in Dollars is located and:

(a) if such day relates to any interest rate settings as to a Eurocurrency Rate Loan denominated in Dollars, any fundings, disbursements, settlements and payments in Dollars in respect of any such Eurocurrency Rate Loan, or any other dealings in Dollars to be carried out pursuant to this Agreement in respect of any such Eurocurrency Rate Loan, means any such day on which dealings in deposits in Dollars are conducted by and between banks in the London interbank market;

(b) if such day relates to any interest rate settings as to a Eurocurrency Rate Loan denominated in Euros, any fundings, disbursements, settlements and payments in Euros in respect of any such Eurocurrency Rate Loan, or any other dealings in Euros to be carried out pursuant to this Agreement in respect of any such Eurocurrency Rate Loan, means a TARGET Day;

(c) if such day relates to any interest rate settings as to a Eurocurrency Rate Loan denominated in a currency other than Dollars or Euros, means any such day on which dealings in deposits in the relevant currency are conducted by and between banks in the London or other applicable offshore interbank market for such currency; and

(d) if such day relates to any fundings, disbursements, settlements and payments in a currency other than Dollars or Euros in respect of a Eurocurrency Rate Loan denominated in a currency other than Dollars or Euros, or any other dealings in any currency other than Dollars or Euros to be carried out pursuant to this Agreement in respect of any such Eurocurrency Rate Loan (other than any interest rate settings), means any such day on which banks are open for foreign exchange business in the principal financial center of the country of such currency.

"**Capital Expenditures**" means, for any period, the aggregate of all expenditures (whether paid in cash or accrued as liabilities and including in all events all amounts expended or capitalized under Capitalized Leases) by the Borrower and the Restricted Subsidiaries during such period that, in conformity with GAAP, are or are required to be included as capital expenditures on the consolidated statement of cash flows of the Borrower and the Restricted Subsidiaries.

"**Capitalized Lease Obligation**" means, at the time any determination thereof is to be made, the amount of the liability in respect of a Capitalized Lease that would at such time be required to be capitalized and reflected as a liability on a balance sheet (excluding the footnotes thereto) prepared in accordance with GAAP.

"**Capitalized Leases**" means all leases that have been or are required to be, in accordance with GAAP, recorded as capitalized leases; *provided* that for all purposes hereunder the amount of obligations under any Capitalized Lease shall be the amount thereof accounted for as a liability in accordance with GAAP; *provided further* that any lease that would be characterized as an operating lease in accordance with GAAP on December 31, 2015 (whether or not such operating lease was in effect on such date) shall continue to be accounted for as an operating lease (and not as a Capitalized Lease) for purposes of this Agreement regardless of any change in GAAP following the Closing Date that would otherwise require such lease to be recharacterized (on a prospective or retroactive basis or otherwise) as a Capitalized Lease.

"**Capitalized Software Expenditures**" means, for any period, the aggregate of all expenditures (whether paid in cash or accrued as liabilities) by the Borrower and the Restricted Subsidiaries during such period in respect of purchased software or internally developed software and software enhancements that, in conformity with GAAP, are or are required to be reflected as capitalized costs on the consolidated balance sheet (excluding the footnotes thereto) of the Borrower and the Restricted Subsidiaries.

"**Captive Insurance Subsidiary**" means any Subsidiary of the Borrower that is subject to regulation as an insurance company (or any Subsidiary thereof).

"**Cash Collateral Account**" means an account of the Borrower held at, and subject to the sole dominion and control of, the Collateral Agent.

"**Cash Collateralize**" means (a) to pledge and deposit with or deliver to the Administrative Agent, for the benefit of the Administrative Agent, the applicable L/C Issuer and the Appropriate Lenders, as collateral for L/C Obligations or obligations of Lenders to fund participations in respect thereof, cash, Cash Equivalents, deposit account or securities account balances, (b) if the applicable L/C Issuer benefiting from such collateral shall agree in its reasonable discretion, to provide a "backstop" letter of credit, in form and substance, and issued by an issuer, reasonably satisfactory to the applicable L/C Issuer, (c) if the applicable L/C Issuer benefiting from such collateral shall agree in its reasonable discretion, to provide evidence that a Letter of Credit has been "grandfathered" into a future credit facility or (d) if the applicable L/C Issuer benefiting from such collateral shall agree in its reasonable discretion, to provide other credit support, in each case, in an amount equal to 103% of such obligations and pursuant to documentation in form and substance reasonably satisfactory to (i) the Administrative Agent (on behalf of the Appropriate Lenders) and (ii) the L/C Issuer(s). "**Cash Collateral**," "**Cash Collateralizing**", "**Cash Collateralized**" and "**Cash Collateralization**" shall have the meanings correlative thereto and shall include the proceeds of such cash collateral and other credit support.

"**Cash Equivalents**" means any of the following types of Investments, to the extent owned by the Borrower or any Restricted Subsidiary:

(a) Dollars;

(b) (i) Euros or (ii) any other foreign currency held by the Borrower or any of the Restricted Subsidiaries in the ordinary course of business;

(c) readily marketable direct obligations issued or directly and fully guaranteed or insured by the United States government or any agency or instrumentality thereof the securities of which are unconditionally guaranteed as a full faith and credit obligation of such government with maturities of 24 months or less from the date of acquisition;

(d) certificates of deposit, time deposits and eurodollar time deposits with maturities of one year or less from the date of acquisition, demand deposits, bankers' acceptances with maturities not exceeding one year and overnight bank deposits, in each case with any domestic or foreign commercial bank having capital and surplus of not less than $500,000,000 for U.S. banks (or the Dollar equivalent as of the date of determination in the case of any non-U.S. banks) in the case of non-U.S. banks;

(e) repurchase obligations for underlying securities of the types described in clauses (c) and (d) above or clause (g) below entered into with any financial institution meeting the qualifications specified in clause (d) above;

(f) commercial paper rated at least P-2 by Moody's or at least A-2 by S&P (or, if at any time neither Moody's nor S&P shall be rating such obligations, an equivalent rating from another nationally recognized statistical rating agency) and in each case maturing within 12 months after the date of creation thereof;

(g) marketable short-term money market and similar highly liquid funds having a rating of at least P-2 or A-2 from either Moody's or S&P, respectively (or, if at any time neither Moody's nor S&P shall be rating such obligations, an equivalent rating from another nationally recognized statistical rating agency);

(h) readily marketable direct obligations issued or directly and fully guaranteed or insured by any state, commonwealth or territory of the United States or any political subdivision or taxing authority thereof having an Investment Grade Rating from either Moody's or S&P (or, if at any time neither Moody's nor S&P shall be rating such obligations, an equivalent rating from another nationally recognized statistical rating agency) with maturities of 24 months or less from the date of acquisition;

(i) Investments with average maturities of 12 months or less from the date of acquisition in money market funds rated AAA- (or the equivalent thereof) or better by S&P or Aaa3 (or the equivalent thereof) or better by Moody's (or, if at any time neither Moody's nor S&P shall be rating such obligations, an equivalent rating from another nationally recognized statistical rating agency);

(j) investment funds investing substantially all of their assets in securities of the types described in clauses (a) through (i) above; and

(k) solely with respect to any Captive Insurance Subsidiary, any investment that a Captive Insurance Subsidiary is not prohibited to make in accordance with applicable Laws.

In the case of Investments by the Borrower or any Subsidiary that is a Restricted Subsidiary or Investments made in a country outside the United States, Cash Equivalents shall also include (i) investments of the type and maturity described in clauses (a) through (j) above of obligors, which Investments or obligors, if required under such clauses, have the ratings described in such clauses or equivalent ratings from comparable foreign rating agencies and (ii) other short-term investments utilized by the Borrower or Subsidiaries that are Restricted Subsidiaries in accordance with normal investment practices for cash management in investments analogous to the foregoing investments described in clauses (a) through (j) and in this paragraph.

"**Cash Management Bank**" means any Person that is an Agent, a Lender, a Lead Arranger or an Affiliate of any of the foregoing at the time it initially provides any Cash Management Services pursuant to a Secured Cash Management Agreement (or, in the case of Secured Cash Management Agreements existing on the Closing Date, on the Closing Date), whether or not such Person subsequently ceases to be an Agent, a Lender, a Lead Arranger or an Affiliate of any of the foregoing.

"**Cash Management Obligations**" means obligations owed by the Borrower or any Restricted Subsidiary in respect of or in connection with any Cash Management Services.

"**Cash Management Services**" means any agreement or arrangement to provide cash management services, including treasury, depository, overdraft, credit card processing, credit or debit card, purchase card, electronic funds transfer, ACH transactions and other cash management arrangements.

"**Casualty Event**" means any event that gives rise to the receipt by the Borrower or any Restricted Subsidiary of any insurance proceeds or condemnation awards in respect of any equipment, fixed assets or real property (including any improvements thereon) to replace or repair such equipment, fixed assets or real property.

"**CFC**" means a "controlled foreign corporation" within the meaning of Section 957 of the Code.

"**Change in Law**" means the occurrence, after the date of this Agreement, of any of the following: (a) the adoption or taking effect of any law, rule, regulation or treaty, (b) any change in any law, rule, regulation or treaty or in the administration, interpretation or application thereof by any Governmental Authority or (c) the making or issuance of any request, guideline or directive (whether or not having the force of law) by any Governmental Authority; *provided*, that notwithstanding anything herein to the contrary, (x) the Dodd-Frank Wall Street Reform and Consumer Protection Act (Pub.L. 111-203, H.R. 4173) and all requests, rules, guidelines, regulations, requirements, interpretations or directives thereunder or issued in connection therewith or in implementation thereof and (y) all requests, rules, guidelines, regulations, requirements, interpretations or directives promulgated by the Bank for International Settlements, the Basel Committee on Banking Supervision (or any successor or similar authority) or the United States or foreign regulatory authorities, in each case pursuant to Basel III, shall in each case be deemed to be a "Change in Law," regardless of the date enacted, adopted, issued or implemented.

"**Change of Control**" means (a) at any time after the Closing Date and prior to a Qualified IPO, the Permitted Holders ceasing to beneficially own, either directly or indirectly (within the meaning of Rule 13d-3 and Rule 13d-5 under the Exchange Act), Equity Interests representing more than 50% of the total voting power of all of the issued and outstanding common Equity Interests of the Borrower;

(b) at any time after the Closing Date and upon or after the consummation of a Qualified IPO (1) any Person (other than a Permitted Holder) or (2) Persons (other than one or more Permitted Holders) constituting a "group" (as such term is used in Section 13(d) and Section 14(d) of the Exchange Act, but excluding any employee benefit plan of such Person and its Subsidiaries, and any Person or entity acting in its capacity as trustee, agent or other fiduciary or administrator of any such plan), becomes the "beneficial owner" (as defined in Rules 13(d)-3 and 13(d)-5 under such Act), directly or indirectly, of Equity Interests representing more than forty percent (40%) of the aggregate ordinary voting power represented by the issued and outstanding Equity Interests of the Borrower (or, in case a Permitted Parent is formed, of the Permitted Parent in lieu of the Borrower) and the percentage of aggregate ordinary voting power so held is greater than the percentage of the aggregate ordinary voting power represented by the issued and outstanding Equity Interests of the Borrower (or, in case a Permitted Parent is formed, of the Permitted Parent in lieu of the Borrower) beneficially owned, directly or indirectly, in the aggregate by the Permitted Holders, unless the Permitted Holders have, at such time, the right or the ability by voting power, contract or otherwise to elect or designate for election directors entitled to cast the majority of votes on the board of directors of the Borrower (or, in case a Permitted Parent is formed, of the Permitted Parent in lieu of the Borrower); or

(c) in the case a Permitted Parent is formed, if the Borrower ceases to be a direct or indirect wholly owned subsidiary of such Permitted Parent;

provided that, notwithstanding anything contained herein to the contrary, the (i) acquisition by a Permitted Parent of 100% of the issued and outstanding Equity Interests of the Borrower or (ii) the occurrence of a Qualified IPO, in each case, shall not constitute a "Change of Control."

"**Claims**" has the meaning specified in the definition of "Environmental Claim."

"**Class**" when used in reference to (a) any Loan or Borrowing, refers to whether such Loan, or the Loans comprising such Borrowing, are Initial Term Loans, Revolving Credit Loans, New Term Loans, New Revolving Credit Loans, Refinancing Term Loans, Refinancing Revolving Credit Loans, Extended Term Loans, Extended Revolving Credit Loans or Replacement Term Loans, (b) any Commitment, refers to whether such Commitment is a Commitment in respect of Initial Term Commitments, Revolving Credit Commitments (including Non-Extended Revolving Credit Commitments) or a Commitment in respect of a Class of Loans to be made pursuant to an Incremental Amendment, a Refinancing Amendment, an Extension Amendment, Corrective Loan Extension Amendment or an amendment to this Agreement in respect of Replacement Term Loans and (c) any Lender, refers to whether such Lender has a Loan or Commitment with respect to a particular Class of Loans or Commitments and includes Term Lenders with Initial Term Loans, Revolving Credit Lenders with Revolving Credit Commitments (including Non-Extended Revolving Credit Commitments), Refinancing Term Lenders with Refinancing Term Commitments or Refinancing Term Loans, Refinancing Revolving Credit Lenders with Refinancing Revolving Credit Commitments or Refinancing Revolving Credit Loans, Extending Term Lenders for a given Term Loan Extension Series of Extended Term Commitments or Extended Term Loans, Extending Revolving Credit Lenders for a given Revolving Credit Loan Extension Series of Extended Revolving Credit Commitments or Extended Revolving Credit Loans, New Term Lenders with New Term Commitments or New Term Loans, New Revolving Credit Lenders with New Revolving Credit Commitments or New Revolving Credit Loans or Lenders with Replacement Term Loans. Refinancing Term Commitments, Refinancing Term Loans, Refinancing Revolving Credit Commitments, Refinancing Revolving Credit Loans, New Term Commitments, New Term Loans, New Revolving Credit Commitments, New Revolving Credit Loans,

Extended Term Commitments, Extended Term Loans, Extended Revolving Credit Commitments, Extended Revolving Credit Loans, commitments in respect of Replacement Term Loans and Replacement Term Loans that have different terms and conditions shall be construed to be in different Classes.

"**Closing Date**" means the first date on which all the conditions precedent in Section 4.01 are satisfied or waived in accordance with Section 10.01.

"**Code**" means the U.S. Internal Revenue Code of 1986, as amended.

"**Collateral**" means all the "Collateral" (or equivalent term) as defined in any Collateral Document.

"**Collateral Agent**" has the meaning specified in the introductory paragraph to this Agreement.

"**Collateral and Guarantee Requirement**" means, at any time, the requirement that:

(a) the Collateral Agent shall have received each Collateral Document required to be delivered (i) on the Closing Date pursuant to Section 4.01(a)(iv) or (ii) on such other dates as required pursuant to the Collateral Documents, Section 6.11 or Section 6.13, subject, in each case, to the limitations and exceptions of this Agreement and the Collateral Documents duly executed by each Loan Party party thereto;

(b) all Obligations (other than, with respect to any Guarantor, any Excluded Swap Obligations of such Guarantor) shall have been unconditionally guaranteed by each Restricted Subsidiary of the Borrower that is a Domestic Subsidiary (and not an Excluded Subsidiary) (each, a "**Guarantor**");

(c) the Obligations of each Loan Party shall have been secured by a first-priority security interest (subject to non-consensual Liens permitted by Section 7.01 and other Liens permitted pursuant to Section 7.01(i)(ii), (m)(ii), (n), (o), (p), (z), (bb), (cc) (which shall be pari passu Liens to the extent secured by the Collateral), (ff) (but solely in the case of Liens permitted by clause (i)(ii), (n), (p), (oo) or (pp) of Section 7.01), (gg), (jj), (oo) and (pp)) in (i) all Equity Interests of each Restricted Subsidiary that is a wholly owned Domestic Subsidiary (other than a Domestic Subsidiary (x) that is an Immaterial Subsidiary, a not-for-profit organization, a Captive Insurance Subsidiary or a special purpose entity for a securitization transaction or a similar special purpose, or (y) described in the following clause (ii)(B)) directly owned by the Borrower or any Guarantor and (ii) 65% of the issued and outstanding Equity Interests of (A) each Restricted Subsidiary that is a wholly owned Foreign Subsidiary and is directly owned by the Borrower or any Guarantor and (B) each Restricted Subsidiary that is a wholly owned Domestic Subsidiary that is directly owned by the Borrower or any Guarantor substantially all of the assets of which consist, directly or indirectly, of Equity Interests of one or more Foreign Subsidiaries that are CFCs (in the case of clauses (A) and (B), other than a Subsidiary that is an Immaterial Subsidiary, a not-for-profit organization, a Captive Insurance Subsidiary or a special purpose entity for a securitization transaction or a similar special purpose);

(d) except to the extent otherwise provided hereunder or under any Collateral Document, including subject to Liens permitted by Section 7.01 or under any Collateral Document, the Obligations shall have been secured by a valid and perfected security interest in substantially all tangible and intangible assets of each Loan Party (including accounts receivable, inventory, equipment, investment property, contract rights, intellectual property, other general intangibles, mortgages on Material Real Property and proceeds of the foregoing), in each case, with the priority required by the Collateral Documents (to the extent such security interests may be perfected by delivering certificated securities and

Material Debt Instruments, filing financing statements under the Uniform Commercial Code, making any necessary filings with the United States Patent and Trademark Office or United States Copyright Office or by taking any other action required by the terms of any Collateral Document); and

(e) the Collateral Agent shall have received counterparts of a Mortgage and other documentation required to be delivered, with respect to each Material Real Property, if any, pursuant to Section 6.11 and 6.13,

The foregoing definition shall not require, and the Loan Documents shall not contain any requirements as to, the creation or perfection of pledges of or security interests in, Mortgages on, or the obtaining of title insurance, surveys, abstracts or appraisals or taking other actions with respect to, any Excluded Assets. The Collateral Agent may, in its sole discretion, grant extensions of time for the perfection of security interests in or the delivery of the Mortgages and the obtaining of title insurance, surveys, abstracts and appraisals with respect to particular assets and the delivery of assets (including extensions beyond the Closing Date for the perfection of security interests in the assets of the Loan Parties on such date) where it reasonably determines, in consultation with the Borrower, that perfection cannot be accomplished without undue effort or expense by the time or times at which it would otherwise be required by this Agreement or the Collateral Documents.

Notwithstanding anything to the contrary, there shall be no requirement for (and no Default under the Loan Documents shall arise out of the lack of) (A) actions in, or required by the Laws of, any non-U.S. jurisdiction in order to create, perfect or maintain any security interests in any assets (including any intellectual property registered in any non-U.S. jurisdiction and all real property located outside the United States) (it being understood that there shall be no security agreements, pledge agreements or similar security documents governed by the Laws of any non-U.S. jurisdiction) and (B) actions required to be taken to perfect by "control" with respect to any Collateral (other than delivery of (x) certificated securities required to be pledged in accordance with clause (c) of this definition and (y) Material Debt Instruments), including control agreements or similar agreements in respect of any deposit accounts, securities accounts, commodities accounts or other bank accounts (other than the Cash Collateral Account).

"**Collateral Documents**" means, collectively, the Security Agreement, the Intellectual Property Security Agreements, Security Agreement Supplements, the Mortgages, each of the mortgages, debentures, charges, collateral assignments, security agreements, pledge agreements or other similar agreements delivered to the Agents and the Lenders pursuant to this Agreement, the Guaranty, the First Lien Intercreditor Agreement (if any), the Second Lien Intercreditor Agreement (if any) and any other intercreditor agreement entered into in connection herewith and each of the other agreements, instruments or documents executed by a Loan Party that creates or purports to create a Lien or Guarantee in favor of the Administrative Agent or the Collateral Agent for the benefit of the Secured Parties.

"**Commitment**" means a Term Commitment or a Revolving Credit Commitment, as the context may require.

"**Compensation Period**" has the meaning specified in Section 2.12(c)(ii).

"**Compliance Certificate**" means a certificate substantially in the form of Exhibit C and which certificate shall in any event be a certificate of a Responsible Officer of the Borrower (a) certifying as to whether a Default has occurred and is continuing and, if applicable, specifying the details thereof and any action taken or proposed to be taken with respect thereto, (b) setting forth reasonably detailed calculations, in the case of financial statements delivered under Section 6.01(a), beginning with the financial statements for the fiscal year of the Borrower ending December 31, 2017, of Excess Cash Flow

for such fiscal year and (c) in the case of financial statements delivered under Section 6.01(a), setting forth a reasonably detailed calculation of the Net Cash Proceeds received during the applicable period by or on behalf of, the Borrower or any of its Restricted Subsidiaries in respect of any Disposition subject to prepayment pursuant to Section 2.05(b)(ii)(A) and the portion of such Net Cash Proceeds that has been invested or is intended to be reinvested in accordance with Section 2.05(b)(ii)(B).

"**Compliance Date**" means the last day of any Test Period (commencing with the first full fiscal quarter of the Borrower ending after the Closing Date) if on such day the aggregate Outstanding Amount of any Revolving Credit Loans and L/C Obligations (other than with respect to (x) undrawn Letters of Credit in an amount not in excess of $5,000,000 and (y) Letters of Credit outstanding that have been Cash Collateralized in an amount not less than 103% of the stated amount in accordance with the requirements set forth in Section 2.03(g)), exceeds 30% of the aggregate Revolving Credit Commitments.

"**Consolidated Current Assets**" means, as at any date of determination, the total assets of the Borrower and the Restricted Subsidiaries on a consolidated basis that may properly be classified as current assets in conformity with GAAP, excluding cash and Cash Equivalents, amounts related to current or deferred taxes based on income or profits, assets held for sale, loans (permitted) to third parties, pension assets, deferred bank fees and derivative financial instruments.

"**Consolidated Current Liabilities**" means, as at any date of determination, the total liabilities of the Borrower and the Restricted Subsidiaries on a consolidated basis that may properly be classified as current liabilities in conformity with GAAP, but excluding (A) the current portion of any Funded Debt, (B) the current portion of interest, (C) accruals for current or deferred taxes based on income or profits, (D) accruals of any costs or expenses related to restructuring reserves, (E) revolving loans, swing line loans and letter of credit obligations under the Revolving Credit Facility or any other revolving credit facility, (F) the current portion of any Capitalized Lease Obligation, (G) deferred revenue, (H) liabilities in respect of unpaid earn-outs, (I) the current portion of any other long-term liabilities, and, furthermore, excluding the effects of adjustments pursuant to GAAP resulting from the application of recapitalization accounting or purchase accounting, as the case may be, in relation to any consummated acquisition and (J) Non-Cash Compensation Liabilities.

"**Consolidated Depreciation and Amortization Expense**" means, with respect to any Person for any period, the total amount of depreciation and amortization expense, including amortization or write-off of intangibles and non-cash organization costs and of deferred financing fees or costs and Capitalized Software Expenditures, of such Person, including the amortization of deferred financing fees or costs for such period on a consolidated basis and otherwise determined in accordance with GAAP and the amortization of OID resulting from the issuance of Indebtedness at less than par, and any write down of assets or asset value carried on the balance sheet.

"**Consolidated EBITDA**" means, with respect to any Person for any period, the Consolidated Net Income of such Person for such period:

(a) increased by (without duplication, and as determined in accordance with GAAP to the extent applicable):

(i) (A) provision for taxes based on income or profits or capital, plus state, provincial, franchise, property or similar taxes and foreign withholding taxes and foreign unreimbursed value added taxes, of such Person for such period (including, in each case, penalties and interest related to such taxes or arising from tax examinations) deducted in computing Consolidated Net Income and (B) amounts paid to a Permitted Parent in respect of taxes in accordance with Section 7.06(g), solely to the extent such amounts were deducted in computing Consolidated Net Income; plus

(ii) (A) total interest expense of such Person and, to the extent not reflected in such total interest expense, any losses on hedging obligations or other derivative instruments entered into for the purpose of hedging interest rate risk, and (B) bank fees and costs owed with respect to letters of credit, bankers acceptances and surety bonds, in each case under this clause (B), in connection with financing activities and, in each case under clauses (A) and (B), to the extent the same were deducted in computing Consolidated Net Income; plus

(iii) Consolidated Depreciation and Amortization Expense of such Person for such period to the extent such depreciation and amortization expenses were deducted in computing Consolidated Net Income; plus

(iv) any (A) Transaction Expenses and (B) fees, costs, expenses or charges incurred (I) in connection with (x) any issuance or offering of Equity Interests, Investment, acquisition (including any one-time costs incurred in connection with any Permitted Acquisition or any other Investment permitted hereunder after the Closing Date), Disposition, recapitalization or the issuance, incurrence, redemption or repayment of Indebtedness (including, with respect to Indebtedness, a refinancing thereof), (y) any amendment, waiver, consent or modification to any documentation governing the terms of any transaction described in the immediately preceding subclause (x) or (z) any amendment, waiver, consent or modification to any Loan Document, in each case under subclauses (x), (y) and (z), whether or not such transaction or amendment, waiver, consent or modification is successful, and solely to the extent such transaction or amendment, waiver, consent or modification is permitted to be incurred, made or entered into in accordance with this Agreement or (II) to the extent reimbursable by third parties, pursuant to indemnification provisions, in each case, deducted in computing Consolidated Net Income; plus

(v) any charges, losses or expenses related to signing, retention, relocation, recruiting or completion bonuses or recruiting costs, severance costs, transition costs, curtailments or modifications to pension and post-retirement employee benefit plans (including any settlement of pension liabilities), pre-opening, opening, closing and consolidation costs and expenses with respect to any facilities, facility start-up costs, costs and expenses relating to implementation of operational and reporting systems and technology initiatives, costs and expenses relating to any registration statement, or registered exchange offer in respect of any Indebtedness permitted hereunder, costs incurred in connection with product and intellectual property development and new systems design, project start-up costs, integration and systems establishment costs, costs of strategic initiatives, business optimization expenses or costs (including costs and expenses relating to intellectual property restructurings) and cash restructuring charges or reserves; plus

(vi) equity related expenses recorded in accordance with GAAP, solely to the extent such amounts were deducted in computing Consolidated Net Income; plus

(vii) any other non-cash charges, expenses, losses or items, including any write offs or write downs, reducing such Consolidated Net Income for such period (*provided* that if any such non-cash charges represent an accrual or reserve for potential cash items in any future period, (1) the Borrower may determine not to add back such non-cash charge in the current period and (2) to the extent the Borrower does decide to add back such non-cash charge, the cash payment in respect thereof in such future period shall be subtracted from Consolidated EBITDA to such extent, and excluding amortization of a prepaid cash item that was paid in a prior period); plus

(viii) the amount of any minority interest expense or non-controlling interest consisting of Subsidiary income attributable to minority equity interests of third parties in any non-wholly owned Subsidiary deducted in calculating Consolidated Net Income; plus

(ix) **[reserved]**; plus

(x) **[reserved]**; plus

(xi) the amount of "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies related to any Specified Transaction, restructurings, cost savings initiatives and other initiatives, whether prior to or after the Closing Date (without duplication of any amounts added back pursuant to Section 1.08(c) in connection with a Specified Transaction) and projected by the Borrower in good faith to result from actions taken, committed to be taken or expected to be taken no later than eighteen (18) months after the end of such period (which "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies shall be calculated on a pro forma basis as though such "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies had been realized on the first day of the period for which Consolidated EBITDA is being determined), net of the amount of actual benefits realized during such period from such actions; *provided* that such "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies are reasonably identifiable and factually supportable (in the good faith determination of the Borrower); *provided* further, that that the aggregate amount of the add-back pursuant to this clause (xi) for such period (other than amounts that would be permitted to be included in pro forma financial statements prepared in accordance with Regulation S-X under the Securities Act) shall not exceed 25% of Consolidated EBITDA for such period (calculated before giving effect to such add-back); plus

(xii) any costs or expenses incurred by the Borrower or a Restricted Subsidiary pursuant to any management equity plan or stock option plan or any other management or employee benefit plan or agreement or any stock subscription or stockholders agreement, to the extent that such costs or expenses are funded with cash proceeds contributed to the capital of the Borrower or net cash proceeds of issuance of Equity Interests of the Borrower (other than Disqualified Equity Interests), in each case, solely to the extent that such cash proceeds are excluded from the calculation of the Available Amount; plus

(xiii) Specified Legal Expenses; plus

(xiv) accruals and reserves that are established or adjusted (x) within 12 months after the Closing Date and that are so required to be established or adjusted in accordance with GAAP or (y) after the closing of any acquisition that are so required as a result of such acquisition in accordance with GAAP, or changes as a result of the adoption or modification of accounting policies, whether effected through a cumulative effect adjustment, restatement or a retroactive application; and

(b) decreased by (without duplication, and as determined in accordance with GAAP to the extent applicable) any non-cash gains increasing Consolidated Net Income of such Person for such period, excluding any gains that represent the reversal of any accrual of, or cash reserve for, anticipated cash charges in any prior period (other than such cash charges that have been added back to Consolidated Net Income in calculating Consolidated EBITDA in accordance with this definition).

Notwithstanding anything to the contrary contained herein, for purposes of determining Consolidated EBITDA under this Agreement for any period that includes any of the fiscal quarters ended December 31, 2015, March 31, 2016, June 30, 2016 and September 30, 2016, Consolidated EBITDA for such fiscal quarters shall be $40,762,000, $33,501,000, $18,477,000 and $24,426,000 respectively, in each case, as may be subject to add-backs and adjustments (without duplication) pursuant to Section 1.08(c) and clauses (a)(v) and (a)(xi) above for the applicable Test Period. For the avoidance of doubt, Consolidated EBITDA shall be calculated, including pro forma adjustments, in accordance with Section 1.08.

"**Consolidated First Lien Net Debt**" means, as of any date of determination, (a) Consolidated Total Debt of the Borrower and the Restricted Subsidiaries that is secured by a first priority Lien on any asset or property of the Borrower or any Guarantor minus (b) the aggregate amount of cash and Cash Equivalents of the Borrower and the Restricted Subsidiaries as of such date that is not Restricted in an amount not to exceed $75,000,000; *provided* that in calculating the Total Net First Lien Leverage Ratio for the purposes of determining the Available Incremental Amount on any date of determination in respect of any New Term Loans, New Revolving Credit Commitments or Incremental Equivalent Debt, in each case incurred as such, (i) the proceeds thereof incurred on such date shall be excluded from clause (b) and (ii) in connection with the incurrence of a New Revolving Credit Commitment, the full amount of such New Revolving Credit Commitment shall be deemed to be Indebtedness outstanding on such date; *provided further* that to the extent proceeds of any New Term Loans, New Revolving Credit Commitments or Incremental Equivalent Debt are to be used to substantially concurrently repay Indebtedness (including, to the extent irrevocable, by defeasance, discharge, escrow or similar arrangements), the Borrower shall be permitted to give Pro Forma Effect to such repayment of Indebtedness.

"**Consolidated Net Debt**" means, as of any date of determination, (a) Consolidated Total Debt of the Borrower and the Restricted Subsidiaries minus (b) the aggregate amount of cash and Cash Equivalents of the Borrower and the Restricted Subsidiaries as of such date that is not Restricted in an amount not to exceed $75,000,000; *provided* that in calculating the Total Net Leverage Ratio for the purposes of determining the Available Incremental Amount on any date of determination in respect of any Incremental Equivalent Debt, the proceeds thereof incurred on such date shall be excluded from clause (b); *provided further* that to the extent proceeds of any such Indebtedness are to be used to substantially concurrently repay Indebtedness (including, to the extent irrevocable, by defeasance, discharge, escrow or similar arrangements), the Borrower shall be permitted to give Pro Forma Effect to such repayment of Indebtedness.

"Consolidated Net Income" means, with respect to any Person for any period, the aggregate of the Net Income of such Person and its Restricted Subsidiaries for such period on a consolidated basis and otherwise determined in accordance with GAAP; *provided*, *however*, that, without duplication:

(a) any net after-tax extraordinary, non-recurring or unusual gains or losses, charges or expenses shall be excluded;

(b) the Net Income for such period shall not include the cumulative effect of a change in accounting principles during such period, whether effected through a cumulative effect adjustment or a retroactive application, in each case in accordance with GAAP;

(c) effects of adjustments (including the effects of such adjustments pushed down to the Borrower and its Subsidiaries) in such Person's consolidated financial statements pursuant to GAAP (including in the property and equipment, software, goodwill, intangible assets, deferred revenue and debt line items thereof) resulting from the application of recapitalization accounting or purchase accounting, as the case may be, in relation to any consummated acquisition or the amortization or write-off of any amounts thereof (including any write-off of in process research and development), net of taxes, shall be excluded;

(d) any net after-tax income (loss) from disposed, abandoned, transferred, closed or discontinued operations (excluding held for sale discontinued operations until actually disposed of) and any net after-tax gains or losses on disposal of disposed, abandoned, transferred, closed or discontinued operations shall be excluded;

(e) any net after-tax gains or losses (less all fees, expenses and charges relating thereto) attributable to asset dispositions or the sale or other disposition of any Equity Interests of any Person other than in the ordinary course of business, as determined in good faith by the Borrower, shall be excluded;

(f) the Net Income for such period of any Person that is not a Subsidiary, or is an Unrestricted Subsidiary, or that is accounted for by the equity method of accounting, shall be excluded; *provided* that the Borrower's or any Restricted Subsidiary's equity in the Net Income of such Person or Unrestricted Subsidiary shall be included in the Consolidated Net Income of the Borrower or such Restricted Subsidiary up to the aggregate amount of dividends or distributions or other payments that are actually paid in cash (or to the extent converted into cash) by such Person or Unrestricted Subsidiary to the Borrower or a Restricted Subsidiary in respect of such period (subject in the case of dividends, distributions or other payments made to a Restricted Subsidiary to the limitations contained in clause (g) below);

(g) solely for the purpose of determining the Available Amount for application pursuant to Section 7.02(j), Section 7.06(c) and Section 7.13(a)(v), the Net Income for such period attributable to any Restricted Subsidiary (other than any Guarantor) shall be excluded to the extent that the declaration or payment of dividends or similar distributions by that Restricted Subsidiary of its Net Income is not at the date of determination permitted without any prior governmental approval (which has not been obtained) or, directly or indirectly, by the operation of the terms of its charter or any agreement, instrument, judgment, decree, order, statute, rule, or governmental regulation applicable to that Restricted Subsidiary or its equity holders, unless such restriction with respect to the payment of dividends or similar distributions has been legally waived; *provided* that Consolidated Net Income of the Borrower will be increased by the amount of dividends or other distributions or other payments actually paid in cash (or to the extent converted into cash) to the Borrower or a Restricted Subsidiary thereof in respect of such period, to the extent not already included therein;

(h) (i) any net unrealized gain or loss (after any offset) resulting in such period from obligations in respect of Swap Contracts and the application of Accounting Standards Codification 815 (Derivatives and Hedging) or any ineffectiveness recognized in earnings related to qualifying hedge transactions or the fair value of changes therein recognized in earnings for derivatives that do not qualify as hedge transactions, in each case, in respect of Swap Contracts, (ii) any net gain or loss resulting in such period from currency translation gains or losses related to currency re-measurements of Indebtedness (including the net loss or gain (A) resulting from Swap Contracts for currency exchange risk and (B) resulting from intercompany Indebtedness) and all other foreign currency translation gains or losses, and (iii) any net after-tax income (loss) for such period attributable to the early extinguishment or conversion of (A) Indebtedness, (B) obligations under any Swap Contracts or (C) other derivative instruments and all deferred financing costs written off or amortized and premiums paid or other expenses incurred directly in connection therewith, shall be excluded;

(i) any impairment charge or asset write-off or write-down, including impairment charges or asset write-offs or write-downs related to goodwill, intangible assets, long-lived assets, investments in debt and equity securities or as a result of a change in law or regulation, in each case pursuant to GAAP, the amortization of intangibles arising pursuant to GAAP and the amortization of Capitalized Software Expenditures, shall be excluded;

(j) any expenses, charges or losses that are covered by indemnification or other reimbursement provisions in connection with any Investment or Permitted Acquisition, acquisitions completed prior to the Closing Date or any sale, conveyance, transfer or other disposition of assets, in each case, permitted under this Agreement or that are consummated prior to the Closing Date, to the extent actually reimbursed, or, so long as the Borrower has made a determination that a reasonable basis exists for indemnification or reimbursement and only to the extent that such amount is in fact indemnified or reimbursed within 365 days of such determination (with a deduction in the applicable future period for any amount so added back to the extent not so indemnified or reimbursed within such 365 days), shall be excluded;

(k) to the extent covered by insurance and actually reimbursed, or, so long as the Borrower has made a determination that a reasonable basis exists that such amount will in fact be reimbursed by the insurer within 365 days of the insurable event (with a deduction for any amount so added back to the extent not so reimbursed within such 365 days), expenses, charges or losses with respect to liability or casualty events or business interruption shall be excluded; *provided*, that any proceeds of such reimbursement when received shall be excluded to the extent the expense reimbursed was previously excluded pursuant to this clause (k);

(l) any non-cash (for such period and all other periods) compensation charge or expense, including any such charge or expense arising from the grants of stock appreciation or similar rights, stock options, restricted stock or other rights or equity incentive programs shall be excluded;

(m) any income (loss) attributable to deferred compensation plans or trusts and any non-cash deemed finance charges in respect of any pension liabilities or other provisions or on the revaluation of any benefit plan obligation shall be excluded;

(n) proceeds from any business interruption insurance to the extent not already included in Consolidated Net Income and to the extent the related loss was deducted in the determination of Net Income, shall be included;

(o) the amount of any expense to the extent a corresponding amount is received in cash by the Borrower and the Restricted Subsidiaries from a Person other than the Borrower or any Restricted Subsidiaries; *provided* such amount received has not been included in determining Consolidated Net Income, shall be excluded (it being understood that if the amounts received in cash under any such agreement in any period exceed the amount of expense in respect of such period, such excess amounts received may be carried forward and applied against expense in future periods);

(p) any adjustments resulting from the application of Accounting Standards Codification Topic No. 460 (*Guarantees*), or any comparable regulation, shall be excluded;

(q) earn-out and contingent consideration obligations (including adjustments thereof and purchase price adjustments) incurred in connection with any Permitted Acquisition or other Investment permitted hereunder and any acquisitions completed prior to the Closing Date shall be excluded; and

(r) any expenses of any Permitted Parent paid with the proceeds of any Restricted Payment from the Borrower pursuant to Section 7.06(g)(i), Section 7.06(g)(v) or Section 7.06(g)(vi) shall be deducted in the calculation of Consolidated Net Income (to the extent the proceeds of such Restricted Payment pay expenses of the Permitted Parent which if paid by the Borrower directly would reduce Consolidated Net Income or Consolidated EBITDA of the Borrower).

"**Consolidated Senior Secured Net Debt**" means, as of any date of determination, (a) Consolidated Total Debt of the Borrower and the Restricted Subsidiaries that is secured by a Lien on any asset or property of the Borrower or any Guarantor minus (b) the aggregate amount of cash and Cash Equivalents of the Borrower and the Restricted Subsidiaries as of such date that is not Restricted in an amount not to exceed $75,000,000; *provided* that in calculating the Total Net Senior Secured Leverage Ratio for the purposes of determining the Available Incremental Amount on any date of determination in respect of any Incremental Equivalent Debt, the proceeds thereof incurred on such date shall be excluded from clause (b); *provided further* that to the extent proceeds of any such Indebtedness are to be used to substantially concurrently repay Indebtedness (including, if irrevocable, by defeasance, discharge, escrow or similar arrangements), the Borrower shall be permitted to give Pro Forma Effect to such repayment of Indebtedness.

"**Consolidated Total Debt**" means, as of any date of determination, the aggregate principal amount of Indebtedness of the Borrower and the Restricted Subsidiaries outstanding on such date, determined on a consolidated basis in accordance with GAAP (but excluding the effects of any discounting of Indebtedness resulting from the application of recapitalization accounting or purchase accounting in connection with any Permitted Acquisition or any other Investment permitted hereunder, acquisitions completed prior to the Closing Date or for any other purpose), consisting of Indebtedness for borrowed money, Capitalized Lease Obligations or obligations in respect of other purchase money indebtedness, unreimbursed obligations in respect of drawn letters of credit (subject to the proviso below), debt obligations evidenced by promissory notes or similar instruments and (without duplication) guarantees of the foregoing; *provided* that Consolidated Total Debt shall not include Indebtedness in respect of (i) unreimbursed obligations in respect of drawn letters of credit until two (2) Business Days after such amount is drawn (it being understood that any borrowing, whether automatic or otherwise, to fund such reimbursement shall be counted) and (ii) obligations under Swap Contracts.

"**Consolidated Working Capital**" means, as at any date of determination, the excess of Consolidated Current Assets over Consolidated Current Liabilities; *provided* that Consolidated Working Capital shall be calculated without giving effect to (w) recapitalization or purchase accounting, (x) any assets or liabilities acquired, assumed, sold or transferred in any acquisition or any Disposition pursuant to Section 7.05, (y) changes as a result of the reclassification of items from short-term to long-term and vice versa or (z) changes to Consolidated Working Capital resulting from non-cash charges and credits to Consolidated Current Assets and Consolidated Current Liabilities (including derivatives and deferred income tax).

"**Contract Consideration**" has the meaning specified in the definition of "Excess Cash Flow."

"**Contractual Obligation**" means, as to any Person, any provision of any security issued by such Person or of any agreement, instrument or other undertaking to which such Person is a party or by which it or any of its property is bound, including the Organization Documents of such Person.

"**Control**" has the meaning specified in the definition of "Affiliate".

"**Corrective Loan Extension Amendment**" means a Corrective Revolving Credit Extension Amendment and/or a Corrective Term Loan Extension Amendment, as the context requires.

"**Corrective Revolving Credit Extension Amendment**" has the meaning specified in Section 2.18(f).

"**Corrective Term Loan Extension Amendment**" has the meaning specified in Section 2.17(f).

"**Credit Extension**" means each of the following: (a) a Borrowing and (b) an L/C Credit Extension.

"**Cure Expiration Date**" has the meaning specified in Section 8.04(a).

"**Cure Right**" has the meaning specified in Section 8.04(a).

"**Debtor Relief Laws**" means the Bankruptcy Code of the United States and all other liquidation, conservatorship, bankruptcy, assignment for the benefit of creditors, moratorium, rearrangement, receivership, insolvency, reorganization, or similar debtor relief Laws of the United States or other applicable jurisdictions from time to time in effect and, in each case, affecting the rights of creditors generally.

"**Declined Amounts**" has the meaning specified in Section 2.05(b)(vii).

"**Default**" means any event or condition that constitutes an Event of Default or that, with the giving of any notice, the passage of time, or both, would be an Event of Default.

"**Default Rate**" means an interest rate equal to (a) the Base Rate plus (b) the Applicable Rate applicable to Base Rate Loans plus (c) 2.0% per annum; *provided* that with respect to a Eurocurrency Rate Loan, the Default Rate shall be an interest rate equal to the interest rate (including any Applicable Rate) otherwise applicable to such Loan (giving effect to Section 2.02(c)) plus 2.0% per annum, to the fullest extent permitted by applicable law.

"**Defaulting Lender**" means, subject to Section 2.19(f), any Lender that (a) has failed to fund any portion of the Term Loans, Revolving Credit Loans, participations in L/C Obligations or any reimbursement amount required pursuant to clause (ii) of the third sentence of Section 2.02(b) required to be funded by it hereunder within two (2) Business Days of the date required to be funded by it hereunder, (b) has otherwise failed to pay over to the Administrative Agent, any L/C Issuer or any other Lender any other amount required to be paid by it hereunder within two (2) Business Days of the date when due, (c) has notified the Borrower, the Administrative Agent, any L/C Issuer or any other Lender in writing that it does not intend to comply with its funding obligations hereunder, or generally under other agreements in which it commits to extend credit, or has made a public statement to that effect, (d) has failed, within three (3) Business Days after written request by the Administrative Agent, any L/C Issuer or the Borrower, to confirm in writing to the Administrative Agent, such L/C Issuer or the Borrower, in a manner reasonably satisfactory to the Administrative Agent, such L/C Issuer or the Borrower, as applicable, that it will comply with its prospective funding obligations hereunder (*provided* that such Lender shall cease to be a Defaulting Lender pursuant to this clause (d) upon receipt of such written confirmation by the Administrative Agent, such L/C Issuer and the Borrower) or (e) has, or has a direct or indirect parent company that has, (i) become the subject of a proceeding under any Debtor Relief Law, (ii) had appointed for it a receiver, custodian, conservator, trustee, administrator, assignee for the benefit of creditors or similar Person charged with reorganization or liquidation of its business or assets, including the Federal Deposit Insurance Corporation or any other state or federal regulatory authority acting in such a capacity or (iii) become the subject of a Bail-In Action; *provided* that a Lender shall not be a Defaulting Lender solely by virtue of (x) an Undisclosed Administration or (y) the ownership or acquisition of any equity interest in that Lender or any direct or indirect parent company thereof by a Governmental Authority so long as such ownership interest does not result in or provide such Lender with immunity from the jurisdiction of courts within the United States or from the enforcement of judgments or writs of attachment on its assets or permit such Lender (or such Governmental Authority) to reject, repudiate, disavow or disaffirm any contracts or agreements made with such Lender.

"**Designated Non-Cash Consideration**" means the fair market value (as determined in good faith by the Borrower) of non-cash consideration received by the Borrower or a Restricted Subsidiary in connection with a Disposition pursuant to Section 7.05(j) that is designated as Designated Non-Cash Consideration pursuant to a certificate of a Responsible Officer, setting forth the basis of such valuation (which amount will be reduced by the fair market value of the portion of the non-cash consideration converted to cash or Cash Equivalents following the consummation of the applicable Disposition) (including as a result of a subsequent payment, redemption, retirement, sale or other disposition of such Designated Non-Cash Consideration).

"**Discount Prepayment Accepting Lender**" has the meaning specified in Section 2.05(a)(iv)(B)(2).

"**Discount Range**" has the meaning specified in Section 2.05(a)(iv)(C)(1).

"**Discount Range Prepayment Amount**" has the meaning specified in Section 2.05(a)(iv)(C)(1).

"**Discount Range Prepayment Notice**" means a written notice of a Borrower Solicitation of Discount Range Prepayment Offers made pursuant to Section 2.05(a)(iv)(C) substantially in the form of Exhibit J or any other form approved by the Administrative Agent and the Borrower.

"**Discount Range Prepayment Offer**" means the irrevocable written offer by a Lender, substantially in the form of Exhibit K or any other form approved by the Administrative Agent and the Borrower, submitted in response to an invitation to submit offers following the Auction Agent's receipt of a Discount Range Prepayment Notice.

"**Discount Range Prepayment Response Date**" has the meaning specified in Section 2.05(a)(iv)(C)(1).

"**Discount Range Proration**" has the meaning specified in Section 2.05(a)(iv)(C)(3).

"**Discounted Loan Prepayment**" has the meaning specified in Section 2.05(a)(iv)(A).

"**Discounted Prepayment Determination Date**" has the meaning specified in Section 2.05(a)(iv)(D)(3).

"**Discounted Prepayment Effective Date**" means in the case of a Borrower Offer of Specified Discount Prepayment, Borrower Solicitation of Discount Range Prepayment Offer or Borrower Solicitation of Discounted Prepayment Offer, six (6) Business Days following the Specified Discount Prepayment Response Date, the Discount Range Prepayment Response Date or the Solicited Discounted Prepayment Response Date, as applicable, in accordance with Section 2.05(a)(iv)(B), Section 2.05(a)(iv)(C) or Section 2.05(a)(iv)(D), respectively, unless a shorter period is agreed to between the Borrower and the Auction Agent.

"**Disposition**" or "**Dispose**" means the sale, transfer, license tantamount to a sale, lease tantamount to a sale or other disposition (including any sale leaseback transaction and any sale or issuance of Equity Interests in a Restricted Subsidiary) of any property by any Person, including any sale, assignment, transfer or other disposal, with or without recourse, of any notes or accounts receivable or any rights and claims associated therewith; *provided* that "Disposition" and "Dispose" shall not include any issuance by the Borrower of any of its Equity Interests to another Person.

"**Disqualified Equity Interests**" means any Equity Interest that, by its terms (or by the terms of any security or other Equity Interests into which it is convertible or for which it is putable or exchangeable), or upon the happening of any event or condition (a) matures or is mandatorily redeemable (other than solely for Qualified Equity Interests), pursuant to a sinking fund obligation or otherwise (except as a result of a change of control, initial public offering or asset sale so long as any rights of the holders thereof upon the occurrence of a change of control, initial public offering or asset sale event shall be subject to the prior repayment in full of the Loans and all other Obligations that are accrued and payable (other than (i) contingent obligations that by their terms survive and (ii) Obligations under Secured Hedge Agreements and Secured Cash Management Agreements) and the termination of the Commitments and Cash Collateralization of all outstanding Letters of Credit), (b) is redeemable at the option of the holder thereof (other than solely for Qualified Equity Interests and other than as a result of a change of control, initial public offering or asset sale so long as any rights of the holders thereof upon the occurrence of a change of control, initial public offering or asset sale event shall be subject to the prior repayment in full of the Loans and all other Obligations that are accrued and payable (other than (i) contingent obligations that by their terms survive and (ii) Obligations under Secured Hedge Agreements and Secured Cash Management Agreements) and the termination of the Commitments and Cash Collateralization of all outstanding Letters of Credit), in whole or in part or (c) is or becomes automatically or at the option of the holder convertible into or exchangeable for Indebtedness or any other Equity Interests that would constitute Disqualified Equity Interests, in the case of each of clauses (a), (b) and (c), prior to the date that is ninety-one (91) days after the Latest Maturity Date of the Loans at the time of issuance; *provided* that if such Equity Interests are issued to any employees, other service providers, directors, officers or members of management or pursuant to a plan for the benefit of employees, other service providers, directors, officers or members of management of the Borrower or the Subsidiaries or by any such plan to such employees, other service providers, directors, officers or members of management, such Equity Interests shall not constitute Disqualified Equity Interests solely because they may be required to be repurchased by the Borrower or the Subsidiaries in order to satisfy applicable statutory or regulatory obligations or as a result of such employees', other service providers', directors', officers' or management members' termination, death or disability.

"**Disqualified Institution**" means (a) Persons that have been specified in writing by the Borrower to the Lead Arrangers prior to the Closing Date and Affiliates of the foregoing to the extent such Affiliates are reasonably identifiable on the basis of such Affiliates' names or designated in writing by the Borrower from time to time to the Administrative Agent, (b) competitors of the Borrower and its Subsidiaries that are in the same or a similar line of business as the Borrower and its Subsidiaries that have been specified in writing by the Borrower (i) to the Lead Arrangers prior to the Closing Date, or (ii) to the Administrative Agent from time to time after the Closing Date(all such Persons under this clause (b), "**Competitors**"), and (c) Affiliates of Competitors (other than bona fide debt funds or investment vehicles (other than a Person that is separately identified on a list delivered pursuant to this definition) that are engaged in making, purchasing, holding or otherwise investing in commercial loans and similar extensions of credit in the ordinary course of business and which are not managed, sponsored or advised by any Person controlling, controlled by or under common control with a Competitor and for which no personnel involved with the investment by such Affiliate (i) makes (or has the right to make or participate with others in making) any investment decisions for a Competitor or (ii) has access to any information (other than information that is publicly available) relating to the Borrower or any entity that forms a part of the Borrower's business (including Subsidiaries of the Borrower)) to the extent such Affiliates are reasonably identifiable on the basis of such Affiliates' names or designated in writing by the Borrower from time to time to the Administrative Agent; *provided* that no designation of any Person as a Disqualified Institution made pursuant to the foregoing shall (i) be effective until two (2) Business Days

following receipt thereof by the Administrative Agent, (ii) have any retroactive effect to the extent any such party has previously entered into a trade for an assignment or participation interest in the Facilities or is already a Lender hereunder at the time of such designation or (iii) shall be effective unless sent to the Administrative Agent at the email address: JPMDQ_Contact@jpmorgan.com.

"**Disqualified Person**" has the meaning specified in Section 10.07(l)(ii).

"**Distressed Agent-Related Person**" has the meaning specified in the definition of "Agent-Related Distress Event".

"**Dividend**" has the meaning specified in the preliminary statements to this Agreement.

"**Dollar**" and "**$**" mean lawful money of the United States.

"**Dollar Amount**" means, at any time:

(a) with respect to any Loan denominated in Dollars, the principal amount thereof then outstanding (or in which such participation is held);

(b) with respect to any Loan denominated in an Alternative Currency, the principal amount thereof then outstanding in the relevant Alternative Currency (or in which such participation is held), converted to Dollars in accordance with Section 1.09 and Section 2.22(a); and

(c) with respect to any L/C Obligation (or any risk participation therein), (A) if denominated in Dollars, the amount thereof and (B) if denominated in an Alternative Currency, the amount thereof converted to Dollars in accordance with Section 1.09 and Section 2.22(b).

"**Domestic Subsidiary**" means any Subsidiary that is organized under the Laws of the United States, any state thereof or the District of Columbia.

"**ECF Payment Amount**" has the meaning specified in Section 2.05(b)(i).

"**ECF Percentage**" has the meaning specified in Section 2.05(b)(i).

"**EEA Financial Institution**" means (a) any institution established in any EEA Member Country which is subject to the supervision of an EEA Resolution Authority, (b) any entity established in an EEA Member Country which is a parent of an institution described in clause (a) of this definition, or (c) any financial institution established in an EEA Member Country which is a subsidiary of an institution described in clauses (a) or (b) of this definition and is subject to consolidated supervision with its parent.

"**EEA Member Country**" means any of the member states of the European Union, Iceland, Liechtenstein, and Norway.

"**EEA Resolution Authority**" means any public administrative authority or any person entrusted with public administrative authority of any EEA Member Country (including any delegee) having responsibility for the resolution of any EEA Financial Institution.

"**Eligible Assignee**" means any Person that meets the requirements to be an assignee under Sections 10.07(b)(iii) and (v) (subject to such consents, if any, as may be required under Section 10.07(b)(iii)); *provided* that, in any event, Eligible Assignees shall not include (x) any natural person, (y) any Disqualified Institution unless consented to in writing by the Borrower in its sole discretion (which consent shall be required regardless of whether a Default or Event of Default shall be continuing), or (z) any Defaulting Lender or any Subsidiary thereof.

"**EMU Legislation**" means the legislative measures of the European Council for the introduction of, changeover to or operation of a single or unified European currency.

"**Engagement Letter**" means the Engagement Letter dated December 2, 2016 among JPMorgan Chase Bank, N.A., Barclays Bank PLC and the Borrower.

"**Engagement Parties**" means JPMorgan Chase Bank, N.A. and Barclays Bank PLC.

"**Environmental Claim**" means any administrative, regulatory or judicial action, suits, demand letter, claim, lien, notice of noncompliance or violation, investigation (other than internal reports prepared by any Loan Party or any of its Subsidiaries (a) in the ordinary course of such Person's business or (b) as required in connection with a financing transaction or an acquisition or disposition of real estate) or proceeding with respect to any Environmental Liability (hereinafter "**Claims**"), including (i) any and all Claims by governmental or regulatory authorities for enforcement, cleanup, removal, response, remedial or other actions or damages pursuant to any Environmental Law and (ii) any and all Claims by any third party seeking damages, contribution, indemnification, cost recovery, compensation or injunctive relief pursuant to any Environmental Law.

"**Environmental Laws**" means Laws relating to the protection of the environment.

"**Environmental Liability**" means any liability, contingent or otherwise (including any liability for damages, costs of environmental remediation, fines, penalties or indemnities) of any Loan Party or any of its Restricted Subsidiaries directly or indirectly resulting from or based upon (a) violation of any Environmental Law, (b) the generation, use, handling, transportation, storage, treatment or disposal of any Hazardous Materials, (c) exposure to any Hazardous Materials, (d) the release or threatened release of any Hazardous Materials into the environment or (e) any contract or other written agreement pursuant to which liability is assumed or imposed with respect to any of the foregoing.

"**Environmental Permit**" means any permit, approval, identification number, license or other authorization required under any Environmental Law.

"**Equity Interests**" means, with respect to any Person, all of the shares, interests, rights, participations, units or other equivalents (however designated) of capital stock of (or other ownership or profit interests or units in, including any limited or general partnership interest and any limited liability company membership interest) such Person and all of the warrants, options or other rights for the purchase, acquisition or exchange from such Person of any of the foregoing (including through convertible securities, but excluding debt securities).

"**ERISA**" means the Employee Retirement Income Security Act of 1974, as amended from time to time.

"**ERISA Affiliate**" means any trade or business (whether or not incorporated) that together with the Borrower is treated as a single employer within the meaning of Section 414 of the Code or that is treated as under common control within the meaning of Section 4001 of ERISA.

"**ERISA Event**" means (a) a Reportable Event with respect to a Pension Plan; (b) a withdrawal by the Borrower or any of its ERISA Affiliates from a Pension Plan subject to Section 4063 of ERISA during a plan year in which it was a substantial employer (as defined in Section 4001(a)(2) of

ERISA) or a cessation of operations that is treated as a termination under Section 4062(e) of ERISA; (c) the incurrence by the Borrower or any of its ERISA Affiliates of any liability under Title IV of ERISA with respect to a complete or partial withdrawal by the Borrower or any of its ERISA Affiliates from a Multiemployer Plan, written notification of the Borrower or any of its ERISA Affiliates concerning the imposition of Withdrawal Liability or written notification that a Multiemployer Plan is insolvent or is in reorganization within the meaning of Title IV of ERISA or in "endangered" or "critical" status (within the meaning of Section 432 of the Code or Section 305 of ERISA); (d) the filing under Section 4041(c) of ERISA of a notice of intent to terminate a Pension Plan, the treatment of a Pension Plan or Multiemployer Plan amendment as a termination under Section 4041 or Section 4041A of ERISA, or the receipt by the Borrower or any of its ERISA Affiliates from the PBGC of any notice relating to the intention to terminate a Pension Plan or Multiemployer Plan; (e) the imposition of any liability under Title IV of ERISA with respect to the termination of any Pension Plan or Multiemployer Plan, other than for the payment of plan contributions or PBGC premiums due but not delinquent under Section 4007 of ERISA, upon the Borrower or any of its ERISA Affiliates; (f) the application for a minimum funding waiver under Section 302(c) of ERISA with respect to a Pension Plan; (g) the imposition of a lien under Section 303(k) of ERISA with respect to any Pension Plan or (h) the occurrence of a non-exempt prohibited transaction (within the meaning of Section 406 of ERISA or Section 4975 of the Code) which could result in liability to the Borrower or any of its ERISA Affiliates.

"**EU Bail-In Legislation Schedule**" means the EU Bail-In Legislation Schedule published by the Loan Market Association (or any successor person), as in effect from time to time.

"**Euro Same Day Loan**" means a Eurocurrency Rate Loan made under Section 2.02(a)(iii) that is denominated in Euros.

"**Eurocurrency Rate**" means, for any Interest Period, the Eurocurrency Screen Rate at approximately 11:00 a.m., London time, two Business Days prior to the commencement of such Interest Period; provided that if the Eurocurrency Screen Rate shall not be available at such time for such Interest Period (an "**Impacted Interest Period**") with respect to the applicable currency (such currency, the "**Impacted Currency**") then the Eurocurrency Rate shall be the Interpolated Rate; provided, however, that notwithstanding anything in this definition to the contrary, in the case of any Euro Same Day Loans, the Eurocurrency Rate shall be determined on the date of the making of such Loans.

"**Eurocurrency Screen Rate**" means, for any day and time

(i) with respect to any Eurocurrency Borrowing for any applicable currency other than Euro and for any Interest Period, the London interbank offered rate as administered by ICE Benchmark Administration (or any other Person that takes over the administration of such rate for the relevant currency for a period equal in length to such Interest Period as displayed on such day and time on pages LIBOR01 or LIBOR02 of the Reuters screen that displays such rate (or, in the event such rate does not appear on a Reuters page or screen, on any successor or substitute page on such screen that displays such rate, or on the appropriate page of such other information service that publishes such rate from time to time as selected by the Administrative Agent in its reasonable discretion);

(ii) with respect to any Eurocurrency Borrowing denominated in Euro and for any Interest Period (other than any Euro Same Day Loan), the euro interbank offered rate as administered by the Banking Federation of the European Union (or any other Person that takes over the administration of such rate for Euro) for a period in length equal to such Interest Period as displayed on page EURIBOR01 of the Reuters screen that displays such rate (or, in the event such rate does not appear on such Reuters page, on any successor or substitute page on such screen that displays such rate, or on the appropriate page of such other information service that publishes such rate from time to time as selected by the Administrative Agent in its reasonable discretion; in each case); and

(iii) with respect to any Euro Same Day Loans, the applicable Overnight Rate;

provided that if the Eurocurrency Screen Rate shall be less than zero, such rate shall be deemed to zero for the purposes of this Agreement.

"**Eurocurrency Rate Borrowing**" means a Borrowing comprised of Eurocurrency Rate Loans.

"**Eurocurrency Rate Loan**" means a Loan, whether denominated in Dollars or in an Alternative Currency, that bears interest at a rate based on the applicable Adjusted Eurocurrency Rate (other than a Base Rate Loan).

"**Eurocurrency Rate Revolving Credit Loan**" means a Revolving Credit Loan, whether denominated in Dollars or in an Alternative Currency, that bears interest at a rate based on the applicable Adjusted Eurocurrency Rate (other than a Base Rate Loan).

"**Euros**" means the lawful currency of the Participating Member States introduced in accordance with the EMU Legislation.

"**Event of Default**" has the meaning specified in Section 8.01.

"**Excess Cash Flow**" means, for any period, an amount equal to the excess of:

(a) the sum, without duplication, of:

(i) Consolidated Net Income of the Borrower for such period; plus

(ii) an amount equal to the amount of all non-cash charges (including depreciation and amortization) to the extent deducted in arriving at such Consolidated Net Income, but excluding any such non-cash charges representing an accrual or reserve for potential cash items in any future period and excluding amortization of a prepaid cash item that was paid in a prior period; plus

(iii) decreases in Consolidated Working Capital for such period (other than any such decreases arising from acquisitions or Dispositions by the Borrower and the Restricted Subsidiaries completed during such period or the application of purchase accounting); plus

(iv) an amount equal to the aggregate net non-cash loss on Dispositions by the Borrower and the Restricted Subsidiaries during such period (other than Dispositions in the ordinary course of business) to the extent deducted in arriving at such Consolidated Net Income (other than to the extent such Disposition is subject to Section 2.05(b)(ii)); plus

(v) the amount deducted as tax expense in determining Consolidated Net Income to the extent in excess of cash taxes paid or payable in respect of such periods; plus

(vi) cash receipts in respect of Swap Contracts during such fiscal year to the extent not otherwise included in arriving at such Consolidated Net Income; minus

(b) the sum, without duplication; of:

(i) an amount equal to the amount of all non-cash gains or credits included in arriving at such Consolidated Net Income (but excluding any non-cash gains or credit to the extent representing the reversal of an accrual or reserve described in clause (a)(ii) above) and cash charges, losses or expenses excluded by virtue of clauses (a) through (q) of the definition of "Consolidated Net Income"; plus

(ii) without duplication of amounts deducted pursuant to clause (xi) below in prior fiscal years, the amount of Capital Expenditures, Capitalized Software Expenditures or acquisitions of intellectual property accrued or made in cash during such period by the Borrower or the Restricted Subsidiaries to the extent not financed with long-term Indebtedness (other than revolving Indebtedness); plus

(iii) the aggregate amount of all principal payments of Indebtedness of the Borrower and the Restricted Subsidiaries (including (A) the principal component of payments in respect of Capitalized Leases, (B) the amount of any repayment of Loans pursuant to Section 2.07, and (C) the amount of any mandatory prepayment of Loans pursuant to Section 2.05(b)(ii) to the extent required due to a Disposition or Casualty Event that resulted in an increase to such Consolidated Net Income and not in excess of the amount of such increase, but excluding (W) all other prepayments of Term Loans (other than those specified in preceding clauses (B) and (C)) and all voluntary prepayments of Refinancing Equivalent Debt and Incremental Equivalent Debt, (X) all prepayments of Revolving Credit Loans, (Y) all prepayments in respect of any other revolving credit facility and (Z) payments of Indebtedness constituting Indebtedness expressly subordinated to the Obligations, except in each case to the extent permitted to be paid pursuant to Section 7.13(a)) made during such period, in each case to the extent not financed with long-term Indebtedness (other than revolving Indebtedness); plus

(iv) an amount equal to the aggregate net non-cash gain on Dispositions by the Borrower and the Restricted Subsidiaries during such period (other than Dispositions in the ordinary course of business) to the extent included in arriving at such Consolidated Net Income; plus

(v) increases in Consolidated Working Capital for such period (other than any such increases arising from acquisitions or Dispositions by the Borrower and the Restricted Subsidiaries completed during such period or the application of purchase accounting); plus

(vi) cash payments by the Borrower and the Restricted Subsidiaries during such period in respect of long-term liabilities of the Borrower and the Restricted Subsidiaries (other than Indebtedness) to the extent such payments are not expensed during such period or are not deducted in calculating Consolidated Net Income; plus

(vii) without duplication of amounts deducted pursuant to clauses (viii) and (xi) below in prior fiscal years, the amount of Investments made in cash (in each case, other than Investments in Restricted Subsidiaries) pursuant to Sections 7.02(b), (f), (i), (j), (m), (n), (s), (u), (v), (bb), (dd), (ff) and (gg), and the amount of acquisitions made during such period to the extent that such Investments and acquisitions were not financed with long-term Indebtedness (other than revolving Indebtedness) and, to the extent applicable, not made in reliance on clause (b) of the definition of "Available Amount"; plus

(viii) the amount of Restricted Payments paid during such period pursuant to Sections 7.06(c), (f), (g), (h), (i), (k), (l), (o), (p) and (q) in each case to the extent such Restricted Payments were not financed with long-term Indebtedness (other than revolving Indebtedness) and, to the extent applicable, not made in reliance on clause (b) of the definition of "Available Amount"; plus

(ix) the aggregate amount of expenditures, fees and expenses actually made or paid by the Borrower and the Restricted Subsidiaries with long-term Indebtedness (other than revolving Indebtedness) during such period (including expenditures for the payment of financing fees) to the extent that such expenditures are not expensed (or exceed the amount that is expensed) during such period or are not deducted in calculating Consolidated Net Income; plus

(x) the aggregate amount of any premium, make-whole or penalty payments actually paid in cash by the Borrower and the Restricted Subsidiaries during such period that are made in connection with any prepayment of Indebtedness not prohibited hereunder to the extent such payments are not expensed during such period or are not deducted in calculating Consolidated Net Income and such prepayments reduced Excess Cash Flow pursuant to clause (b)(iii) above or reduced the mandatory prepayment required by Section 2.05(b)(i); plus

(xi) without duplication of amounts deducted from Excess Cash Flow in prior periods, at the option of the Borrower, the aggregate consideration required to be paid in cash by the Borrower or any of the Restricted Subsidiaries pursuant to binding contracts (the "**Contract Consideration**") entered into prior to or during such period or otherwise budgeted to be paid in cash, in either case, relating to tax expenses, interest payments, Investments, Restricted Payments, Permitted Acquisitions, Capital Expenditures, Capitalized Software Expenditures or acquisitions of intellectual property expected to be consummated or made during the period of four consecutive fiscal quarters of the Borrower following the end of such period; *provided* that, to the extent the aggregate amount of cash actually utilized to finance such tax expenses, interest payments, Investments, Restricted Payments, Permitted Acquisitions, Capital Expenditures, Capitalized Software Expenditures or acquisitions of intellectual property during such period of four consecutive fiscal quarters is less than the Contract Consideration or amount otherwise budgeted for, the amount of such shortfall shall be added to the calculation of Excess Cash Flow at the end of such period of four consecutive fiscal quarters; plus

(xii) the amount of cash taxes paid or tax reserves set aside or payable (without duplication) in such period, to the extent they exceed the amount of tax expense deducted in determining Consolidated Net Income for such period; plus

(xiii) cash expenditures in respect of Swap Contracts during such fiscal year to the extent not deducted in arriving at such Consolidated Net Income.

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended.

"**Excluded Assets**" means any of the following:

(a) any lease, license, franchise, charter, authorization, contract or agreement to which any Loan Party is a party, and any of its rights or interest thereunder, or any property subject to a purchase money security interest, capital lease obligation or other arrangement, or any other asset, if and to the extent that the pledge thereof or the grant of a security interest, (i) (A) is prohibited by or in violation of any Laws (including financial assistance laws, corporate benefit laws or otherwise), rule or regulation applicable to any Loan Party, except to the extent such prohibition is rendered ineffective under the Uniform Commercial Code, (B) would be prohibited by the enforceable anti-assignment provisions of any contract or Laws, rule or regulation applicable to any Loan Party or with respect to any assets, to the extent such a grant or security interest would violate the terms of any contract with respect to such assets or would trigger termination of such contract (including any purchase money security interest, capital lease obligation or other arrangement) or any such material rights therein pursuant to any "change of control" or other provision or applicable Laws (in each case, after giving effect to the applicable anti-assignment provisions of the Uniform Commercial Code or other applicable Law), or (C)

requires any governmental or third party consent, license or authorization (unless such consent, license or authorization has been obtained), or (ii) is prohibited by or in violation of a term, provision or condition of any such lease, license, franchise, charter, authorization, contract or agreement; *provided*, *however*, that the Collateral shall include (and such security interest shall attach) at such time as the contractual or legal prohibition shall no longer be applicable and to the extent severable, shall attach to any portion of such lease, license, franchise, charter, authorization, contract, agreement or other asset not subject to the prohibitions specified in (i) or (ii) above (in each case, after giving effect to the applicable anti-assignment provisions of the Uniform Commercial Code or other applicable Laws in any relevant jurisdiction); *provided*, *further*, that the exclusions referred to in this clause (a) shall not include any proceeds of any such lease, license, franchise, charter, authorization, contract or agreement (unless such proceeds would independently constitute Excluded Assets);

(b) (i) Equity Interests in excess of 65% of the total issued and outstanding Equity Interests of (x) a Foreign Subsidiary of a Loan Party or (y) any Domestic Subsidiary of a Loan Party, substantially all of the assets of which consist, directly or indirectly, of Equity Interests of one or more Foreign Subsidiaries that are CFCs, (ii) Equity Interests in any Person other than the Borrower's wholly owned Restricted Subsidiaries that are not Immaterial Subsidiaries, Captive Insurance Subsidiaries, not-for-profit organizations, or special purpose entities used for a securitization transaction or similar special purpose, and (iii) Margin Stock;

(c) any "intent-to-use" application for registration of a trademark filed pursuant to Section 1(b) of the Lanham Act, 15 U.S.C. § 1051, prior to the filing of a "Statement of Use" pursuant to Section 1(d), or an "Amendment to Allege Use" pursuant to Section 1(c), of the Lanham Act, to the extent that, and during the period, if any, in which, the grant of a security interest therein would impair the validity or enforceability of any registration that issues from such intent-to-use application under applicable federal Laws;

(d) (i) any leasehold interest (including any ground lease interest) in real property (it being agreed that no Loan Party shall be required to deliver landlord lien waivers, estoppels or collateral access letters), (ii) any fee interest in owned real property that is not Material Real Property and (iii) any fixtures affixed to any real property to the extent a security interest in such fixtures may not be perfected by a UCC-1 financing statement in the jurisdiction of organization of the applicable Loan Party, or, solely in the case of fixtures affixed to any Material Real Property, to the extent a security interest in such fixtures may not be perfected by the recording of a Mortgage in the jurisdiction where such Material Real Property is located;

(e) assets subject to certificates of title or ownership, except to the extent a security interest therein can be perfected by the filing of a Uniform Commercial Code financing statement;

(f) letters of credit and letter of credit rights except to the extent constituting a supporting obligation for other Collateral as to which perfection of the security interest in such other Collateral may be accomplished by the filing of a Uniform Commercial Code financing statement;

(g) assets, if and to the extent that a security interest in such asset (i) is prohibited by or in violation of any Law, rule or regulation applicable to any Loan Party or (ii) requires a consent of any Governmental Authority or any third party that has not been obtained, except, in the case of clauses (i) and (ii), to the extent such prohibition or consent is rendered ineffective under the Uniform Commercial Code;

(h) commercial tort claims that, in the reasonable determination of the Borrower, are not expected to result in a judgment in excess of $1,000,000;

(i) assets for which the grant would result in material adverse tax or regulatory costs or consequences as reasonably determined by the Borrower in consultation with the Administrative Agent; and

(j) particular assets if and for so long as, in the reasonable judgment of the Administrative Agent and the Borrower, the cost, difficulty, burden or consequences of obtaining, perfecting or maintaining a security interest in such assets exceeds the practical benefits to the Lenders afforded thereby.

"**Excluded Contribution**" means (1) the cash, Cash Equivalents or other assets (valued at their fair market value as determined in good faith by the Borrower) received by the Borrower after the Closing Date from:

(a) contributions in respect of Qualified Equity Interests, plus

(b) the sale (other than to a Subsidiary of the Borrower or to any Subsidiary management equity plan or stock option plan or any other management or employee benefit plan or agreement) of Qualified Equity Interests of the Borrower, plus

(2) the Net Cash Proceeds received by the Borrower or any of its Restricted Subsidiaries from issuances of debt securities or Disqualified Equity Interests incurred or issued by the Borrower or any of its Restricted Subsidiaries that have been converted into or exchanged for Qualified Equity Interests of the Borrower or any Permitted Parent,

in each case designated as Excluded Contributions pursuant to a certificate of a Responsible Officer on or promptly after the date such capital contributions, sales, conversions or exchanges are made.

"**Excluded Subsidiary**" means (a) Immaterial Subsidiaries, (b) Unrestricted Subsidiaries, (c) any Subsidiary that is prohibited or restricted by Law, regulation or Contractual Obligation (so long as, in respect to any such Contractual Obligation, such prohibition existed on the Closing Date or, if later, on the date the applicable Subsidiary is acquired and is not incurred in contemplation of such acquisition) from providing a Guaranty or that would require a governmental (including regulatory) consent, approval, license or authorization in order to provide a Guaranty (including, in each case, under any financial assistance, corporate benefit or thin capitalization rule), in each case, for so long as such prohibition or circumstance exists, (d) any Subsidiary to the extent it is not within the legal capacity of such Person to provide a guarantee, or would conflict with the fiduciary duties of such Person's directors or result in, or could reasonably be expected to result in, a material risk of personal or criminal liability for any officer or director of such Person, (e) any Subsidiary that is not a wholly owned Subsidiary of the Borrower or any Guarantor, (f) any Foreign Subsidiary, (g) any Domestic Subsidiary of a Foreign Subsidiary that is a CFC, (h) any Domestic Subsidiary substantially all the assets of which consist, directly or indirectly, of Equity Interests in one or more Foreign Subsidiaries that are CFCs, (i) any Subsidiary that is a not-for-profit organization, (j) Captive Insurance Subsidiaries, (k) any Subsidiary that is a special purpose entity for a securitization transaction or a similar special purpose, (l) any Subsidiary with respect to which providing a Guaranty would result in material adverse tax consequences to the Borrower and its Subsidiaries (taken as a whole) as reasonably determined by the Borrower (in consultation with the Administrative Agent) and (m) any other Subsidiary with respect to which, as reasonably determined by the Administrative Agent and the Borrower, the burden or cost of providing a Guaranty outweighs the benefits afforded to the Lenders thereby.

"**Excluded Swap Obligation**" means, with respect to any Guarantor, any Swap Obligation if, and to the extent that, all or a portion of the Guarantee of such Guarantor of, or the grant by

such Guarantor of a security interest to secure, such Swap Obligation (or any Guarantee thereof) is or becomes illegal under the Commodity Exchange Act or any rule, regulation or order of the U.S. Commodity Futures Trading Commission (or the application or official interpretation of any thereof) by virtue of such Guarantor's failure for any reason to constitute an "eligible contract participant" as defined in the Commodity Exchange Act and the regulations thereunder at the time the Guarantee of such Guarantor or the grant of such security interest becomes effective with respect to such Swap Obligation. If a Swap Obligation arises under a Master Agreement governing more than one swap, such exclusion shall apply only to the portion of such Swap Obligation that is attributable to swaps for which such Guarantee or security interest is or becomes illegal under the Commodity Exchange Act or any rule, regulation or order of the Commodity Futures Trading Commission (or the application or official interpretation of any thereof).

"**Executive Order**" means the Executive Order No. 13224 of September 23, 2001, entitled Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism.

"**Existing Credit Agreement**" means that certain Revolving Credit Agreement, dated as of April 11, 2014, between the Borrower and Bank of America, N.A.

"**Existing Revolving Credit Loan Facility**" has the meaning provided in Section 2.18(a).

"**Existing Term Loan Facility**" has the meaning specified in Section 2.17(a).

"**Extended Commitments**" means the Extended Term Commitments and/or the Extended Revolving Credit Commitments, as the context may require.

"**Extended Loans**" means Extended Term Loans and/or Extended Revolving Credit Loans, as the context may require.

"**Extended Revolving Credit Commitments**" has the meaning specified in Section 2.18(a), as the same may be adjusted from time to time in accordance with the terms of this Agreement (including as a result of permitted increases thereto, and reductions thereto, in accordance with the terms of this Agreement and adjusted for assignments effected in accordance with the provisions of Section 10.07(b)). Each Lender with an Extended Revolving Credit Commitment shall be obligated to (a) make Revolving Credit Loans to the Borrower pursuant thereto and in accordance with Section 2.01(b), and (b) purchase participations in L/C Obligations as provided herein.

"**Extended Revolving Credit Loan**" has the meaning specified in Section 2.18(a) and includes each Revolving Credit Loan made by an Extending Revolving Credit Lender pursuant to its Extended Revolving Credit Commitment (or originally made pursuant to a Non-Extended Revolving Credit Commitment to the extent the same has been converted into an Extended Revolving Credit Commitment).

"**Extended Term Commitment**" means one or more commitments hereunder to convert Term Loans under an Existing Term Loan Facility to Extended Term Loans of a given Term Loan Extension Series pursuant to an Extension Amendment.

"**Extended Term Loans**" has the meaning specified in Section 2.17(a).

"**Extending Revolving Credit Lender**" has the meaning specified in Section 2.18(b).

"**Extending Term Lender**" has the meaning specified in Section 2.17(b).

"**Extension**" means the establishment of an Extension Series by amending a Loan or a Commitment pursuant to Section 2.17 or Section 2.18, as applicable, and the applicable Extension Amendment.

"**Extension Amendment**" means an amendment to this Agreement in form and substance reasonably satisfactory to the Administrative Agent and the Borrower executed by each of (a) the Borrower, (b) the Administrative Agent and (c) each Lender that agrees to provide any Extended Commitments or Extended Loans being incurred pursuant thereto, in accordance with Section 2.17 or Section 2.18.

"**Extension Minimum Condition**" means a condition to consummating any Extension Amendment that a minimum amount (to be determined and specified in the relevant Extension Request, in the Borrower's sole discretion) of any or all applicable Classes be submitted for Extension.

"**Extension Request**" means a notice to the Administrative Agent setting forth the proposed terms of (i) Extended Term Loans in accordance with Section 2.17(a) or (ii) Extended Revolving Credit Commitments in accordance with Section 2.18(a).

"**Extension Series**" means and includes each Revolving Credit Loan Extension Series and each Term Loan Extension Series.

"**Facility**" means the Initial Term Loans, the Revolving Credit Facility (including any Non-Extended Revolving Credit Commitments) and all extensions of credit pursuant thereto, the Letter of Credit Sublimit, any Refinancing Term Loans, any Refinancing Revolving Credit Loan, any Extended Term Loans, any Extended Revolving Credit Loan, any New Term Loans, any New Revolving Credit Loans or any Replacement Term Loans, as the context may require.

"**FATCA**" means Section 1471 through Section 1474 of the Code as in effect on the date hereof or any amended or successor provision that is substantively comparable and not materially more onerous to comply with (and, in each case, any current or future regulations promulgated thereunder or official interpretations thereof, any agreements entered into pursuant to Section 1471(b)(1) of the Code and any intergovernmental agreements with respect thereto between the United States and another jurisdiction).

"**Federal Funds Rate**" means, for any day, the rate per annum equal to the weighted average of the rates on overnight Federal funds transactions with members of the Federal Reserve System of the United States arranged by Federal funds brokers on such day, as published by the Federal Reserve Bank of New York on the Business Day next succeeding such day; *provided* that (a) if such day is not a Business Day, the Federal Funds Rate for such day shall be such rate on such transactions on the next preceding Business Day as so published on the next succeeding Business Day, and (b) if no such rate is so published on such next succeeding Business Day, the Federal Funds Rate for such day shall be the average rate (rounded upward, if necessary, to a whole multiple of 1/100 of 1%) charged to the Administrative Agent on such day on such transactions as determined by the Administrative Agent.

"**Fee Letter**" means the Fee Letter, dated December 2, 2016, among the Borrower, JPMorgan Chase Bank, N.A. and Barclays Bank PLC.

"**FIRREA**" means the Financial Institutions Reform, Recovery and Enforcement Act of 1989, as amended from time to time.

"**First Lien Intercreditor Agreement**" means any first lien intercreditor agreement entered into after the date hereof, in form and substance reasonably acceptable to the Borrower and the Administrative Agent.

"**Flood Insurance Laws**" means, collectively, (i) the National Flood Insurance Reform Act of 1994 (which comprehensively revised the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973) as now or hereafter in effect or any successor statute thereto and (ii) the Flood Insurance Reform Act of 2004 as now or hereafter in effect or any successor statute thereto.

"**Foreign Lender**" has the meaning specified in Section 3.01(c)(i).

"**Foreign Plan**" means any retirement benefit or pension plan maintained or contributed to by, or entered into with, the Borrower or any Restricted Subsidiary with respect to any employees employed outside the United States which under applicable Laws is required to be funded through a trust or other funding vehicle other than a trust or funding vehicle maintained exclusively by a Governmental Authority.

"**Foreign Subsidiary**" means any direct or indirect Subsidiary of the Borrower that is not a Domestic Subsidiary.

"**FRB**" means the Board of Governors of the Federal Reserve System of the United States.

"**Fronting Exposure**" means, at any time there is a Defaulting Lender, with respect to the L/C Issuer, such Defaulting Lender's Pro Rata Share or other applicable share provided under this Agreement of the Outstanding Amount of L/C Obligations other than L/C Obligations as to which such Defaulting Lender's participation obligation has been reallocated to other Lenders or Cash Collateralized in accordance with the terms hereof.

"**Fronted Amount**" has the meaning specified in Section 2.02(b).

"**Fund**" means any Person (other than a natural person) that is engaged in making, purchasing, holding or otherwise investing in commercial loans and similar extensions of credit in the ordinary course.

"**Funded Debt**" means, in respect of any Person, all third-party Indebtedness of such Person for borrowed money that matures more than one year from the date of its creation or matures within one year from such date that is renewable or extendable, at the option of such Person, to a date more than one year from such date or arises under a revolving credit or similar agreement that obligates the lender or lenders to extend credit during a period of more than one year from such date, including Indebtedness in respect of the Loans.

"**GAAP**" means generally accepted accounting principles in the United States of America, as in effect from time to time; provided, however, that if the Borrower notifies the Administrative Agent that the Borrower requests an amendment to any provision hereof to eliminate the effect of any change occurring after the Closing Date in GAAP or in the application thereof (including through conforming changes made consistent with International Financial Reporting Standards) on the operation of such provision (or if the Administrative Agent notifies the Borrower that the Required Lenders request an amendment to any provision hereof for such purpose), regardless of whether any such notice is given before or after such change in GAAP or in the application thereof (including through

conforming changes made consistent with International Financial Reporting Standards), then such provision shall be interpreted on the basis of GAAP as in effect and applied immediately before such change shall have become effective until such notice shall have been withdrawn or such provision amended pursuant to good faith negotiations between the Borrower and the Administrative Agent to accomplish any such required change.

"**Governmental Authority**" means the government of the United States or any other nation, or of any political subdivision thereof, whether state or local, and any agency, authority, instrumentality, regulatory body, court, administrative tribunal, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions of or pertaining to government (including any supra-national bodies such as the European Union or the European Central Bank).

"**Granting Lender**" has the meaning specified in Section 10.07(g).

"**Guarantee**" means, as to any Person, without duplication, any obligation, contingent or otherwise, of such Person guaranteeing or having the economic effect of guaranteeing any Indebtedness or other monetary obligation payable or performable by another Person (the "**primary obligor**") in any manner, whether directly or indirectly, and including any obligation of such Person, direct or indirect, (a) to purchase or pay (or advance or supply funds for the purchase or payment of) such Indebtedness or other monetary obligation, (b) to purchase or lease property, securities or services for the purpose of assuring the obligee in respect of such Indebtedness or other monetary obligation of the payment or performance of such Indebtedness or other monetary obligation, (c) to maintain working capital, equity capital or any other financial statement condition or liquidity or level of income or cash flow of the primary obligor so as to enable the primary obligor to pay such Indebtedness or other monetary obligation, or (d) entered into for the purpose of assuring in any other manner the obligee in respect of such Indebtedness or other monetary obligation of the payment or performance thereof or to protect such obligee against loss in respect thereof (in whole or in part); *provided* that the term "Guarantee" shall not include endorsements for collection or deposit, in either case in the ordinary course of business, or customary and reasonable indemnity obligations in effect on the Closing Date or entered into in connection with any acquisition or Disposition of assets permitted under this Agreement (other than such obligations with respect to Indebtedness). The amount of any Guarantee shall be deemed to be an amount equal to the stated or determinable amount of the related primary obligation, or portion thereof, in respect of which such Guarantee is made or, if not stated or determinable, the maximum reasonably anticipated liability in respect thereof as determined by the guaranteeing Person in good faith. The term "Guarantee" as a verb has a corresponding meaning.

"**Guarantors**" has the meaning specified in the definition of "Collateral and Guarantee Requirement" and shall include each Restricted Subsidiary that shall have become a Guarantor pursuant to Section 6.11. For avoidance of doubt, the Borrower may cause any Restricted Subsidiary that is not a Guarantor to Guarantee the Obligations by causing such Restricted Subsidiary to execute a Guaranty, and any such Restricted Subsidiary shall be a Guarantor and Loan Party hereunder for all purposes. On the Closing Date, the Guarantors are each of the entities listed on Schedule 1.01B.

"**Guaranty**" means (a) the guaranty of the Obligations made by the Guarantors in favor of the Administrative Agent on behalf of the Secured Parties pursuant to clause (b) of the definition of "Collateral and Guarantee Requirement," substantially in the form of Exhibit F and (b) each other guaranty and guaranty supplement delivered pursuant to this Agreement or any other Loan Document.

"**Hazardous Materials**" means any substance, material or waste that is regulated, classified, or otherwise characterized as "hazardous," "toxic," a "pollutant," a "contaminant," "radioactive" or "explosive" pursuant to any Environmental Law.

"**Hedge Bank**" means any Person that is an Agent, a Lender, a Lead Arranger or an Affiliate of any of the foregoing at the time it enters into a Secured Hedge Agreement, in its capacity as a party to a Secured Hedge Agreement (or, in the case of Secured Hedge Agreements existing on the Closing Date, on the Closing Date), whether or not such Person subsequently ceases to be an Agent, a Lender, a Lead Arranger or an Affiliate of any of the foregoing.

"**Honor Date**" has the meaning specified in Section 2.03(c)(i).

"**Identified Participating Lenders**" has the meaning specified in Section 2.05(a)(iv)(C)(3).

"**Identified Qualifying Lender**" has the meaning specified in Section 2.05(a)(iv)(D)(3).

"**Immaterial Subsidiaries**" means any Restricted Subsidiary of the Borrower with respect to which, as of the last day of the most recently ended Test Period on or prior to the date of determination, Consolidated EBITDA attributable to such Restricted Subsidiary for the period of four consecutive fiscal quarters ending on such date does not exceed 5.0% of the Consolidated EBITDA of the Borrower and the Restricted Subsidiaries for such period; provided that if the combined Consolidated EBITDA of all Restricted Subsidiaries of the Borrower that would otherwise constitute Immaterial Subsidiaries shall exceed 10.0% of the Consolidated EBITDA of the Borrower and the Restricted Subsidiaries for such four-quarter period, the Borrower shall redesignate one or more of such Restricted Subsidiaries to not be Immaterial Subsidiaries within ten (10) Business Days after delivery of the Compliance Certificate for such fiscal quarter such that only Restricted Subsidiaries as shall then have aggregate Consolidated EBITDA of 10.0% or less of the Consolidated EBITDA of the Borrower and the Restricted Subsidiaries shall constitute Immaterial Subsidiaries.

"**Impacted Currency**" has the meaning specified in the definition of "**Eurocurrency Rate**".

"**Impacted Interest Period**" has the meaning specified in the definition of "**Eurocurrency Rate**".

"**Incremental Amendment**" has the meaning specified in Section 2.14(c).

"**Incremental Amount Date**" has the meaning specified in Section 2.14(c).

"**Incremental Equivalent Debt**" means one or more series of senior unsecured notes or loans, senior secured first lien or junior lien notes or loans, subordinated notes or loans, or secured (first lien or junior lien) or unsecured mezzanine Indebtedness, in the case of securities, whether issued in a public offering, Rule 144A or other private placement in lieu of the foregoing or otherwise, secured by the Collateral (if at all) on a *pari passu* (but without regard to control of remedies) or junior basis with the Obligations, which Indebtedness is issued or made in lieu of New Revolving Credit Commitments, New Term Commitments and/or New Term Loans pursuant to an indenture, loan agreement, credit agreement, note purchase agreement or otherwise; *provided* that (i) the aggregate principal amount of all Incremental Equivalent Debt issued pursuant to this Agreement shall not, together with any New Revolving Credit Commitments, New Term Commitments and/or New Term Loans issued prior to or substantially simultaneously with such Incremental Equivalent Debt, exceed the Available Incremental Amount, (ii)

such Incremental Equivalent Debt shall not be subject to any Guarantee by any Person other than a Loan Party, (iii) the interest rate (including margin and floors) applicable to any such Incremental Equivalent Debt will be determined by the Borrower and the Persons providing such Incremental Equivalent Debt; *provided* that, with respect to any Incremental Equivalent Debt that constitutes term loans secured by Collateral on a *pari passu* basis (but without regard to control of remedies) with the Obligations that would be permitted to be incurred as a New Term Loan pursuant to Section 2.14, if such Incremental Equivalent Debt is incurred on or prior to the end of the eighteenth (18th) month following the Closing Date and if the All-In Yield applicable to any such Incremental Equivalent Debt exceeds the All-In Yield of the Initial Term Loans made on the Closing Date at such time by more than 50 basis points, then the interest rate margins for the Initial Term Loans shall be increased to the extent necessary so that the All-In Yield of the Initial Term Loans is equal to the All-In Yield of such Incremental Equivalent Debt minus 50 basis points; *provided* that any increase in All-In Yield to any Initial Term Loan due to the application or imposition of a Eurocurrency Rate or Base Rate floor on any such Incremental Equivalent Debt shall be effected, at the Borrower's option, (x) through an increase in (or implementation of, as applicable) any Eurocurrency Rate or Base Rate floor applicable to such Initial Term Loan (not in excess of the floor applicable to the Incremental Equivalent Debt), (y) through an increase in the Applicable Rate for such Initial Term Loan or (z) any combination of (x) and (y) above, and in each case, solely to the extent that the application or imposition of such floor would cause an increase in the interest rate then in effect under the Initial Term Loans, (iv) in the case of Incremental Equivalent Debt that is secured, (A) the obligations in respect thereof shall not be secured by any Lien on any asset of the Borrower or any Restricted Subsidiary other than any asset constituting Collateral, (B) the security agreements relating to such Incremental Equivalent Debt shall be substantially the same as the Collateral Documents (with such differences as are appropriate to reflect the nature of such Incremental Equivalent Debt and are otherwise reasonably satisfactory to the Administrative Agent) and (C) such Incremental Equivalent Debt shall be subject to a First Lien Intercreditor Agreement or a Second Lien Intercreditor Agreement, as appropriate, or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent, (v) both immediately before and immediately after the incurrence of such Indebtedness (or, in the case of a Permitted Acquisition or permitted Investment, on the date of the execution of (x) the definitive agreement in connection therewith and (y) any commitment in respect of such Incremental Equivalent Debt), no Event of Default under Section 8.01(a) or Section 8.01(f) shall exist, and (vi) the covenants and events of default applicable to such Incremental Equivalent Debt shall be either substantially similar to, and not more favorable to the lenders thereunder than the Term Loans or the Revolving Credit Loans, as applicable, or, if more favorable, may be materially different from those of the Term Loans or Revolving Credit Commitments, as applicable, to the extent such differences are reasonably acceptable to the Administrative Agent (it being understood that (x) terms applicable only after the Latest Maturity Date are acceptable in any event) unless such covenants and events of default for such Incremental Equivalent Debt are reflective of market terms and conditions for the type of Indebtedness incurred or issued at the time of issuance or incurrence thereof (in each case, as determined by the Borrower in good faith); *provided* that a certificate of the Borrower delivered to the Administrative Agent at least five (5) Business Days prior to the incurrence of such Indebtedness, together with a reasonably detailed description of the material covenants of such Indebtedness or drafts of the documentation relating thereto, stating that the Borrower has reasonably determined in good faith that such covenants and defaults satisfy the foregoing requirement shall be conclusive evidence that such covenants and defaults satisfy the foregoing requirement unless the Administrative Agent notifies the Borrower within such five (5) Business Day period that it disagrees with such determination (including a reasonably detailed description of the basis upon which it disagrees).

"**Indebtedness**" means, as to any Person at a particular time, without duplication, all of the following, whether or not included as indebtedness or liabilities in accordance with GAAP:

(a) all obligations of such Person for borrowed money and all obligations of such Person evidenced by bonds, debentures, notes, loan agreements or other similar instruments;

(b) the maximum amount (after giving effect to any prior drawings or reductions that may have been reimbursed) of all outstanding letters of credit (including standby and commercial), bankers' acceptances, bank guaranties, surety bonds, performance bonds and similar instruments issued or created by or for the account of such Person;

(c) net obligations of such Person under any Swap Contract;

(d) all obligations of such Person to pay the deferred purchase price of property or services (other than (i) trade accounts payable and accrued expenses payable in the ordinary course of business, (ii) any earn-out obligation until such obligation is not paid after becoming due and payable and (iii) accruals for payroll and other liabilities accrued in the ordinary course of business);

(e) indebtedness (excluding prepaid interest thereon) secured by a Lien on property owned or being purchased by such Person (including indebtedness arising under conditional sales or other title retention agreements and mortgage, industrial revenue bond, industrial development bond and similar financings), whether or not such indebtedness shall have been assumed by such Person or is limited in recourse;

(f) all Attributable Indebtedness;

(g) all obligations of such Person in respect of Disqualified Equity Interests; and

(h) all Guarantees of such Person in respect of any of the foregoing.

For all purposes hereof, the Indebtedness of any Person shall (A) include the Indebtedness of any partnership or joint venture (other than a joint venture that is itself a corporation or limited liability company) in which such Person is a general partner or a joint venturer, except to the extent such Person's liability for such Indebtedness is otherwise limited and only to the extent such Indebtedness would be included in the calculation of Consolidated Total Debt, (B) in the case of Non-Loan Parties, exclude loans and advances made by Loan Parties having a term not exceeding 364 days (inclusive of any roll over or extensions of terms) and made in the ordinary course of business and (C) exclude amounts otherwise constituting Indebtedness to the extent that cash has been irrevocably deposited to defease or otherwise prepay or discharge such amounts in full. The amount of any net obligation under any Swap Contract on any date shall be deemed to be the Swap Termination Value thereof as of such date. The amount of Indebtedness of any Person for purposes of clause (e) shall be deemed to be equal to the lesser of (i) the aggregate unpaid amount of such Indebtedness and (ii) the fair market value (as determined by such Person in good faith) of the property encumbered thereby as determined by such Person in good faith.

"**Indemnified Liabilities**" has the meaning specified in Section 10.05.

"**Indemnitees**" has the meaning specified in Section 10.05.

"**Independent Financial Advisor**" means an accounting, appraisal, investment banking firm or consultant of nationally recognized standing that is, in the good faith judgment of the Borrower, qualified to perform the task for which it has been engaged and that is independent of the Borrower and its Affiliates.

"**Information**" has the meaning specified in Section 10.08.

"**Initial Term Commitment**" means, as to each Term Lender, its obligation to make an Initial Term Loan to the Borrower pursuant to Section 2.01(a) in an aggregate amount not to exceed the amount set forth opposite such Lender's name on Schedule 2.01 (as in effect on the Closing Date) under the caption "Initial Term Commitment," as such amount may be adjusted from time to time in accordance with this Agreement. The initial aggregate amount of the Initial Term Commitments is $300,000,000.

"**Initial Term Loan**" and "**Initial Term Loans**" have the meanings specified in Section 2.01(a).

"**Intellectual Property Security Agreements**" has the meaning specified in the Security Agreement.

"**Intercompany Note**" means any intercompany note substantially in the form of Exhibit I.

"**Intercreditor Agreements**" means the First Lien Intercreditor Agreement, the Second Lien Intercreditor Agreement and other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent, collectively, in each case to the extent then in effect.

"**Interest Payment Date**" means, (a) as to any Loan of any Class other than a Base Rate Loan, the last day of each Interest Period applicable to such Loan, and the Maturity Date of the Facility under which such Loan was made; *provided* that if any Interest Period for a Eurocurrency Rate Loan exceeds three months, the respective dates that fall every three months after the beginning of such Interest Period shall also be Interest Payment Dates; and (b) as to any Base Rate Loan of any Class, the last Business Day of each March, June, September and December (commencing with the last Business Day of March, 2017), and the Maturity Date of the Facility under which such Loan was made.

"**Interest Period**" means, as to each Eurocurrency Rate Loan, the period commencing on the date such Eurocurrency Rate Loan is disbursed or converted to or continued as a Eurocurrency Rate Loan and ending on the date one, three or six months thereafter, or to the extent consented to by each applicable Lender of such Eurocurrency Rate Loan, twelve months (or such period of less than one (1) month as may be consented to by each applicable Lender), as selected by the Borrower in its Loan Notice; *provided* that:

(a) any Interest Period that would otherwise end on a day that is not a Business Day shall be extended to the next succeeding Business Day unless such Business Day falls in another calendar month, in which case such Interest Period shall end on the immediately preceding Business Day;

(b) any Interest Period (other than an Interest Period having a duration of less than one (1) month) that begins on the last Business Day of a calendar month (or on a day for which there is no numerically corresponding day in the calendar month at the end of such Interest Period) shall end on the last Business Day of the calendar month at the end of such Interest Period; and

(c) no Interest Period shall extend beyond the Maturity Date of the Facility under which such Loan was made.

"**Interpolated Rate**" means, at any time, the rate per annum (rounded to the same number of decimal places as the Screen Rate) determined by the Administrative Agent (which determination shall be conclusive and binding absent manifest error) to be equal to the rate that results from interpolating on a linear basis between: (a) the Eurocurrency Screen Rate (for the longest period for which that Eurocurrency Screen Rate is available in the Impacted Currency) that is shorter than the Impacted Interest Period and (b) the Eurocurrency Screen Rate (for the shortest period for which that Eurocurrency Screen Rate is available in the Impacted Currency) that exceeds the Impacted Interest Period, in each case, as of the Specified Time on the Quotation Day for such Interest Period; provided that if any Interpolated Rate shall be less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

"**Investment**" means, as to any Person, the acquisition or investment by such Person, by means of (a) the purchase or other acquisition (including by merger or otherwise) of Equity Interests of another Person, (b) a loan, advance or capital contribution to, Guarantee or assumption of debt of, or purchase or other acquisition of any other debt or equity participation or interest in, another Person, including any partnership or joint venture interest in such other Person (excluding, in the case of the Borrower and the Restricted Subsidiaries, intercompany loans, advances, or Indebtedness having a term not exceeding 364 days (inclusive of any roll-over or extensions of terms) and made in the ordinary course of business) or (c) the purchase or other acquisition (in one transaction or a series of transactions, including by merger or otherwise) of all or substantially all of the property and assets of another Person or assets constituting a business unit, line of business or division of such Person; *provided* that, in the event that any Investment is made by the Borrower or any Restricted Subsidiary in any Person through substantially concurrent interim transfers of any amount through the Borrower or any Restricted Subsidiaries, then such other substantially concurrent interim transfers shall be disregarded for purposes of Section 7.02. For purposes of covenant compliance, the amount of any Investment at any time shall be the amount actually invested (measured at the time made (which, in the case of any Investment constituting the contribution of an asset or property, shall be based on the Borrower's good faith estimate of the fair market value of such asset or property at the time such Investment is made)), without adjustment for subsequent changes in the value of such Investment, net of any Returns with respect to such Investment.

"**Investment Grade Rating**" means a rating equal to or higher than Baa3 (or the equivalent) by Moody's and BBB- (or the equivalent) by S&P, or an equivalent rating by any other nationally recognized statistical rating agency selected by the Borrower.

"**IP Rights**" has the meaning specified in Section 5.15.

"**IRS**" means the Internal Revenue Service of the United States.

"**ISP**" means, with respect to any Letter of Credit, the "International Standby Practices 1998" published by the Institute of International Banking Law & Practice, Inc. (or such later version thereof as may be in effect at the time of issuance of such Letter of Credit).

"**Issuer Documents**" means with respect to any Letter of Credit, the Letter of Credit Application, and any other document, agreement and instrument entered into by an L/C Issuer and the Borrower (or any Subsidiary) or in favor of such L/C Issuer and relating to such Letter of Credit.

"**Joint Venture**" means (a) any Person which would constitute an "equity method investee" of the Borrower or any of the Restricted Subsidiaries and (b) any Person in whom the Borrower or any of the Restricted Subsidiaries beneficially owns any Equity Interest that is not a Restricted Subsidiary (other than an Unrestricted Subsidiary).

"**Judgment Currency**" has the meaning specified in Section 10.18.

"**Junior Financing**" has the meaning specified in Section 7.13(a).

"**Junior Financing Documentation**" means any documentation governing any Junior Financing.

"**Latest Maturity Date**" means, at any date of determination and, with respect to the specified Loans or Commitments (or in the absence of any such specification, all outstanding Loans and Commitments hereunder), the latest Maturity Date applicable to any such Loans or Commitments hereunder at such time, including the latest maturity or expiration date of any Initial Term Loan, any New Revolving Credit Commitment, any New Term Commitment, any New Term Loan, any New Revolving Credit Loan, any Refinancing Loan, any Refinancing Commitment, any Extended Loan, any Extended Commitment or any Replacement Term Loan, in each case as extended in accordance with this Agreement from time to time.

"**Laws**" means, collectively, all applicable international, foreign, federal, state and local statutes, treaties, rules, guidelines, regulations, ordinances, codes and administrative or judicial precedents or authorities and executive orders, including the interpretation or administration thereof by any Governmental Authority charged with the enforcement, interpretation or administration thereof, and all applicable administrative orders, directed duties, requests, licenses, authorizations and permits of, and agreements with, any Governmental Authority.

"**L/C Advances**" means with respect to each Revolving Credit Lender, such Lender's funding of its participation in any L/C Borrowing in accordance with its Pro Rata Share or other applicable share provided for under this Agreement.

"**L/C Borrowing**" means an extension of credit resulting from a drawing under any Letter of Credit which has not been reimbursed on the applicable Honor Date or refinanced as a Revolving Credit Borrowing.

"**L/C Credit Extension**" means, with respect to any Letter of Credit, the issuance thereof or extension of the expiry date thereof, or the renewal or increase of the amount thereof.

"**L/C Issuer**" means JPMorgan Chase Bank, N.A., Barclays Bank PLC and any other Lender or Affiliate of a Lender that becomes an L/C Issuer in accordance with Section 2.03(l) or 10.07(k), in each case, in its capacity as an issuer of Letters of Credit hereunder, or any successor issuer of Letters of Credit hereunder. Any L/C Issuer may arrange for one or more Letters of Credit to be issued indirectly through any other financial institution reasonably acceptable to such L/C Issuer.

"**L/C Obligations**" means, as at any date of determination (without duplication) (a) the aggregate stated amount available to be drawn under all outstanding Letters of Credit plus (b) the aggregate of all Unreimbursed Amounts, including all L/C Borrowings. For purposes of computing the amount available to be drawn under any Letter of Credit, the amount of such Letter of Credit shall be determined in accordance with Section 1.12. For all purposes of this Agreement, if on any date of determination a Letter of Credit has expired by its terms but (i) any amount may still be drawn thereunder by reason of the operation of Rule 3.13 or Rule 3.14 of the ISP, such Letter of Credit shall be deemed to be "outstanding" in the amount so remaining available to be drawn, or (ii) any request for drawing was made thereunder on or before the last day permitted thereunder and such drawing has not been honored or dishonored by the applicable L/C Issuer, such Letter of Credit shall be deemed to be "outstanding" in the amount of the drawing so requested until the applicable period of time specified by applicable Laws or practice rules for honoring or dishonoring a request for drawing under such Letter of Credit has lapsed.

"**Lead Arrangers**" means JPMorgan Chase Bank, N.A. and Barclays Bank PLC, each in its capacity as joint lead arrangers under this Agreement.

"**Lender**" has the meaning specified in the introductory paragraph to this Agreement and, as the context requires, includes an L/C Issuer and its respective successors and assigns as permitted hereunder, each of which is referred to herein as a "Lender." Each Additional Lender shall be a Lender to the extent any such Person has executed and delivered a Refinancing Amendment, an Incremental Amendment or an amendment to this Agreement in respect of Replacement Term Loans, as the case may be, and to the extent such Refinancing Amendment, Incremental Amendment or amendment to this Agreement in respect of Replacement Term Loans shall have become effective in accordance with the terms hereof and thereof, and each Extending Revolving Credit Lender and Extending Term Lender shall continue to be a Lender. As of the Closing Date, Schedule 2.01 sets forth the name of each Lender.

"**Lending Office**" means, as to any Lender, the office or offices of such Lender described as such in such Lender's Administrative Questionnaire, or such other office or offices as a Lender may from time to time notify the Borrower and the Administrative Agent by not less than five (5) Business Days' written notice.

"**Letter of Credit**" means any letter of credit or bank guarantee (or similar instrument customarily issued in bank markets outside the United States), in each case, issued hereunder. A Letter of Credit may be a commercial or documentary letter of credit or a standby letter of credit.

"**Letter of Credit Application**" means an application and agreement for the issuance or extension of, or amendment to, a Letter of Credit in a form agreed to by the Borrower and the applicable L/C Issuer from time to time.

"**Letter of Credit Expiration Date**" means the day that is five (5) Business Days prior to the Latest Maturity Date then in effect for the Revolving Credit Commitments (or, if such day is not a Business Day, the next preceding Business Day).

"**Letter of Credit Exposure**" means, at any time, the aggregate amount of all L/C Obligations at such time in respect of Letters of Credit. The Letter of Credit Exposure of any Revolving Credit Lender at any time shall be its Revolving Credit Percentage of the aggregate Letter of Credit Exposure at such time.

"**Letter of Credit Sublimit**" means an amount equal to the lesser of (a) as of the Closing Date, a Dollar Amount of $10,000,000, as such amount may be adjusted hereunder from time to time and (b) the aggregate amount of the Revolving Credit Commitments. The Letter of Credit Sublimit is part of, and not in addition to, the Revolving Credit Facility.

"**Lien**" means any mortgage, pledge, hypothecation, collateral assignment, deposit arrangement, encumbrance, lien (statutory or other), charge, or preference, priority or other security interest or preferential arrangement in the nature of a security interest of any kind or nature whatsoever (including any conditional sale or other title retention agreement, any easement, right of way or other encumbrance on title to real property, and any Capitalized Lease having substantially the same economic effect as any of the foregoing); *provided* that in no event shall an operating lease in and of itself be deemed a Lien.

"**Limited Conditionality Transaction**" means (i) any Permitted Acquisition or other permitted Investment by the Borrower or any of its Restricted Subsidiaries the consummation of which is not conditioned on the availability of, or on obtaining, third party financing and (ii) any redemption, repurchase, defeasance, satisfaction and discharge or repayment of Indebtedness requiring irrevocable notice in advance of such redemption, repurchase, defeasance, satisfaction and discharge or repayment.

"**Loan**" means an extension of credit by a Lender to the Borrower under Article II in the form of a Term Loan or a Revolving Credit Loan.

"**Loan Documents**" means, collectively, (a) this Agreement, (b) the Notes, (c) any Refinancing Amendment, Incremental Amendment, Extension Amendment or amendment to this Agreement in respect of Replacement Term Loans, (d) the Collateral Documents and (e) each Letter of Credit Application.

"**Loan Notice**" means a notice of (a) a Term Borrowing, (b) a Revolving Credit Borrowing, (c) a conversion of Loans from one Type to the other, or (d) a continuation of Eurocurrency Rate Loans, pursuant to Section 2.02(a), which, if in writing, shall be substantially in the form of Exhibit A.

"**Loan Parties**" means, collectively, (a) the Borrower and (b) each Guarantor.

"**Management Stockholders**" means any of (i) any current or former director, officer, employee or member of management of the Borrower, any of its Subsidiaries or any direct or indirect parent thereof who, at any time, is an investor in the Borrower or any direct or indirect parent thereof, (ii) any trust, partnership, limited liability company, corporate body or other entity established by any such director, officer, employee or member of management of the Borrower or any of its Subsidiaries (or by any Person described in the succeeding clauses (iii) and (iv), as applicable) to hold an investment in the Borrower or any direct or indirect parent thereof in connection with such Person's estate or tax planning, (iii) any spouse, parents or grandparents of any such director, officer, employee or member of management of the Borrower or any of its Subsidiaries and any and all descendants of the foregoing, together with any spouse of any of the foregoing Persons, who are transferred an investment in the Borrower or any direct or indirect parent thereof by any such director, officer, employee or member of management of the Borrower or any of its Subsidiaries in connection with such Person's estate or tax planning and (iv) any Person who acquires an investment in the Borrower or any direct or indirect parent thereof by will or by the Laws of intestate succession as a result of the death of an employee of the Borrower or any of its Subsidiaries.

"**Margin Stock**" has the meaning set forth in Regulation U of the FRB, or any successor thereto.

"**Master Agreement**" has the meaning specified in the definition of "Swap Contract."

"**Material Adverse Effect**" means (a) a material adverse effect on the business, assets, financial condition or results of operations of the Borrower and its Restricted Subsidiaries taken as a whole, and (b) a material adverse effect on the rights and remedies of the Lenders, the L/C Issuers and the Administrative Agent, taken as a whole, under any Loan Document.

"**Material Debt Instrument**" means any physical instrument evidencing obligations in excess of $1,000,000.

"**Material Real Property**" means any fee-owned real property located in the United States that is owned by a Loan Party and which has a fair market value (estimated in good faith by the Borrower) in excess of $3,000,000 as of the time such property is acquired (or, if such property is owned by a Person at the time it becomes a Loan Party pursuant to Section 6.11, as of such date).

"**Material Subsidiary**" means any Restricted Subsidiary of the Borrower that is not an Immaterial Subsidiary.

"**Maturity Date**" means (i) with respect to the Revolving Credit Commitments that have not been extended pursuant to Section 2.18, the date that is five (5) years after the Closing Date (the "**Original Revolving Credit Maturity Date**"), (ii) with respect to the Initial Term Loans that have not been extended pursuant to Section 2.17, the date that is seven (7) years after the Closing Date (the "**Original Term Loan Maturity Date**"), (iii) with respect to any Extended Term Loans of a given Term Loan Extension Series, the final maturity date as specified in the applicable Extension Amendment accepted by the respective Lender or Lenders, (iv) with respect to any Extended Revolving Credit Commitments of a given Revolving Credit Loan Extension Series, the final maturity date as specified in the applicable Extension Amendment accepted by the respective Lender or Lenders, (v) with respect to any Refinancing Term Loans, Refinancing Revolving Credit Commitments or Refinancing Revolving Credit Loans, the final maturity date as specified in the applicable Refinancing Amendment, (vi) with respect to any New Term Loan, New Revolving Credit Commitments or New Revolving Credit Loans, the final maturity date as specified in the applicable Incremental Amendment and (vii) with respect to Replacement Term Loans, the final maturity date as specified in the applicable amendment to this Agreement in respect of such Replacement Term Loans; *provided*, in each case, that if such day is not a Business Day, the applicable Maturity Date shall be the Business Day immediately preceding such day.

"**Maximum Rate**" has the meaning specified in Section 10.10.

"**Moody's**" means Moody's Investors Service, Inc. and any successor thereto.

"**Mortgage Policies**" has the meaning specified in Section 6.13(b)(ii).

"**Mortgages**" means collectively, the deeds of trust, trust deeds, hypothecs and mortgages made by the Loan Parties in favor or for the benefit of the Collateral Agent on behalf of the Secured Parties in form and substance reasonably satisfactory to the Collateral Agent, executed and delivered pursuant to Section 6.11 and Section 6.13.

"**Multiemployer Plan**" means any multiemployer plan as defined in Section 4001(a)(3) of ERISA and subject to Title IV of ERISA, to which the Borrower or any of its ERISA Affiliates makes or is obligated to make contributions, or during the preceding five plan years, has made or been obligated to make contributions.

"**Net Cash Proceeds**" means:

(a) with respect to the Disposition of any asset by the Borrower or any of the Restricted Subsidiaries or any Casualty Event, the excess, if any, of (i) the sum of cash and Cash Equivalents received in connection with such Disposition or Casualty Event (including any cash and Cash Equivalents received by way of deferred payment pursuant to, or by monetization of, a note receivable or otherwise, but only as and when so received and, with respect to any Casualty Event, any insurance proceeds or condemnation awards in respect of such Casualty Event actually received by or paid to or for the account of the Borrower or any of the Restricted Subsidiaries) over (ii) the sum of (A) the principal amount, premium or penalty, if any, interest and other amounts on any Indebtedness that is secured by a

Lien on the asset subject to such Disposition or Casualty Event and required to be repaid in connection with such Disposition or Casualty Event (other than Indebtedness under the Loan Documents and Refinancing Equivalent Debt), (B) the out-of-pocket fees and expenses (including attorneys' fees, investment banking fees, survey costs, title insurance premiums, and related search and recording charges, transfer taxes, deed or mortgage recording taxes, other customary expenses and brokerage, consultant and other customary fees) actually incurred by the Borrower or such Restricted Subsidiary in connection with such Disposition or Casualty Event and restoration costs following a Casualty Event, (C) taxes (including Restricted Payments in respect thereof pursuant to Section 7.06) paid or reasonably estimated to be payable in connection therewith (including taxes imposed on the distribution or repatriation of any such Net Cash Proceeds), (D) in the case of any Disposition or Casualty Event by a non-wholly owned Restricted Subsidiary, the pro-rata portion of the Net Cash Proceeds thereof (calculated without regard to this clause (D)) attributable to minority interests and not available for distribution to or for the account of the Borrower or a wholly owned Restricted Subsidiary as a result thereof, and (E) any reserve for adjustment in respect of (x) the sale price of such asset or assets established in accordance with GAAP and (y) any liabilities associated with such asset or assets and retained by the Borrower or any Restricted Subsidiary after such sale or other disposition thereof, including pension and other post-employment benefit liabilities and liabilities related to environmental matters or against any indemnification obligations associated with such transaction, it being understood that "Net Cash Proceeds" shall include the amount of any reversal (without the satisfaction of any applicable liabilities in cash in a corresponding amount) of any reserve described in this clause (E); *provided* that (x) no net cash proceeds calculated in accordance with the foregoing realized in a single transaction or series of related transactions shall constitute Net Cash Proceeds unless such net cash proceeds shall exceed $5,000,000 and (y) no such net cash proceeds shall constitute Net Cash Proceeds under this clause (a) in any fiscal year until the aggregate amount of all such net cash proceeds in such fiscal year shall exceed $10,000,000 (and thereafter only net cash proceeds in excess of such amount shall constitute Net Cash Proceeds under this clause (a)); and

(b) with respect to the incurrence, issuance or sale of any Indebtedness by the Borrower or any Restricted Subsidiary or any Permitted Equity Issuance by the Borrower or any Permitted Parent, the excess, if any, of (A) the sum of the cash and Cash Equivalents received in connection with such incurrence or issuance over (B) the investment banking fees, underwriting discounts, commissions, costs and other out-of-pocket expenses and other customary expenses, incurred by the Borrower or any Restricted Subsidiary in connection with such incurrence or issuance; and

(c) with respect to any Permitted Equity Issuance by any Permitted Parent, the amount of cash from such Permitted Equity Issuance contributed to the capital of the Borrower.

For purposes of calculating the amount of Net Cash Proceeds, fees, commissions and other costs and expenses payable to the Borrower or any Restricted Subsidiary shall be disregarded.

"**Net Income**" means, with respect to any Person, the net income (loss) of such Person, determined in accordance with GAAP.

"**New Lenders**" means, collectively, New Revolving Credit Lenders and New Term Lenders.

"**New Refinancing Revolving Credit Commitments**" has the meaning specified in Section 2.15(a).

"**New Revolving Commitment Tranche**" has the meaning specified in Section 2.14(a).

"**New Refinancing Term Commitments**" has the meaning specified in Section 2.15(a).

"**New Revolving Credit Commitments**" has the meaning specified in Section 2.14(a).

"**New Revolving Credit Loans**" means any revolving credit loan made by New Revolving Credit Lenders pursuant to New Revolving Credit Commitments.

"**New Revolving Credit Lender**" means each existing Lender or Additional Lender that provides New Revolving Credit Commitments.

"**New Term Commitments**" has the meaning specified in Section 2.14(a).

"**New Term Lender**" means each existing Lender or Additional Lender that provides New Term Loans.

"**New Term Loans**" has the meaning specified in Section 2.14(a).

"**Non-Bank Certificate**" has the meaning specified in Section 3.01(c)(i).

"**Non-Cash Compensation Liabilities**" means any liabilities recorded in connection with stock-based awards, partnership interest-based awards, awards of profits interests, deferred compensation awards and similar incentive based compensation awards or arrangements.

"**Non-Consenting Lender**" has the meaning specified in the penultimate paragraph of Section 3.07.

"**Non-Defaulting Lender**" means and includes each Lender other than a Defaulting Lender.

"**Non-Extended Revolving Credit Commitment**" means, as to each Revolving Credit Lender, any Class of Revolving Credit Commitments of such Lender as in effect immediately prior to the date on which any extension of all or any part of any Class of Revolving Credit Commitments becomes effective pursuant to an Extension Amendment, as well as any commitment of a Lender acquired by way of additions to such Class in accordance with the terms of this Agreement, as such commitments of the various Revolving Credit Lenders may be adjusted from time to time in accordance with the terms of this Agreement (including as a result of permitted increases thereto, and reductions thereto, in accordance with the terms of this Agreement and adjusted for assignments effected in accordance with the provisions of Section 10.07(b)); *provided* that the Non-Extended Revolving Credit Commitment of any Lender shall exclude any portion of such commitments which have been extended pursuant to one or more Extension Amendments. Each Lender with a Non-Extended Revolving Credit Commitment shall be obligated to (a) make Revolving Credit Loans to the Borrower pursuant thereto and in accordance with Section 2.01(b) and (b) purchase participations in L/C Obligations as provided herein.

"**Non-Extended Revolving Credit Loans**" means a Revolving Credit Loan made by a Non-Extending Revolving Credit Lender pursuant to its Non-Extended Revolving Credit Commitment (and Revolving Credit Loans to the extent originally made pursuant to a Non-Extended Revolving Credit Commitment which has been converted into an Extended Revolving Credit Commitment, which Revolving Credit Loans shall thereafter be Extended Revolving Credit Loans).

"**Non-Extending Revolving Credit Lender**" means, at any time, any Lender that has a Non-Extended Revolving Credit Commitment and/or related Revolving Credit Exposure incurred pursuant thereto at such time.

"**Non-Extension Notice Date**" has the meaning specified in Section 2.03(b)(iii).

"**Non-Loan Party**" means any Restricted Subsidiary that is not a Loan Party.

"**Note**" means a Term Note or a Revolving Credit Note, as the context may require.

"**Not Otherwise Applied**" means, with reference to any amount of net cash proceeds of any transaction or event that is proposed to be applied to a particular use or transaction, that such amount has not previously been (and is not simultaneously being) applied to anything other than that such particular use or transaction.

"**Obligations**" means all (a) advances to, and debts, liabilities, obligations, covenants and duties of, any Loan Party arising under any Loan Document or otherwise with respect to any Loan or Letter of Credit, whether direct or indirect (including those acquired by assumption), absolute or contingent, due or to become due, now existing or hereafter arising and including interest, fees and expenses that accrue after the commencement by or against any Loan Party of any proceeding under any Debtor Relief Laws naming such Person as the debtor in such proceeding, regardless of whether such interest, fees and expenses are allowed claims in such proceeding, (b) for purposes of the Collateral Documents and Section 8.03 only, obligations of any Loan Party arising under any Secured Hedge Agreement and (c) for purposes of the Collateral Documents and Section 8.03 only, obligations under Secured Cash Management Agreements; *provided* that in the case of clauses (b) and (c), only to the extent that, and for so long as, the other Obligations are so secured or guaranteed, and any release of Collateral or Guarantees effected in a manner permitted by this Agreement shall not require the consent of holders of obligations under Secured Hedge Agreements or obligations under Secured Cash Management Agreements; *provided further* that the Obligations shall exclude all Excluded Swap Obligations. Without limiting the generality of the foregoing, the Obligations of the Loan Parties under the Loan Documents include the obligation (including guarantee obligations) to pay principal, interest, Letter of Credit fees, commissions, reimbursement obligations, charges, expenses, fees, Attorney Costs, indemnities and other amounts payable by any Loan Party under any Loan Document.

"**Offered Amount**" has the meaning specified in Section 2.05(a)(iv)(D)(1).

"**Offered Discount**" has the meaning specified in Section 2.05(a)(iv)(D)(1).

"**OID**" means original issue discount.

"**Organization Documents**" means (a) with respect to any corporation, the certificate or articles of incorporation and the bylaws (or equivalent or comparable constitutive documents with respect to any non-U.S. jurisdiction); (b) with respect to any limited liability company, the certificate or articles of formation or organization and operating agreement (or equivalent or comparable constitutive documents with respect to any non-U.S. jurisdiction); and (c) with respect to any partnership, joint venture, trust or other form of business entity, the partnership, joint venture or other applicable agreement of formation or organization and any agreement, instrument, filing or notice with respect thereto filed in connection with its formation or organization with the applicable Governmental Authority in the jurisdiction of its formation or organization and, if applicable, any certificate or articles of formation or organization of such entity (or equivalent or comparable constitutive documents with respect to any non-U.S. jurisdiction).

"**Original Revolving Credit Maturity Date**" has the meaning specified in the definition of "Maturity Date."

"**Original Term Loan Maturity Date**" has the meaning specified in the definition of "Maturity Date."

"**Other Allocable Share**" means, in the case of any determination with respect to any Extending Revolving Credit Lender (or its Extended Revolving Credit Commitment (and related Revolving Credit Exposure)) or any Non-Extending Revolving Credit Lender (or its Non-Extended Revolving Credit Commitment (and related Revolving Credit Exposure)), at any time on or after the date of any applicable Extension Amendment, a fraction (expressed as a percentage, carried out to the ninth decimal place), the numerator of which is the amount of the Extended Revolving Credit Commitment or the Non-Extended Revolving Credit Commitment, as the case may be, of such Lender at such time and the denominator of which is the aggregate amount of all Extended Revolving Credit Commitments or all Non-Extended Revolving Credit Commitments, as the case may be, at such time; *provided* that if such Extended Revolving Credit Commitment or Non-Extended Revolving Credit Commitment, as the case may be, has been terminated, then the Other Allocable Share of each applicable Lender shall be determined based on the Other Allocable Share of such Lender immediately prior to such termination and after giving effect to any subsequent assignments made pursuant to the terms hereof.

"**Other Applicable Indebtedness**" means Indebtedness of the Borrower or any Restricted Subsidiary that is required to be repaid, redeemed or repurchased or requires an offer to repay, redeem or repurchase such Indebtedness that is secured on a pari passu basis (but without regard to control of remedies) with the Obligations pursuant to the terms of the documentation governing such Indebtedness with (i) Excess Cash Flow or (ii) the net proceeds of a Disposition or Casualty Event, as applicable.

"**Other Taxes**" has the meaning specified in Section 3.01(e).

"**Outstanding Amount**" means (a) with respect to the Term Loans of any Class and Revolving Credit Loans of any Class, the Dollar Amount thereof after giving effect to any borrowings and prepayments or repayments of Term Loans of any Class and Revolving Credit Loans of any Class (including any refinancing of outstanding Unreimbursed Amounts under Letters of Credit or L/C Credit Extensions as a Revolving Credit Borrowing), as the case may be, occurring on such date; and (b) with respect to any L/C Obligations on any date, the Dollar Amount thereof on such date after giving effect to any related L/C Credit Extension occurring on such date and any other changes thereto as of such date, including as a result of any reimbursements of outstanding Unreimbursed Amounts under related Letters of Credit (including any refinancing of outstanding Unreimbursed Amounts under related Letters of Credit or related L/C Credit Extensions as a Revolving Credit Borrowing) or any reductions in the maximum amount available for drawing under related Letters of Credit taking effect on such date.

"**Overnight Rate**" means, for any day, (a) with respect to any amount denominated in Dollars, the Federal Funds Rate and (b) with respect to any amount denominated in an Alternative Currency, the rate of interest per annum at which overnight deposits in the applicable Alternative Currency, in an amount approximately equal to the amount with respect to which such rate is being determined, would be offered for such day by a branch or Affiliate of the Administrative Agent in the applicable offshore interbank market for such currency to major banks in such interbank market.

"**Participant**" has the meaning specified in Section 10.07(d).

"**Participant Register**" has the meaning specified in Section 10.07(e).

"**Participating Lender**" has the meaning specified in Section 2.05(a)(iv)(C)(2).

"**Participating Member State**" means each state so described in any EMU Legislation.

"**PATRIOT Act**" means the USA PATRIOT Act (Title III of Pub. L. 107-56 (signed into law October 26, 2001)).

"**PBGC**" means the Pension Benefit Guaranty Corporation.

"**Pension Plan**" means any "employee pension benefit plan" (as such term is defined in Section 3(2) of ERISA), other than a Multiemployer Plan, that is subject to Title IV of ERISA and is sponsored or maintained by the Borrower or any of its ERISA Affiliates or to which the Borrower or any of its ERISA Affiliates contributes or has an obligation to contribute, or in the case of a multiple employer or other plan described in Section 4064(a) of ERISA, has made contributions at any time in the preceding five plan years.

"**Perfection Certificate**" means a certificate in the form of Exhibit II to the Security Agreement or any other form reasonably approved by the Administrative Agent, as the same shall be supplemented from time to time.

"**Permitted Acquisition**" has the meaning specified in Section 7.02(i).

"**Permitted Equity Issuance**" means any sale or issuance of any Qualified Equity Interests of the Borrower or any Permitted Parent, in each case to the extent not prohibited hereunder.

"**Permitted Holder**" means any of (i) Summit Partners, (ii) the Management Stockholders, (iii) Liberty Global Inc. or any of its Affiliates and (iv) any "group" (within the meaning of Section 13(d) or Section 14(d) of the Exchange Act) of which any of the foregoing are members; *provided* that in the case of such "group" and without giving effect to the existence of such "group" or any other "group," such Persons specified in clauses (i), (ii), and/or (iii) above, collectively, have beneficial ownership, directly or indirectly, of more than 50% of the aggregate ordinary voting power for election of directors represented by the issued and outstanding Equity Interests of the Borrower held, directly or indirectly, by such "group".

"**Permitted Junior Secured Refinancing Debt**" has the meaning specified in Section 2.15(i).

"**Permitted Parent**" means any Person organized or existing under the Laws of the United States or any state thereof formed for the sole purpose of owning 100% of the issued and outstanding Equity Interests of the Borrower so long as, immediately after the acquisition by such Person of 100% of the issued and outstanding Equity Interests of the Borrower, the issued and outstanding Equity Interests in such Person are owned by the equityholders of the Borrower immediately prior to such acquisition in substantially the same proportions as their ownership of Equity Interests in the Borrower at such time.

"**Permitted Pari Passu Secured Refinancing Debt**" has the meaning specified in Section 2.15(i).

"**Permitted Refinancing**" means, with respect to any Person, any modification, refinancing, refunding, replacement, renewal or extension of any Indebtedness of such Person; *provided* that (a) the principal amount (or accreted value, if applicable) thereof does not exceed the principal

amount (or accreted value, if applicable) of the Indebtedness so modified, refinanced, refunded, replaced, renewed or extended except by an amount equal to unpaid accrued interest, fees, premium (including call and tender premiums) thereon, defeasance costs, and fees and expenses incurred (including OID, upfront fees and similar items), in connection with such modification, refinancing, refunding, replacement, renewal or extension and by an amount equal to any existing commitments unutilized thereunder, (b) other than with respect to a Permitted Refinancing in respect of Indebtedness permitted pursuant to Section 7.03(b), Section 7.03(e) and Section 7.03(g), such modification, refinancing, refunding, replacement, renewal or extension has a final maturity date equal to or later than the final maturity date of, and has a Weighted Average Life to Maturity equal to or greater than the Weighted Average Life to Maturity of, the Indebtedness being modified, refinanced, refunded, replaced, renewed or extended, and (c) if such Indebtedness being modified, refinanced, refunded, replaced, renewed, or extended is Junior Financing, (i) to the extent such Indebtedness being modified, refinanced, refunded, replaced, renewed, or extended is contractually subordinated in right of payment to the Obligations, such modification, refinancing, refunding, replacement, renewal, or extension is contractually subordinated in right of payment to the Obligations on terms, taken as a whole, at least as favorable to the Lenders, in all material respects, as those contained in the documentation governing the Indebtedness being modified, refinanced, refunded, replaced, renewed or extended, (ii) to the extent such Indebtedness being modified, refinanced, refunded, replaced, renewed, or extended is secured by Liens, (x) such modification, refinancing, refunding, replacement, renewal or extension is unsecured or is secured by Liens otherwise permitted under Section 7.01 to the extent the Indebtedness being modified, refinanced, refunded, replaced or extended would have been permitted to be secured by such Lien and (y) to the extent that such Liens are contractually subordinated to the Liens securing the Obligations, such modification, refinancing, refunding, replacement, renewal or extension is either unsecured or secured by Liens that are contractually subordinated to the Liens securing the Obligations on terms, taken as a whole, at least as favorable to the Lenders, in all material respects, as those contained in the documentation (including any intercreditor or similar agreements) governing the Indebtedness being modified, refinanced, refunded, replaced, renewed or extended, (iii) to the extent such Indebtedness being modified, refinanced, refunded, replaced, renewed, or extended is unsecured, such Indebtedness must be unsecured except to the extent permitted under Section 7.01(gg), Section 7.01(jj), Section 7.01(oo) or Section 7.01(pp), (iv) the covenants and defaults of any such modified, refinanced, refunded, replaced, renewed or extended Indebtedness with an original principal amount outstanding in excess of the Threshold Amount (taken as a whole) are (x) not materially more restrictive with respect to the Borrower and the Restricted Subsidiaries, as reasonably determined by the Borrower in good faith, than the covenants and defaults of the Indebtedness being modified, refinanced, refunded, replaced, renewed or extended or (y) reflective of market terms and conditions for the type of Indebtedness incurred or issued at the time of issuance or incurrence thereof (as determined by the Borrower in good faith); *provided* that a certificate of the Borrower delivered to the Administrative Agent at least three (3) Business Days prior to the incurrence of such Indebtedness, together with a reasonably detailed description of the material covenants of such Indebtedness or drafts of the documentation relating thereto, stating that the Borrower has reasonably determined in good faith that such covenants and defaults satisfy the foregoing requirement shall be conclusive evidence that such covenants and defaults satisfy the foregoing requirement unless the Administrative Agent notifies the Borrower within such three (3) Business Day period that it disagrees with such determination (including a reasonably detailed description of the basis upon which it disagrees) and (v) such modification, refinancing, refunding, replacement, renewal or extension is incurred by the Person who is the obligor of the Indebtedness being modified, refinanced, refunded, replaced, renewed or extended and no additional obligors become liable for such Indebtedness except to the extent such Person guaranteed the Indebtedness being modified, refinanced, refunded, replaced, renewed or extended (or such guarantee would have otherwise been permitted under Section 7.03). Any reference to a Permitted Refinancing in this Agreement or any other Loan Document shall be interpreted to mean (a) a Permitted Refinancing of the subject Indebtedness and (b) any further refinancings constituting a Permitted Refinancing of the Indebtedness resulting from a prior Permitted Refinancing.

"**Permitted Unsecured Refinancing Debt**" has the meaning specified in Section 2.15(i).

"**Person**" means any natural person, corporation, limited liability company, trust, joint venture, association, company, partnership (including any exempted limited partnership), Governmental Authority or other entity.

"**Platform**" has the meaning specified in the last paragraph of Section 6.02.

"**Pledged Debt**" has the meaning specified in the Security Agreement.

"**Pledged Equity**" has the meaning specified in the Security Agreement.

"**Prime Rate**" means the rate of interest per annum publicly announced from time to time by JPMorgan Chase Bank, N.A. as its prime rate in effect at its principal office in New York City (the Prime Rate not being intended to be the lowest rate of interest charged by JPMorgan Chase Bank, N.A. in connection with extensions of credit to debtors).

"**Pro Forma Basis**" and "**Pro Forma Effect**" mean, with respect to compliance with any test or covenant or calculation of any ratio hereunder, or the calculation of Consolidated EBITDA hereunder, the determination or calculation of such test, covenant, ratio or Consolidated EBITDA (including in connection with Specified Transactions) in accordance with Section 1.08.

"**Pro Rata Share**" means, with respect to each Lender at any time, a fraction (expressed as a percentage, carried out to the ninth decimal place), the numerator of which is the amount of the Commitments and, if applicable and without duplication, Term Loans of such Lender under the applicable Facility or Facilities at such time and the denominator of which is the amount of the Aggregate Commitments of all Lenders under the applicable Facility or Facilities and, if applicable and without duplication, Term Loans of all Lenders at such time; *provided* that, in the case of the Revolving Credit Commitments of any Class, if such Commitments have been terminated, then the Pro Rata Share of each Lender shall be determined based on the Pro Rata Share of such Lender immediately prior to such termination and after giving effect to any subsequent assignments made pursuant to the terms hereof.

"**Public Lender**" has the meaning specified in the last paragraph of Section 6.02.

"**Qualified Equity Interests**" means any Equity Interests that are not Disqualified Equity Interests.

"**Qualified IPO**" means the issuance and sale by the Borrower or any Permitted Parent of its common Equity Interests in an underwritten primary public offering (other than a public offering pursuant to a registration statement on Form S-8) pursuant to an effective registration statement filed with the SEC in accordance with the Securities Act or any analogous filing under the securities laws of any jurisdiction other than the U.S. (whether alone or in connection with a secondary public offering)

"**Qualifying Lender**" has the meaning specified in Section 2.05(a)(iv)(D)(3).

"**Quarterly Financial Statements**" means the unaudited consolidated balance sheets and related statements of operations and cash flows of the Borrower and its Subsidiaries, as may have been restated prior to the Closing Date, for the fiscal quarter ended September 30, 2016.

"**Quotation Day**" means, with respect to any Eurocurrency Loan for any Interest Period, two Business Days prior to the commencement of such Interest Period.

"**Reference Date**" has the meaning specified in the definition of "Available Amount".

"**Refinanced Debt**" has the meaning specified in Section 2.15(a).

"**Refinanced Loans**" has the meaning specified in Section 2.15(i).

"**Refinancing**" has the meaning specified in the preliminary statements to this Agreement.

"**Refinancing Amendment**" has the meaning specified in Section 2.15(f).

"**Refinancing Commitments**" has the meaning specified in Section 2.15(a).

"**Refinancing Equivalent Debt**" has the meaning specified in Section 2.15(i).

"**Refinancing Facility Closing Date**" has the meaning specified in Section 2.15(d).

"**Refinancing Lenders**" has the meaning specified in Section 2.15(c).

"**Refinancing Loan**" has the meaning specified in Section 2.15(b).

"**Refinancing Loan Request**" has the meaning specified in Section 2.15(a).

"**Refinancing Revolving Credit Commitments**" has the meaning specified in Section 2.15(a).

"**Refinancing Revolving Credit Lender**" has the meaning specified in Section 2.15(c).

"**Refinancing Revolving Credit Loan**" has the meaning specified in Section 2.15(b).

"**Refinancing Term Commitments**" has the meaning specified in Section 2.15(a).

"**Refinancing Term Lender**" has the meaning specified in Section 2.15(c).

"**Refinancing Term Loan**" has the meaning specified in Section 2.15(b).

"**Refunding Capital Stock**" has the meaning specified in Section 7.06(n)(i).

"**Register**" has the meaning specified in Section 10.07(c).

"**Rejection Notice**" has the meaning specified in Section 2.05(b)(vii).

"**Related Indemnified Person**" of an Indemnitee means (a) any controlling Person or controlled affiliate of such Indemnitee, (b) the respective directors, officers, members, or employees of such Indemnitee or any of its controlling Persons or controlled affiliates and (c) the respective agents or representatives of such Indemnitee or any of its controlling Persons or controlled affiliates, in the case of this clause (c), acting at the instructions of such Indemnitee, controlling Person or such controlled affiliate; *provided* that each reference to a controlled affiliate, director, officer or employee or controlling Person in this definition shall pertain to a controlled affiliate, director, officer or employee or controlling Person involved in the negotiation or syndication of this Agreement and the Facilities.

"**Replaced Term Loans**" has the meaning specified in Section 10.01(B)(c).

"**Replacement Term Loans**" has the meaning specified in Section 10.01(B)(c).

"**Reportable Event**" means, with respect to any Pension Plan, any of the events set forth in Section 4043(c) of ERISA or the regulations issued thereunder, other than events for which the thirty (30) day notice period has been waived.

"**Representative**" means, with respect to any series of Indebtedness and any Permitted Refinancing of the foregoing, the trustee, administrative agent, collateral agent, security agent or similar agent under the indenture or agreement pursuant to which such Indebtedness is issued, incurred or otherwise obtained, as the case may be, and each of their successors in such capacities.

"**Repricing Transaction**" means (i) any prepayment or repayment, refinancing, substitution or replacement of all or a portion of the Initial Term Loans with the incurrence by any Loan Party of any syndicated term loans under any credit facility (including any Replacement Term Loans) the primary purpose of which is to reduce the All-In Yield of such debt financing relative to the All-In Yield of such Initial Term Loans so prepaid, repaid, refinanced, substituted or replaced and (ii) any amendment, amendment and restatement or other modification to this Agreement the primary purpose of which is to reduce the All-In Yield applicable to the Initial Term Loans; but excluding, in any such case, any refinancing of Initial Term Loans or amendment to this Agreement in connection with a Qualified IPO, Change of Control or Transformative Acquisition.

"**Request for Credit Extension**" means (a) with respect to a Borrowing, conversion or continuation of Term Loans or Revolving Credit Loans, a Loan Notice and (b) with respect to an L/C Credit Extension, a Letter of Credit Application.

"**Required Facility Lenders**" means, with respect to any Facility on any date of determination, Lenders having more than 50% of the sum of (i) the Total Outstandings (with the aggregate Dollar Amount as of such date of each Lender's risk participation and funded participation in L/C Obligations under such Facilities being deemed "held" by such Lender for purposes of this definition), under such Facility and (ii) the aggregate unused Commitments under such Facility; *provided* that the unused Commitments of, and the portion of the Total Outstandings under such Facility or Facilities held, or deemed held by, any Defaulting Lender shall be excluded for purposes of making a determination of the Required Facility Lenders; *provided, further,* that, to the same extent set forth in Section 10.07(i) with respect to determination of Required Lenders, the Loans of any Affiliated Lender shall in each case be excluded for purposes of making a determination of Required Facility Lenders.

"**Required Lenders**" means, as of any date of determination, Lenders having more than 50% of the sum of the (a) Total Outstandings (with the aggregate Dollar Amount as of such date of each Lender's risk participation and funded participation in L/C Obligations being deemed "held" by such Lender for purposes of this definition), (b) aggregate unused Term Commitments and (c) aggregate unused Revolving Credit Commitments; *provided* that the unused Term Commitment and unused Revolving Credit Commitment of, and the portion of the Total Outstandings held or deemed held by, any Defaulting Lender shall be excluded for purposes of making a determination of Required Lenders; *provided, further,* that the Loans of any Affiliated Lender shall in each case be excluded for purposes of making a determination of Required Lenders to the extent set forth in Section 10.07(i).

"**Required Term Lenders**" means, as of any date of determination, Term Lenders having more than 50% of the sum of the Dollar Amount of Outstanding Amount of Term Loans; *provided* that the unused Term Commitment of, and the portion of the Total Outstandings held or deemed held by, any Defaulting Lender shall be excluded for purposes of making a determination of Required Term Lenders; *provided, further,* that, to the same extent set forth in Section 10.07(i) with respect to determination of Required Lenders, the Loans of any Affiliated Lender shall in each case be excluded for purposes of making a determination of Required Term Lenders.

"**Required Revolving Credit Lenders**" means, as of any date of determination, Revolving Credit Lenders having more than 50% of the sum of the Dollar Amount of (a) the Revolving Credit Commitments or (b) after the termination of Revolving Credit Commitments, the Revolving Credit Exposure; *provided* that the Revolving Credit Commitment and Revolving Credit Exposure of any Defaulting Lender shall be excluded for the purposes of making a determination of Required Revolving Credit Lenders.

"**Responsible Officer**" means the chief executive officer, president, chief financial officer, chief operating officer, chief administrative officer or treasurer or other similar officer or Person performing similar functions of a Loan Party (or, in the case of any such Person that is a Foreign Subsidiary, director or managing partner or similar official). With respect to any document delivered by a Loan Party on the Closing Date, Responsible Officer shall include any secretary or assistant secretary of such Loan Party. Any document delivered hereunder that is signed by a Responsible Officer of a Loan Party shall be conclusively presumed to have been authorized by all necessary corporate, partnership and/or other action on the part of such Loan Party and such Responsible Officer shall be conclusively presumed to have acted on behalf of such Loan Party. Unless otherwise specified, all references herein to a "Responsible Officer" shall refer to a Responsible Officer of the Borrower.

"**Restricted**" means, when referring to cash or Cash Equivalents of the Borrower or any of its Restricted Subsidiaries, that such cash or Cash Equivalents (i) appear (or would be required to appear) as "restricted" on a consolidated balance sheet of the Borrower or such Restricted Subsidiary (unless such appearance is related to the Loan Documents (or the Liens created thereunder) or other Indebtedness permitted under Section 7.03 which is permitted to be secured by a Lien on the Collateral) or (ii) are subject to any Lien (other than non-consensual Liens permitted by Sections 7.01 and Liens permitted by Sections 7.01(a), (e), (f), (k), (l), (m), (o), (s), (u), (cc) (which shall be pari passu Liens to the extent secured by the Collateral), (ff) (solely with respect to Liens originally permitted by Section 7.01(pp) that are *pari passu* with or junior to the Liens securing the Obligations), (gg), (jj), (mm) and (pp) (in the case of Liens permitted by Section 7.01(pp), to the extent such Liens are *pari passu* with or junior to the Liens securing the Obligations); so long as, in the case of any of the foregoing Liens permitted by Sections 7.01(ff) and (pp) that are secured *pari passu* with or junior to the Liens securing the Obligations, either (x) neither of such Liens on such cash or Cash Equivalents are perfected or (y) the Liens on such cash or Cash Equivalents securing the Obligations are perfected).

"**Restricted Payment**" means any dividend or other distribution (whether in cash, securities or other property) with respect to any Equity Interest of the Borrower or any of the Restricted Subsidiaries, or any payment (whether in cash, securities or other property), including any sinking fund or similar deposit, on account of the purchase, redemption, retirement, defeasance, acquisition, cancellation or termination of any such Equity Interest, or on account of any return of capital to the Borrower's or any Restricted Subsidiary's equity holders, partners or members (or the equivalent Persons thereof), other than the payment of compensation in the ordinary course of business to holders of any such Equity Interests who are employees of the Borrower or any Subsidiary and other than payments of intercompany indebtedness permitted under this Agreement.

"**Restricted Subsidiary**" means any Subsidiary of the Borrower other than an Unrestricted Subsidiary.

"**Retired Capital Stock**" has the meaning specified in Section 7.06(n)(i).

"**Return**" means, with respect to any Investment, any dividend, distribution, interest, fee, premium, return of capital, repayment of principal, income, profit (from a disposition or otherwise) and any other amount received or realized in respect thereof.

"**Revolving Commitment Increase**" has the meaning specified in Section 2.14(a).

"**Revolving Credit Borrowing**" means a borrowing consisting of Revolving Credit Loans of the same Type and, in the case of Eurocurrency Rate Loans, having the same Interest Period made by each of the Revolving Credit Lenders pursuant to Section 2.01(b) and includes (a) the making of a Refinancing Revolving Credit Loan by a Lender or an Additional Lender to the Borrower pursuant to Section 2.15 and the applicable Refinancing Amendment, (b) the making of an Extended Revolving Credit Loan of a given Revolving Credit Loan Extension Series by a Lender to the Borrower pursuant to Section 2.18 and the applicable Extension Amendment and (c) the making of a New Revolving Credit Loan by a Lender or an Additional Lender to the Borrower pursuant to Section 2.14 and the applicable Incremental Amendment.

"**Revolving Credit Commitment**" means, as to each Revolving Credit Lender, its obligation to (a) make Revolving Credit Loans to the Borrower pursuant to Section 2.01(b) and (b) purchase participations in L/C Obligations in respect of Letters of Credit, in an aggregate principal amount at any one time outstanding not to exceed the amount set forth opposite such Lender's name on Schedule 2.01 under the caption "Revolving Credit Commitment" or in the Assignment and Assumption pursuant to which such Lender becomes a party hereto, as applicable, as such amount may be adjusted from time to time in accordance with this Agreement and includes an Extended Revolving Credit Commitment, a Non-Extended Revolving Credit Commitment, a Refinancing Revolving Credit Commitment and/or any Class of New Revolving Credit Commitment effected pursuant to Section 2.14, as the context may require. The initial aggregate amount of the Revolving Credit Commitments is $25,000,000 (subject, for the avoidance of doubt, to the Alternative Currency Limit with respect to any Outstanding Amount denominated in an Alternative Currency).

"**Revolving Credit Exposure**" means, at any time, as to each Revolving Credit Lender, the sum of the outstanding principal amount of such Revolving Credit Lender's Revolving Credit Loans at such time and its Pro Rata Share, or other applicable share provided for under this Agreement, of the L/C Obligations at such time.

"**Revolving Credit Extension Election**" has the meaning specified in Section 2.18(b).

"**Revolving Credit Facility**" means, at any time, the aggregate amount of the Revolving Credit Lenders' Revolving Credit Commitments at such time.

"**Revolving Credit Lender**" means, at any time, any Lender that has a Revolving Credit Commitment and/or Revolving Credit Exposure at such time.

"**Revolving Credit Loan**" means (i) any revolving credit loan made by the Revolving Credit Lenders pursuant to the Revolving Credit Commitments of the Revolving Credit Lenders on the Closing Date pursuant to Section 2.01(b) and (ii) includes any New Revolving Credit Loans, Refinancing Revolving Credit Loans and Extended Revolving Credit Loans effected pursuant to Section 2.14, Section 2.15 or Section 2.18, as applicable, and the related Incremental Amendment, Refinancing Amendment or Extension Amendment, as applicable.

"**Revolving Credit Loan Extension Series**" has the meaning specified in Section 2.18(a).

"**Revolving Credit Note**" means a promissory note of the Borrower payable to any Revolving Credit Lender or its registered assigns, in substantially the form of Exhibit D-2 hereto, evidencing the aggregate Indebtedness of the Borrower to such Revolving Credit Lender resulting from the Revolving Credit Loans made by such Revolving Credit Lender.

"**Revolving Credit Percentage**" of any Revolving Credit Lender at any time shall mean a fraction (expressed as a percentage) the numerator of which is the Revolving Credit Commitment for the Revolving Credit Facility (or, after the date of any Refinancing Amendment, Extension Amendment or Incremental Amendment, the applicable Class or Facility) of such Revolving Credit Lender at such time and the denominator of which is the aggregate Revolving Credit Commitments of all Revolving Credit Lenders for the Revolving Credit Facility (or, after the date of any Refinancing Amendment, Extension Amendment or Incremental Amendment, the applicable Class or Facility) at such time; *provided* that if the Revolving Credit Percentage of any Revolving Credit Lender is to be determined after all Revolving Credit Commitments for the Revolving Credit Facility (or, after the date of any Refinancing Amendment, Extension Amendment or Incremental Amendment, the applicable Class or Facility) have been terminated, then the Revolving Credit Percentage of such Revolving Credit Lender shall be determined immediately prior (and without giving effect) to such termination (but giving effect to assignments made thereafter in accordance with the terms hereof); *provided*, *further*, that in the case of Section 2.19 when a Defaulting Lender shall exist, "Revolving Credit Percentage" shall mean the percentage of the aggregate Revolving Credit Commitments for the Revolving Credit Facility (or, after the date of any Refinancing Amendment, Extension Amendment or Incremental Amendment, the applicable Class or Facility) (disregarding any Defaulting Lender's Revolving Credit Commitment) represented by such Lender's Revolving Credit Commitment.

"**S&P**" means Standard & Poor's Financial Services LLC or any successor thereto.

"**Same Day Funds**" means disbursements and payments in immediately available funds.

"**Sanctioned Country**" means, at any time, a country, region or territory which is itself the subject or target of any Sanctions (at the time of this Agreement, Crimea, Cuba, Iran, North Korea, Sudan and Syria).

"**Sanctioned Person**" means, at any time, (a) any Person listed in any Sanctions-related list of designated Persons maintained by the Office of Foreign Assets Control of the U.S. Department of the Treasury or the U.S. Department of State, by the United Nations Security Council, the European Union, any European Union member state, Her Majesty's Treasury of the United Kingdom or other relevant sanctions authority having authority or jurisdiction over the Borrower or its Restricted Subsidiaries, (b) any Person operating, organized or resident in a Sanctioned Country or (c) any Person owned or controlled by any such Person or Persons described in the foregoing clauses (a) or (b).

"**Sanctions**" has the meaning specified in Section 5.20(c).

"**Sanctions Laws**" has the meaning specified in Section 5.20(c).

"**SEC**" means the U.S. Securities and Exchange Commission, or any Governmental Authority succeeding to any of its principal functions.

"**Second Lien Intercreditor Agreement**" means a second lien intercreditor agreement entered into after the date hereof, in form and substance reasonably acceptable to the Borrower and the Administrative Agent.

"**Secured Cash Management Agreement**" means any Cash Management Obligation that is entered into by and between any Loan Party and any Cash Management Bank and designated by the Borrower and the Cash Management Bank in writing to the Administrative Agent as a "Secured Cash Management Agreement." The designation of any Secured Cash Management Agreement shall not create in favor of such Cash Management Bank any rights in connection with the management or release of Collateral or of the obligations of any Loan Party under the Loan Documents (other than any such rights of such Cash Management Bank in its capacity as a Lender hereunder, if applicable).

"**Secured Hedge Agreement**" means any Swap Contract that is entered into by and between any Loan Party and any Hedge Bank and designated by the Borrower and the Hedge Bank in writing to the Administrative Agent as a "Secured Hedge Agreement." The designation of any Secured Hedge Agreement shall not create in favor of such Hedge Bank any rights in connection with the management or release of Collateral or of the obligations of any Loan Party under the Loan Documents (other than any such rights of such Hedge Bank in its capacity as a Lender hereunder, if applicable).

"**Secured Parties**" means, collectively, the Administrative Agent, the Collateral Agent, the Lenders, each L/C Issuer, each Hedge Bank, each Cash Management Bank and each co-agent or sub-agent appointed by the Administrative Agent from time to time pursuant to Section 9.05.

"**Securities Act**" means the Securities Act of 1933, as amended.

"**Security Agreement**" means, collectively, the Security Agreement executed by the Loan Parties, substantially in the form of Exhibit G, together with any Security Agreement Supplement executed and delivered pursuant to Section 6.11, as amended, restated amended and restated, supplemented or otherwise modified from the time to time.

"**Security Agreement Supplement**" has the meaning specified in the Security Agreement.

"**Solicited Discount Proration**" has the meaning specified in Section 2.05(a)(iv)(D)(3).

"**Solicited Discounted Prepayment Amount**" has the meaning specified in Section 2.05(a)(iv)(D)(1).

"**Solicited Discounted Prepayment Notice**" means a written notice of the Borrower of Solicited Discounted Prepayment Offers made pursuant to Section 2.05(a)(iv)(D) substantially in the form of Exhibit L.

"**Solicited Discounted Prepayment Offer**" means the irrevocable written offer by each Lender, substantially in the form of Exhibit M, submitted following the Auction Agent's receipt of a Solicited Discounted Prepayment Notice.

"**Solicited Discounted Prepayment Response Date**" has the meaning specified in Section 2.05(a)(iv)(D)(1).

"**Solvent**" and "**Solvency**" mean, with respect to any Person on any date of determination, that on such date (a) the fair value of the assets of such Person and its Subsidiaries, on a consolidated basis, exceeds, on a consolidated basis, their debts and liabilities, subordinated, contingent or otherwise, (b) the present fair saleable value of the property of such Person and its Subsidiaries, on a consolidated basis, is greater than the amount that will be required to pay the probable liability, on a consolidated basis, of their debts and other liabilities, subordinated, contingent or otherwise, as such debts

and other liabilities become absolute and matured, (c) such Person and its Subsidiaries, on a consolidated basis, are able to pay their debts and liabilities, subordinated, contingent or otherwise, as such liabilities become absolute and matured and (d) such Person and its Subsidiaries, on a consolidated basis, are not engaged in, and are not about to engage in, business for which they have unreasonably small capital. The amount of any contingent liability at any time shall be computed as the amount that would reasonably be expected to become an actual and matured liability.

"**SPC**" has the meaning specified in Section 10.07(g).

"**Special Notice Currency**" means, at any time, an Alternative Currency, other than the currency of a country that is a member of the Organization for Economic Cooperation and Development at such time located in North America or Europe.

"**Specified Default**" means any Event of Default under Sections 8.01(a) or (f).

"**Specified Discount**" has the meaning specified in Section 2.05(a)(iv)(B)(1).

"**Specified Discount Prepayment Amount**" has the meaning specified in Section 2.05(a)(iv)(B)(1).

"**Specified Discount Prepayment Notice**" means a written notice of the Borrower of an offer of Specified Discount prepayment made pursuant to Section 2.05(a)(iv)(B) substantially in the form of Exhibit N.

"**Specified Discount Prepayment Response**" means the irrevocable written response by each Lender, substantially in the form of Exhibit O, to a Specified Discount Prepayment Notice.

"**Specified Discount Prepayment Response Date**" has the meaning specified in Section 2.05(a)(iv)(B)(1).

"**Specified Discount Proration**" has the meaning specified in Section 2.05(a)(iv)(B)(3).

"**Specified Equity Contribution**" means any direct or indirect cash contribution to the common equity or capital of the Borrower and/or any purchase of, or investment in, any Qualified Equity Interest of the Borrower.

"**Specified Legal Expenses**" means, to the extent not constituting an extraordinary, non-recurring or unusual loss, charge or expense, all attorneys' and experts' fees and expenses and all other costs, liabilities (including all damages, penalties, fines and indemnification and settlement payments) and expenses paid or payable in connection with any threatened, pending, completed or future claim, demand, action, suit, proceeding, inquiry or investigation (whether civil, criminal, administrative, governmental or investigative) arising from, or related to, facts and circumstances existing on or prior to the Closing Date.

"**Specified Representations**" means those representations and warranties made by and solely in respect of the Borrower in Section 5.01(a) (with respect to organizational existence only), Section 5.02(a), Section 5.04, Section 5.13, Section 5.16, Section 5.19 and Section 5.20.

"**Specified Time**" means 11:00 a.m., London time.

"**Specified Transaction**" means any Investment that results in a Person becoming a Restricted Subsidiary, any designation of a Subsidiary as a Restricted Subsidiary or an Unrestricted

Subsidiary, any Permitted Acquisition, any Disposition that results in a Restricted Subsidiary ceasing to be a Subsidiary of the Borrower, any Investment constituting an acquisition of assets constituting a business unit, line of business or division of another Person or any Disposition of a business unit, line of business or division of the Borrower or a Restricted Subsidiary, in each case whether by merger, consolidation, amalgamation or otherwise, or any incurrence or repayment of Indebtedness (other than Indebtedness incurred or repaid under any revolving credit facility in the ordinary course of business for working capital purposes), Restricted Payment, Subsidiary designation, New Term Loan, New Revolving Credit Commitments, New Revolving Credit Loan or other event that by the terms of this Agreement requires Consolidated EBITDA or a financial ratio or test to be calculated on a "Pro Forma Basis" or after giving "Pro Forma Effect."

"**Spot Rate**" for a currency means the rate determined by the Administrative Agent or an L/C Issuer, as applicable, to be the rate quoted by the Person acting in such capacity as the spot rate for the purchase by such Person of such currency with another currency through its principal foreign exchange trading office; *provided* that the Administrative Agent or an L/C Issuer may obtain such spot rate from another financial institution designated by the Administrative Agent or such L/C Issuer if the Person acting in such capacity does not have as of the date of determination a spot buying rate for any such currency. Once the Spot Rate is revalued by the applicable Person, the Administrative Agent will advise the Borrower and the Revolving Credit Lenders of the new Spot Rate.

"**Statutory Reserve Rate**" means a fraction (expressed as a decimal), the numerator of which is the number one and the denominator of which is the number one minus the aggregate of the maximum reserve percentages (including any marginal, special, emergency or supplemental reserves) expressed as a decimal under any regulations of the FRB or other Governmental Authority having jurisdiction with respect thereto dealing with reserve requirements prescribed for eurocurrency funding (currently referred to as "Eurocurrency Liabilities" in Regulation D of the FRB) maintained by a member bank of the Federal Reserve System.

"**Subject Transaction**" has the meaning specified in Section 1.09(a).

"**Submitted Amount**" has the meaning specified in Section 2.05(a)(iv)(C)(1).

"**Submitted Discount**" has the meaning specified in Section 2.05(a)(iv)(C)(1).

"**Subsidiary**" of a Person means a corporation, partnership, joint venture, limited liability company or other business entity (excluding, for the avoidance of doubt, charitable foundations) of which a majority of the shares of securities or other interests having ordinary voting power for the election of directors or other governing body (other than securities or interests having such power only by reason of the happening of a contingency) are at the time beneficially owned by such Person, or the management of which is otherwise controlled, directly, or indirectly through one or more intermediaries, or both, by such Person. Unless otherwise specified, all references herein to a "Subsidiary" or to "Subsidiaries" shall refer to a Subsidiary or Subsidiaries of the Borrower.

"**Summit Investors**" means any of Summit Partners Private Equity Fund VII-A, L.P., Summit Partners Private Equity Fund VII-B, L.P., Summit Investors I, LLC, Summit Investors I (UK), L.P. and any of their respective Affiliates.

"**Summit Partners**" means any of Summit Partners, L.P., any of its Affiliates and any funds, investment vehicles or partnerships managed, advised or sub-advised by any of them or any of their respective Affiliates but not including, however, any operating portfolio company of any of the foregoing.

"**Swap Contract**" means (a) any and all rate swap transactions, basis swaps, credit derivative transactions, forward rate transactions, commodity swaps, commodity options, forward commodity contracts, equity or equity index swaps or options, bond or bond price or bond index swaps or options or forward bond or forward bond price or forward bond index transactions, interest rate options, forward foreign exchange transactions, cap transactions, floor transactions, collar transactions, currency swap transactions, cross-currency rate swap transactions, currency options, spot contracts, or any other similar transactions or any combination of any of the foregoing (including any options to enter into any of the foregoing), whether or not any such transaction is governed by or subject to any master agreement, and (b) any and all transactions of any kind, and the related confirmations, which are subject to the terms and conditions of, or governed by, any form of master agreement published by the International Swaps and Derivatives Association, Inc., any International Foreign Exchange Master Agreement, or any other master agreement (any such master agreement, together with any related schedules, a "**Master Agreement**"), including any such obligations or liabilities under any Master Agreement.

"**Swap Obligation**" means, with respect to any Guarantor, any obligation to pay or perform under any agreement, contract or transaction that constitutes a "swap" within the meaning of Section 1a(47) of the Commodity Exchange Act.

"**Swap Termination Value**" means, in respect of any one or more Swap Contracts, after taking into account the effect of any legally enforceable netting agreement relating to such Swap Contracts, (a) for any date on or after the date such Swap Contracts have been closed out and termination value(s) determined in accordance therewith, such termination value(s), and (b) for any date prior to the date referenced in clause (a), the amount(s) determined as the mark-to-market value(s) for such Swap Contracts, as determined based upon one or more mid-market or other readily available quotations provided by any recognized dealer in such Swap Contracts (which may include a Lender or any Affiliate of a Lender).

"**Syndication Agent**" means Barclays Bank PLC in its capacity as syndication agent under this Agreement.

"**TARGET Day**" means any day on which the Trans-European Automated Real-time Gross Settlement Express Transfer system (TARGET) payment system (or, if such payment system ceases to be operative, such other payment system (if any) determined by the Administrative Agent to be a suitable replacement) is open for the settlement of payments in Euros.

"**Taxes**" has the meaning specified in Section 3.01(a).

"**Term Borrowing**" means (a) a borrowing consisting of simultaneous Term Loans of the same Type and currency and, in the case of Eurocurrency Rate Loans, having the same Interest Period made by each of the Term Lenders pursuant to Section 2.01, (b) the making of a New Term Loan by a Lender or an Additional Lender to the Borrower pursuant to Section 2.14 and the applicable Incremental Amendment, (c) the making of a Refinancing Term Loan by a Lender or an Additional Lender to the Borrower pursuant to Section 2.15 and the applicable Refinancing Amendment, (d) the making of an Extended Term Loan of a given Term Loan Extension Series by a Lender to the Borrower pursuant to Section 2.17 and the applicable Corrective Term Loan Extension Amendment and (e) the making of a Replacement Term Loan by a Lender or an Additional Lender to the Borrower pursuant to Section 10.01(B)(c) and the applicable amendment to this Agreement in respect of such Replacement Term Loan.

"**Term Commitment**" means, as to each Term Lender, its obligation to make a Term Loan to the Borrower, expressed as an amount representing the maximum principal amount of the Term Loan to be made by such Lender under this Agreement, as such commitment may be (a) reduced from

time to time pursuant to Section 2.06 and (b) reduced or increased from time to time pursuant to (i) assignments by or to such Lender pursuant to an Assignment and Assumption, (ii) an Incremental Amendment, (iii) a Refinancing Amendment, (iv) an Extension Amendment or (v) an amendment to this Agreement in respect of Replacement Term Loans. The amount of each Lender's Initial Term Commitment is set forth on Schedule 2.01 under the caption "Initial Term Commitment;" and the amount of each Lender's other Term Commitments shall be as set forth in the Assignment and Assumption, Incremental Amendment, Refinancing Amendment or amendment to this Agreement in respect of Replacement Term Loans pursuant to which such Lender shall have assumed its Term Commitment, as the case may be, as such amounts may be adjusted from time to time in accordance with this Agreement.

"**Term Lender**" means, at any time, any Lender that has a Term Commitment or a Term Loan at such time.

"**Term Loan**" means (i) the Initial Term Loans and (ii) any New Term Loan, Refinancing Term Loan, Extended Term Loan or Replacement Term Loan effected pursuant to Section 2.14, Section 2.15 , Section 2.17 or Section 10.01(B)(c) as applicable, and the related Incremental Amendment, Refinancing Amendment, Extension Amendment or amendment to this Agreement in respect of Replacement Term Loans.

"**Term Loan Extension**" means any establishment of Extended Term Commitments and Extended Term Loans pursuant to Section 2.17 and the applicable Extension Amendment.

"**Term Loan Extension Election**" has the meaning specified in Section 2.17(b).

"**Term Loan Extension Series**" has the meaning specified in Section 2.17(a).

"**Term Loan Increase**" has the meaning specified in Section 2.14(a).

"**Term Note**" means a promissory note of the Borrower payable to any Term Lender or its registered assigns, in substantially the form of Exhibit D-1 hereto, evidencing the aggregate Indebtedness of the Borrower to such Term Lender resulting from the Term Loans made by such Term Lender.

"**Termination Date**" has the meaning specified in Section 9.11(b).

"**Test Period**" in effect at any time means the most recent period of four consecutive fiscal quarters of the Borrower ended on or prior to such time (taken as one accounting period) in respect of which financial statements for each quarter or fiscal year in such period have been or are required to be delivered pursuant to Section 6.01(a) or (b), as applicable; *provided* that, prior to the first date that financial statements have been or are required to be delivered pursuant to Section 6.01(a) or (b), the Test Period in effect shall be the period of four consecutive fiscal quarters of the Borrower ended September 30, 2016. A Test Period may be designated by reference to the last day thereof (i.e., the "September 30, 2016 Test Period" refers to the period of four consecutive fiscal quarters of the Borrower ended September 30, 2016), and a Test Period shall be deemed to end on the last day thereof.

"**Threshold Amount**" means $35,000,000.

"**Total Net First Lien Leverage Ratio**" means, with respect to any Test Period, the ratio of (a) Consolidated First Lien Net Debt as of the last day of such Test Period to (b) Consolidated EBITDA of the Borrower and the Restricted Subsidiaries for such Test Period.

"**Total Net Leverage Ratio**" means, with respect to any Test Period, the ratio of (a) Consolidated Net Debt as of the last day of such Test Period to (b) Consolidated EBITDA of the Borrower and the Restricted Subsidiaries for such Test Period.

"**Total Net Senior Secured Leverage Ratio**" means, with respect to any Test Period, the ratio of (a) Consolidated Senior Secured Net Debt as of the last day of such Test Period to (b) Consolidated EBITDA of the Borrower and the Restricted Subsidiaries for such Test Period.

"**Total Outstandings**" means the aggregate Outstanding Amount of all Loans and all L/C Obligations.

"**Transaction**" means, collectively, (a) the Refinancing and the making of the Dividend, (b) the funding of the Initial Term Loans and Revolving Credit Loans (if any), (c) the consummation of any other transactions in connection with the foregoing, and (d) the payment of the fees and expenses incurred in connection with any of the foregoing.

"**Transaction Expenses**" means any fees, premiums, expenses and other transaction costs incurred or paid by the Borrower or any of its Subsidiaries in connection with the Transaction (including to fund any OID and upfront fees), this Agreement and the other Loan Documents and the transactions contemplated hereby and thereby.

"**Transformative Acquisition**" means any acquisition or Investment by the Borrower or any other Restricted Subsidiary that (i) is not permitted by the terms of the Loan Documents immediately prior to the consummation of such acquisition or (ii) if permitted by the terms of the Loan Documents immediately prior to the consummation of such acquisition or Investment, involves an aggregate consideration of $50,000,000 or greater.

"**Type**" means, with respect to a Loan, its character as a Base Rate Loan or a Eurocurrency Rate Loan.

"**Undisclosed Administration**" means, in relation to a Lender or its direct or indirect parent company, the appointment of an administrator, provisional liquidator, conservator, receiver, trustee, custodian, or other similar official by a supervisory authority or regulator under or based on the law in the country where such Lender or such parent company is subject to home jurisdiction, if applicable law requires that such appointment not be disclosed.

"**Uniform Commercial Code**" means the Uniform Commercial Code or any successor provision thereof as the same may from time to time be in effect in the State of New York or the Uniform Commercial Code or any successor provision thereof (or similar code or statute) of another jurisdiction, to the extent it may be required to apply to any item or items of Collateral.

"**United States**" and "**U.S.**" mean the United States of America.

"**Unreimbursed Amount**" has the meaning specified in Section 2.03(c)(i).

"**Unrestricted Subsidiary**" means any Subsidiary of the Borrower designated by the Borrower as an Unrestricted Subsidiary pursuant to Section 6.14 subsequent to the date hereof (and any of its Subsidiaries), in each case, until such Person ceases to be an Unrestricted Subsidiary of the Borrower in accordance with Section 6.14 or ceases to be a Subsidiary of the Borrower.

"**U.S. Lender**" has the meaning specified in Section 3.01(c)(iii).

"**U.S. Person**" means any Person that is a "United States Person" as defined in Section 7701(a)(30) of the Code.

"**Weighted Average Life to Maturity**" means, when applied to any Indebtedness at any date, the number of years obtained by dividing: (a) the sum of the products obtained by multiplying (i) the amount of each then remaining scheduled installment, sinking fund, serial maturity or other required scheduled payments of principal, including payment at final scheduled maturity, in respect thereof, by (ii) the number of years (calculated to the nearest one-twelfth) that will elapse between such date and the making of such payment by (b) the then outstanding principal amount of such Indebtedness; *provided* that for purposes of determining the Weighted Average Life to Maturity of any Indebtedness that is being modified, refinanced, refunded, renewed, replaced or extended (the "**Applicable Indebtedness**"), the effects of any prepayments or amortization made on such Applicable Indebtedness prior to the date of the applicable modification, refinancing, refunding, renewal, replacement or extension shall be disregarded.

"**wholly owned**" means, with respect to a Subsidiary of a Person, a Subsidiary of such Person all of the outstanding Equity Interests of which (other than (x) director's qualifying shares and (y) nominal shares issued to foreign nationals to the extent required by applicable Laws) are owned by such Person and/or by one or more wholly owned Subsidiaries of such Person.

"**Withdrawal Liability**" means the liability to a Multiemployer Plan as a result of a complete or partial withdrawal from such Multiemployer Plan, as such term is defined in Part I of Subtitle E of Title IV of ERISA.

"**Write-Down and Conversion Powers**" means, with respect to any EEA Resolution Authority, the write-down and conversion powers of such EEA Resolution Authority from time to time under the Bail-In Legislation for the applicable EEA Member Country, which write-down and conversion powers are described in the EU Bail-In Legislation Schedule.

Section 1.02 Other Interpretive Provisions. With reference to this Agreement and each other Loan Document, unless otherwise specified herein or in such other Loan Document:

(a) The meanings of defined terms are equally applicable to the singular and plural forms of the defined terms. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms.

(b) (i) The words "herein," "hereto," "hereof" and "hereunder" and words of similar import when used in any Loan Document shall refer to such Loan Document as a whole and not to any particular provision thereof.

(ii) References in this Agreement and any other Loan Document to the introductory paragraph, preliminary statements, an Exhibit, Schedule, Article, Section, clause or sub-clause refer (A) to the appropriate introductory paragraph, preliminary statements, Exhibit or Schedule to, or Article, Section, clause or sub-clause in, this Agreement or (B) to the extent such references are not present in this Agreement, to the Loan Document in which such reference appears.

(iii) The terms "include," "includes" and "including" are by way of example and not limitation.

(iv) The term "documents" includes any and all instruments, documents, agreements, certificates, notices, reports, financial statements and other writings, however evidenced, whether in physical or electronic form.

(v) The words “assets” and “property” shall be construed to have the same meaning and effect.

(vi) The word “or” is not exclusive.

(c) In the computation of periods of time from a specified date to a later specified date, the word “from” means “from and including”; the words “to” and “until” each mean “to but excluding”; and the word “through” means “to and including.”

(d) Section headings herein and in the other Loan Documents are included for convenience of reference only and shall not affect the interpretation of this Agreement or any other Loan Document.

Section 1.03 Accounting Terms. All accounting terms not specifically or completely defined herein shall be construed in conformity with, and all financial data (including financial ratios and other financial calculations) required to be submitted pursuant to this Agreement shall be prepared in conformity with, GAAP, except as otherwise specifically prescribed herein.

Section 1.04 Rounding. Any financial ratios required to be maintained by the Borrower pursuant to this Agreement (or required to be satisfied in order for a specific action to be permitted under this Agreement) shall be calculated by dividing the appropriate component by the other component, carrying the result to one place more than the number of places by which such ratio is expressed herein and rounding the result up or down to the nearest number (with a rounding-up if there is no nearest number).

Section 1.05 References to Agreements, Laws, Etc. Unless otherwise expressly provided herein, (a) references to Organization Documents, documents (including the Loan Documents) and other contractual instruments shall be deemed to include all subsequent amendments, restatements, amendments and restatements, extensions, supplements, replacements, refinancings and other modifications thereto, but only to the extent that such amendments, restatements, amendments and restatements, extensions, supplements, replacements, refinancings, and other modifications are not prohibited by any Loan Document; (b) references to any Law shall include all statutory and regulatory provisions consolidating, amending, replacing, supplementing or interpreting such Law and (c) references to any Person shall include such Person’s successors and permitted assigns.

Section 1.06 Times of Day. Unless otherwise specified, all references herein to times of day shall be references to New York City time (daylight or standard, as applicable).

Section 1.07 Available Amount Transactions. If more than one action occurs on any given date the permissibility or the taking of which is determined hereunder by reference to the amount of the Available Amount immediately prior to the taking of such action, the permissibility of the taking of each such action shall be determined independently and in no event may any two or more such actions be treated as occurring simultaneously, i.e. each transaction must be permitted under the Available Amount as so calculated.

Section 1.08 Pro Forma Calculations. (a) Notwithstanding anything to the contrary herein, Consolidated EBITDA and any financial ratios or tests, including the Total Net Leverage Ratio, the Total Net First Lien Leverage Ratio and the Total Net Senior Secured Leverage Ratio, shall be calculated in the manner prescribed by this Section 1.08; *provided* that notwithstanding anything to the contrary in clauses (b), (c) or (d) of this Section 1.08, when calculating the Total Net First Lien Leverage Ratio for purposes of (i) Section 2.05(b)(i), (ii) the definition of “Applicable Rate”, or (iii) determining

actual compliance (and not *pro forma* compliance, compliance on a Pro Forma Basis or determining compliance giving Pro Forma Effect to a transaction) with Section 7.11, the events described in this Section 1.08 that occurred subsequent to the end of the applicable Test Period shall not be given *pro forma* effect.

(b) For purposes of calculating Consolidated EBITDA and any financial ratios or tests, including the Total Net Leverage Ratio, the Total Net Senior Secured Leverage Ratio and the Total Net First Lien Leverage Ratio, Specified Transactions (and the incurrence or repayment of any Indebtedness in connection therewith, subject to clause (d) of this Section 1.08) that have been made (i) during the applicable Test Period or (ii) subsequent to such Test Period and prior to or simultaneously with the event for which the calculation of Consolidated EBITDA or any such ratio is made shall be calculated on a *pro forma* basis assuming that all such Specified Transactions (and any increase or decrease in Consolidated EBITDA and the component financial definitions used therein attributable to any Specified Transaction) had occurred on the first day of the applicable Test Period. If since the beginning of any applicable Test Period any Person that subsequently became a Restricted Subsidiary or was merged, amalgamated or consolidated with or into the Borrower or any of its Restricted Subsidiaries since the beginning of such Test Period shall have made any Specified Transaction that would have required adjustment pursuant to this Section 1.08, then the Total Net Leverage Ratio, the Total Net Senior Secured Leverage Ratio and the Total Net First Lien Leverage Ratio and Consolidated EBITDA shall be calculated to give *pro forma* effect thereto in accordance with this Section 1.08.

(c) Whenever *pro forma* effect is to be given to a Specified Transaction, the *pro forma* calculations shall be made in good faith by a Responsible Officer of the Borrower and may include, for the avoidance of doubt, the amount of "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies projected by the Borrower in good faith to be realized as a result of specified actions taken, committed to be taken or expected to be taken (calculated on a *pro forma* basis as though such cost savings, operating expense reductions, restructuring charges and expenses and cost synergies had been realized on the first day of such period and as if such cost savings, operating expense reductions, restructuring charges and expenses and synergies were realized during the entirety of such period) relating to such Specified Transaction, and "run rate" means the full recurring benefit for a period that is associated with any action taken, committed to be taken or expected to be taken (including any savings expected to result from the elimination of a public target's compliance costs with public company requirements), net of the amount of actual benefits realized during such period from such actions, and any such adjustments shall be included in the initial pro forma calculations of such financial ratios or tests (and in respect of any subsequent pro forma calculations in which such Specified Transaction is given pro forma effect) and during any applicable subsequent Test Period in which the effects thereof are expected to be taken or realized) relating to such specified action; *provided* that (A) such amounts are reasonably identifiable and factually supportable (in the good faith determination of the Borrower), (B) such actions are taken, committed to be taken or expected to be taken no later than eighteen (18) months after the date of such Specified Transaction, (C) no amounts shall be added pursuant to this clause (C) to the extent duplicative of any amounts that are otherwise added back in computing Consolidated EBITDA, whether through a *pro forma* adjustment or otherwise, with respect to such period (and no amount shall be added back in respect of this clause (C), as it relates to adjustments of the type permitted under clause (b)(xi) of the definition of Consolidated EBITDA, in excess of (and shall be aggregated with) the cap on such amounts set forth therein) and (D) it is understood and agreed that, subject to compliance with the other provisions of this Section 1.08(c), amounts to be included in pro forma calculations pursuant to this Section 1.08(c) may be included in Test Periods in which the Specified Transaction to which such amounts relate to is no longer being given pro forma effect pursuant to Section 1.08(b).

(d) In the event that the Borrower or any Restricted Subsidiary incurs (including by assumption or guarantees) or repays (including by repurchase, redemption, repayment, retirement or extinguishment) any Indebtedness included in the calculations of the Total Net Leverage Ratio, the Total Net Senior Secured Leverage Ratio and the Total Net First Lien Leverage Ratio, as the case may be (in each case, other than the net change in Indebtedness under any revolving credit facility in the ordinary course of business for working capital purposes), (i) during the applicable Test Period or (ii) subsequent to the end of the applicable Test Period and prior to or simultaneously with the event for which the calculation of any such ratio is made, then the Total Net Leverage Ratio, the Total Net Senior Secured Leverage Ratio and the Total Net First Lien Leverage Ratio shall be calculated giving *pro forma* effect to such incurrence or repayment of Indebtedness, to the extent required, as if the same had occurred on the last day of the applicable Test Period. If any Indebtedness bears a floating rate of interest and is being given pro forma effect, the interest on such Indebtedness shall be calculated as if the rate in effect on the date such calculation is being made had been the applicable rate for the entire period (taking into account any Swap Contract applicable to such Indebtedness). Interest on a Capitalized Lease shall be deemed to accrue at an interest rate reasonably determined by a Responsible Officer of the Borrower to be the rate of interest implicit in such Capitalized Lease in accordance with GAAP. Interest on Indebtedness that may optionally be determined at an interest rate based upon a factor of a prime or similar rate, a Eurocurrency Rate, or other rate, shall be deemed to have been based upon the rate actually chosen, or, if none, then based upon such optional rate chosen as the Borrower may designate.

(e) Notwithstanding anything to the contrary herein (including in connection with any calculation made on a Pro Forma Basis), to the extent that the terms of this Agreement require (i) compliance with any financial ratio or test (including, without limitation, Section 7.11 hereof, any Total Net First Lien Leverage Ratio test, any Total Net Leverage Ratio test, any Total Net Senior Secured Leverage Ratio test) and/or any cap expressed as a percentage of Consolidated EBITDA or (ii) the absence of a Default or Event of Default (or any type of Default or Event of Default) as a condition to the consummation of any Limited Conditionality Transaction (and any transaction relating thereto, including the incurrence or repayment of Indebtedness and the making of Restricted Payments), the determination of whether the relevant condition is satisfied may be made, at the election of the Borrower, at the time of (or on the basis of the financial statements for the most recently ended Test Period at the time of) either (x) the execution of the definitive agreement with respect to such Limited Conditionality Transaction or (y) the consummation of such Limited Conditionality Transaction, in each case, after giving effect to the relevant Limited Conditionality Transaction (and any transaction relating thereto) on a Pro Forma Basis; provided that such *pro forma* effect shall be deemed to continue at all times thereafter for purposes of determining ratio-based conditions and baskets (including baskets that are determined on the basis of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries) until such Limited Condition Transaction is consummated or such definitive agreement is terminated.

(f) On and after the date pro forma effect is to be given to a Permitted Acquisition and on which the Borrower or any Restricted Subsidiary is incurring or deemed to be incurring Indebtedness, which Permitted Acquisition has yet to be consummated but for which a definitive agreement governing such Permitted Acquisition has been executed and remains in effect, such pro forma effect shall be deemed to continue at all times thereafter for purposes of determining ratio-based conditions and baskets (including baskets that are determined on the basis of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries) until such Permitted Acquisition is consummated or such definitive agreement is terminated.

Section 1.09 Currency Equivalents Generally. (a) Any amount specified in this Agreement (other than in Articles II, IX and X or as set forth in clause (b) of this Section) or any of the other Loan Documents to be in Dollars shall also include the equivalent of such amount in any currency other than Dollars, such equivalent amount to be determined at the rate of exchange quoted by the Reuters

World Currency Page for the Alternative Currency at 11:00 a.m. (London time) on such day (or, in the event such rate does not appear on any Reuters World Currency Page, by reference to such other publicly available service for displaying exchange rates as may be agreed upon by the Administrative Agent and the Borrower, or, in the absence of such agreement, such rate shall instead be the arithmetic average of the Spot Rates of exchange of the Administrative Agent in the market where its foreign currency exchange operations in respect of such currency are then being conducted, at or about 11:00 a.m. (New York City time) on such date for the purchase of Dollars for delivery two Business Days later); *provided* that the determination of any Dollar Amount shall be made in accordance with Section 2.22. Notwithstanding the foregoing, for purposes of determining compliance with Section 7.01, Section 7.02, Section 7.03, Section 7.05, Section 7.06, Section 7.08 and Section 7.13 with respect to the amount of any Lien, Investment, Indebtedness, Disposition, Restricted Payment, Affiliate transaction or prepayment, redemption, purchase, defeasance or other satisfaction of Indebtedness (a "**Subject Transaction**") in a currency other than Dollars, (i) the Dollar-equivalent amount of a Subject Transaction in a currency other than Dollars shall be calculated based on the relevant currency exchange rate in effect on the date of such Subject Transaction and, in the case of the incurrence of Indebtedness, on the date incurred, in the case of term debt, or first committed, in the case of revolving credit debt; *provided* that if such Indebtedness is incurred to extend, replace, refund, refinance, renew or defease other Indebtedness denominated in a currency other than Dollars, and such extension, refunding, replacement, refinancing, renewal or defeasance would cause the applicable Dollar-denominated restriction to be exceeded if calculated at the relevant currency exchange rate in effect on the date of such extension, replacement, refunding, refinancing, renewal or defeasance, such Dollar-denominated restriction shall be deemed not to have been exceeded so long as the principal amount of such refinancing Indebtedness does not exceed the principal amount of such Indebtedness being extended, replaced, refunded, refinanced, renewed or defeased, plus the aggregate amount of unpaid and accrued interest, premium (including tender and call premiums) thereon, defeasance costs and fees and expenses incurred (including OID, upfront fees and similar interest), in connection with such extension, replacement, refunding, refinancing, renewal or defeasance and (ii) for the avoidance of doubt, it is agreed no Default or Event of Default shall be deemed to have occurred solely as a result of changes in rates of currency exchange occurring after the time of such Subject Transaction (so long as such Subject Transaction, at the time incurred, made, acquired, committed or entered into (or declared in the case of a Restricted Payment) was permitted hereunder).

(b) For purposes of determining the Total Net Leverage Ratio, the Total Net Senior Secured Leverage Ratio and the Total Net First Lien Leverage Ratio, amounts denominated in a currency other than Dollars will be converted to Dollars at the currency exchange rates used in preparing the Borrower's financial statements corresponding to the Test Period with respect to the applicable date of determination and will, in the case of Indebtedness, reflect the currency translation effects, determined in accordance with GAAP, of Swap Contracts permitted hereunder for currency exchange risks with respect to the applicable currency in effect on the date of determination of the Dollar equivalent of such Indebtedness.

Section 1.10 Certifications. All certificates and other statements required to be made by any director, officer, employee or member of management of a Loan Party pursuant to any Loan Document are and will be made on the behalf of such Loan Party and not in such officer's, director's, employee's or member of management's individual capacity.

Section 1.11 Payment or Performance. When the payment of any obligation or the performance of any action, covenant, duty or obligation under any Loan Document is stated to be due or performance required on a day which is not a Business Day (other than as described in the definition of "Interest Period"), the date of such payment or performance shall extend to the immediately succeeding Business Day and such extension of time shall be reflected in computing interest or fees, as the case may be.

Section 1.12 Letter of Credit Amounts. Unless otherwise specified herein, the amount of a Letter of Credit at any time shall be deemed to be the Dollar equivalent of the stated amount of such Letter of Credit in effect at such time; *provided*, *however*, that except with respect to the calculation of fees pursuant to Section 2.03(i) with respect to any Letter of Credit that, by its terms or the terms of any Issuer Document related thereto, provides for one or more automatic increases in the stated amount thereof, the amount of such Letter of Credit shall be deemed to be the Dollar equivalent of the maximum stated amount of such Letter of Credit after giving effect to all such increases, whether or not such maximum stated amount is in effect at such time.

Section 1.13 Additional Alternative Currencies.

(a) The Borrower may from time to time request that Eurocurrency Rate Revolving Credit Loans be made and/or that a Letter of Credit be issued in a currency other than those specifically listed in the definition of "Alternative Currency"; *provided* that such requested currency is a lawful currency (other than Dollars) that is readily available and freely transferable and convertible into Dollars. In the case of any such request with respect to the making of Eurocurrency Rate Revolving Credit Loans, such request shall be subject to the approval of the Administrative Agent and the Revolving Credit Lenders; and in the case of any such request with respect to the issuance of a relevant Letter of Credit, such request shall be subject to the approval of the Administrative Agent and the relevant L/C Issuer.

(b) Any such request shall be made to the Administrative Agent not later than 11:00 a.m. (New York City time), twenty (20) Business Days prior to the date of the desired Credit Extension (or such other time or date as may be agreed by the Administrative Agent and, in the case of any such request pertaining to Letters of Credit, the relevant L/C Issuer, in its or their sole discretion). In the case of any such request pertaining to Eurocurrency Rate Revolving Credit Loans, the Administrative Agent shall promptly notify each relevant Revolving Credit Lender thereof; and in the case of any such request pertaining to a Letter of Credit, the Administrative Agent shall promptly notify the relevant L/C Issuer thereof. Each relevant Revolving Credit Lender (in the case of any such request pertaining to Eurocurrency Rate Revolving Credit Loans) or the relevant L/C Issuer (in the case of a request pertaining to a Letter of Credit) shall notify the Administrative Agent, not later than 11:00 a.m. (New York City time), within ten (10) Business Days after receipt of such request whether it consents, in its sole discretion, to the making of Eurocurrency Rate Revolving Credit Loans or the issuance of such Letter of Credit, as the case may be, in such requested currency.

(c) Any failure by such Revolving Credit Lender or L/C Issuer, as the case may be, to respond to such request within the time period specified in the preceding clause shall be deemed to be a refusal by such Revolving Credit Lender or L/C Issuer, as the case may be, to permit Eurocurrency Rate Revolving Credit Loans to be made or such Letter of Credit to be issued in such requested currency. If the Administrative Agent and all the relevant Revolving Credit Lenders consent to making Eurocurrency Rate Revolving Credit Loans in such requested currency, the Administrative Agent shall so notify the Borrower and such currency shall thereupon be deemed for all purposes to be an Alternative Currency hereunder for purposes of any Borrowings of Eurocurrency Rate Revolving Credit Loans. If the Administrative Agent and such L/C Issuer consent to the issuance of such Letter of Credit in such requested currency, the Administrative Agent shall so notify the Borrower and such Letter of Credit may thereafter be issued in such requested currency and such currency shall thereupon be deemed for all purposes to be an Alternative Currency hereunder; *provided* that no other L/C Issuer shall be required to issue any Letter of Credit in such Alternative Currency unless it otherwise agrees in writing. If the Administrative Agent shall fail to obtain consent to any request for an additional currency under this Section 1.13, the Administrative Agent shall promptly so notify the Borrower.

Section 1.14 Change in Currency.

(a) Each obligation of the Borrower to make a payment denominated in the national currency unit of any member state of the European Union that adopts the Euro as its lawful currency after the date hereof shall be redenominated into Euros at the time of such adoption (in accordance with the EMU Legislation). If, in relation to the currency of any such member state, the basis of accrual of interest expressed in this Agreement in respect of that currency shall be inconsistent with any convention or practice in the London interbank market for the basis of accrual of interest in respect of the Euro, such expressed basis shall be replaced by such convention or practice with effect from the date on which such member state adopts the Euro as its lawful currency; *provided* that if any Borrowing in the currency of such member state is outstanding immediately prior to such date, such replacement shall take effect, with respect to such Borrowing, at the end of the then current Interest Period.

(b) Each provision of this Agreement shall be subject to such reasonable changes of construction as the Administrative Agent may from time to time specify to be appropriate (and which are reasonably acceptable to the Borrower) to reflect the adoption of the Euro by any member state of the European Union and any relevant market conventions or practices relating to the Euro.

(c) Each provision of this Agreement also shall be subject to such reasonable changes of construction as the Administrative Agent may from time to time specify to be appropriate (and which are reasonably acceptable to the Borrower) to reflect a change in currency of any other country and any relevant market conventions or practices relating to the change in currency.

Section 1.15 Classification. For purposes of determining compliance at any time with Section 7.01, Section 7.02, Section 7.03, Section 7.05, Section 7.06, Section 7.08 and Section 7.13, in the event that any Lien, Investment, Indebtedness, Disposition, Restricted Payment, Affiliate transaction or prepayment of Indebtedness meets the criteria of more than one of the categories of transactions or items (or any combination of one or more thereof) permitted pursuant to any clause of such Section 7.01, Section 7.02, Section 7.03, Section 7.05, Section 7.06, Section 7.08 and Section 7.13, the Borrower, in its sole discretion, may classify and/or reclassify such transaction or item (or portion thereof) from time to time and will only be required to include the amount and type of such transaction (or portion thereof) in any one category.

ARTICLE II

The Commitments and Borrowings

Section 2.01 The Loans. (a) *The Term Borrowings.* Subject to the terms and conditions set forth herein, each Term Lender with an Initial Term Commitment severally agrees to make to the Borrower a single loan denominated in Dollars equal to such Lender's Initial Term Commitment on the Closing Date (each such term loan, an "**Initial Term Loan**" and, collectively, the "**Initial Term Loans**").

Amounts borrowed under this Section 2.01(a) and repaid or prepaid may not be reborrowed. Initial Term Loans may be Base Rate Loans or Eurocurrency Rate Loans, as further provided herein.

(b) *The Revolving Credit Borrowings*. Subject to the terms and conditions set forth herein, each Revolving Credit Lender severally agrees to make loans denominated in Dollars or in one or more Alternative Currencies to the Borrower from time to time, on any Business Day until the Maturity Date with respect to the Revolving Credit Facility in an aggregate Dollar Amount not to exceed at any

time outstanding the amount of such Revolving Credit Lender's Revolving Credit Commitment as then in effect; *provided* that after giving effect to any Revolving Credit Borrowing, (i) the aggregate Outstanding Amount of the Revolving Credit Loans of any Revolving Credit Lender, plus such Revolving Credit Lender's Pro Rata Share or other applicable share provided for under this Agreement of the Outstanding Amount of all L/C Obligations shall not exceed such Revolving Credit Lender's Revolving Credit Commitment as then in effect and (ii) denominated in an Alternative Currency, the aggregate Outstanding Amount of the Revolving Credit Loans and L/C Obligations denominated in an Alternative Currency shall not exceed the Alternative Currency Limit. Revolving Credit Loans may be Base Rate Loans or Eurocurrency Rate Loans, as further provided herein. All Revolving Credit Loans will be made by Revolving Credit Lenders (including both Extending Revolving Credit Lenders and Non-Extending Revolving Credit Lenders) in accordance with their Pro Rata Shares (acting as a single Class) or other applicable share provided for under this Agreement until the Maturity Date with respect to the Non-Extended Revolving Credit Commitments; thereafter, all Revolving Credit Loans will be made by the Extending Revolving Credit Lenders in accordance with their Pro Rata Shares or other applicable share provided for under this Agreement.

Section 2.02 Borrowings, Conversions and Continuations of Loans. (a) Each Term Borrowing, each Revolving Credit Borrowing, each conversion of Loans of a given Class from one Type to the other, and each continuation of Eurocurrency Rate Loans shall be made upon the Borrower's irrevocable notice to the Administrative Agent (*provided* that the notice in respect of the initial Borrowings on the Closing Date, or in connection with any Permitted Acquisition or other acquisition permitted under this Agreement, or in connection with any Borrowing or Extension, as applicable, under an Incremental Amendment, Refinancing Amendment, amendment in respect of Replacement Term Loans or Extension Offer, may be conditioned on, with respect to the funding of the initial Borrowing under this Agreement, the closing of the Transaction or, with respect to any future Borrowing under this Agreement, such Permitted Acquisition or other acquisition or any such Borrowing or Extension under an Incremental Amendment, Refinancing Amendment, amendment in respect of Replacement Term Loans or Extension Offer, as applicable), which may be given by telephone. Each such notice must be received by the Administrative Agent (i) not later than 12:00 p.m. (New York City time) three (3) Business Days prior to the requested date of any Borrowing or continuation of Eurocurrency Rate Loans denominated in Dollars or any conversion of Base Rate Loans to Eurocurrency Rate Loans, (ii) not later than 10:00 a.m. (London time) three (3) Business Days (or five (5) Business Days in the case of a Special Notice Currency) prior to the requested date of any Borrowing or continuation of Eurocurrency Rate Loans denominated in an Alternative Currency (other than Euro Same Day Loans), (iii) not later than 12:00 p.m. (New York City time) on the requested date of any Borrowing of Base Rate Loans or conversion of any Eurocurrency Rate Loans to Base Rate Loans or 10:00 a.m. (London time) on the requested date of any Borrowing of Euro Same Day Loans, and (iv) one (1) Business Day prior to the Closing Date with respect to any Loans incurred on the Closing Date. Each telephonic notice by the Borrower pursuant to this Section 2.02(a) must be confirmed promptly by delivery to the Administrative Agent of a written Loan Notice, appropriately completed and signed by a Responsible Officer of the Borrower. Except as provided in Sections 2.14 and 2.15, each Borrowing of, conversion to or continuation of Eurocurrency Rate Loans shall be in a principal Dollar Amount of $100,000 or a whole multiple of $100,000 in excess thereof in the case of Term Loans or Revolving Credit Loans. Except as provided in Sections 2.03(c), 2.14 and 2.15, each Borrowing of or conversion to Base Rate Loans shall be in a principal Dollar Amount of $100,000 or a whole multiple of $100,000 in excess thereof. Each Loan Notice (whether telephonic or written) shall specify (i) the Class of the Borrowing requested and whether the Borrower is requesting the making of new Loans of the respective Class, a conversion of Term Loans or Revolving Credit Loans (of a given Class) from one Type to the other, or a continuation of Eurocurrency Rate Loans, (ii) the requested date of the Borrowing, conversion or continuation, as the case may be (which shall be a Business Day), (iii) the principal amount of Loans to be borrowed, converted or continued, (iv) in the case of Revolving Credit Loans, the currency in which the Revolving Credit Loans to be borrowed are to be

denominated, (v) the Type of Loans to be borrowed or to which existing Term Loans or Revolving Credit Loans are to be converted and (vi) if applicable, the duration of the Interest Period with respect thereto. If, with respect to Loans denominated in Dollars, the Borrower fails to specify a Type of Loan in a Loan Notice or fails to give a timely notice requesting a conversion or continuation, then the applicable Term Loans or Revolving Credit Loans shall be made as, or converted to, Base Rate Loans (unless the Loan being continued is a Eurocurrency Rate Loan, in which case it shall be continued as a Eurocurrency Rate Loan with an Interest Period of one (1) month). If, with respect to any Eurocurrency Rate Loans denominated in an Alternative Currency, the Borrower fails to specify a Type of Loan in a Loan Notice or if the Borrower fails to give a timely notice requesting a conversion or continuation, then the applicable tranche of Term Loans or Revolving Credit Loans shall be made as, or converted to, Eurocurrency Rate Loans with an Interest Period of one (1) month. Any such automatic conversion to Base Rate Loans or continuation pursuant to the immediately preceding two sentences shall be effective as of the last day of the Interest Period then in effect with respect to the applicable Eurocurrency Rate Loans. If the Borrower requests a Borrowing of, conversion to, or continuation of Eurocurrency Rate Loans in any such Loan Notice, but fails to specify an Interest Period (or fails to give a timely notice requesting a continuation of Eurocurrency Rate Loans denominated in an Alternative Currency), it will be deemed to have specified an Interest Period of one (1) month. If no currency is specified, the requested Borrowing shall be in Dollars.

(b) Following receipt of a Loan Notice, the Administrative Agent shall promptly notify each Lender of the amount of its Pro Rata Share or other applicable share provided for under this Agreement of the applicable Class of Loans, and if no timely notice of a conversion or continuation is provided by the Borrower, the Administrative Agent shall notify each Lender of the details of any automatic conversion to Base Rate Loans or continuation of Loans described in Section 2.02(a). In the case of each Borrowing, each Appropriate Lender shall make the amount of its Loan available to the Administrative Agent in Same Day Funds at the Administrative Agent's Office not later than 1:00 p.m. (New York City time), in the case of any Loan denominated in Dollars or in an Alternative Currency (other than Euros) and not later than 2:00 p.m. (New York City time) in the case of any Loan denominated in Euros, in each case on the Business Day specified in the applicable Loan Notice. With respect to any Euro Same Day Loan, (i) at the written request of any Revolving Credit Lender that is not a Defaulting Lender, the Administrative Agent may, but shall not be obligated to, fund such Revolving Credit Lender's Pro Rata Share (or other applicable share hereunder) of such Euro Same Day Loans to the Borrower on behalf of such Revolving Credit Lender (the "**Fronted Amount**"), (ii) such Revolving Credit Lender shall be obligated to reimburse the Administrative Agent for the Fronted Amount of such Pro Rata Share (or other applicable share hereunder) not later than 1:00 p.m. (New York City time) three (3) Business Days after the date of funding of such Fronted Amount and (iii) if the Fronted Amount is not so reimbursed in full upon written notice by the Administrative Agent to the Borrower that such Revolving Credit Lender has failed to make such reimbursement as described in clause (ii) above, the Administrative Agent shall be entitled, at the Borrower's option, to (A) recover the Fronted Amount within one Business Day of written demand (or if such written demand is made after 11:00 a.m. (New York City time) on a Business Day, within two Business Days of written demand) from the Borrower or (B) require the Borrower to cause a Revolving Credit Borrowing of Base Rate Loans equal to the Dollar Amount (calculated pursuant to Section 2.22(a)) sufficient to repay the Administrative Agent the Fronted Amount (plus accrued and unpaid interest) on the date of repayment by giving written notice to the Administrative Agent not later than 12:00 p.m. (New York City time) on the Business Day immediately following such written demand (or if such written demand is made after 11:00 a.m. (New York City time) on a Business Day, on the second Business Day following such written demand), which Dollar Amount shall be used to repay the Administrative Agent the Fronted Amount (and any accrued and unpaid interest) on the date of receipt of such Base Rate Loans (with any repayment of the Fronted Amount as described in clause (A) or (B) above to constitute a voluntary prepayment pursuant to Section 2.05(a) on a non pro rata basis of the applicable Euro Same Day Loan made by the Revolving Credit Lender which failed to make such reimbursement as described in clause (ii) above, and the minimum prepayment

amounts, notice requirements and prepayment cutoff times shall be disregarded for such purposes); *provided* that any minimum borrowing requirements for Base Rate Loans under Section 2.02 shall be disregarded for purposes of this clause (b)(iii)(B). Euro Same Day Loans shall be deemed to be included in the calculation of "Outstanding Amount." Upon satisfaction of the applicable conditions set forth in Section 4.02 (or, if such Borrowing is the initial Credit Extension, Section 4.01), the Administrative Agent shall make all funds so received available to the Borrower in like funds as received by the Administrative Agent either by (i) crediting the account of the Borrower on the books of the Administrative Agent with the amount of such funds or (ii) wire transfer of such funds, in each case in accordance with instructions provided to (and reasonably acceptable to) the Administrative Agent by the Borrower; *provided* that if, on the date the Loan Notice with respect to such Borrowing is given by the Borrower, there are L/C Borrowings Loans outstanding, then the proceeds of such Borrowing shall be applied, first, to the payment in full of any such L/C Borrowings, and second, to the Borrower as provided above.

(c) Except as otherwise provided herein, a Eurocurrency Rate Loan may be continued or converted only on the last day of an Interest Period for such Eurocurrency Rate Loan unless the Borrower pays the amount due, if any, under Section 3.05 in connection therewith. Upon the occurrence and during the continuation of an Event of Default, the Required Lenders may require that no Loans denominated in Dollars may be converted to or continued as Eurocurrency Rate Loans.

(d) The Administrative Agent shall promptly notify the Borrower and the Lenders of the interest rate applicable to any Interest Period for Eurocurrency Rate Loans upon determination of such interest rate. The determination of the Eurocurrency Rate by the Administrative Agent shall be conclusive in the absence of manifest error. At any time when Base Rate Loans are outstanding, the Administrative Agent shall notify the Borrower and the Lenders of any change in the "prime rate" used in determining the Base Rate promptly following the public announcement of such change.

(e) After giving effect to all Term Borrowings, all Revolving Credit Borrowings, all conversions of Term Loans or Revolving Credit Loans of a given Class from one Type to the other, and all continuations of Term Loans or Revolving Credit Loans of a given Class as the same Type, there shall not be more than ten (10) Interest Periods in effect unless otherwise agreed between the Borrower and the Administrative Agent; *provided* that after the establishment of any new Class of Loans pursuant to an Incremental Amendment, a Refinancing Amendment, an Extension Amendment or an amendment to this Agreement in respect of Replacement Term Loans, the number of Interest Periods otherwise permitted by this Section 2.02(e) shall increase by three (3) Interest Periods for each applicable Class so established.

(f) The failure of any Lender to make the Loan to be made by it as part of any Borrowing shall not relieve any other Lender of its obligation, if any, hereunder to make its Loan on the date of such Borrowing, but no Lender shall be responsible for the failure of any other Lender to make the Loan to be made by such other Lender on the date of any Borrowing.

(g) Unless the Administrative Agent shall have received notice from a Lender prior to the date of any Borrowing that such Lender will not make available to the Administrative Agent such Lender's Pro Rata Share or other applicable share provided for under this Agreement of such Borrowing, the Administrative Agent may assume that such Lender has made such Pro Rata Share or other applicable share provided for under this Agreement available to the Administrative Agent on the date of such Borrowing in accordance with clause (b) above, and the Administrative Agent may, in reliance upon such assumption, make available to the Borrower on such date a corresponding amount. If the Administrative Agent shall have so made funds available, then, to the extent that such Lender shall not have made such portion available to the Administrative Agent, each of such Lender and the Borrower severally agrees to repay to the Administrative Agent forthwith on demand such corresponding amount together with interest

thereon, for each day from the date such amount is made available to the Borrower until the date such amount is repaid to the Administrative Agent at (i) in the case of the Borrower, the interest rate applicable at the time to the Loans comprising such Borrowing and (ii) in the case of such Lender, the Overnight Rate plus any administrative, processing, or similar fees customarily charged by the Administrative Agent in accordance with the foregoing. A certificate of the Administrative Agent submitted to any Lender with respect to any amounts owing under this Section 2.02(g) shall be conclusive in the absence of manifest error. If the Borrower and such Lender shall pay such interest to the Administrative Agent for the same or an overlapping period, the Administrative Agent shall promptly remit to the Borrower the amount of such interest paid by the Borrower for such period. If such Lender pays its share of the applicable Borrowing to the Administrative Agent, then the amount so paid shall constitute such Lender's Loan included in such Borrowing. Any payment by the Borrower shall be without prejudice to any claim the Borrower may have against a Lender that shall have failed to make such payment to the Administrative Agent.

Section 2.03 Letters of Credit.

(a) The Letter of Credit Commitment. (i) Subject to the terms and conditions set forth herein, (A) each L/C Issuer agrees, in reliance upon the agreements of the other Revolving Credit Lenders and the Borrower set forth in this Section 2.03 and elsewhere in the Loan Documents, (x) from time to time on any Business Day during the period from the Closing Date until the Letter of Credit Expiration Date, to issue Letters of Credit denominated in Dollars or one or more Alternative Currencies for the account of the Borrower (*provided* that any Letter of Credit may be for the account of any Subsidiary of the Borrower so long as the Borrower is the primary obligor in respect of all Obligations arising under or in respect of such Letter of Credit) and to amend or extend Letters of Credit previously issued by it, in accordance with Section 2.03(b), and (y) to honor drawings under the Letters of Credit in accordance with the respective terms and conditions of such Letters of Credit and (B) the Revolving Credit Lenders severally agree to participate in Letters of Credit issued pursuant to this Section 2.03; *provided* that L/C Issuers shall not be obligated to make any L/C Credit Extensions with respect to any Letter of Credit, and no Revolving Credit Lender shall be obligated to participate in any Letter of Credit if as of the date of the applicable L/C Credit Extension and after giving effect thereto, (w) the Revolving Credit Exposure of any Revolving Credit Lender would exceed such Lender's Revolving Credit Commitments, (x) the Outstanding Amount of all L/C Obligations would exceed the Letter of Credit Sublimit, (y) with respect to any Letter of Credit Extension to be made in an Alternative Currency, the aggregate Outstanding Amount of the Revolving Credit Loans and L/C Obligations denominated in an Alternative Currency would exceed the Alternative Currency Limit or (z) the Letter of Credit giving rise to such L/C Credit Extension has a stated expiry date after the Maturity Date with respect to Non-Extended Revolving Credit Commitments and the aggregate stated amount of all Letters of Credit having stated expiry dates after such Maturity Date, when added to the aggregate Revolving Credit Exposure of all Extending Revolving Credit Lenders (exclusive of L/C Obligations) as of such date, would exceed the aggregate amount of the Extended Revolving Credit Commitments then in effect; *provided*, further that Barclays Bank PLC shall only be required to issue standby Letters of Credit. Within the foregoing limits, and subject to the terms and conditions hereof, the Borrower's ability to obtain Letters of Credit shall be fully revolving, and accordingly the Borrower may, during the foregoing period, obtain Letters of Credit to replace Letters of Credit that have expired or that have been drawn upon and reimbursed. Each Appropriate Lender's risk participation in each outstanding Letter of Credit shall be automatically adjusted on each Maturity Date for any of the Revolving Credit Facilities as, and to the extent, provided in Section 2.06(d).

(ii) **[Reserved]**.

(iii) An L/C Issuer shall be under no obligation to issue, amend, extend, or increase any Letter of Credit if:

(1) any order, judgment or decree of any Governmental Authority or arbitrator shall by its terms purport to enjoin or restrain such L/C Issuer from issuing such Letter of Credit, or any Law applicable to such L/C Issuer or any directive (whether or not having the force of law) from any Governmental Authority with jurisdiction over such L/C Issuer shall prohibit, or direct that such L/C Issuer refrain from, the issuance of letters of credit generally or such Letter of Credit in particular or shall impose upon such L/C Issuer with respect to such Letter of Credit any restriction, reserve or capital requirement (for which such L/C Issuer is not otherwise compensated hereunder) not in effect on the Closing Date, or shall impose upon such L/C Issuer any unreimbursed loss, cost or expense which was not applicable on the Closing Date (for which such L/C Issuer is not otherwise compensated hereunder) and which, in each case, such L/C Issuer in good faith deems material to it;

(2) subject to Section 2.03(b)(iii), the expiry date of such requested Letter of Credit would occur (i) in the case of standby Letters of Credit, more than twelve months after the date of issuance (or, in the case of any Auto-Extension Letter of Credit or any other Letter of Credit that has been extended in accordance with this Section 2.03, the last renewal thereof) and (ii) in the case of a commercial Letter of Credit, more than 180 days after the date of issuance or (or, in the case of any Auto-Extension Letter of Credit or any other Letter of Credit that has been extended in accordance with this Section 2.03, the last renewal thereof), unless, in each case, the relevant L/C Issuer has approved such expiry date;

(3) the expiry date of such requested Letter of Credit would occur after the Letter of Credit Expiration Date, unless (1) all the Revolving Credit Lenders and the applicable L/C Issuer have approved such expiry date or (2) the Outstanding Amount of L/C Obligations in respect of such requested Letter of Credit has been Cash Collateralized;

(4) the issuance of such Letter of Credit would violate (i) any Laws binding upon such L/C Issuer or (ii) one or more policies of such L/C Issuer now or hereafter in effect and applicable to letters of credit generally;

(5) except as otherwise agreed by the Administrative Agent and such L/C Issuer, such Letter of Credit is to be denominated in a currency other than Dollars or an Alternative Currency;

(6) such Letter of Credit is in an initial amount less than $100,000 (or such lesser amount as is acceptable to the applicable L/C Issuer in its sole discretion); or

(7) any Revolving Credit Lender is a Defaulting Lender at such time, unless such L/C Issuer has entered into arrangements reasonably satisfactory to it and the Borrower to eliminate such L/C Issuer's actual or potential Fronting Exposure , including by reallocation of the Defaulting Lender's Pro Rata Share of the outstanding L/C Obligations pursuant to Section 2.19 or by Cash Collateralizing such Defaulting Lender's Pro Rata Share or other applicable share provided for under this Agreement of the L/C Obligations.

(iv) An L/C Issuer shall be under no obligation to amend or extend any Letter of Credit if (A) such L/C Issuer would have no obligation at such time to issue such Letter of Credit in its amended form under the terms hereof, or (B) the beneficiary of such Letter of Credit does not accept the proposed amendment to such Letter of Credit.

(b) Procedures for Issuance and Amendment of Letters of Credit; Auto-Extension Letters of Credit. (i) Each Letter of Credit shall be issued, extended or amended, as the case may be, upon the request of the Borrower delivered to an L/C Issuer (with a copy to the Administrative Agent) in the form of a Letter of Credit Application, appropriately completed and signed by a Responsible Officer of the Borrower. Such Letter of Credit Application must be received by the relevant L/C Issuer and the Administrative Agent not later than 12:30 p.m. (New York City time) at least three (3) Business Days prior to the proposed issuance date or date of amendment or extension, as the case may be; or, in each case, such later date and time as the relevant L/C Issuer may agree in a particular instance in its sole discretion. In the case of a request for an initial issuance of a Letter of Credit, such Letter of Credit Application shall specify in form and detail reasonably satisfactory to the relevant L/C Issuer (a) the proposed issuance date of the requested Letter of Credit (which shall be a Business Day), (b) the amount thereof, (c) the expiry date thereof, (d) the name and address of the beneficiary thereof and the account party thereto (if not the Borrower), (e) the documents to be presented by such beneficiary in case of any drawing thereunder, (f) the full text of any certificate to be presented by such beneficiary in case of any drawing thereunder, (g) the currency in which the requested Letter of Credit will be denominated and (h) such other matters (including the form of the requested Letter of Credit) as the relevant L/C Issuer may reasonably request. In the case of a request for an amendment or extension of any outstanding Letter of Credit, such Letter of Credit Application shall specify in form and detail reasonably satisfactory to the relevant L/C Issuer (1) the Letter of Credit to be amended or extended, (2) the proposed date of amendment or extension thereof (which shall be a Business Day), (3) the nature of the proposed amendment or the length of extension and (4) such other matters as the relevant L/C Issuer may reasonably request.

(ii) Promptly after receipt of any Letter of Credit Application, the relevant L/C Issuer will confirm with the Administrative Agent (by telephone or in writing) that the Administrative Agent has received a copy of such Letter of Credit Application from the Borrower and, if not, such L/C Issuer will provide the Administrative Agent with a copy thereof. Unless the relevant L/C Issuer has received written notice from any Revolving Credit Lender, the Administrative Agent or any Loan Party, at least one Business Day prior to the requested date of issuance or amendment of the applicable Letter of Credit, that one or more applicable conditions contained in Article IV shall not then be satisfied, then, subject to the terms and conditions hereof, such L/C Issuer shall, on the requested date, issue a Letter of Credit for the account of the Borrower (or the applicable Subsidiary) or enter into the applicable amendment or extension, as the case may be. Each Revolving Credit Lender hereby irrevocably and unconditionally agrees that, immediately upon the issuance of each Letter of Credit, each Revolving Credit Lender shall be deemed to have purchased from the relevant L/C Issuer, and the relevant L/C Issuer shall be deemed to have sold such Revolving Credit Lender, a risk participation in such Letter of Credit in an amount equal to the product of such Revolving Credit Lender's Pro Rata Share or other applicable share provided for under this Agreement multiplied by the amount of such Letter of Credit.

(iii) If the Borrower so requests in any applicable Letter of Credit Application, the relevant L/C Issuer shall agree to issue a Letter of Credit that has automatic extension provisions (each, an "**Auto-Extension Letter of Credit**"); *provided* that any such Auto-Extension Letter of Credit must permit the relevant L/C Issuer to prevent any such extension at least once in each twelve month period (commencing with the date of issuance of such Letter of Credit) by giving prior notice to the beneficiary thereof not later than a day (the "**Non-Extension Notice Date**") in each such twelve month period to be agreed upon by the relevant L/C Issuer and the Borrower at the time such Letter of Credit is issued. Once an Auto-Extension Letter of Credit has been issued, unless otherwise directed by the relevant L/C Issuer, the Borrower shall not be required to make a specific request to the relevant L/C Issuer for any such extension. Once an Auto-Extension Letter of Credit has been issued, the applicable Lenders shall be deemed to have authorized (but may not require) the relevant L/C Issuer

to permit the extension of such Letter of Credit at any time for a period of one year from the date of expiry in effect prior to such extension but not to an expiry date that is later than the Letter of Credit Expiration Date, unless the Outstanding Amount of L/C Obligations in respect of such requested Letter of Credit are Cash Collateralized not later than the Letter of Credit Expiration Date; *provided* that the relevant L/C Issuer shall not permit any such extension if (A) the relevant L/C Issuer has determined that it would not be permitted or would have no obligation at such time to issue such Letter of Credit in its extended form under the terms hereof (by reason of the provisions of Section 2.03(a)(iii) or otherwise), or (B) it has received notice (which may be by telephone or in writing) on or before the day that is five (5) Business Days before the Non-Extension Notice Date from the Administrative Agent, any Revolving Credit Lender, or the Borrower that one or more of the applicable conditions specified in Section 4.02 is not then satisfied.

(iv) Promptly after its delivery of any Letter of Credit or any amendment or extension to a Letter of Credit to an advising bank with respect thereto or to the beneficiary thereof, the relevant L/C Issuer will also deliver to the Borrower and the Administrative Agent a true and complete copy of such Letter of Credit, amendment or extension.

(c) Drawings and Reimbursements; Funding of Participations. (i) Upon receipt from the beneficiary of any Letter of Credit of any request for a drawing under such Letter of Credit, the relevant L/C Issuer shall promptly notify the Borrower and the Administrative Agent thereof. Not later than (1) 2:00 p.m. (New York City time) on the second Business Day immediately following any payment by an L/C Issuer under a Letter of Credit if the Borrower receives notice by 11:00 a.m. (New York City time) on the date of payment and (2) if the foregoing clause (1) does not apply, then on the third Business Day following such notice (each such date, an "**Honor Date**"), the Borrower shall (A) in the case of a Letter of Credit denominated in an Alternative Currency, reimburse such L/C Issuer in such Alternative Currency unless (I) such L/C Issuer (at its option) shall have specified in such notice that it will require reimbursement in Dollars or (II) in the absence of any such requirement for reimbursement in Dollars, the Borrower shall have notified such L/C Issuer promptly following receipt of the notice of drawing that the Borrower will reimburse such L/C Issuer in Dollars and (B) in the case of Letter of Credit denominated in Dollars, reimburse such L/C Issuer in Dollars, in each case, through the Administrative Agent in an amount equal to the amount of such drawing (or, in the case of any such reimbursement in Dollars of a drawing under a Letter of Credit denominated in an Alternative Currency, the Dollar Amount that the applicable L/C Issuer shall have notified to the Borrower in such notice in respect of the amount of the drawing), with interest on the amount so paid or disbursed by such L/C Issuer, to the extent not reimbursed on the date of such payment or disbursement, at a per annum rate equal to the Base Rate plus the Applicable Rate applicable to Base Rate Loans that are Revolving Credit Loans, accruing from the date of such payment or disbursement is made by such L/C Issuer until the date reimbursement is due from (or paid by) the Borrower and thereafter (until reimbursement in full by the Borrower) at the rate provided below in clause (iii). If the Borrower fails to so reimburse such L/C Issuer by such time, the Administrative Agent shall promptly notify each Appropriate Lender of the Honor Date, the amount of the unreimbursed drawing (the "**Unreimbursed Amount**"), and the amount of such Appropriate Lender's Pro Rata Share thereof or other applicable share provided for under this Agreement. In such event, (x) in the case of an Unreimbursed Amount denominated in Dollars, the Borrower shall be deemed to have requested a Revolving Credit Borrowing of Base Rate Loans and (y) in the case of an Unreimbursed Amount denominated in an Alternative Currency, the Borrower shall be deemed to have requested a Revolving Credit Borrowing of Eurocurrency Rate Loans in such Alternative Currency, in each case to be disbursed on the Honor Date in an amount equal to the Unreimbursed Amount plus any accrued interest thereon, without regard to the minimum and multiples specified in Section 2.02 for the principal amount of Eurocurrency Rate Loans or Base Rate Loans but subject to the amount of the unutilized portion of the Revolving Credit Commitments of the Appropriate Lenders and subject to the conditions set forth in Section 4.02 (other than the delivery of a Loan Notice). Any notice given by an

L/C Issuer or the Administrative Agent pursuant to this Section 2.03(c)(i) may be given by telephone if promptly confirmed in writing; *provided* that the lack of such a prompt confirmation shall not affect the conclusiveness or binding effect of such notice.

(ii) Each Appropriate Lender (including any such Lender acting as an L/C Issuer) shall upon any notice pursuant to Section 2.03(c)(i) make funds available to the Administrative Agent for the account of the relevant L/C Issuer, in Dollars or the applicable Alternative Currency, at the Administrative Agent's Office for payments in an amount equal to its Pro Rata Share or other applicable share provided for under this Agreement of any Unreimbursed Amount not later than 1:00 p.m. (New York City time) on the Business Day specified in such notice by the Administrative Agent (which may be the same Business Day such notice is provided if such notice is provided prior to 12:00 noon (New York City time)), whereupon, subject to the provisions of Section 2.03(c)(iii), each Appropriate Lender that so makes funds available shall be deemed to have made a Revolving Credit Loan in the form of (x) in the case of a Letter of Credit denominated in Dollars, a Base Rate Loan to the Borrower in such amount and (y) in the case of a Letter of Credit denominated in an Alternative Currency, a Eurocurrency Rate Loan to the Borrower in such amount in such Alternative Currency. The Administrative Agent shall promptly remit the funds so received to the relevant L/C Issuer.

(iii) With respect to any Unreimbursed Amount in respect of a Letter of Credit that is not fully refinanced by a Revolving Credit Borrowing of Base Rate Loans for Letters of Credit denominated in Dollars or Eurocurrency Rate Loans for Letters of Credit denominated in an Alternative Currency, as the case may be, because the conditions set forth in Section 4.02 cannot be satisfied or for any other reason, the Borrower shall be deemed to have incurred from the relevant L/C Issuer an L/C Borrowing in the amount of the Unreimbursed Amount that is not so refinanced, which L/C Borrowing shall be due and payable on demand (together with interest) and shall bear interest at the Default Rate. In such event, each Revolving Credit Lender's payment to the Administrative Agent for the account of the relevant L/C Issuer pursuant to Section 2.03(c)(ii) shall be deemed payment in respect of its participation in such L/C Borrowing and shall constitute an L/C Advance from such Lender in satisfaction of its participation obligation under this Section 2.03.

(iv) Until each Appropriate Lender funds its Revolving Credit Loan or L/C Advance pursuant to this Section 2.03(c) to reimburse the relevant L/C Issuer for any amount drawn under any Letter of Credit, interest in respect of such Lender's Pro Rata Share or other applicable share provided for under this Agreement of such amount shall be solely for the account of the relevant L/C Issuer.

(v) Each Revolving Credit Lender's obligation to make Revolving Credit Loans or L/C Advances to reimburse an L/C Issuer for amounts drawn under Letters of Credit, as contemplated by this Section 2.03(c), shall be absolute and unconditional and shall not be affected by any circumstance, including (A) any setoff, counterclaim, recoupment, defense or other right which such Lender may have against the relevant L/C Issuer, the Borrower or any other Person for any reason whatsoever, (B) the occurrence or continuance of a Default an Event of Default or the failure to satisfy any of the other conditions specified in Article IV; (C) any adverse change in the condition (financial or otherwise) of the Loan Parties; (D) any breach of this Agreement or any other Loan Document by the Borrower, any other Loan Party or any other L/C Issuer or (E) any other occurrence, event or condition, whether or not similar to any of the foregoing; *provided* that each Revolving Credit Lender's obligation to make Revolving Credit Loans pursuant to this Section 2.03(c) (but not the obligation to make L/C Advances)is subject to the conditions set forth in Section 4.02 (other than delivery by the Borrower of a Loan Notice). No making of an L/C Advance shall relieve or otherwise impair the obligation of the Borrower to reimburse the relevant L/C Issuer for the amount of any payment made by such L/C Issuer under any Letter of Credit, together with interest as provided herein.

(vi) If any Revolving Credit Lender fails to make available to the Administrative Agent for the account of the relevant L/C Issuer any amount required to be paid by such Lender pursuant to the foregoing provisions of this Section 2.03(c) by the time specified in Section 2.03(c)(ii), such L/C Issuer shall be entitled to recover from such Lender (acting through the Administrative Agent), on demand, such amount with interest thereon for the period from the date such payment is required to the date on which such payment is immediately available to such L/C Issuer at a rate per annum equal to the applicable Overnight Rate from time to time in effect, plus any administrative, processing or similar fees customarily charged by such L/C Issuer in connection with the foregoing. If such Lender pays such amount (with interest and fees as aforesaid), the amount so paid shall constitute such Lender's Revolving Credit Loan included in the relevant Revolving Credit Borrowing or L/C Advance in respect of the relevant L/C Borrowing, as the case may be. A certificate of the relevant L/C Issuer submitted to any Revolving Credit Lender (through the Administrative Agent) with respect to any amounts owing under this Section 2.03(c)(vi) shall be conclusive absent manifest error.

(d) Repayment of Participations. (i) If, at any time after an L/C Issuer has made a payment under any Letter of Credit and has received from any Revolving Credit Lender such Lender's L/C Advance in respect of such payment in accordance with Section 2.03(c), the Administrative Agent receives for the account of such L/C Issuer any payment in respect of the related Unreimbursed Amount or interest thereon (whether directly from the Borrower or otherwise, including proceeds of Cash Collateral applied thereto by the Administrative Agent), the Administrative Agent will distribute to such Lender its Pro Rata Share or other applicable share provided for under this Agreement thereof (appropriately adjusted, in the case of interest payments, to reflect the period of time during which such Lender's L/C Advance was outstanding and any differential in the interest payable to such Lender attributable to the Applicable Rate for such Lender's L/C Advance as an Extending Revolving Credit Lender or a Non-Extending Revolving Credit Lender, as applicable) in the same funds as those received by the Administrative Agent.

(ii) If any payment received by the Administrative Agent for the account of an L/C Issuer pursuant to Section 2.03(c)(i) is required to be returned under any of the circumstances described in Section 10.06 (including pursuant to any settlement entered into by such L/C Issuer in its discretion), each Appropriate Lender shall pay to the Administrative Agent for the account of such L/C Issuer its Pro Rata Share or other applicable share provided for under this Agreement thereof on demand of the Administrative Agent, plus interest thereon from the date of such demand to the date such amount is returned by such Lender, at a rate per annum equal to the applicable Overnight Rate from time to time in effect. The obligations of the Lenders under this clause (d)(ii) shall survive the payment in full of the Obligations and the termination of this Agreement.

(e) Obligations Absolute. The obligation of the Borrower to reimburse the relevant L/C Issuer for each drawing under each Letter of Credit issued by it and to repay each L/C Borrowing shall be absolute, unconditional and irrevocable, and shall be paid strictly in accordance with the terms of this Agreement under all circumstances, including the following:

(i) any lack of validity or enforceability of such Letter of Credit, this Agreement, or any other agreement or instrument relating hereto or thereto;

(ii) the existence of any claim, counterclaim, setoff, defense or other right that any Loan Party may have at any time against any beneficiary or any transferee of such Letter of Credit (or any Person for whom any such beneficiary or any such transferee may be acting), the relevant L/C Issuer or any other Person, whether in connection with this Agreement, the transactions contemplated hereby or by such Letter of Credit or any agreement or instrument relating thereto, or any unrelated transaction;

(iii) any draft, demand, certificate or other document presented under such Letter of Credit proving to be forged, fraudulent, invalid or insufficient in any respect or any statement therein being untrue or inaccurate in any respect; or any loss or delay in the transmission or otherwise of any document required in order to make a drawing under such Letter of Credit;

(iv) any payment by the relevant L/C Issuer under such Letter of Credit against presentation of a draft or certificate that does not strictly comply with the terms of such Letter of Credit; or any payment made by the relevant L/C Issuer under such Letter of Credit to any Person purporting to be a trustee in bankruptcy, debtor-in-possession, assignee for the benefit of creditors, liquidator, receiver or other representative of or successor to any beneficiary or any transferee of such Letter of Credit, including any arising in connection with any proceeding under any Debtor Relief Law;

(v) any exchange, release or non-perfection of any Collateral, or any release or amendment or waiver of or consent to departure from the Guaranty or any other guarantee, for all or any of the Obligations of any Loan Party in respect of such Letter of Credit;

(vi) any adverse change in the relevant exchange rates or in the availability of the relevant Alternative Currency to the Borrower and the Restricted Subsidiaries or in the relevant currency markets generally; or

(vii) any other circumstance or happening whatsoever, whether or not similar to any of the foregoing, including any other circumstance that might otherwise constitute a defense available to, or a discharge of, any Loan Party;

provided that the foregoing shall not excuse any L/C Issuer from liability to the Borrower to the extent of any direct damages (as opposed to consequential, indirect, punitive, special or exemplary damages, claims in respect of which are waived by the Borrower to the extent permitted by applicable Laws) suffered by the Borrower that are caused by acts or omissions by such L/C Issuer's gross negligence, bad faith or willful misconduct (as determined by a court of competent jurisdiction by final and non-appealable judgment) when determining whether drafts and other documents presented under a Letter of Credit comply with the terms thereof.

(f) Role of L/C Issuers. Each Lender and the Borrower agree that, in paying any drawing under a Letter of Credit, the relevant L/C Issuer shall not have any responsibility to obtain any document (other than any draft, demand, certificate or other document expressly required by the Letter of Credit) or to ascertain or inquire as to the validity or accuracy of any such document or the authority of the Person executing or delivering any such document. None of the L/C Issuers, any Agent-Related Person nor any of the respective correspondents, participants or assignees of any L/C Issuer shall be liable to any Lender for (i) any action taken or omitted in connection herewith at the request or with the approval of the Lenders or the Required Lenders, as applicable; (ii) any action taken or omitted, except to the extent determined by a court of competent jurisdiction by a final and non-appealable judgment to have resulted from the gross negligence, bad faith or willful misconduct of such Person; or (iii) the due execution, effectiveness, validity or enforceability (or, in each case, the lack thereof) of any document or instrument related to any Letter of Credit or Issuer Document. The Borrower hereby assumes all risks of the acts or omissions of any beneficiary or transferee with respect to the use of any Letter of Credit; *provided* that this assumption is not intended to, and shall not, preclude the Borrower's pursuing such rights and remedies as it may have against the beneficiary or transferee at law or under any other agreement. None of the L/C Issuers, any Agent-Related Person, nor any of the respective correspondents,

participants or assignees of any L/C Issuer, shall be liable or responsible for any of the matters described in clauses (i) through (vii) of Section 2.03(e) or clauses (i) through (iii) of this Section 2.03(f); *provided* that anything in such clauses to the contrary notwithstanding, the Borrower may have a claim against an L/C Issuer, and such L/C Issuer may be liable to the Borrower, to the extent, but only to the extent, of any direct, as opposed to consequential, indirect, punitive, special or exemplary damages suffered by the Borrower which the Borrower proves were caused by such L/C Issuer's willful misconduct, bad faith or gross negligence or such L/C Issuer's willful or grossly negligent failure to pay under any Letter of Credit after the presentation to it by the beneficiary of all the documents specified in such Letter of Credit strictly complying with the terms and conditions of such Letter of Credit (in each case, as are determined by a court of competent jurisdiction by final and non-appealable judgment). In furtherance and not in limitation of the foregoing, each L/C Issuer may accept documents that appear on their face to be in order, without responsibility for further investigation, regardless of any notice or information to the contrary, and without responsibility for the invalidity, insufficiency, or ineffectiveness of any document for any reason (including any instrument transferring or assigning or purporting to transfer or assign a Letter of Credit or any rights or benefits thereunder or proceeds thereof, in whole or in part).

(g) Cash Collateral. If (i) as of the Letter of Credit Expiration Date, any Letter of Credit for any reason remains outstanding and partially or wholly undrawn, (ii) any Event of Default occurs and is continuing and the Administrative Agent or the Required Lenders, as applicable, require the Borrower to Cash Collateralize the L/C Obligations pursuant to Section 8.02 or (iii) an Event of Default set forth under Section 8.01(f) occurs and is continuing, then the Borrower shall Cash Collateralize the then Outstanding Amount of all of its L/C Obligations (in an amount equal to such Outstanding Amount determined as of the date of such Event of Default or the Letter of Credit Expiration Date, as the case may be), and shall do so not later than 3:00 p.m., New York City time, on (x) in the case of the immediately preceding clauses (i) and (ii), (1) the Business Day that the Borrower receives notice thereof, if such notice is received on such day prior to 9:00 a.m., New York City time, or (2) if clause (1) above does not apply, the Business Day immediately following the day that the Borrower receives such notice and (y) in the case of the immediately preceding clause (iii), the Business Day on which an Event of Default set forth under Section 8.01(f) occurs or, if such day is not a Business Day, the Business Day immediately succeeding such day. If at any time the Administrative Agent determines that any funds held as Cash Collateral are subject to any prior right or claim of any Person other than the Administrative Agent (on behalf of the Secured Parties) or that the total amount of such funds is less than the aggregate Outstanding Amount of all L/C Obligations, the Borrower will, forthwith upon demand by the Administrative Agent, pay to the Administrative Agent, as additional funds to be deposited and held in the deposit accounts at the Administrative Agent as aforesaid, an amount equal to the excess of (a) such aggregate Outstanding Amount over (b) the total amount of funds, if any, then held as Cash Collateral that the Administrative Agent reasonably determines to be free and clear of any such right and claim. Upon the drawing of any Letter of Credit for which funds are on deposit as Cash Collateral, such funds shall be applied, to the extent permitted under applicable Laws, to reimburse the relevant L/C Issuer. To the extent the amount of any Cash Collateral exceeds the then Outstanding Amount of such L/C Obligations and so long as no Event of Default has occurred and is continuing, the excess shall be refunded to the Borrower. To the extent any Event of Default giving rise to the requirement to Cash Collateralize any Letter of Credit pursuant to this Section 2.03(g) is cured or otherwise waived, then so long as no other Event of Default has occurred and is continuing, all Cash Collateral pledged to Cash Collateralize such Letter of Credit shall be refunded to the Borrower. If at any time the Administrative Agent determines that Cash Collateral is subject to any right or claim of any Person other than the Administrative Agent as herein provided or any claims of the depositary bank holding such Cash Collateral arising by operation of law, or that the total amount of such Cash Collateral is less than the applicable Fronting Exposure and other obligations secured thereby, the Borrower or the relevant Defaulting Lenders will, promptly upon demand by the Administrative Agent, pay or provide to the Administrative Agent additional Cash Collateral in an amount sufficient to eliminate such deficiency.

(h) Applicability of ISP and UCP. Unless otherwise expressly agreed by the L/C Issuer and the Borrower when a Letter of Credit is issued, (i) the rules of the ISP shall apply to each standby Letter of Credit, and (ii) the rules of the Uniform Customs and Practice for documentary Letters of Credit, as most recently published by the International Chamber of Commerce in Publication 600 (or such later version thereof as in effect at the time of issuance of such Letter of Credit (the "**UCP**") shall apply to each commercial Letter of Credit.

(i) Letter of Credit Fees. The Borrower shall pay to the Administrative Agent (i) for any period prior to the date of any Extension Amendment, for the account of each Revolving Credit Lender in accordance with its Pro Rata Share (if any) or other applicable share provided for under this Agreement, a Letter of Credit fee for each Letter of Credit issued pursuant to this Agreement equal to the Applicable Rate then in effect for the applicable Class or Classes of the respective Revolving Credit Lender's Revolving Credit Commitments times the daily maximum Dollar Amount then available to be drawn under such Letter of Credit (whether or not such maximum amount is then in effect under such Letter of Credit, if such maximum amount increases periodically pursuant to the terms of such Letter of Credit) and (ii) for any period commencing on and after the date of any Extension Amendment, for the account of each Non-Extending Revolving Credit Lender and each Extending Revolving Credit Lender in accordance with its Other Allocable Share of the Non-Extended Revolving Credit Commitments and the Extended Revolving Credit Commitments, respectively, that result pursuant to such Extension Amendment, a Letter of Credit fee for each Letter of Credit issued pursuant to this Agreement equal to the Applicable Rate in respect of such Non-Extended Revolving Credit Commitments or Extended Revolving Credit Commitments, as the case may be, times the Allocable Revolving Share of the Non-Extending Revolving Credit Lenders or the Extending Revolving Credit Lenders, as the case may be, of the daily maximum Dollar Amount then available to be drawn under such Letter of Credit (whether or not such maximum amount is then in effect under such Letter of Credit, if such maximum amount increases periodically pursuant to the terms of such Letter of Credit). Such letter of credit fees shall be computed on a quarterly basis in arrears. Such Letter of Credit fees shall be due and payable in Dollars on the first Business Day after the end of each March, June, September and December, commencing with the first such date to occur after the issuance of such Letter of Credit, on the Maturity Date for the Non-Extended Revolving Credit Commitments (with respect to the fees accrued for the accounts on the Non-Extending Revolving Credit Lenders), on any other relevant Maturity Date (for any applicable Revolving Credit Commitments then expiring), or the Letter of Credit Expiration Date and thereafter on demand. If there is any change in the Applicable Rate during any quarter, the daily maximum amount of each Letter of Credit shall be computed and multiplied by the Applicable Rate separately for each period during such quarter that such Applicable Rate was in effect.

(j) Fronting Fee and Documentary and Processing Charges Payable to L/C Issuers. The Borrower shall pay directly to each L/C Issuer for its own account a fronting fee with respect to each Letter of Credit issued by it equal to 0.125% per annum (or such other amount as is agreed in a separate writing between the relevant L/C Issuer and the Borrower) of the daily maximum Dollar Amount then available to be drawn under such Letter of Credit (whether or not such maximum amount is then in effect under such Letter of Credit if such maximum amount increases periodically pursuant to the terms of such Letter of Credit). Such fronting fees shall be (x) computed on a quarterly basis in arrears and (y) due and payable on the first Business Day after the end of each March, June, September and December, commencing with the first such date to occur after the issuance of such Letter of Credit, on the Letter of Credit Expiration Date and thereafter on demand. In addition, the Borrower shall pay directly to each L/C Issuer for its own account the customary issuance, presentation, amendment and other processing fees, and other standard costs and charges, of such L/C Issuer relating to letters of credit as from time to time in effect. Such customary fees and standard costs and charges are due and payable within ten (10) Business Days of demand and are nonrefundable.

(k) Conflict with Letter of Credit Application. Notwithstanding anything else to the contrary in this Agreement, in the event of any conflict between the terms hereof and the terms of any Letter of Credit Application, the terms hereof shall control. No Issuer Document shall (x) contain any representations or warranties, covenants or events of default not set forth in this Agreement (and to the extent inconsistent herewith, shall be rendered null and void) and (y) all representations and warranties, covenants and events of default contained therein shall contain standards, qualifications, thresholds and exceptions for materiality or otherwise consistent with this Agreement (and, to the extent inconsistent herewith, shall be deemed to incorporate such standards, qualifications, thresholds and exceptions contained herein without action by any other party).

(l) Addition of an L/C Issuer. A Revolving Credit Lender reasonably acceptable to the Borrower and the Administrative Agent may become an additional L/C Issuer hereunder pursuant to a written agreement among the Borrower, the Administrative Agent and such Revolving Credit Lender. The Administrative Agent shall notify the Revolving Credit Lenders of any such additional L/C Issuer.

(m) Letters of Credit Issued for Subsidiaries. Notwithstanding that a Letter of Credit issued or outstanding hereunder is in support of any obligations of, or is for the account of, a Subsidiary, the Borrower shall be obligated to reimburse the applicable L/C Issuer in accordance with the terms hereof for any and all drawings under such Letter of Credit and any other amounts payable under or in connection with such Letter of Credit. The Borrower hereby acknowledges that the issuance of Letters of Credit for the account of Subsidiaries inures to the benefit of the Borrower, and that the Borrower's business derives substantial benefits from the businesses of such Subsidiaries and the issuance of such Letters of Credit.

(n) Indemnification of L/C Issuers. The Revolving Credit Lenders shall indemnify upon demand each L/C Issuer (to the extent not reimbursed by or on behalf of any Loan Party and without limiting the obligation of any Loan Party to do so), pro rata, and hold harmless each L/C Issuer from and against any and all Indemnified Liabilities incurred by it; *provided* that no Revolving Credit Lender shall be liable for the payment to any L/C Issuer of any portion of such Indemnified Liabilities resulting from such L/C Issuer's own gross negligence or willful misconduct, as determined by the final, non-appealable judgment of a court of competent jurisdiction; *provided* that no action taken in accordance with the directions of the Required Lenders (or such other number or percentage of the Lenders as shall be required by the Loan Documents) shall be deemed to constitute gross negligence or willful misconduct for purposes of this Section 2.03(n). In the case of any investigation, litigation or proceeding giving rise to any Indemnified Liabilities, this Section 2.03(n) applies whether any such investigation, litigation or proceeding is brought by any Lender or any other Person. The undertaking in this Section 2.03(n) shall survive termination of the Revolving Credit Commitments, the payment and satisfaction of all other Obligations and the resignation of the L/C Issuers.

Section 2.04 [Reserved].

Section 2.05 Prepayments.

(a) Optional.

(i) The Borrower may, upon notice to the Administrative Agent, at any time or from time to time voluntarily prepay Term Loans or Revolving Credit Loans in whole or in part without premium or penalty (except as provided in Section 2.23, if applicable); *provided* that (1) such notice must be received by the Administrative Agent not later than 12:00 p.m. (New York City time) (I) three (3) Business Days prior to any date of prepayment of Eurocurrency Rate Loans denominated in Dollars, (II) three (3) Business Days prior to any date of prepayment of Eurocurrency Rate Loans

denominated in an Alternative Currency and (III) on the day of prepayment of Base Rate Loans; (2) any partial prepayment of Eurocurrency Rate Loans shall be in a principal Dollar Amount of $100,000 or a whole multiple of the Dollar Amount of $100,000 in excess thereof in the case of Term Loans or Revolving Credit Loans or, if less, the entire principal amount thereof then outstanding; and (3) any prepayment of Base Rate Loans shall be in a principal amount of $100,000 or a whole multiple of $100,000 in excess thereof or, if less, the entire principal amount thereof then outstanding (it being understood that Base Rate Loans shall be denominated in Dollars only). Each such notice shall specify the date and amount of such prepayment and the Class(es) and Type(s) of Loans to be prepaid and, in the case of a prepayment of Term Loans, the manner in which such prepayment shall be applied to repayments thereof required pursuant to Section 2.07(a); *provided* that in the event such notice fails to specify the manner in which the respective prepayment of Term Loans shall be applied to repayments thereof required pursuant to Section 2.07(a), such prepayment of Term Loans shall be applied in direct order of maturity to repayments thereof required pursuant to Section 2.07(a). The Administrative Agent will promptly notify each Appropriate Lender of its receipt of each such notice, and of the amount of such Lender's Pro Rata Share or other applicable share provided for under this Agreement of such prepayment. Any prepayment of a Eurocurrency Rate Loan shall be accompanied by all accrued interest thereon, together with any additional amounts required pursuant to Section 3.05. Each prepayment of the principal of, and interest on, any Revolving Credit Loans denominated in an Alternative Currency shall be made in the relevant Alternative Currency (even if the Borrower is required to convert currency to do so). Each prepayment of the Loans of a given Class pursuant to this Section 2.05(a) shall be paid to the Appropriate Lenders in accordance with their respective Pro Rata Shares.

(ii) Notwithstanding anything to the contrary contained in this Agreement, the Borrower may rescind, or extend the date for prepayment specified in, any notice of prepayment under Section 2.05(a)(i), if such prepayment would have resulted from a refinancing of all or any portion of any Facility or Facilities which refinancing shall not be consummated or shall otherwise be delayed.

(iii) Voluntary prepayments of any Class of Term Loans permitted hereunder shall be applied to the remaining scheduled installments of principal thereof pursuant to Section 2.07(a) in a manner determined at the sole discretion of the Borrower and specified in the notice of prepayment, and, subject to the other limitations expressly set forth in this Agreement, the Borrower may elect to apply voluntary prepayments of Term Loans to one or more Class or Classes of Term Loans selected by the Borrower in its sole discretion (*provided* that such voluntary prepayments of the Term Loans shall be made *pro rata* within any such Class or Classes selected by the Borrower). In the event that the Borrower does not specify the order in which to apply prepayments to reduce scheduled installments of principal or as between Classes of Term Loans, the Borrower shall be deemed to have elected that such prepayment be applied to reduce the scheduled installments of principal in direct order of maturity on a pro-rata basis among Class(es) of Term Loan.

(iv) Notwithstanding anything in any Loan Document to the contrary, so long as no Event of Default has occurred and is continuing, the Borrower may prepay the outstanding Term Loans (which shall, for the avoidance of doubt, be automatically and permanently canceled immediately upon acquisition by the Borrower) (or any of its Subsidiaries may purchase such outstanding Term Loans and immediately cancel them) on the following basis:

(A) Any Borrower Party shall have the right to make a voluntary prepayment of Term Loans at a discount to par pursuant to a Borrower Offer of Specified Discount Prepayment, Borrower Solicitation of Discount Range Prepayment Offers or Borrower Solicitation of Discounted Prepayment Offers (any such prepayment, the "**Discounted Loan**

Prepayment"), in each case made in accordance with this Section 2.05(a)(iv); *provided* that no Borrower Party shall initiate any action under this Section 2.05(a)(iv) in order to make a Discounted Loan Prepayment (other than with respect to actions under this Section 2.05(a)(iv) in order to make the first Discounted Loan Party Prepayment hereunder) unless (I) at least ten (10) Business Days shall have passed since the consummation of the most recent Discounted Loan Prepayment as a result of a prepayment made by a Borrower Party on the applicable Discounted Prepayment Effective Date; or (II) at least three (3) Business Days shall have passed since the date the Borrower Party was notified that no Lender was willing to accept any prepayment of any Term Loan at the Specified Discount, within the Discount Range or at any discount to par value, as applicable, or in the case of Borrower Solicitation of Discounted Prepayment Offers, the date of any Borrower Party's election not to accept any Solicited Discounted Prepayment Offers.

(B) (1) Subject to the proviso to clause (A) above, any Borrower Party may from time to time offer to make a Discounted Loan Prepayment by providing the Auction Agent with five (5) Business Days' notice in the form of a Specified Discount Prepayment Notice; *provided* that (I) any such offer shall be made available, at the sole discretion of the Borrower Party, to (x) each Term Lender and/or (y) each Lender with respect to any Class of Term Loans on an individual tranche basis, (II) any such offer shall specify the aggregate principal amount offered to be prepaid (the "**Specified Discount Prepayment Amount**") with respect to each applicable tranche, the tranche or tranches of Term Loans subject to such offer and the specific percentage discount to par (the "**Specified Discount**") of such Term Loans to be prepaid (it being understood that different Specified Discounts and/or Specified Discount Prepayment Amounts may be offered with respect to different tranches of Term Loans and, in such event, each such offer will be treated as a separate offer pursuant to the terms of this clause), (III) the Specified Discount Prepayment Amount shall be in an aggregate amount not less than $5,000,000 and whole increments of $1,000,000 in excess thereof and (IV) each such offer shall remain outstanding through the Specified Discount Prepayment Response Date. The Auction Agent will promptly provide each Appropriate Lender with a copy of such Specified Discount Prepayment Notice and a form of the Specified Discount Prepayment Response to be completed and returned by each such Lender to the Auction Agent (or its delegate) by no later than 5:00 p.m., New York City time, on the third Business Day after the date of delivery of such notice to such Lenders (which date may be extended for a period not exceeding three (3) Business Days upon notice by the Borrower Party to, and with the consent of, the Auction Agent) (the "**Specified Discount Prepayment Response Date**").

(2) Each Lender receiving such offer shall notify the Auction Agent (or its delegate) by the Specified Discount Prepayment Response Date whether or not it agrees to accept a prepayment of any of its applicable then outstanding Term Loans at the Specified Discount and, if so (such accepting Lender, a "**Discount Prepayment Accepting Lender**"), the amount and the tranches of such Lender's Term Loans to be prepaid at such offered discount. Each acceptance of a Discounted Loan Prepayment by a Discount Prepayment Accepting Lender shall be irrevocable. Any Lender whose Specified Discount Prepayment Response is not received by the Auction Agent by the Specified Discount Prepayment Response Date shall be deemed to have declined to accept the applicable Borrower Offer of Specified Discount Prepayment.

(3) If there is at least one Discount Prepayment Accepting Lender, the relevant Borrower Party will make a prepayment of outstanding Term Loans pursuant to this clause (B) to each Discount Prepayment Accepting Lender on the Discounted Prepayment Effective Date in accordance with the respective outstanding amount and tranches of Term Loans specified in such Lender's Specified Discount Prepayment Response given pursuant to clause (2) above; *provided* that, if the aggregate principal amount of Term Loans accepted for prepayment

by all Discount Prepayment Accepting Lenders exceeds the Specified Discount Prepayment Amount, such prepayment shall be made pro rata among the Discount Prepayment Accepting Lenders in accordance with the respective principal amounts accepted to be prepaid by each such Discount Prepayment Accepting Lender and the Auction Agent (in consultation with such Borrower Party and subject to rounding requirements of the Auction Agent made in its reasonable discretion) will calculate such proration (the "**Specified Discount Proration**"). The Auction Agent shall promptly, and in any case within four (4) Business Days following the Specified Discount Prepayment Response Date, notify (I) the relevant Borrower Party of the respective Lenders' responses to such offer, the Discounted Prepayment Effective Date and the aggregate principal amount of the Discounted Loan Prepayment and the tranches to be prepaid, (II) each Lender of the Discounted Prepayment Effective Date, and the aggregate principal amount and the tranches of Term Loans to be prepaid at the Specified Discount on such date and (III) each Discount Prepayment Accepting Lender of the Specified Discount Proration, if any, and confirmation of the principal amount, tranche and Type of Term Loans of such Lender to be prepaid at the Specified Discount on such date. Each determination by the Auction Agent of the amounts stated in the foregoing notices to the Borrower Party and such Lenders shall be conclusive and binding for all purposes absent manifest error. The payment amount specified in such notice to the Borrower Party shall be due and payable by such Borrower Party on the Discounted Prepayment Effective Date in accordance with clause (F) below (subject to clause (J) below).

(C) (1) Subject to the proviso to subclause (A) above, any Borrower Party may from time to time solicit Discount Range Prepayment Offers by providing the Auction Agent with five (5) Business Days' notice in the form of a Discount Range Prepayment Notice; *provided* that (I) any such solicitation shall be extended, at the sole discretion of such Borrower Party, to (x) each Lender and/or (y) each Lender with respect to any Class of Term Loans on an individual tranche basis, (II) any such notice shall specify the maximum aggregate principal amount of the relevant Loans (the "**Discount Range Prepayment Amount**"), the tranche or tranches of Term Loans subject to such offer and the maximum and minimum percentage discounts to par (the "**Discount Range**") of the principal amount of such Term Loans with respect to each relevant tranche of Term Loans willing to be prepaid by such Borrower Party (it being understood that different Discount Ranges and/or Discount Range Prepayment Amounts may be offered with respect to different tranches of Term Loans and, in such event, each such offer will be treated as separate offer pursuant to the terms of this clause), (III) the Discount Range Prepayment Amount shall be in an aggregate amount not less than $5,000,000 and whole increments of $1,000,000 in excess thereof and (IV) each such solicitation by the Borrower shall remain outstanding through the Discount Range Prepayment Response Date. The Auction Agent will promptly provide each Appropriate Lender with a copy of such Discount Range Prepayment Notice and a form of the Discount Range Prepayment Offer to be submitted by a responding Lender to the Auction Agent (or its delegate) by no later than 5:00 p.m., New York City time, on the third Business Day after the date of delivery of such notice to such Lenders (which date may be extended for a period not exceeding three (3) Business Days upon notice by the Borrower Party to, and with the consent of, the Auction Agent) (the "**Discount Range Prepayment Response Date**"). Each Lender's Discount Range Prepayment Offer shall be irrevocable and shall specify a discount to par within the Discount Range (the "**Submitted Discount**") at which such Lender is willing to allow prepayment of any or all of its then outstanding Term Loans of the applicable tranche or tranches and the maximum aggregate principal amount and tranches of such Lender's Term Loans (the "**Submitted Amount**") such Lender is willing to have prepaid at the Submitted Discount. Any Lender whose Discount Range Prepayment Offer is not received by the Auction Agent by the Discount Range Prepayment Response Date shall be deemed to have declined to accept a Discounted Loan Prepayment of any of its Term Loans at any discount to their par value within the Discount Range.

(2) The Auction Agent shall review all Discount Range Prepayment Offers received on or before the applicable Discount Range Prepayment Response Date and shall determine (in consultation with such Borrower Party and subject to rounding requirements of the Auction Agent made in its sole reasonable discretion) the Applicable Discount and Term Loans to be prepaid at such Applicable Discount in accordance with this subclause (C). The relevant Borrower Party agrees to accept on the Discount Range Prepayment Response Date all Discount Range Prepayment Offers received by Auction Agent within the Discount Range by the Discount Range Prepayment Response Date, in the order from the Submitted Discount that is the largest discount to par to the Submitted Discount that is the smallest discount to par, up to and including the Submitted Discount that is the smallest discount to par within the Discount Range (such Submitted Discount that is the smallest discount to par within the Discount Range being referred to as the "**Applicable Discount**") which yields a Discounted Loan Prepayment in an aggregate principal amount equal to the lower of (I) the Discount Range Prepayment Amount and (II) the sum of all Submitted Amounts. Each Lender that has submitted a Discount Range Prepayment Offer to accept prepayment at a discount to par that is larger than or equal to the Applicable Discount shall be deemed to have irrevocably consented to prepayment of Term Loans equal to its Submitted Amount (subject to any required proration pursuant to the following subclause (3)) at the Applicable Discount (each such Lender, a "**Participating Lender**").

(3) If there is at least one Participating Lender, the relevant Borrower Party will prepay the respective outstanding Term Loans of each Participating Lender on the Discounted Prepayment Effective Date in the aggregate principal amount and of the tranches specified in such Lender's Discount Range Prepayment Offer at the Applicable Discount; *provided* that if the Submitted Amount by all Participating Lenders offered at a discount to par greater than the Applicable Discount exceeds the Discount Range Prepayment Amount, prepayment of the principal amount of the relevant Term Loans for those Participating Lenders whose Submitted Discount is a discount to par greater than or equal to the Applicable Discount (the "**Identified Participating Lenders**") shall be made pro rata among the Identified Participating Lenders in accordance with the Submitted Amount of each such Identified Participating Lender and the Auction Agent (in consultation with such Borrower Party and subject to rounding requirements of the Auction Agent made in its sole reasonable discretion) will calculate such proration (the "**Discount Range Proration**"). The Auction Agent shall promptly, and in any case within six (6) Business Days following the Discount Range Prepayment Response Date, notify (I) the relevant Borrower Party of the respective Lenders' responses to such solicitation, the Discounted Prepayment Effective Date, the Applicable Discount, and the aggregate principal amount of the Discounted Loan Prepayment and the tranches to be prepaid, (II) each Lender of the Discounted Prepayment Effective Date, the Applicable Discount, and the aggregate principal amount and tranches of Term Loans to be prepaid at the Applicable Discount on such date, (III) each Participating Lender of the aggregate principal amount and tranches of such Lender to be prepaid at the Applicable Discount on such date, and (IV) if applicable, each Identified Participating Lender of the Discount Range Proration. Each determination by the Auction Agent of the amounts stated in the foregoing notices to the relevant Borrower Party and Lenders shall be conclusive and binding for all purposes absent manifest error. The payment amount specified in such notice to the Borrower Party shall be due and payable by such Borrower Party on the Discounted Prepayment Effective Date in accordance with subclause (F) below (subject to subclause (J) below).

(D) (1) Subject to the proviso to subclause (A) above, any Borrower Party may from time to time solicit Solicited Discounted Prepayment Offers by providing the Auction Agent with five (5) Business Days' notice in the form of a Solicited Discounted Prepayment Notice; *provided* that (I) any such solicitation shall be extended, at the sole discretion of such Borrower Party, to (x) each Lender and/or (y) each Lender with respect to any Class of Term Loans on an individual tranche basis, (II) any such notice shall specify the maximum aggregate amount of the Term Loans (the "**Solicited Discounted Prepayment Amount**") and the tranche or tranches of Term Loans the Borrower is willing to prepay at a discount (it being understood that different Solicited Discounted Prepayment Amounts may be offered with respect to different tranches of Term Loans and, in such event, each such offer will be treated as separate offer pursuant to the terms of this clause), (III) the Solicited Discounted Prepayment Amount shall be in an aggregate amount not less than $5,000,000 and whole increments of $1,000,000 in excess thereof and (IV) each such solicitation by the Borrower shall remain outstanding through the Solicited Discounted Prepayment Response Date. The Auction Agent will promptly provide each Appropriate Lender with a copy of such Solicited Discounted Prepayment Notice and a form of the Solicited Discounted Prepayment Offer to be submitted by a responding Lender to the Auction Agent (or its delegate) by no later than 5:00 p.m., New York City time on the third Business Day after the date of delivery of such notice to such Lenders (which date may be extended for a period not exceeding three (3) Business Days upon notice by the Borrower Party to, and with the consent of, the Auction Agent) (the "**Solicited Discounted Prepayment Response Date**"). Each Lender's Solicited Discounted Prepayment Offer shall (x) be irrevocable, (y) remain outstanding until the Acceptance Date, and (z) specify both a discount to par (for example, an offer of 99% of the outstanding principal amount would equate to a 1% discount to par) (the "**Offered Discount**") at which such Lender is willing to allow prepayment of its then outstanding Term Loans and the maximum aggregate principal amount and tranches of such Term Loans (the "**Offered Amount**") such Lender is willing to have prepaid at the Offered Discount. Any Lender whose Solicited Discounted Prepayment Offer is not received by the Auction Agent by the Solicited Discounted Prepayment Response Date shall be deemed to have declined prepayment of any of its Term Loans at any discount.

(2) The Auction Agent shall promptly provide the relevant Borrower Party with a copy of all Solicited Discounted Prepayment Offers received on or before the Solicited Discounted Prepayment Response Date. Such Borrower Party shall review all such Solicited Discounted Prepayment Offers and select the smallest of the Offered Discounts specified by the relevant responding Lenders in the Solicited Discounted Prepayment Offers that is acceptable to the Borrower Party in its sole discretion (the "**Acceptable Discount**"), if any. If the Borrower Party elects in its sole discretion to accept any Offered Discount as the Acceptable Discount, then as soon as practicable after the determination of the Acceptable Discount, but in no event later than by the third Business Day after the date of receipt by such Borrower Party from the Auction Agent of a copy of all Solicited Discounted Prepayment Offers pursuant to the first sentence of this clause (2) (the "**Acceptance Date**"), the Borrower Party shall submit an Acceptance and Prepayment Notice to the Auction Agent setting forth the Acceptable Discount. If the Auction Agent shall fail to receive an Acceptance and Prepayment Notice from the Borrower Party by the Acceptance Date, such Borrower Party shall be deemed to have rejected all Solicited Discounted Prepayment Offers.

(3) Based upon the Acceptable Discount and the Solicited Discounted Prepayment Offers received by Auction Agent by the Solicited Discounted Prepayment Response Date, within four (4) Business Days after receipt of an Acceptance and Prepayment Notice (the "**Discounted Prepayment Determination Date**"), the Auction Agent will determine (in consultation with such Borrower Party and subject to rounding requirements of

the Auction Agent made in its sole reasonable discretion) the aggregate principal amount and the tranches of Term Loans (the "**Acceptable Prepayment Amount**") to be prepaid by the relevant Borrower Party at the Acceptable Discount in accordance with this Section 2.05(a)(iv)(D). If the Borrower Party elects to accept any Acceptable Discount, then the Borrower Party agrees to accept all Solicited Discounted Prepayment Offers received by Auction Agent by the Solicited Discounted Prepayment Response Date, in the order from largest Offered Discount to smallest Offered Discount, up to and including the Acceptable Discount. Each Lender that has submitted a Solicited Discounted Prepayment Offer with an Offered Discount that is greater than or equal to the Acceptable Discount shall be deemed to have irrevocably consented to prepayment of Term Loans equal to its Offered Amount (subject to any required pro-rata reduction pursuant to the following sentence) at the Acceptable Discount (each such Lender, a "**Qualifying Lender**"). The Borrower Party will prepay outstanding Term Loans pursuant to this subclause (D) to each Qualifying Lender in the aggregate principal amount and of the tranches specified in such Lender's Solicited Discounted Prepayment Offer at the Acceptable Discount; *provided* that if the aggregate Offered Amount by all Qualifying Lenders whose Offered Discount is greater than or equal to the Acceptable Discount exceeds the Solicited Discounted Prepayment Amount, prepayment of the principal amount of the Term Loans for those Qualifying Lenders whose Offered Discount is greater than or equal to the Acceptable Discount (the "**Identified Qualifying Lenders**") shall be made pro rata among the Identified Qualifying Lenders in accordance with the Offered Amount of each such Identified Qualifying Lender and the Auction Agent (in consultation with such Borrower Party and subject to rounding requirements of the Auction Agent made in its sole reasonable discretion) will calculate such proration (the "**Solicited Discount Proration**"). On or prior to the Discounted Prepayment Determination Date, the Auction Agent shall promptly notify (I) the relevant Borrower Party of the Discounted Prepayment Effective Date and Acceptable Prepayment Amount comprising the Discounted Loan Prepayment and the tranches to be prepaid, (II) each Lender of the Discounted Prepayment Effective Date, the Acceptable Discount, and the Acceptable Prepayment Amount of all Term Loans and the tranches to be prepaid at the Applicable Discount on such date, (III) each Qualifying Lender of the aggregate principal amount and the tranches of such Lender to be prepaid at the Acceptable Discount on such date, and (IV) if applicable, each Identified Qualifying Lender of the Solicited Discount Proration. Each determination by the Auction Agent of the amounts stated in the foregoing notices to such Borrower Party and Lenders shall be conclusive and binding for all purposes absent manifest error. The payment amount specified in such notice to such Borrower Party shall be due and payable by such Borrower Party on the Discounted Prepayment Effective Date in accordance with subclause (F) below (subject to subclause (J) below).

(E) In connection with any Discounted Loan Prepayment, the Borrower and the Lenders acknowledge and agree that the Auction Agent may require as a condition to any Discounted Loan Prepayment the payment of customary, reasonable and documented fees and out-of-pocket expenses from a Borrower Party in connection therewith.

(F) If any Term Loan is prepaid in accordance with clauses (B) through (D) above, a Borrower Party shall prepay such Term Loans on the Discounted Prepayment Effective Date without premium or penalty; *provided* that in no event shall the Revolving Credit Facility be utilized to fund any Discounted Loan Prepayment. The relevant Borrower Party shall make such prepayment to the Administrative Agent, for the account of the Discount Prepayment Accepting Lenders, Participating Lenders, or Qualifying Lenders, as applicable, at the Administrative Agent's Office in immediately available funds not later than 2:00 p.m. (New York City time) on the Discounted Prepayment Effective Date and all such prepayments shall be applied to the remaining principal installments of the relevant tranche of

Term Loans pursuant to Section 2.07(a) in an amount equal to the principal amount of the applicable Term Loans in accordance with Section 2.05(a)(iii); *provided* that to the extent prepayments are applied to scheduled installments of principal other than in forward order of maturity, the applicable Borrower Party shall so specify in the applicable offer. The Term Loans so prepaid shall be accompanied by all accrued and unpaid interest on the par principal amount so prepaid up to, but not including, the Discounted Prepayment Effective Date. Each prepayment of the outstanding Term Loans pursuant to this Section 2.05(a)(iv) shall be paid to the Discount Prepayment Accepting Lenders, Participating Lenders, or Qualifying Lenders, as applicable, and shall be applied to the relevant Term Loans of such Lenders in accordance with their respective Pro Rata Share or other applicable share provided for under this Agreement. The aggregate principal amount of the tranches and installments of the relevant Loans outstanding shall be deemed reduced by the full par value of the aggregate principal amount of the tranches of Term Loans prepaid on the Discounted Prepayment Effective Date in any Discounted Loan Prepayment. In connection with each prepayment pursuant to this Section 2.05(a)(iv), the relevant Borrower Party shall (a) either (I) make a representation to the Lenders that it does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information) or (II) disclose that it cannot make such representation and (b) waive any right with to bring any action against the Administrative Agent, in its capacity as such, in connection with any such Discounted Loan Prepayment (other than in connection with any breach of its obligations under this Agreement).

(G) To the extent not expressly provided for herein, each Discounted Loan Prepayment shall be consummated pursuant to procedures consistent with the provisions in this Section 2.05(a)(iv), established by the Auction Agent acting in its reasonable discretion and as reasonably agreed by the applicable Borrower Party.

(H) Purchases of Term Loans under this Section 2.05(a)(iv) shall not be funded with the proceeds of Revolving Credit Loans.

(I) Notwithstanding anything in any Loan Document to the contrary, for purposes of this Section 2.05(a)(iv), each notice or other communication required to be delivered or otherwise provided to the Auction Agent (or its delegate) shall be deemed to have been given upon the Auction Agent's (or its delegate's) actual receipt during normal business hours of such notice or communication; *provided* that any notice or communication actually received outside of normal business hours shall be deemed to have been given as of the opening of business on the next Business Day.

(J) The Borrower and the Lenders acknowledge and agree that the Auction Agent may perform any and all of its duties under this Section 2.05(a)(iv) by itself or through any Affiliate of the Auction Agent and expressly consents to any such delegation of duties by the Auction Agent to such Affiliate and the performance of such delegated duties by such Affiliate. The exculpatory provisions pursuant to this Agreement shall apply to each Affiliate of the Auction Agent and its respective activities in connection with any Discounted Loan Prepayment provided for in this Section 2.05(a)(iv) as well as activities of the Auction Agent.

(K) Each Borrower Party shall have the right, by written notice to the Auction Agent, to revoke in full (but not in part) its offer to make a Discounted Loan Prepayment and rescind the applicable Specified Discount Prepayment Notice, Discount Range Prepayment Notice or Solicited Discounted Prepayment Notice therefor at its discretion at any time on or

prior to the applicable Specified Discount Prepayment Response Date, Discount Range Prepayment Response Date or Solicited Discounted Prepayment Response Date (and if such offer is revoked pursuant to the preceding clauses, any failure by such Borrower Party to make any prepayment to a Lender, as applicable, pursuant to this Section 2.05(a)(iv) shall not constitute a Default under Section 8.01 or otherwise).

(b) Mandatory.

(i) Within five (5) Business Days after financial statements have been delivered pursuant to Section 6.01(a) and the related Compliance Certificate has been delivered pursuant to Section 6.02(a), the Borrower shall, subject to clause (b)(vi) of this Section 2.05, prepay an aggregate principal amount of Term Loans in an amount (the "**ECF Payment Amount**") equal to (A) 50.0% (such percentage as it may be reduced as described below, the "**ECF Percentage**") of Excess Cash Flow, if any, for the fiscal year covered by such financial statements (commencing with the fiscal year ending on December 31, 2017) minus (B) the sum of (x) all voluntary prepayments of Term Loans, Refinancing Equivalent Debt and Incremental Equivalent Debt during such fiscal year (to the extent not deducted pursuant to this clause (B) in respect of the prior year) or after such fiscal year end and prior to the time the payment pursuant to this Section 2.05(b) is due (including the amount of any voluntary prepayments or cancellation of Term Loans, Refinancing Equivalent Debt and Incremental Equivalent Debt made at a discount to par (in an amount equal to the discounted amount actually paid in respect of the principal amount of such Indebtedness)) and (y) all voluntary prepayments of Revolving Credit Loans or other revolving credit facilities during such fiscal year (to the extent not deducted pursuant this clause (B) in respect of the prior year) or after such fiscal year end and prior to the time the payment pursuant to this Section 2.05(b) is due, in each case to the extent the Revolving Credit Commitments or any other revolving credit facility commitments are permanently reduced by the amount of such payments, in the case of each of the immediately preceding clauses (x) and (y), to the extent such prepayments are financed with long-term Indebtedness (other than revolving Indebtedness); *provided* that a prepayment of the aggregate principal amount of Term Loans pursuant to this Section 2.05(b)(i) in respect of any fiscal year shall only be required in the amount by which the ECF Payment Amount for such fiscal year exceeds $10,000,000; *provided further* that (x) the ECF Percentage shall be 25.0% if the Total Net First Lien Leverage Ratio for the fiscal year covered by such financial statements was less than or equal to 2.00:1.00 and greater than 1.00:1.00 and (y) the ECF Percentage shall be 0% if the Total Net First Lien Leverage Ratio for the fiscal year covered by such financial statements was less than or equal to 1.00:1.00; *provided* that if, at the time of any such prepayment, any prepayment of Other Applicable Indebtedness would be required, then the Borrower or applicable Restricted Subsidiary may apply such ECF Payment Amount on a pro rata basis (determined on the basis of the aggregate outstanding principal amount of the Term Loans and Other Applicable Indebtedness at such time; *provided* that the portion of such ECF Payment Amount allocated to the Other Applicable Indebtedness shall not exceed the amount of such ECF Payment Amount required to be allocated to the Other Applicable Indebtedness pursuant to the terms thereof, and the remaining amount, if any, of such ECF Payment Amount shall be allocated to the Term Loans in accordance with the terms hereof) to the prepayment of the Term Loans and to the prepayment of Other Applicable Indebtedness, and the amount of prepayment of the Term Loans that would have otherwise been required pursuant to this Section 2.05(b)(i) shall be reduced accordingly; *provided, further*, that to the extent the holders of Other Applicable Indebtedness decline to have such indebtedness repurchased, redeemed or prepaid, the declined amount shall promptly (and in any event within five (5) Business Days after the date of such rejection) be applied to prepay the Term Loans in accordance with the terms hereof.

(ii) (A) If (x) the Borrower or any of its Restricted Subsidiaries Disposes of any property or assets pursuant to Section 7.05(f) or (j) (or in a Disposition not permitted by this

Agreement) or (y) any Casualty Event occurs, which results in the realization or receipt by the Borrower or such Restricted Subsidiary of Net Cash Proceeds, the Borrower shall prepay on or prior to the date which is ten (10) Business Days after the date of the realization or receipt of such Net Cash Proceeds, subject to clause (b)(vi) of this Section 2.05, an aggregate principal amount of Term Loans equal to 100% of all Net Cash Proceeds realized or received; *provided* that if at the time that any such prepayment would be required, the Borrower or any Restricted Subsidiary is required to repay, redeem or repurchase or offer to repay, redeem or repurchase Other Applicable Indebtedness, then the Borrower or applicable Restricted Subsidiary may apply such Net Cash Proceeds on a pro rata basis (determined on the basis of the aggregate outstanding principal amount of the Term Loans and Other Applicable Indebtedness at such time; *provided* that the portion of such net proceeds allocated to the Other Applicable Indebtedness shall not exceed the amount of such net proceeds required to be allocated to the Other Applicable Indebtedness pursuant to the terms thereof, and the remaining amount, if any, of such net proceeds shall be allocated to the Term Loans in accordance with the terms hereof) to the prepayment of the Term Loans and to the repurchase, redemption or prepayment of Other Applicable Indebtedness, and the amount of prepayment of the Term Loans that would have otherwise been required pursuant to this Section 2.05(b)(ii)(A) shall be reduced accordingly; *provided, further*, that to the extent the holders of Other Applicable Indebtedness decline to have such indebtedness repurchased, redeemed or prepaid, the declined amount shall promptly (and in any event within ten (10) Business Days after the date of such rejection) be applied to prepay the Term Loans in accordance with the terms hereof; *provided*, *further*, that no prepayment shall be required pursuant to this Section 2.05(b)(ii)(A) with respect to such portion of such Net Cash Proceeds that the Borrower shall have, on or prior to such date, given written notice to the Administrative Agent of its intent to reinvest in accordance with Section 2.05(b)(ii)(B).

(B) With respect to any Net Cash Proceeds realized or received with respect to any Disposition (other than any Disposition specifically excluded from the application of Section 2.05(b)(ii)(A)) or any Casualty Event, at the option of the Borrower, the Borrower may reinvest all or any portion of such Net Cash Proceeds in assets useful for its or any of its Restricted Subsidiary's business within (x) eighteen (18) months following receipt of such Net Cash Proceeds or (y) if the Borrower or a Restricted Subsidiary enters into a legally binding commitment to reinvest such Net Cash Proceeds within eighteen (18) months following receipt thereof, within the later of (1) eighteen (18) months following receipt thereof and (2) one hundred and eighty (180) days after the expiration of such eighteen (18) month period; *provided*, that if any Net Cash Proceeds are no longer intended to be or cannot be so reinvested at any time after delivery of a notice of reinvestment election, and subject to clauses (iv) and (vi) of this Section 2.05(b), an amount equal to any such Net Cash Proceeds shall be applied within five (5) Business Days after the Borrower reasonably determines that such Net Cash Proceeds are no longer intended to be or cannot be so reinvested to the prepayment of the Loans as set forth in this Section 2.05(b)(ii).

(iii) (A) If the Borrower or any Restricted Subsidiary incurs or issues any Indebtedness not expressly permitted to be incurred or issued pursuant to Section 7.03, the Borrower shall cause to be prepaid an aggregate principal amount of Term Loans equal to 100% of all Net Cash Proceeds received therefrom on or prior to the date which is five (5) Business Days after the receipt of such Net Cash Proceeds and (B) if the Borrower incurs or issues any Refinancing Term Loans, Refinancing Revolving Credit Loans or Refinancing Equivalent Debt to refinance any Class (or Classes) of Loans resulting in Net Cash Proceeds (as opposed to such Refinancing Term Loans, Refinancing Revolving Credit Loans or Refinancing Equivalent Debt arising out of an exchange of existing Term Loans or Revolving Credit Loans for such Refinancing Term Loans, Refinancing Revolving Credit Loans or Refinancing Equivalent Debt), the Borrower shall cause to be prepaid an aggregate principal amount of such Class (or Classes) of Loans in an amount equal to 100% of the Net Cash Proceeds received therefrom on or prior to the date which is five (5) Business Days after the receipt by the Borrower of such Net Cash Proceeds.

(iv) Except as may otherwise be set forth in any Refinancing Amendment, any Extension Amendment, any Incremental Amendment or any amendment in respect of Replacement Term Loans, (A) each prepayment of Term Loans pursuant to this Section 2.05(b) shall be applied ratably to each Class of Term Loans (*provided* that (i) any prepayment of Term Loans with the Net Cash Proceeds of, or in exchange for, Refinancing Term Loans, Refinancing Revolving Credit Loans, Refinancing Equivalent Debt or Replacement Term Loans shall be applied solely to each applicable Class or Classes of Term Loans being refinanced as selected by the Borrower, and (ii) any Class of Extended Term Loans, Refinancing Term Loans, New Term Loans and Replacement Term Loans may specify that one or more other Classes of Term Loans may be prepaid prior to such Class of Extended Term Loans, Refinancing Term Loans, New Term Loans or Replacement Term Loans), (B) with respect to each Class of Term Loans, each prepayment pursuant to clauses (i) through (iii) of this Section 2.05(b) shall be applied *first*, to accrued interest and fees due on the amount of such prepayment of such Class of Term Loans and *second*, to the remaining scheduled installments of principal of such Class of Term Loans in a manner determined at the sole discretion of the Borrower (although in all cases on a pro rata basis to the respective Term Lenders of such Class) and specified in the notice of prepayment; *provided* that, if the Borrower does not specify the order in which to apply prepayments to reduce scheduled installments of principal, the Borrower shall be deemed to have elected that such prepayment be applied to reduce the scheduled installments of principal in direct order of maturity; and (C) each such prepayment shall be paid to the Appropriate Lenders in accordance with their respective Pro Rata Shares of such prepayment, subject to clauses (vi) and (vii) of this Section 2.05(b).

(v) Subject to Section 2.22(b), if for any reason the aggregate Revolving Credit Exposures of any Facility at any time exceeds the aggregate Revolving Credit Commitments then in effect for such Facility (including as a result of the termination of any Revolving Credit Commitments on the applicable Maturity Date thereof), the Borrower shall promptly prepay or cause to be promptly prepaid Revolving Credit Loans and/or Cash Collateralize the L/C Obligations with respect to such Facility in an aggregate amount equal to such excess; *provided* that the Borrower shall not be required to Cash Collateralize the L/C Obligations of such Facility pursuant to this Section 2.05(b)(v) unless after the prepayment in full of the Revolving Credit Loans for such Facility, such aggregate Outstanding Amount exceeds the aggregate Revolving Credit Commitments for such Facility then in effect. After the date of any Extension Amendment, if for any reason, at any time during the five (5) Business Day period immediately preceding the applicable Maturity Date for any Non-Extended Revolving Credit Commitments, (x) the Non-Extending Revolving Credit Lenders with such Non-Extended Revolving Credit Commitments' Allocable Revolving Share of the Revolving Credit Exposure attributable to L/C Obligations exceeds (y) the amount of the Extended Revolving Credit Commitments minus the Extending Revolving Credit Lenders' Allocable Revolving Share of the total Revolving Credit Exposure at such time, then the Borrower shall promptly prepay or cause to be promptly prepaid Revolving Credit Loans and/or Cash Collateralize the L/C Obligations in an aggregate amount necessary to eliminate such excess; *provided further* that the Borrower shall not be required to Cash Collateralize the L/C Obligations pursuant to this sentence unless after the prepayment in full of the Revolving Credit Loans, such excess has not been eliminated. Further, if for any reason, at any time during the five (5) Business Day period immediately preceding the applicable Maturity Date for any Revolving Credit Commitments where there exist other Revolving Credit Commitments with a longer Maturity Date or Maturity Dates, and if at such time there are outstanding Letters of Credit under such respective Class or Classes, then the Borrower shall prepay (in accordance with this Section 2.05) outstanding Revolving Credit Loans as is needed so that, after giving effect thereto, the Revolving Credit Exposure of the Revolving Credit Lenders with such later Maturity Dates will not, after giving

effect to the reallocations which will be required (in the absence of a Specified Default or event, act or condition which with notice or lapse of time or both would constitute a Specified Default) pursuant to Section 2.06(d), exceed the amount of their respective Revolving Credit Commitments as in effect on (and after giving effect to) the Maturity Date of such sooner maturing Revolving Credit Commitments.

(vi) Notwithstanding any other provisions of this Section 2.05(b), (A) to the extent that any or all of the Net Cash Proceeds of any Disposition by a Subsidiary giving rise to a prepayment event pursuant to Section 2.05(b)(ii) (a "**Foreign Disposition**"), the Net Cash Proceeds of any Casualty Event from a Subsidiary (a "**Foreign Casualty Event**") or Excess Cash Flow attributable to Subsidiaries are prohibited or delayed by (I) applicable local Law or (II) with respect to non-wholly owned Subsidiaries only, the material constituent documents of (or other material agreements binding on) such non-wholly owned Subsidiary, in any case, from being repatriated to the Borrower, an amount equal to the portion of such Net Cash Proceeds or Excess Cash Flow so affected will not be required to be applied to repay Term Loans at the times provided in this Section 2.05(b) but may be retained by the applicable Subsidiary so long, but only so long, as (x) the applicable local Law will not permit repatriation to the Borrower (the Borrower hereby agreeing to use commercially reasonable efforts to cause the applicable Subsidiary to promptly take all actions reasonably required by the applicable local law to permit such repatriation) or (y) the material constituent documents of the applicable non-wholly owned Subsidiary or any other material agreements binding upon the applicable non-wholly owned Subsidiary will not permit repatriation to the Borrower, and once such repatriation of any of such affected Net Cash Proceeds or Excess Cash Flow is permitted under the applicable local Law or applicable material constituent documents or other material agreement, such repatriation will be immediately effected and an amount equal to such repatriated Net Cash Proceeds or Excess Cash Flow will be promptly (and in any event not later than two (2) Business Days after such repatriation) applied (net of additional taxes payable or reserved against as a result thereof) to the repayment of the Term Loans pursuant to this Section 2.05(b) to the extent provided herein and (B) to the extent that the Borrower has determined in good faith that repatriation of any of or all the Net Cash Proceeds of any Foreign Disposition, any Foreign Casualty Event or Excess Cash Flow attributable to Foreign Subsidiaries would have a material adverse tax consequence (taking into account any foreign tax credit or benefit actually realized in connection with such repatriation) (as determined in good faith by the Borrower) with respect to such Net Cash Proceeds or Excess Cash Flow, the Net Cash Proceeds or Excess Cash Flow so affected will not be required to be applied to repay Term Loans at the times provided in this Section 2.05(b) but may be retained by the applicable Foreign Subsidiary until such time as it may repatriate such amount without incurring such material adverse tax consequences (at which time such amount shall be repatriated to the Borrower and applied to repay the Term Loans to the extent provided herein).

(vii) The Borrower shall give notice to the Administrative Agent of any mandatory prepayment of the Term Loans pursuant to Section 2.05(b)(i), (ii) or (iii), three (3) Business Days prior to the date on which such payment is due; *provided* that the Borrower may rescind, or extend the date for prepayment specified in, any notice of prepayment under Section 2.05(b)(iii) if such prepayment would have resulted from a refinancing of all or any portion of any Facility or Facilities, which refinancing shall not be consummated or shall otherwise be delayed. Such notice shall specify the date of such prepayment and provide a reasonably detailed calculation of the amount of such prepayment. Upon receipt by the Administrative Agent of such notice, the Administrative Agent shall immediately give notice to each Appropriate Lender of the contents of the Borrower's prepayment notice and of such Appropriate Lender's Pro Rata Share or other applicable share provided for under this Agreement of the prepayment. Each Appropriate Lender may elect (in its sole discretion) to decline all or a portion of its Pro Rata Share or other applicable share provided for under this Agreement of the prepayment (such amounts so declined, the "**Declined Amounts**") of any mandatory prepayment (other than any mandatory prepayment made under Section 2.05(b)(iii)(B)) by giving

notice of such election in writing (each, a "**Rejection Notice**") to the Administrative Agent by 12:00 p.m. (New York City time), on the date that is one (1) Business Day after the date of such Lender's receipt of notice from the Administrative Agent regarding such prepayment. Each Rejection Notice from a given Lender shall specify the principal amount of the mandatory repayment of Term Loans to be rejected by such Lender. If a Lender fails to deliver a Rejection Notice to the Administrative Agent within the time frame specified above, or such Rejection Notice fails to specify the principal amount of the Term Loans to be rejected, any such failure will be deemed to constitute an acceptance of such Lender's Pro Rata Share or other applicable share provided for under this Agreement of the total amount of such mandatory prepayment of Term Loans. Upon receipt by the Administrative Agent of such Rejection Notice, the Administrative Agent shall immediately notify the Borrower of such election. Any Declined Amount by any Lender shall be retained by the Borrower and the Restricted Subsidiaries and/or applied by the Borrower or any of the Restricted Subsidiaries in any manner not inconsistent with the terms of this Agreement.

(c) Interest, Funding Losses, Etc. All prepayments under this Section 2.05 shall be accompanied by all accrued interest thereon, together with, in the case of any such prepayment of a Eurocurrency Rate Loan on a date prior to the last day of an Interest Period therefor, any amounts owing in respect of such Eurocurrency Rate Loan pursuant to Section 3.05.

Notwithstanding any of the other provisions of this Section 2.05, so long as no Event of Default shall have occurred and be continuing, if any prepayment of Eurocurrency Rate Loans is required to be made under this Section 2.05 prior to the last day of the Interest Period therefor, in lieu of making any payment pursuant to this Section 2.05 in respect of any such Eurocurrency Rate Loan prior to the last day of the Interest Period therefor, the Borrower may, in its sole discretion, deposit an amount sufficient to make any such prepayment otherwise required to be made hereunder together with accrued interest to the last day of such Interest Period into a Cash Collateral Account until the last day of such Interest Period, at which time the Administrative Agent shall be authorized (without any further action by or notice to or from the Borrower or any other Loan Party) to apply such amount to the prepayment of such Loans in accordance with this Section 2.05. Upon the occurrence and during the continuance of any Event of Default, the Administrative Agent shall also be authorized (without any further action by or notice to or from the Borrower or any other Loan Party) to apply such amount to the prepayment of the outstanding Loans in accordance with the relevant provisions of this Section 2.05.

Section 2.06 Termination or Reduction of Commitments.

(a) Optional. The Borrower may, upon written notice to the Administrative Agent, terminate the unused Commitments of any Class, or from time to time permanently reduce the unused Commitments of any Class, in each case without premium or penalty; *provided* that (i) any such notice shall be received by the Administrative Agent one (1) Business Day prior to the date of termination or reduction and (ii) any such partial reduction shall be in an aggregate amount of $1,000,000 or any whole multiple of $100,000 in excess thereof or, if less, the entire amount thereof, and (iii) if, after giving effect to any reduction of the Commitments, the Letter of Credit Sublimit exceeds the amount of the Revolving Credit Commitments, then in any such case the Letter of Credit Sublimit shall be automatically reduced by the amount of such excess. Notwithstanding the foregoing, the Borrower may rescind or postpone any notice of termination of the Commitments if such termination would have resulted from a refinancing of all or any portion of any Facility or Facilities, which refinancing shall not be consummated or otherwise shall be delayed.

(b) Mandatory. The Initial Term Commitment of each Term Lender shall be automatically and permanently reduced to $0 upon the making of such Term Lender's Initial Term Loans pursuant to Section 2.01. The Revolving Credit Commitments shall terminate on the applicable Maturity Date for each such Facility.

(c) Application of Commitment Reductions; Payment of Fees. The Administrative Agent will promptly notify the Revolving Credit Lenders of any termination or reduction of the unused portions of the Letter of Credit Sublimit and all Lenders of the termination or reduction of unused Commitments of any Class under this Section 2.06. Upon any reduction of unused Commitments of any Class, the Commitment of each Lender of such Class shall be reduced by such Lender's Pro Rata Share of the amount by which such Commitments are reduced (other than the termination of the Commitment of any Lender as provided in Section 3.07). All commitment fees accrued until the effective date of any termination of any Revolving Credit Commitments shall be paid on the effective date of such termination.

(d) Termination of Non-Extended Revolving Credit Commitments. After the date of an Extension Amendment, on the Maturity Date of any Non-Extended Revolving Credit Commitments, such Non-Extended Revolving Credit Commitments will terminate and the Non-Extending Revolving Credit Lenders with respect thereto will have no further obligation to make Revolving Credit Loans or fund L/C Advances pursuant to Section 2.03(c); *provided* that (x) the foregoing will not release any such Non-Extending Revolving Credit Lender from any such obligation to fund Revolving Credit Loans or L/C Advances that was required to be performed on or prior to the Maturity Date of such Non-Extended Revolving Credit Commitments and (y) the foregoing will not release any such Non-Extending Revolving Credit Lender from any such obligation to fund its portion of L/C Advances with respect to Letters of Credit as provided herein if on such Maturity Date any Specified Default or event, act or condition which with notice or lapse of time or both would constitute a Specified Default exists until such Specified Default or event, act or condition ceases to exist. Unless clause (y) of the proviso in the immediately preceding sentence is applicable, on the Maturity Date with respect to such Non-Extended Revolving Credit Commitments, L/C Advances shall be deemed to be outstanding with respect to (and reallocated under) the Extended Revolving Credit Commitments and the Pro Rata Shares or other applicable share provided for under this Agreement of the Revolving Credit Lenders shall be determined to give effect to the termination of such Non-Extended Revolving Credit Commitments (in each case, so long as after giving effect to such reallocation, the Revolving Credit Exposure of each Extending Revolving Credit Lender does not exceed such Lender's Extended Revolving Credit Commitment). On and after the Maturity Date of such Non-Extended Revolving Credit Commitments, the Extending Revolving Credit Lenders (and so long as clause (y) of the proviso in the second preceding sentence is applicable, such Non-Extending Revolving Credit Lenders) will be required, in accordance with their Pro Rata Shares or other applicable share provided for under this Agreement, to fund L/C Advances pursuant to Section 2.03(c) in respect of Unreimbursed Amounts, in each case, arising on or after such date, regardless of whether any Default existed on the Maturity Date with respect to such Non-Extended Revolving Credit Commitments; *provided* that the Revolving Credit Exposure of each Extending Revolving Credit Lender does not exceed such Extending Revolving Credit Lender's Revolving Credit Commitment. In the event that a Specified Default or event, act or condition which with notice or lapse of time or both would constitute a Specified Default exists on the Maturity Date with respect to Non-Extended Revolving Credit Commitments, until such Specified Default or event, act or condition ceases to exist, for purposes of determining a Revolving Credit Lenders' Pro Rata Share or other applicable share provided for under this Agreement for purposes of Section 2.03(c) and its Allocable Revolving Share for purposes of Section 2.03(i), such Non-Extending Revolving Credit Lender's Revolving Credit Commitment shall be deemed to be the Revolving Credit Commitment of such Non-Extending Revolving Credit Lender immediately prior to the termination thereof on such Maturity Date.

(e) **[Reserved]**.

(f) Termination of Revolving Credit Commitments. On the Maturity Date of any Class of Revolving Credit Commitments, such Revolving Credit Commitments will terminate and the respective Lenders who held such terminated Revolving Credit Commitments will have no obligation to make, or participate in, extensions of credit (whether the making of Revolving Credit Loans or the issuance of Letters of Credit) made pursuant to such Revolving Credit Commitments after such Maturity Date; *provided* that, except as expressly provided in the immediately succeeding sentence, (x) the foregoing shall not release any Revolving Credit Lender from liability it may have for its failure to fund Revolving Credit Loans or L/C Advances that was required to be performed by it on or prior to such Maturity Date and (y) the foregoing will not release any Revolving Credit Lender from any obligation to fund its portion of L/C Advances with respect to Letters of Credit issued prior to such Maturity Date. If, on the Maturity Date applicable to any Revolving Credit Commitments, there exist additional Revolving Credit Commitments, which have a later Maturity Date or later Maturity Dates, then and only so long as no Specified Default or event, act or condition which with notice or lapse of time or both would constitute a Specified Default then exists (or, if such a Specified Default or event, act or condition which with notice or lapse of time or both would constitute a Specified Default then exists, immediately after such Specified Default or event, act or condition has ceased to exist), all L/C Advances and participations in Letters of Credit shall be deemed outstanding with respect to (and reallocated under) such additional Revolving Credit Commitments and the Pro Rata Shares of the Revolving Credit Lenders shall be determined to give effect to the termination of the Revolving Credit Commitments with respect to which the Maturity Date has occurred in each case so long as after giving effect to such reallocation, no Revolving Credit Lender shall have a Revolving Credit Exposure which exceeds such Lender's Revolving Credit Commitments which have not matured prior to such date.

Section 2.07 Repayment of Loans.

(a) Term Loans. The Borrower shall repay to the Administrative Agent for the ratable account of the Appropriate Lenders (i) on the last Business Day of each March, June, September and December, commencing with the last Business Day of March, 2017, an aggregate Dollar Amount equal to 0.25% of the aggregate principal Dollar Amount of all Initial Term Loans outstanding on the Closing Date (as such repayment amount shall be reduced as a result of the application of prepayments in accordance with the order of priority determined under Section 2.05); *provided* that at the time of any effectiveness of any Extension Amendment, the scheduled amortization with respect to the Initial Term Loans set forth above shall be reduced ratably to reflect the percentage of Initial Term Loans converted to Extended Term Loans (but will not affect the amount of amortization received by a given lender with outstanding Initial Term Loans), (ii) the amortization for any new Class of Term Loans established pursuant to an Incremental Amendment, a Refinancing Amendment, an Extension Amendment or an amendment to this Agreement in respect of Replacement Term Loans shall be as agreed in accordance with the terms and conditions hereof and specified in such Incremental Amendment, Refinancing Amendment, Extension Amendment or amendment to this Agreement in respect of Replacement Term Loans, as applicable, and (iii) on the Maturity Date for each Class of Term Loans, the aggregate principal amount of all such Term Loans outstanding on such date; *provided* that the repayments under this clause may be adjusted to account for the addition of any New Term Loans, including any increase to payments to the extent, and as required pursuant to, the terms of any applicable Incremental Amendment involving a Term Loan Increase to the Initial Term Loans.

(b) Revolving Credit Loans. The Borrower shall repay to the Administrative Agent for the ratable account of the Appropriate Lenders (i) on the applicable Maturity Date for the Revolving Credit Facilities of a given Class the aggregate principal amount of all of the Revolving Credit Loans of such Class outstanding on such date, (ii) after the date of an Extension Amendment, on the Maturity Date with respect to any Non-Extended Revolving Credit Commitments of a given Class, the aggregate principal amount of all related Non-Extended Revolving Credit Loans of such Class outstanding on such

date and (iii) after the date of an Extension Amendment, on the Maturity Date with respect to the Extended Revolving Credit Commitments of a given Class, the aggregate principal amount of all related Extended Revolving Credit Loans of such Class outstanding on such date.

(c) All Loans shall be repaid, whether pursuant to this Section 2.07 or otherwise, in the currency in which they were made.

Section 2.08 Interest. (a) Subject to the provisions of Section 2.08(b), (i) each Eurocurrency Rate Loan shall bear interest on the outstanding principal amount thereof for each Interest Period at a rate per annum equal to the Adjusted Eurocurrency Rate applicable to the currency of such Loan for such Interest Period plus the Applicable Rate and (ii) each Base Rate Loan shall bear interest on the outstanding principal amount thereof from the applicable Borrowing date at a rate per annum equal to the Base Rate plus the Applicable Rate. Notwithstanding anything to the contrary, for the period from the day of funding of a Fronted Amount in respect of a Euro Same Day Loan by the Administrative Agent under the third sentence of Section 2.02(b) through the date of reimbursement of such Fronted Amount or repayment of such Euro Same Day Loan thereunder, interest payable by the Borrower in respect of the portion of such Euro Same Day Loans constituting the Fronted Amount so funded shall accrue for the account of the Administrative Agent. For the avoidance of doubt, each Revolving Credit Loan denominated in an Alternative Currency shall be a Eurocurrency Rate Loan.

For the avoidance of doubt, each Revolving Credit Loan denominated in an Alternative Currency shall be a Eurocurrency Rate Loan.

(b) The Borrower shall pay interest on past due amounts hereunder owing at a fluctuating interest rate per annum at all times equal to the Default Rate to the fullest extent permitted by applicable Laws (*provided*, for the avoidance of doubt, that no interest at the Default Rate shall accrue or be payable to a Defaulting Lender so long as such Lender shall be a Defaulting Lender). Accrued and unpaid interest on past due amounts (including interest on past due interest) shall be due and payable upon demand.

(c) Interest on each Loan shall be due and payable in arrears on each Interest Payment Date applicable thereto and at such other times as may be specified herein. Interest hereunder shall be due and payable in accordance with the terms hereof before and after judgment, and before and after the commencement of any proceeding under any Debtor Relief Law.

(d) Interest on each Loan shall be payable in the currency in which each Loan was made.

(e) All computations of interest hereunder shall be made in accordance with Section 2.10.

Section 2.09 Fees.

(a) Commitment Fee. With respect to each Class of Revolving Credit Commitments in respect of any applicable Facility, the Borrower shall pay to the Administrative Agent (i) for any period prior to the date on which an Extension Amendment becomes effective, for the account of each Revolving Credit Lender for such Facility in accordance with its Pro Rata Share, a commitment fee equal to the Applicable Rate with respect to commitment fees then in effect for the applicable Class of Revolving Credit Commitments times the actual daily amount by which the aggregate Revolving Credit Commitments for such Facility exceeds the sum of (A) the Outstanding Amount of Revolving Credit Loans under such Facility and (B) the Outstanding Amount of L/C Obligations for such Facility and (ii)

for any period after the date on which an Extension Amendment becomes effective, for the account of each Non-Extending Revolving Credit Lender and each Extending Revolving Credit Lender in accordance with its Other Allocable Share of the Non-Extended Revolving Credit Commitments and the Extended Revolving Credit Commitments, respectively, a commitment fee equal to the Applicable Rate with respect to commitment fees in respect of such Non-Extended Revolving Credit Commitments or the Extended Revolving Credit Commitments, as the case may be, times the Allocable Revolving Share of the Non-Extending Revolving Credit Lenders or the Extending Revolving Credit Lenders, as the case may be, of the actual daily amount by which the aggregate Revolving Credit Commitments for such Facility exceed the sum of (A) the Outstanding Amount of Revolving Credit Loans under such Facility and (B) the Outstanding Amount of L/C Obligations under such Facility; *provided* that any commitment fee accrued with respect to any of the Revolving Credit Commitments under such Facility of a Defaulting Lender during the period prior to the time such Lender became a Defaulting Lender and unpaid at such time shall not be payable by the Borrower so long as such Lender shall be a Defaulting Lender except to the extent that such commitment fee shall otherwise have been due and payable by the Borrower prior to such time; and *provided further* that no commitment fee shall accrue on any of the Revolving Credit Commitments under any Facility of a Defaulting Lender so long as such Lender shall be a Defaulting Lender. The commitment fees for the Revolving Credit Facility shall accrue at all times from the date hereof (or from the date on which Revolving Credit Commitments for the applicable Facility come into effect in accordance with the terms hereof) until the Original Revolving Credit Maturity Date or the applicable Maturity Date for such Facility, including at any time during which one or more of the conditions in Article IV is not met, and shall be due and payable quarterly in arrears on the last Business Day of each March, June, September and December, commencing with the last Business Day of March, 2017, and on the applicable Maturity Date for such Facility (and on the Maturity Date for any Non-Extended Revolving Credit Commitments (with respect to commitment fees accrued for the accounts of Non-Extending Revolving Credit Lenders) and the Maturity Date for Extended Revolving Credit Commitments (with respect to commitment fees accrued for the accounts of Extending Revolving Credit Lenders) for any such Facility in respect of which an Extension Amendment has been effected). The commitment fee shall be calculated quarterly in arrears, and if there is any change in the Applicable Rate during any quarter, the actual daily amount shall be computed and multiplied by the Applicable Rate separately for each period during such quarter that such Applicable Rate was in effect.

(b) Other Fees. The Borrower shall pay to the Agents and the Lead Arrangers such fees as shall have been separately agreed upon in writing (including pursuant to the Fee Letter) in the amounts and at the times so specified. Such fees shall be fully earned when paid and shall not be refundable for any reason whatsoever (except as expressly agreed between the Borrower and the applicable Agent or Lead Arranger, as the case may be).

Section 2.10 Computation of Interest and Fees. All computations of interest for Base Rate Loans shall be made on the basis of a year of three hundred and sixty-five (365) days or three hundred and sixty-six (366) days, as the case may be, and actual days elapsed. All other computations of fees and interest shall be made on the basis of a three hundred and sixty (360) day year and actual days elapsed (which results in more fees or interest, as applicable, being paid than if computed on the basis of a 365-day year). Interest shall accrue on each Loan for the day on which the Loan is made, and shall not accrue on a Loan, or any portion thereof, for the day on which the Loan or such portion is paid; *provided* that any Loan that is repaid on the same day on which it is made shall, subject to Section 2.12(a), bear interest for one day. In computing interest on any Loan, the day such Loan is made or converted to a Loan of a different Type shall be included for purposes of calculating interest on a Loan of such different Type and the date such Loan is repaid or converted to a Loan of a different Type, as the case may be, shall be excluded. Each determination by the Administrative Agent of an interest rate or fee hereunder shall be conclusive and binding for all purposes, absent manifest error.

Section 2.11 Evidence of Indebtedness. (a) Subject to Section 10.07(c), the Credit Extensions made by each Lender shall be evidenced by one or more accounts or records maintained by such Lender and evidenced by one or more entries in the Register maintained by the Administrative Agent, acting solely for purposes of Treasury Regulation Section 5f.103-1(c), as a non-fiduciary agent for the Borrower, in each case in the ordinary course of business. The accounts or records maintained by the Administrative Agent and each Lender shall be prima facie evidence absent manifest error of the amount of the Credit Extensions made by the Lenders to the Borrower and the interest and payments thereon. Any failure to so record or any error in doing so shall not, however, limit or otherwise affect the obligation of the Borrower hereunder to pay any amount owing with respect to the Obligations. In the event of any conflict between the accounts and records maintained by any Lender and the accounts and records of the Administrative Agent in respect of such matters, the accounts and records of the Administrative Agent shall control in the absence of manifest error. Upon the request of any Lender made through the Administrative Agent, the Borrower shall execute and deliver to such Lender (through the Administrative Agent) a Note or Notes payable to such Lender, which shall evidence such Lender's Loans of the applicable Class or Classes in addition to such accounts or records. Each Lender may attach schedules to its Note and endorse thereon the date, Type (if applicable), amount and maturity of its Loans and payments with respect thereto.

(b) In addition to the accounts and records referred to in Section 2.11(a), each Lender and the Administrative Agent shall maintain in accordance with its usual practice, accounts or records and, in the case of the Administrative Agent, entries in the Register, evidencing the purchases and sales by such Lender of participations in Letters of Credit. In the event of any conflict between the accounts and records maintained by the Administrative Agent and the accounts and records of any Lender in respect of such matters, the accounts and records of the Administrative Agent shall control in the absence of manifest error.

(c) Entries made in good faith by the Administrative Agent in the Register pursuant to Sections 2.11(a) and (b), and by each Lender in its account or accounts pursuant to Sections 2.11(a) and (b), shall be prima facie evidence of the amount of principal and interest due and payable or to become due and payable from the Borrower to, in the case of the Register, each Lender and, in the case of such account or accounts, such Lender, under this Agreement and the other Loan Documents, absent manifest error; *provided* that the failure of the Administrative Agent or such Lender to make an entry, or any finding that an entry is incorrect, in the Register or such account or accounts shall not limit or otherwise affect the obligations of the Borrower under this Agreement and the other Loan Documents.

(d) Notwithstanding anything to the contrary contained above in this Section 2.11 or elsewhere in this Agreement, Notes shall only be delivered to Lenders which at any time specifically request the delivery of such Notes. No failure of any Lender to request, maintain, obtain or produce a Note evidencing its Loans to the Borrower shall affect or in any manner impair the obligations of the Borrower to pay the Loans (and all related Obligations) incurred by the Borrower which would otherwise be evidenced thereby in accordance with the requirements of this Agreement, and shall not in any way affect the security or guaranties therefor provided pursuant to the various Loan Documents.

Section 2.12 Payments Generally. (a) All payments to be made by the Borrower shall be made without condition or deduction for any counterclaim, defense, recoupment or setoff. Except as otherwise expressly provided herein and except with respect to payments in an Alternative Currency, all payments by the Borrower hereunder shall be made to the Administrative Agent, for the account of the respective Lenders to which such payment is owed, at the applicable Administrative Agent's Office for payment in Dollars and in Same Day Funds not later than 2:00 p.m. (New York City time) on the date specified herein. Except as otherwise expressly provided herein, all payments by the Borrower hereunder in an Alternative Currency shall be made to the Administrative Agent, for the account of the respective

Lenders to which such payment is owed, at the applicable Administrative Agent's Office in such Alternative Currency and in Same Day Funds not later than 2:00 p.m. (New York City time) on the dates specified herein. If, for any reason, the Borrower is prohibited by any Law from making any required payment hereunder in an Alternative Currency, the Borrower shall make such payment in Dollars in the Dollar Amount of the Alternative Currency payment amount. The Administrative Agent will promptly distribute to each Appropriate Lender its Pro Rata Share (or other applicable share as provided herein) of such payment in like funds as received by wire transfer to such Lender's Lending Office. All payments received by the Administrative Agent after 2:00 p.m. (New York City time) shall be deemed received on the next succeeding Business Day and any applicable interest or fee shall continue to accrue.

(b) If any payment to be made by the Borrower shall come due on a day other than a Business Day, payment shall be made on the next following Business Day, and such extension of time shall be reflected in computing interest or fees, as the case may be; *provided* that, if such extension would cause payment of interest on or principal of Eurocurrency Rate Loans to be made in the next succeeding calendar month, such payment shall be made on the immediately preceding Business Day.

(c) Unless the Borrower or any Lender has notified the Administrative Agent, prior to the date any payment is required to be made by it to the Administrative Agent hereunder, that the Borrower or such Lender, as the case may be, will not make such payment, the Administrative Agent may assume that the Borrower or such Lender, as the case may be, has timely made such payment and may (but shall not be so required to), in reliance thereon, make available a corresponding amount to the Person entitled thereto. If and to the extent that such payment was not in fact made to the Administrative Agent in Same Day Funds, then:

(i) If the Borrower failed to make such payment, such Lender or L/C Issuer shall forthwith on demand repay to the Administrative Agent the portion of such assumed payment that was made available to such Lender or L/C Issuer in Same Day Funds, together with interest thereon in respect of each day from and including the date such amount was made available by the Administrative Agent to such Lender or L/C Issuer to the date such amount is repaid to the Administrative Agent in Same Day Funds at the applicable Overnight Rate from time to time in effect; and

(ii) If any Lender or L/C Issuer failed to make such payment, such Lender shall forthwith on demand pay to the Administrative Agent the amount thereof in Same Day Funds, together with interest thereon for the period from the date such amount was made available by the Administrative Agent to the Borrower to the date such amount is recovered by the Administrative Agent (the "**Compensation Period**") at a rate per annum equal to the applicable Overnight Rate from time to time in effect. When such Lender makes payment to the Administrative Agent (together with all accrued interest thereon), then such payment amount (excluding the amount of any interest which may have accrued and been paid in respect of such late payment) shall constitute such Lender's Loan included in the applicable Borrowing. If such Lender does not pay such amount forthwith upon the Administrative Agent's demand therefor, the Administrative Agent may make a demand therefor upon the Borrower, and the Borrower shall pay such amount to the Administrative Agent, together with interest thereon for the Compensation Period at a rate per annum equal to the rate of interest applicable to the applicable Borrowing. Nothing herein or in the third sentence of Section 2.02(b)(iii) shall be deemed to relieve any Lender from its obligation to fulfill its Commitment or to prejudice any rights which the Administrative Agent or the Borrower may have against any Lender as a result of any default by such Lender hereunder.

A notice of the Administrative Agent to any Lender or the Borrower with respect to any amount owing under this Section 2.12(c) shall be conclusive, absent manifest error.

(d) If any Lender makes available to the Administrative Agent funds for any Loan to be made by such Lender as provided in the foregoing provisions of this Article II, and such funds are not made available to the Borrower by the Administrative Agent because the conditions to the applicable Credit Extension set forth in Article IV are not satisfied or waived in accordance with the terms hereof, the Administrative Agent shall return such funds (in like funds as received from such Lender) to such Lender, without interest.

(e) The obligations of the Lenders hereunder to make Loans and to fund participations in Letters of Credit are several and not joint. The failure of any Lender to make any Loan or to fund any such participation on any date required hereunder shall not relieve any other Lender of its corresponding obligation to do so on such date, and no Lender shall be responsible for the failure of any other Lender to so make its Loan or purchase its participation.

(f) Nothing herein shall be deemed to obligate any Lender to obtain the funds for any Loan in any particular place or manner or to constitute a representation by any Lender that it has obtained or will obtain the funds for any Loan in any particular place or manner.

(g) Whenever any payment received by the Administrative Agent under this Agreement or any of the other Loan Documents is insufficient to pay in full all amounts due and payable to the Administrative Agent and the Lenders under or in respect of this Agreement and the other Loan Documents on any date, such payment shall be distributed by the Administrative Agent and applied by the Administrative Agent and the Lenders in the order of priority set forth in Section 8.03. If the Administrative Agent receives funds for application to the Obligations of the Loan Parties under or in respect of the Loan Documents under circumstances for which the Loan Documents do not specify the manner in which such funds are to be applied, the Administrative Agent may, but shall not be obligated to, elect to distribute such funds to each of the Lenders in accordance with such Lender's Pro Rata Share or other applicable share provided for under this Agreement of the sum of (a) the Outstanding Amount of all Loans outstanding at such time and (b) the Outstanding Amount of all L/C Obligations outstanding at such time, in repayment or prepayment of such of the outstanding Loans or other Obligations then owing to such Lender.

Section 2.13 Sharing of Payments, Etc. If, other than as expressly provided elsewhere herein, any Lender shall obtain on account of the Loans made by it, or the participations in L/C Obligations held by it, any payment (whether voluntary, involuntary, through the exercise of any right of setoff, or otherwise) in excess of its ratable share (or other share contemplated hereunder) thereof, such Lender shall immediately (a) notify the Administrative Agent of such fact, and (b) purchase from the other Lenders such participations in the Loans made by them and/or such subparticipations in the participations in L/C Obligations held by them as shall be necessary to cause such purchasing Lender to share the excess payment in respect of such Loans or such participations, as the case may be, pro rata with each of them; *provided* that if all or any portion of such excess payment is thereafter recovered from the purchasing Lender under any of the circumstances described in Section 10.06 (including pursuant to any settlement entered into by the purchasing Lender in its discretion), such purchase shall to that extent be rescinded and each other Lender shall repay to the purchasing Lender the purchase price paid therefor, together with an amount equal to such paying Lender's ratable share (according to the proportion of (i) the amount of such paying Lender's required repayment to (ii) the total amount so recovered from the purchasing Lender) of any interest or other amount paid or payable by the purchasing Lender in respect of the total amount so recovered, without further interest thereon. The provisions of this clause shall not be construed to apply to (A) any payment made by the Borrower pursuant to and in accordance with the express terms of this Agreement as in effect from time to time or (B) any payment obtained by a Lender as consideration for the assignment of or sale of a participation in any of its Loans to any assignee or participant permitted hereunder. The Borrower agrees that any Lender so purchasing a participation from

another Lender may, to the fullest extent permitted by applicable Laws, exercise all its rights of payment (including the right of setoff, but subject to Section 10.09) with respect to such participation as fully as if such Lender were the direct creditor of the Borrower in the amount of such participation. The Administrative Agent will keep records (which shall be conclusive and binding in the absence of manifest error) of participations purchased under this Section 2.13 and will in each case notify the Lenders following any such purchases or repayments. Each Lender that purchases a participation pursuant to this Section 2.13 shall from and after such purchase have the right to give all notices, requests, demands, directions and other communications under this Agreement with respect to the portion of the Obligations purchased to the same extent as though the purchasing Lender were the original owner of the Obligations purchased.

Section 2.14 Incremental Credit Extensions. (a) The Borrower may at any time or from time to time after the Closing Date, by notice to the Administrative Agent (whereupon the Administrative Agent shall promptly deliver a copy to each of the Lenders), request (i) one or more additional tranches of term loans (the "**New Term Loans**"), which may be of the same facility as any existing Term Loans (a "**Term Loan Increase**") or a separate class of Term Loans (collectively with any Term Loan Increase, the "**New Term Commitments**") or (ii) (A) one or more increases in the amount of the Revolving Credit Commitments of any Class (each such increase, a "**Revolving Commitment Increase**") and/or (B) the establishment of one or more new revolving credit commitments (each such new commitment, a "**New Revolving Commitment Tranche**," collectively with any Revolving Commitment Increase, the "**New Revolving Credit Commitments**"); *provided* that both immediately before and immediately after the effectiveness of any Incremental Amendment referred to below (or, in the case of a Permitted Acquisition or permitted Investment, on the date of the execution of (x) the definitive agreement in connection therewith and (y) any Commitment in respect of New Term Loans or New Revolving Credit Commitments therefor), no Event of Default shall exist and all Specified Representations (conformed as reasonably necessary for such Investment or Permitted Acquisition to reflect at the option of the Borrower customary "SunGard" representations) shall be true and correct in all material respects (provided that, any such Specified Representation that is qualified as to "materiality," "Material Adverse Effect" or similar language shall be true and correct in all respects); *provided* that, notwithstanding the above, with respect to any incurrence of Loans pursuant to an Incremental Amendment the purpose of which is to finance a permitted Investment or Permitted Acquisition, for purposes of funding any such Loans, this condition may be waived in full or in part (subject to compliance with Section 10.01(i) hereof) by Lenders holding more than 50% of the applicable aggregate Commitments in respect of Loans to be incurred pursuant to such Incremental Amendment (other than with respect to any (I) Event of Default under Section 8.01(a) or 8.01(f) and (II) Specified Representations (conformed as reasonably necessary for such Investment or Permitted Acquisition to reflect at the option of the Borrower customary "SunGard" representations) which may only be waived with the consent of the Required Lenders). Each tranche of New Term Loans shall be in an aggregate principal amount that is not less than $10,000,000 (*provided* that such amount may be less than $10,000,000 if such lesser amount is approved by the Administrative Agent or such amount represents all remaining availability under the limit set forth in the next sentence) and each New Revolving Credit Commitments shall be in an aggregate principal amount that is not less than a Dollar Amount of $5,000,000 (*provided* that such amount may be less than a Dollar Amount of $5,000,000 if such lesser amount is approved by the Administrative Agent or such amount represents all remaining availability under the limit set forth in the next sentence). Notwithstanding anything to the contrary herein, the aggregate amount of the New Term Loans, when added to the aggregate amount of New Revolving Credit Commitments and any Incremental Equivalent Debt incurred prior to or substantially simultaneously with the incurrence of such New Term Loans and/or New Revolving Credit Commitments, as applicable, shall not exceed the Available Incremental Amount.

(b) The terms and provisions of New Term Commitments or New Revolving Credit Commitments, as the case may be (and the Loans in respect of the foregoing), of any Class shall be as agreed between the Borrower and the lenders providing such New Term Commitments or New Revolving Credit Commitment; *provided*, that:

(i) such New Term Commitments and New Revolving Credit Commitments shall (x) rank *pari passu* in right of payment and of security with the Revolving Credit Loans (if any) and the Initial Term Loans made on the Closing Date and (y) may not be (I) secured by any assets other than Collateral or (II) guaranteed by any Person other than a Guarantor,

(ii) except with respect to customary bridge loans, New Term Loans shall not mature earlier than the Original Term Loan Maturity Date (prior to any extension thereto),

(iii) except with respect to customary bridge loans, New Term Loans shall have a Weighted Average Life to Maturity of no less than the Weighted Average Life to Maturity as then in effect for the Initial Term Loans (prior to any extension thereto),

(iv) (x) the currency, discounts, premiums, fees, optional prepayment and redemptions terms and, subject to clauses (ii) and (iii) above, the amortization schedule applicable to any New Term Loans shall be determined by the Borrower and the Lenders thereunder, and (y) the currency, discounts, premiums, fees and optional prepayment and redemptions terms applicable to any New Revolving Credit Commitments shall be determined by the Borrower and the Lenders thereunder,

(v) the interest rate (including margin and floors) applicable to any New Term Loans or New Revolving Credit Commitments will be determined by the Borrower and the Lenders providing such New Term Loans or such New Revolving Credit Commitments; *provided* that, if the All-In Yield applicable to such New Term Loans exceeds the All-In Yield of the Initial Term Loans made on the Closing Date at such time by more than 50 basis points, then the interest rate margins for the Initial Term Loans shall be increased to the extent necessary so that the All-In Yield of the Initial Term Loans is equal to the All-In Yield of such New Term Loans minus 50 basis points; *provided* that any increase in All-In Yield to any Initial Term Loan due to the application or imposition of a Eurocurrency Rate or Base Rate floor on any New Term Loan shall be effected, at the Borrower's option, (x) through an increase in (or implementation of, as applicable) any Eurocurrency Rate or Base Rate floor applicable to such Initial Term Loan, (y) through an increase in the Applicable Rate for such Initial Term Loan or (z) any combination of (x) and (y) above, and in each case, solely to the extent that the application or imposition of such floor would cause an increase in the interest rate then in effect under the Initial Term Loans,

(vi) the New Term Loans may provide for the ability to participate on a pro rata basis or less than pro rata basis (but not greater than a pro rata basis) in any voluntary repayments or prepayments of principal of Term Loans hereunder and on a pro rata basis or less than a pro rata basis (but not greater than a pro rata basis except in the case of a prepayment under Section 2.05(b)(iii)(B)) in any mandatory repayments or prepayments of principal of Term Loans hereunder,

(vii) the Maturity Date of any Class of New Revolving Credit Commitments shall be no earlier than the maturity of any existing Revolving Credit Commitments and will require no scheduled amortization or mandatory commitment reduction prior to the Latest Maturity Date of any then existing Revolving Credit Commitments,

(viii) with respect to any New Revolving Credit Commitments, (1) the borrowing and repayment (except for (A) payments of interest and fees at different rates on New

Revolving Credit Commitments (and related outstandings), (B) repayments required upon the Maturity Date of any Revolving Credit Commitments and (C) repayments made in connection with a permanent repayment and termination of commitments (subject to clause (3) below)) of Revolving Credit Loans with respect to New Revolving Credit Commitments after the associated Incremental Amount Date shall be made on a pro rata basis with all other Revolving Credit Commitments, (2) subject to the provisions of Section 2.06(d) to the extent dealing with Letters of Credit which mature or expire after a Maturity Date when there exist Revolving Credit Commitments with a longer Maturity Date, all Letters of Credit shall be participated on a pro rata basis by all Lenders with Commitments in accordance with their percentage of the Revolving Credit Commitments (and except as provided in Section 2.06(d), without giving effect to changes thereto on an earlier Maturity Date with respect to Letters of Credit theretofore issued) and (3) the permanent repayment of Revolving Credit Loans with respect to, and termination of, New Revolving Credit Commitments after the associated Incremental Amount Date shall be made on a pro rata basis with all other Revolving Credit Commitments, except that the Borrower shall be permitted, in its sole discretion, to permanently repay and terminate commitments of any such Class on better than a pro rata basis (x) as compared to any other Class with a later Maturity Date than such Class and (y) as compared to any other Class in connection with the refinancing thereof with Refinancing Revolving Credit Commitments,

(ix) except as set forth above, the material terms of any such New Term Commitments or New Revolving Credit Commitments (and the Loans in respect thereof) shall be (taken as a whole) no more favorable (as reasonably determined by the Borrower in good faith) to the New Lenders than those applicable to the Term Loans or Revolving Credit Commitments, as applicable, (except for (1) covenants or other provisions applicable only to periods after the Latest Maturity Date of the Term Loans or Revolving Credit Commitments, as applicable and (2) pricing, fees, rate floors, premiums, optional prepayment or redemption terms); *provided* that (A) except as provided in preceding clauses (i) through (viii), the terms and conditions applicable to such New Term Commitments, New Term Loans and New Revolving Credit Commitments shall be either substantially similar to, and not more favorable to the lenders thereunder than the Term Loans or the Revolving Credit Loans, as applicable, or, if more favorable, may be materially different from those of the Term Loans or Revolving Credit Commitments, as applicable, to the extent such differences are reasonably acceptable to the Administrative Agent (it being understood that (x) terms applicable only after the Latest Maturity Date of the existing Term Loans and (y) the modification of the terms of the then-existing Term Loans to receive the benefit of such more favorable terms, in each case, are acceptable in any event) and (B) in the case of a Term Loan Increase or a Revolving Commitment Increase, the terms, provisions and documentation of such Term Loan Increase or a Revolving Commitment Increase shall be identical (other than with respect to upfront fees and OID and underwriting, commitment, amendment, arrangement, structuring or similar fees payable in connection therewith) to the applicable Term Loans or Revolving Credit Commitments being increased, in each case, as existing on the Incremental Facility Closing Date.

(c) Each notice from the Borrower pursuant to this Section shall set forth the requested amount and proposed terms of the relevant New Term Loans or New Revolving Credit Commitments and the date on which the Borrower proposes that the same shall be effective (each, an "**Incremental Amount Date**"). New Term Loans may be made, and New Revolving Credit Commitments may be provided, by any existing Lender (but each existing Term Lender shall not have an obligation to make a portion of any New Term Loan, and each existing Revolving Credit Lender shall not have an obligation to provide a portion of any New Revolving Credit Commitments, in each case on terms permitted in this Section 2.14) or by any Additional Lender; *provided* that the Administrative Agent shall have consented (not to be unreasonably conditioned, withheld or delayed) to such Lender's or Additional Lender's making such New Term Loans or providing such New Revolving Credit Commitments if such consent would be required under Section 10.07(b) for an assignment of Loans or

Revolving Credit Commitments, as applicable, to such Lender or Additional Lender. Commitments in respect of New Term Loans and New Revolving Credit Commitments shall become Commitments (or in the case of a New Revolving Credit Commitments to be provided by an existing Revolving Credit Lender, an increase in such Lender's applicable Revolving Credit Commitment) under this Agreement pursuant to an amendment (an "**Incremental Amendment**") to this Agreement and, as appropriate, the other Loan Documents, executed by the Borrower, each existing Lender agreeing to provide such Commitment, if any, each Additional Lender agreeing to provide such Commitment, if any, and the Administrative Agent. The Incremental Amendment may, without the consent of any other Lenders, effect such amendments to this Agreement and the other Loan Documents as may be necessary or appropriate, in the reasonable opinion of the Administrative Agent and the Borrower, to effect the provisions of this Section 2.14. The effectiveness of (and, in the case of any Incremental Amendment for New Term Loans or New Revolving Credit Commitments, any Credit Extension under) any Incremental Amendment shall be subject to the satisfaction on the date thereof (each, an "**Incremental Facility Closing Date**") of each of the conditions as the Borrower and the Lenders providing such Commitment shall agree, including, to the extent reasonably requested by the Administrative Agent, receipt by the Administrative Agent of (a) (i) customary officer's certificates and board resolutions and (ii) customary opinions of counsel to the Loan Parties, in each case, consistent with those delivered on the Closing Date (other than changes to legal opinions resulting from a change in law, change in fact or change to counsel's form of opinion reasonably satisfactory to the Administrative Agent) and (b) supplemental or reaffirmation agreements and/or such amendments to the Collateral Documents and/or the Guaranty as may be reasonably requested by the Administrative Agent (including Mortgage amendments) in order to ensure that any New Term Commitment or New Revolving Credit Commitments (as applicable) are provided with the benefit of the applicable Loan Documents. The Borrower shall use the proceeds (if any) of the New Term Loans, New Revolving Credit Commitments and Letters of Credit issued pursuant to any New Revolving Credit Commitments for any purpose not prohibited by this Agreement. No Lender shall be obligated to provide any New Term Loans or New Revolving Credit Commitments unless it so agrees.

(d) Upon any Incremental Facility Closing Date on which New Revolving Credit Commitments are effected through the establishment of a new Class of revolving credit commitments pursuant to this Section 2.14, (i) if, on such date, there are any revolving loans under any Revolving Credit Facility then outstanding, such revolving loans shall be prepaid from the proceeds of a new Borrowing of the New Revolving Credit Loans under such new Class of New Revolving Credit Commitments in such amounts as shall be necessary in order that, after giving effect to such Borrowing and all such related prepayments, all revolving credit loans under all Revolving Credit Facilities will be held by all Lenders under the Revolving Credit Facilities (including New Revolving Credit Lenders) ratably in accordance with their revolving credit commitments under all Revolving Credit Facilities (after giving effect to the establishment of such New Revolving Credit Commitments), (ii) in the case of a Revolving Credit Commitment, there shall be an automatic adjustment to the participations hereunder in Letters of Credit held by each Lender under the Revolving Credit Facilities so that each such Lender shares ratably in such participations in accordance with their revolving credit commitments under all Revolving Credit Commitments (after giving effect to the establishment of such New Revolving Credit Commitments), (iii) each New Revolving Credit Commitment shall be deemed for all purposes a Revolving Credit Commitment and each Loan made thereunder shall be deemed, for all purposes, a Revolving Credit Loan and (iv) each New Revolving Credit Lender shall become a Lender with respect to the New Revolving Credit Commitments and all matters relating thereto. Upon any Incremental Facility Closing Date on which New Revolving Credit Commitments are effected through a Revolving Commitment Increase, if, on the date of such increase, there are any Revolving Credit Loans outstanding, each of the Revolving Credit Lenders under such Class shall assign to each of the New Revolving Credit Lenders, and each of the New Revolving Credit Lenders shall purchase from each of the Revolving Credit Lenders under such Class, at par, such interests in the Revolving Credit Loans outstanding on such

Incremental Facility Closing Date as shall be necessary in order that, after giving effect to all such assignments and purchases, such Revolving Credit Loans under such Class will be held by existing Revolving Credit Lenders under such Class and New Revolving Credit Lenders ratably in accordance with their respective Revolving Credit Commitments under such Class after giving effect to the addition of such New Revolving Credit Commitments to the Revolving Credit Commitments under such Class. The Administrative Agent and the Lenders hereby agree that the minimum borrowing and prepayment requirements in Section 2.02 and 2.05(a) of this Agreement shall not apply to the transactions effected pursuant to the immediately preceding sentence.

(e) Any New Term Commitment or New Revolving Commitment Tranche may be designated a separate Class of Term Loans or Revolving Credit Commitments, as applicable, for all purposes of this Agreement. This Section 2.14 shall supersede any provisions in Section 2.05, Section 2.12, Section 2.13, Section 8.03 or Section 10.01 to the contrary.

Section 2.15 Refinancing Amendments. (a) The Borrower may, at any time or from time to time after the Closing Date, by notice to the Administrative Agent (a "**Refinancing Loan Request**"), request (A) (i) the establishment of one or more new Classes of term loans under this Agreement (any such new Class, "**New Refinancing Term Commitments**") or (ii) increases to one or more existing Classes of term loans under this Agreement (*provided* that the loans under such new commitments shall be fungible for U.S. federal income tax purposes with the existing Class of Term Loans proposed to be increased on the Refinancing Facility Closing Date for such increase) (any such increase to an existing Class, collectively with New Refinancing Term Commitments, "**Refinancing Term Commitments**"), or (B) (i) the establishment of one or more new Classes of revolving credit commitments under this Agreement (any such new Class, "**New Refinancing Revolving Credit Commitments**") or (ii) increases to one or more existing Classes of revolving credit commitments (any such increase to an existing Class, collectively with the New Refinancing Revolving Credit Commitments, "**Refinancing Revolving Credit Commitments**", and collectively with any Refinancing Term Commitments, "**Refinancing Commitments**"), in each case, established in exchange for, or to extend, renew, replace, repurchase, retire or refinance, in whole or in part, as selected by the Borrower, any one or more then existing Class or Classes of Loans or Commitments (with respect to a particular Refinancing Commitment or Refinancing Loan, such existing Loans or Commitments, "**Refinanced Debt**"), whereupon the Administrative Agent shall promptly deliver a copy of each such notice to each of the Lenders.

(b) Any Refinancing Term Loans made pursuant to New Refinancing Term Commitments or any New Refinancing Revolving Credit Commitments made on a Refinancing Facility Closing Date shall be designated a separate Class of Refinancing Term Loans or Refinancing Revolving Credit Commitments, as applicable, for all purposes of this Agreement. On any Refinancing Facility Closing Date on which any Refinancing Term Commitments of any Class are effected, subject to the satisfaction of the terms and conditions in this Section 2.15, (i) each Refinancing Term Lender of such Class shall make a Term Loan to the Borrower (a "**Refinancing Term Loan**") in an amount equal to its Refinancing Term Commitment of such Class and (ii) each Refinancing Term Lender of such Class shall become a Lender hereunder with respect to the Refinancing Term Commitment of such Class and the Refinancing Term Loans of such Class made pursuant thereto. On any Refinancing Facility Closing Date on which any Refinancing Revolving Credit Commitments of any Class are effected, subject to the satisfaction of the terms and conditions in this Section 2.15, (i) each Refinancing Revolving Credit Lender of such Class shall make its Refinancing Revolving Credit Commitment available to the Borrower (when borrowed, a "**Refinancing Revolving Credit Loan**" and collectively with any Refinancing Term Loan, a "**Refinancing Loan**") and (ii) each Refinancing Revolving Credit Lender of such Class shall become a Lender hereunder with respect to the Refinancing Revolving Credit Commitment of such Class and the Refinancing Revolving Credit Loans of such Class made pursuant thereto.

(c) Each Refinancing Loan Request from the Borrower pursuant to this Section 2.15 shall set forth the requested amount and proposed terms of the relevant Refinancing Term Loans or Refinancing Revolving Credit Commitments and identify the Refinanced Debt with respect thereto. Refinancing Term Loans may be made, and Refinancing Revolving Credit Commitments may be provided, by any existing Lender (but each existing Term Lender shall not have an obligation to make a portion of any Refinancing Term Loan, and each existing Revolving Credit Lender shall not have an obligation to provide a portion of any Refinancing Revolving Credit Commitments, in each case on terms permitted in this Section 2.15) or by any Additional Lender; *provided* that the Administrative Agent shall have consented (not to be unreasonably conditioned, withheld or delayed) to such Lender's or Additional Lender's making such Refinancing Term Loans or providing such Refinancing Revolving Credit Commitments if such consent would be required under Section 10.07(b) for an assignment of Loans or Revolving Credit Commitments, as applicable, to such Lender or Additional Lender (each such existing Lender or Additional Lender providing such Commitment or Loan, a "**Refinancing Revolving Credit Lender**" or "**Refinancing Term Lender**," as applicable, and, collectively, "**Refinancing Lenders**").

(d) The effectiveness of any Refinancing Amendment, and the Refinancing Commitments thereunder, shall be subject to the satisfaction on the date thereof (a "**Refinancing Facility Closing Date**") of each of the following conditions, together with any other conditions set forth in the Refinancing Amendment:

(i) after giving effect to such Refinancing Commitments, the conditions of Sections 4.02(a) and (b) shall be satisfied (it being understood that all references to "the date of such Credit Extension" or similar language in such Section 4.02 shall be deemed to refer to the applicable Refinancing Facility Closing Date),

(ii) each Refinancing Commitment shall be in an aggregate principal amount that is not less than $10,000,000 and shall be in an increment of $1,000,000 (*provided* that such amount may be less than $10,000,000 and not in an increment of $1,000,000 if such amount is equal to (x) the entire outstanding principal amount of Refinanced Debt that is in the form of Term Loans or (y) the entire outstanding principal amount of Refinanced Debt (or commitments) that is in the form of Revolving Credit Commitments),

(iii) to the extent reasonably requested by the Administrative Agent, the receipt by the Administrative Agent (A) (I) customary officer's certificates and board resolutions and (II) customary opinions of counsel to the Loan Parties, in each case, consistent with those delivered on the Closing Date (conformed as appropriate) other than changes to such legal opinions resulting from a change in law, change in fact or change to counsel's form of opinion reasonably satisfactory to the Administrative Agent) and (B) supplemental or reaffirmation agreements and/or such amendments to the Collateral Documents as may be reasonably requested by the Administrative Agent (including Mortgage amendments, if applicable) in order to ensure that any Refinancing Term Commitment or Refinancing Revolving Credit Commitments (as applicable) are provided with the benefit of the applicable Loan Documents, and

(iv) the Refinancing Term Loans made pursuant to any increase in any existing Class of Term Loans shall be added to (and form part of) each Borrowing of outstanding Term Loans under the respective Class so incurred on a pro rata basis (based on the principal amount of each Borrowing) so that each Lender under such Class will participate proportionately in each then outstanding Borrowing of Term Loans under such Class.

(e) The terms and provisions of the Refinancing Term Commitments or Refinancing Revolving Credit Commitments, as the case may be (and the Loans in respect of the foregoing), of any

Class shall be as agreed between the Borrower and the lenders providing such Refinancing Term Commitments or Refinancing Revolving Credit Commitment; *provided*, that:

(i) such Refinancing Term Commitments and Refinancing Revolving Credit Commitments shall (x) rank *pari passu* in right of payment and of security with the Revolving Credit Loans and the Term Loans made on the Closing Date and (y) may not be (I) secured by any assets other than Collateral or (II) guaranteed by any Person other than a Guarantor,

(ii) except with respect to customary bridge loans, Refinancing Term Loans shall not mature earlier than the Maturity Date of the applicable Refinancing Debt (prior to any extension thereto),

(iii) except with respect to customary bridge loans, Refinancing Term Loans shall have a Weighted Average Life to Maturity of no less than the Weighted Average Life to Maturity as then in effect for the applicable Refinanced Debt (prior to any extension thereto),

(iv) (x) the currency, discounts, premiums, fees, optional prepayment and redemptions terms and, subject to clauses (ii) and (iii) above, the amortization schedule applicable to any Refinancing Term Loans shall be determined by the Borrower and the Lenders thereunder, and (y) the currency, discounts, premiums, fees and optional prepayment and redemptions terms applicable to any Refinancing Revolving Credit Commitments shall be determined by the Borrower and the Lenders thereunder,

(v) the interest rate (including margin and floors) applicable to any Refinancing Term Loans or Refinancing Revolving Credit Commitments will be determined by the Borrower and the Lenders providing such Refinancing Term Loans or such Refinancing Revolving Credit Commitments,

(vi) the Refinancing Term Loans may provide for the ability to participate on a pro rata basis or less than pro rata basis (but not greater than a pro rata basis) in any voluntary repayments or prepayments of principal of Term Loans hereunder and on a pro rata basis or less than a pro rata basis (but not greater than a pro rata basis except in the case of a prepayment under Section 2.05(b)(iii)(B)) in any mandatory repayments or prepayments of principal of Term Loans hereunder,

(vii) the Maturity Date of any Class of Refinancing Revolving Credit Commitments shall be no earlier than the maturity of the applicable Refinanced Debt and will require no scheduled amortization or mandatory commitment reduction prior to the maturity of the applicable Refinanced Debt,

(viii) with respect to any New Revolving Credit Commitments, (1) the borrowing and repayment (except for (A) payments of interest and fees at different rates on Refinancing Revolving Credit Commitments (and related outstandings), (B) repayments required upon the Maturity Date of any Revolving Credit Commitments and (C) repayments made in connection with a permanent repayment and termination of commitments (subject to clause (3) below)) of Revolving Credit Loans with respect to Refinancing Revolving Credit Commitments after the associated Refinancing Facility Closing Date shall be made on a pro rata basis with all other Revolving Credit Commitments, (2) subject to the provisions of Section 2.06(d) to the extent dealing with Letters of Credit which mature or expire after a Maturity Date when there exist Revolving Credit Commitments with a longer Maturity Date, all Letters of Credit shall be participated on a pro rata basis by all Lenders with Commitments in accordance with their percentage of the Revolving Credit Commitments (and except as provided in Section 2.06(d), without giving effect to changes thereto on an earlier Maturity Date with respect to

Letters of Credit theretofore issued) and (3) the permanent repayment of Revolving Credit Loans with respect to, and termination of, Refinancing Revolving Credit Commitments after the associated Refinancing Facility Closing Date shall be made on a pro rata basis with all other Revolving Credit Commitments, except that the Borrower shall be permitted, in its sole discretion, to permanently repay and terminate commitments of any such Class on better than a pro rata basis (x) as compared to any other Class with a later Maturity Date than such Class and (y) as compared to any other Class in connection with the refinancing thereof with Refinancing Revolving Credit Commitments,

(ix) Refinancing Term Loans shall not have a greater principal amount than the principal amount of the applicable Refinanced Debt plus any accrued but unpaid interest and fees on such Refinanced Debt plus existing commitments unutilized under such Refinanced Debt to the extent permanently terminated at the time of incurrence of such new Indebtedness plus the amount of any tender premium or penalty or premium required to be paid under the terms of the instrument or documents governing such Refinanced Debt and any defeasance costs and any reasonable fees and expenses (including OID, upfront fees or similar fees) incurred in connection with the issuance of such Refinancing Term Loans,

(x) Refinancing Revolving Credit Commitments shall not have a greater principal amount of Commitments than the principal amount of the utilized Commitments of the applicable Refinanced Debt plus any accrued but unpaid interest and fees on such Refinanced Debt plus existing commitments unutilized under such Refinanced Debt to the extent permanently terminated at the time of incurrence of such new Indebtedness plus the amount of any tender premium or penalty or premium required to be paid under the terms of the instrument or documents governing such Refinanced Debt and any defeasance costs and any reasonable fees and expenses (including OID, upfront fees or similar fees) incurred in connection with the issuance of such Refinancing Revolving Credit Commitments or Refinancing Revolving Credit Loans,

(xi) except as set forth above, the material terms and conditions of any such Refinancing Term Commitments or Refinancing Revolving Credit Commitments (and the Loans in respect thereof) shall be (taken as a whole) no more favorable (as reasonably determined by the Borrower in good faith) to the Refinancing Lenders providing such Refinancing Term Commitments or Refinancing Revolving Credit Commitments, as applicable, than those applicable to the applicable Refinanced Debt (except for (1) covenants or other provisions applicable only to periods after the Maturity Date of the applicable Refinanced Debt and (2) pricing, fees, rate floors, premiums, optional prepayment or redemption terms); *provided* that except as provided in preceding clauses (i) through (x) above, the terms and conditions applicable to such Refinancing Term Commitments, Refinancing Term Loans and Refinancing Revolving Credit Commitments may be materially different from those of the applicable Refinanced Debt to the extent such differences are reflective of market terms and conditions at the time of incurrence or issuance thereof, in each case, as determined by the Borrower; *provided*, that no financial maintenance covenant applicable to the Borrower may be added to such Refinancing Term Commitments or Refinancing Revolving Credit Commitments (and the Loans in respect thereof) pursuant to this proviso without also being included in the Revolving Credit Facility and the Term Loans (which may be achieved by an amendment solely among the Borrower and the Administrative Agent, and, for the avoidance of doubt, it being understood that if such financial covenant is a "springing" financial maintenance covenant applicable only to Refinancing Revolving Credit Commitments, such financial maintenance covenant shall be automatically included in the Revolving Credit Facility only for the benefit of the Revolving Credit Facility and any Refinancing Revolving Credit Facility and not for the benefit of the Term Loans, any Refinancing Term Loans or any Refinancing Term Commitments).

(f) Commitments in respect of Refinancing Term Loans and Refinancing Revolving Credit Commitments shall become Commitments under this Agreement pursuant to an amendment (a "**Refinancing Amendment**") to this Agreement and, as appropriate, the other Loan Documents, executed by the Borrower, each existing Lender agreeing to provide such Commitment, if any, each Additional Lender agreeing to provide such Commitment, if any, and the Administrative Agent. The Refinancing Amendment may, without the consent of any other Lenders, effect such amendments to this Agreement and the other Loan Documents as may be necessary or appropriate, in the reasonable opinion of the Administrative Agent and the Borrower, to effect the provisions of this Section 2.15. The Borrower will, on or prior to the date which is five (5) Business Days after the receipt of such proceeds, use the proceeds, if any, of the Refinancing Term Loans and Refinancing Revolving Credit Commitments in exchange for, or to extend, renew, replace, repurchase, retire or refinance, and shall permanently terminate applicable commitments under, the applicable Refinanced Debt.

(g) Upon any Refinancing Facility Closing Date on which Refinancing Revolving Credit Commitments are effected through the establishment of a new Class of revolving credit commitments pursuant to this Section 2.15, (a) if, on such date, there are any revolving loans under any Revolving Credit Facility then outstanding, such revolving loans shall be prepaid from the proceeds of a new Borrowing of the Refinancing Revolving Credit Loans under such new Class of Refinancing Revolving Credit Commitments in such amounts as shall be necessary in order that, after giving effect to such Borrowing and all such related prepayments, all revolving credit loans under all Revolving Credit Facilities will be held by all Lenders under the Revolving Credit Facilities (including Lenders providing such Refinancing Revolving Credit Commitments) ratably in accordance with their revolving credit commitments under all Revolving Credit Facilities (after giving effect to the establishment of such Refinancing Revolving Credit Commitments), (b) in the case of a Revolving Credit Commitment, there shall be an automatic adjustment to the participations hereunder in Letters of Credit by each Lender under the Revolving Credit Facilities so that each such Lender shares ratably in such participations in accordance with their revolving credit commitments under all Revolving Credit Commitments (after giving effect to the establishment of such Refinancing Revolving Credit Commitments), (c) each Refinancing Revolving Credit Commitment shall be deemed for all purposes a Revolving Credit Commitment and each Loan made thereunder shall be deemed, for all purposes, a Revolving Credit Loan and (d) each Refinancing Revolving Credit Lender shall become a Lender with respect to the Refinancing Revolving Credit Commitments and all matters relating thereto. Upon any Refinancing Facility Closing Date on which Refinancing Revolving Credit Commitments are effected through the increase to any existing Class of Revolving Credit Commitments pursuant to this Section 2.15, if, on the date of such increase, there are any Revolving Credit Loans outstanding, each of the Revolving Credit Lenders under such Class shall be deemed to assign to each of the Refinancing Revolving Credit Lenders, and each of the Refinancing Revolving Credit Lenders shall purchase from each of the Revolving Credit Lenders under such Class, at par, such interests in the Revolving Credit Loans outstanding on such Refinancing Facility Closing Date as shall be necessary in order that, after giving effect to all such assignments and purchases, such Revolving Credit Loans under such Class will be held by existing Revolving Credit Lenders under such Class and Refinancing Revolving Credit Lenders ratably in accordance with their Revolving Credit Commitments under such Class after giving effect to the addition of such Refinancing Revolving Credit Commitments to the Revolving Credit Commitments under such Class. The Administrative Agent and the Lenders hereby agree that the minimum borrowing and prepayment requirements in Section 2.02 and 2.05(a) of this Agreement shall not apply to the transactions effected pursuant to the immediately preceding sentence.

(h) Any Refinancing Term Commitment or Refinancing Revolving Credit Commitment may be designated a separate Class of Term Loans or Revolving Credit Commitments, as applicable, for all purposes of this Agreement.

(i) In lieu of incurring any Refinancing Term Loans, the Borrower may, upon notice to the Administrative Agent, at any time or from time to time after the Closing Date issue, incur or otherwise obtain (A) secured Indebtedness in the form of one or more series of senior secured notes that are secured on a pari passu basis with the Obligations (but without regard to the control of remedies) (such notes, "**Permitted Pari Passu Secured Refinancing Debt**"), (B) secured Indebtedness in the form of one or more series of second lien (or other junior lien) secured notes or second lien (or other junior lien) secured loans (such notes or loans, "**Permitted Junior Secured Refinancing Debt**") and (C) unsecured or subordinated Indebtedness in the form of one or more series of unsecured or subordinated notes or loans (such notes or loans, "**Permitted Unsecured Refinancing Debt**" and together with Permitted Pari Passu Secured Refinancing Debt and Permitted Junior Secured Refinancing Debt, "**Refinancing Equivalent Debt**"), in each case, in exchange for, or to extend, renew, replace, repurchase, retire or refinance, in whole or in part, any existing Class or Classes of Loans (such Loans, "**Refinanced Loans**").

(i) Any Refinancing Equivalent Debt:

(A) (1) except with respect to customary bridge loans, shall not have a final scheduled maturity date earlier than the Maturity Date of the Refinanced Loans, (2) except with respect to customary bridge loans, shall not have a Weighted Average Life to Maturity shorter than the remaining Weighted Average Life to Maturity of the Refinanced Loans (prior to any extension thereto), (3) shall not be guaranteed by Persons other than Guarantors, (4) if in the form of subordinated Permitted Unsecured Refinancing Debt, shall be subject to a subordination agreement or provisions as reasonably agreed by the Administrative Agent, (5) shall not have a greater principal amount than the principal amount of the Refinanced Loans plus any accrued but unpaid interest and fees on such Refinanced Loans plus existing commitments unutilized under such Refinanced Loans to the extent permanently terminated at the time of incurrence of such new Indebtedness plus the amount of any tender premium or penalty or premium required to be paid under the terms of the instrument or documents governing such Refinanced Loans and any defeasance costs and any reasonable fees and expenses (including OID, upfront fees or similar fees) incurred in connection with the issuance of such Refinancing Equivalent Debt, and (6) the covenants and events of default applicable to such Refinancing Equivalent Debt shall not be, when taken as a whole, materially more favorable, to the holders of such Indebtedness than those applicable to the Refinanced Loans unless such terms and conditions for such Refinancing Equivalent Debt are reflective of market terms and conditions for the type of Indebtedness incurred or issued at the time of incurrence or issuance thereof, in each case, as determined by the Borrower in good faith (it being understood that terms applicable only after the Maturity Date of the applicable Refinanced Debt are acceptable in any event); *provided*, that no financial maintenance covenant applicable to the Borrower may be added to such Refinancing Equivalent Debt pursuant to this proviso without also being included in the Revolving Credit Facility and the Term Loans (which may be achieved by an amendment solely among the Borrower and the Administrative Agent, and, for the avoidance of doubt, it being understood that if such financial covenant is a "springing" financial maintenance covenant applicable only to Refinancing Revolving Credit Commitments, such financial maintenance covenant shall be automatically included in the Revolving Credit Facility only for the benefit of the Revolving Credit Facility and any Refinancing Revolving Credit Facility and not for the benefit of the Term Loans, any Refinancing Term Loans or any Refinancing Term Commitments); *provided, further*, that a certificate of the Borrower delivered to the Administrative Agent at least three (3) Business Days prior to the incurrence of such Indebtedness, together with a reasonably detailed description of the material covenants of such Indebtedness or drafts of the documentation relating thereto, stating that the Borrower has reasonably determined in good faith that such covenants and defaults satisfy the foregoing requirement shall be conclusive evidence that such covenants and

defaults satisfy the foregoing requirement unless the Administrative Agent notifies the Borrower within such three (3) Business Day period that it disagrees with such determination (including a reasonably detailed description of the basis upon which it disagrees).

(B) (1) if either Permitted Pari Passu Secured Refinancing Debt or Permitted Junior Secured Refinancing Debt, shall be subject to security agreements substantially the same as the Collateral Documents (with such differences as are appropriate to reflect the nature of such Refinancing Equivalent Debt and are otherwise reasonably satisfactory to the Administrative Agent), (2) if Permitted Pari Passu Secured Refinancing Debt, (x) shall be secured by the Collateral on a *pari passu* basis (but without regard to control of remedies) with the Obligations and shall not be secured by any property or assets of the Borrower or any Restricted Subsidiary other than the Collateral, and (y) shall be subject to a First Lien Intercreditor Agreement or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent, and (3) if Permitted Junior Secured Refinancing Debt, (x) shall be secured by the Collateral on a second priority (or other junior priority) basis to the Liens securing the Obligations and shall not be secured by any property or assets of the Borrower or any Restricted Subsidiary other than the Collateral, and (y) shall be subject to a Second Lien Intercreditor Agreement or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent.

(C) shall be incurred, and the proceeds thereof used, solely to repay, repurchase, retire or refinance the Refinanced Loans and terminate all commitments thereunder within five (5) Business Days after the receipt by the Borrower of such proceeds.

(j) This Section 2.15 shall supersede any provisions in Section 2.05, Section 2.12, Section 2.13, Section 8.03 or Section 10.01 to the contrary.

Section 2.16 [Reserved].

Section 2.17 Extended Term Loans. (a) The Borrower may at any time and from time to time request that all or a portion of the Term Loans of a given Class (each, an "**Existing Term Loan Facility**") be converted to extend the scheduled maturity date(s) of any payment of principal with respect to all or a portion of any principal amount of such Loans (any such Term Loans which have been so converted, "**Extended Term Loans**") and to provide for other terms consistent with this Section 2.17. In order to establish any Extended Term Loans, the Borrower shall provide an Extension Request to the Administrative Agent (who shall provide a copy of such notice to each of the Lenders under the applicable Existing Term Loan Facility) setting forth the proposed terms of the Extended Term Loans to be established, which shall (x) be identical as offered to each Lender under such applicable Existing Term Loan Facility (including as to the proposed interest rates and fees payable, but excluding any arrangement, structuring or other fees payable in connection therewith that are not generally shared with the relevant Lenders) and offered pro rata to each Lender under such Existing Term Loan Facility and (y) be identical to the Term Loans under the Existing Term Loan Facility from which such Extended Term Loans are to be converted, except that: (i) the scheduled amortization payments of principal, if any, and/or scheduled final maturity date of the Extended Term Loans shall be as set forth in the applicable Extension Amendment, subject to the provisos below, (ii) the All-In Yield with respect to the Extended Term Loans (whether in the form of interest rate margin, upfront fees, funding discounts, OID, prepayment premiums or otherwise) may be different than the All-In Yield for the Term Loans of such Existing Term Loan Facility, in each case, to the extent provided in the applicable Extension Amendment, (iii) the applicable Extension Amendment may provide for other covenants and terms that apply solely to any period after the Latest Maturity Date that is in effect on the effective date of the Extension Amendment (immediately prior to the establishment of such Extended Term Loans), and (iv) Extended Term Loans may have

optional prepayment terms (including call protection and prepayment premiums) and mandatory repayment terms (other than as to scheduled amortization and final maturity date) as may be agreed by the Borrower and the Lenders thereof; *provided* that no Extended Term Loans may be optionally prepaid or mandatorily repaid (other than scheduled amortization and in the case of a prepayment under Section 2.05(b)(iii)(B)) prior to the date on which all Term Loans with an earlier final stated maturity (including Term Loans under the Existing Term Loan Facility from which they were converted) are repaid in full, unless such prepayment or repayment is in accordance with the theretofore existing provisions of this Agreement or is accompanied by at least a pro rata prepayment or repayment of such other Term Loans, as applicable; *provided*, *further*, that (A) in no event shall the final maturity date of any Extended Term Loans of a given Term Loan Extension Series at the time of establishment thereof be earlier than the final maturity of the Existing Term Loan Facility being extended and (B) scheduled amortization applicable to such Extended Term Loans shall not exceed (or occur on different dates than) the scheduled amortization (exclusive of payments required at maturity) which previously applied to the Term Loans that are being extended (which regular amortization in the same amounts may continue after the date referenced in clause (x) below) at any time prior to the final maturity of the Existing Term Loan Facility being extended. Any Class of Extended Term Loans converted pursuant to any Extension Request shall be designated a series (each, a "**Term Loan Extension Series**") of Extended Term Loans for all purposes of this Agreement; *provided* that any Extended Term Loans converted from an Existing Term Loan Facility may, to the extent provided in the applicable Extension Amendment, be designated as an increase in any previously established Term Loan Extension Series with respect to such Existing Term Loan Facility (in which case scheduled amortization with respect thereto shall be proportionally increased). Each Term Loan Extension Series of Extended Term Loans incurred under this Section 2.17 shall be in an aggregate principal amount that is not less than a Dollar Amount of $10,000,000 (or, in the case of any Class of Term Loans with an entire outstanding principal amount of less than a Dollar Amount of $10,000,000 that is to be extended in full, such outstanding principal amount) (unless such extension is made pursuant to clause (e) below) and the Borrower may impose an Extension Minimum Condition with respect to any Extension Request for Extended Term Loans, which may be waived by the Borrower in its sole discretion.

(b) The Borrower shall provide the applicable Extension Request (which may be in the form of a term sheet posted to a website for the benefit of the Lenders) at least five (5) Business Days prior to the date on which Lenders under the Existing Term Loan Facility are requested to respond (although any changes to terms previously announced shall only require two (2) Business Days' notice), and shall agree to such procedures, if any, as may be reasonably requested by, or acceptable to, the Administrative Agent, in each case acting reasonably to accomplish the purposes of this Section 2.17. No Lender shall have any obligation to agree to have any of its Term Loans of any Existing Term Loan Facility converted into Extended Term Loans pursuant to any Extension Request or offer made pursuant to clause (e) below. Any Lender (each, an "**Extending Term Lender**") wishing to have all or a portion of its Term Loans under the Existing Term Loan Facility subject to such Extension Request converted into Extended Term Loans shall notify the Administrative Agent (each, a "**Term Loan Extension Election**") on or prior to the date specified in such Extension Request of the amount of its Term Loans under the Existing Term Loan Facility which it has elected to request be converted into Extended Term Loans (subject to any customary minimum denomination requirements imposed by the Administrative Agent). In the event that the aggregate principal amount of Term Loans under the Existing Term Loan Facility in respect of which applicable Term Lenders shall have accepted the relevant Extension Request exceeds the amount of Extended Term Loans requested to be extended pursuant to the Extension Request, Term Loans subject to Term Loan Extension Elections shall be converted to Extended Term Loans on a pro rata basis (subject to rounding by the Administrative Agent, which shall be conclusive) based on the aggregate principal amount of Term Loans included in each such Term Loan Extension Election.

(c) Extended Term Loans shall be established pursuant to an Extension Amendment amending the terms of this Agreement among the Borrower, the Administrative Agent and each Extending Term Lender providing an Extended Term Loan thereunder, which shall be consistent with the provisions set forth in Section 2.17(a) above and reasonably satisfactory to the Administrative Agent. Each such Extension Amendment shall include representations (x) as to the accuracy of representations and warranties set forth in Article V of this Agreement and in the other Loan Documents in all material respects immediately before and after giving effect to such Extension Amendment and the transactions contemplated thereby and (y) that no Default shall have occurred and be continuing as of the effective date of such Extension Amendment, after giving effect to such Extension Amendment and the transactions contemplated thereby. The effectiveness of any Extension Amendment shall be subject to any Extension Minimum Condition (unless waived by the Borrower) and, to the extent reasonably requested by the Administrative Agent, be subject to receipt by the Administrative Agent of (i) board resolutions and officers' certificates consistent with those delivered on the Closing Date, (ii) customary opinions of counsel to the Loan Parties reasonably acceptable to the Administrative Agent and (iii) supplemental or reaffirmation agreements and/or such amendments to the Collateral Documents and/or the Guaranty as may be reasonably requested by the Administrative Agent in order to ensure that the Extended Term Loans are provided with the benefit of the applicable Loan Documents. The Administrative Agent shall promptly notify each Lender as to the effectiveness of each such Extension Amendment. Each of the parties hereto hereby (A) agrees that, notwithstanding anything to the contrary set forth in Section 10.01, this Agreement and the other Loan Documents may be amended pursuant to an Extension Amendment, without the consent of any other Lenders, to the extent reasonably required to (i) reflect the existence and terms of the Extended Term Loans incurred pursuant thereto (including changes and additional terms as agreed by the relevant Lenders and permitted pursuant to Section 2.17(a)) and (ii) effect such other amendments to this Agreement and the other Loan Documents as may be necessary or appropriate, in the reasonable opinion of the Administrative Agent and the Borrower, to effect the provisions of this Section, and the Lenders hereby expressly and irrevocably, for the benefit of all parties hereto, authorize the Administrative Agent to enter into such Extension Amendment and (B) consents to the transactions contemplated by this Section 2.17 (including payment of interest, fees or premiums in respect of any Extended Term Loans on such terms as may be set forth in the relevant Extension Amendment).

(d) No conversion of Loans pursuant to any Term Loan Extension in accordance with this Section 2.17 shall constitute a voluntary or mandatory payment or prepayment for purposes of this Agreement.

(e) Notwithstanding anything to the contrary contained above, at any time following the establishment of a Term Loan Extension Series (and so long as the last sentence of Section 2.17(b) was not applicable thereto), the Borrower may offer any Lender of the relevant Existing Term Loan Facility (without being required to make the same offer to any or all other Lenders) who failed to make a Term Loan Extension Election in respect of all or a portion of its Term Loans on or prior to the date specified in the Extension Request relating to such Term Loan Extension Series the right to convert all or any portion of its Term Loans under the respective Existing Term Loan Facility into Extended Term Loans under such Term Loan Extension Series; *provided* that (A) such offer and any related acceptance (x) shall be in accordance with such procedures, if any, as may be reasonably requested by, or acceptable to, the Administrative Agent, (y) shall be on identical terms (including as to the proposed interest rates and fees payable, but excluding any arrangement, structuring or other fees payable in connection therewith that are not generally shared with the relevant Lenders) to those offered to the Lenders who agreed to convert their Term Loans under the Existing Term Loan Facility into Extended Term Loans pursuant to the respective Extension Request and (z) shall result in proportionate increases to the scheduled amortization payments, if any, otherwise owing with respect to the Term Loan Extension Series, (B) any Lender which agrees to an extension pursuant to this clause (e) shall enter into a joinder

agreement to the respective Extension Amendment in form and substance reasonably satisfactory to the Administrative Agent and the Borrower and executed by such Lender, the Administrative Agent, the Borrower (and the Required Lenders hereby irrevocably authorize the Administrative Agent to enter into any such joinder agreement) and (C) the Term Loans of any such Lender that are converted pursuant to this clause (e) shall be in an aggregate principal amount that is not less than a Dollar Amount of $1,000,000 (or, if such Lender's outstanding Term Loans amount is less than a Dollar Amount of $1,000,000, such lesser amount), unless each of the Borrower and the Administrative Agent otherwise consents.

(f) In the event that the Administrative Agent determines in its sole discretion that the allocation of Extended Term Loans of a given Term Loan Extension Series to a given Lender was incorrectly determined as a result of manifest administrative error in the receipt and processing of a Term Loan Extension Election timely submitted by such Lender in accordance with the procedures set forth in the applicable Extension Amendment, then the Administrative Agent, the Borrower and such affected Lender may (and hereby are authorized to), in their sole discretion and without the consent of any other Lender, notwithstanding anything to the contrary set forth in Section 10.01, enter into an amendment to this Agreement and the other Loan Documents (each, a "**Corrective Term Loan Extension Amendment**") within 15 days following the effective date of such Extension Amendment, which Corrective Term Loan Extension Amendment shall (i) provide for the conversion and extension of Term Loans under the applicable Existing Term Loan Facility in such amount as is required to cause such Lender to hold Extended Term Loans of the applicable Term Loan Extension Series into which such other Term Loans were initially converted, in the amount such Lender would have held had such administrative error not occurred and had such Lender received the minimum allocation of the applicable Loans or Commitments to which it was entitled under the terms of such Extension Amendment in the absence of such error, (ii) be subject to the satisfaction of such conditions as the Administrative Agent, the Borrower and such Lender may agree (including conditions of the type required to be satisfied for the effectiveness of an Extension Amendment described in Section 2.17(c)), and (iii) effect such other amendments of the type (with appropriate reference and nomenclature changes) described in the last sentence of Section 2.17(c).

(g) This Section 2.17 shall supersede any provisions in Section 2.05, Section 2.12, Section 2.13, Section 8.03 or Section 10.01 to the contrary.

Section 2.18 Extended Revolving Credit Commitments. (a) The Borrower may at any time and from time to time request that all or a portion of the Revolving Credit Commitments (and related Revolving Credit Loans and other related extensions of credit) of a given Class (each, an "**Existing Revolving Credit Loan Facility**") be converted to extend the scheduled maturity date(s) with respect to all or a portion of such Revolving Credit Commitments (any such Revolving Credit Commitments which have been so converted, "**Extended Revolving Credit Commitments**," and the revolving loans thereunder, "**Extended Revolving Credit Loans**") and to provide for other terms consistent with this Section 2.18. In order to establish any Extended Revolving Credit Commitments, the Borrower shall provide an Extension Request to the Administrative Agent (who shall provide a copy of such notice to each of the Lenders under the applicable Existing Revolving Credit Loan Facility) setting forth the proposed terms of the Extended Revolving Credit Commitments to be established, which shall (x) be identical as offered to each Lender under such applicable Existing Revolving Credit Loan Facility (including as to the proposed interest rates and fees payable, but excluding any arrangement, structuring or other fees payable in connection therewith that are not generally shared with the relevant Lenders) and offered pro rata to each Lender under such Existing Revolving Credit Loan Facility and (y) be identical to the Revolving Credit Commitments under the Existing Revolving Credit Loan Facility from which such Extended Revolving Credit Commitments are to be converted, except that: (i) the scheduled amortization payments, if any, of principal, scheduled or mandatory commitment reductions, scheduled final maturity

date and/or the unused line fee of (or applicable to) the Extended Revolving Credit Loans shall be as set forth in the applicable Extension Amendment, subject to the provisos below, (ii) the All-In Yield with respect to the Extended Revolving Credit Loans (whether in the form of interest rate margin, upfront fees, funding discounts, OID, prepayment premiums or otherwise) may be different than the All-In Yield for the Revolving Credit Loans of such Existing Revolving Credit Loan Facility, in each case, to the extent provided in the applicable Extension Amendment, (iii) the applicable Extension Amendment may provide for other covenants and terms that apply solely to any period after the Maturity Date which applied to the respective Existing Revolving Credit Loan Facility with respect to which the Extension Request is being made and (iv) Extended Revolving Credit Commitments may have optional prepayment terms (including call protection and prepayment premiums) and mandatory commitment reduction and repayment terms as may be agreed by the Borrower and the Lenders thereof; *provided* that no Extended Revolving Credit Loans or Extended Revolving Credit Commitments, as applicable, may be optionally prepaid or mandatorily repaid (other than scheduled amortizations and in connection with the refinancing thereof with Refinancing Revolving Credit Commitments) or subject to mandatory commitment reductions prior to the Maturity Date which applied to the respective Existing Revolving Credit Loan Facility with respect to which the Extension Request is being made, unless such prepayment, repayment and/or commitment reduction is in accordance with the theretofore existing provisions of this Agreement or is accompanied by at least a pro rata prepayment, repayment and/or commitment reduction, as the case may be, of such other Revolving Credit Loans or Revolving Credit Commitments, as applicable; *provided*, *further*, that in no event shall the final maturity date of any Extended Revolving Credit Loans of a given Revolving Credit Loan Extension Series at the time of establishment thereof be earlier than the Maturity Date which applied to the respective Existing Revolving Credit Loan Facility with respect to which the Extension Request is being made. Any Class of Extended Revolving Credit Commitments converted pursuant to any Extension Request shall be designated a series (each, a "**Revolving Credit Loan Extension Series**") of Extended Revolving Credit Commitments for all purposes of this Agreement; *provided* that any Extended Revolving Credit Commitments converted from an Existing Revolving Credit Loan Facility may, to the extent provided in the applicable Extension Amendment, be designated as an increase in any previously established Revolving Credit Loan Extension Series with respect to such Existing Revolving Credit Loan Facility. Each Revolving Credit Loan Extension Series of Extended Revolving Credit Commitments incurred under this Section 2.18 shall be in an aggregate amount that is not less than a Dollar Amount of $10,000,000 or, if an extension on substantially similar terms is concurrently made to Revolving Credit Commitments with the same existing maturity, then the aggregate amount for such Classes of Loans extended shall not be less than a Dollar Amount of $10,000,000 (or, in the case of any Class of Revolving Credit Commitments with an entire outstanding principal amount of less than a Dollar Amount of $10,000,000 that is to be extended in full, such outstanding principal amount) (unless, in either case, such extension is made pursuant to clause (e) below) and the Borrower may impose an Extension Minimum Condition with respect to any Extension Request for Extended Revolving Credit Commitments, which may be waived by the Borrower in its sole discretion.

(b) The Borrower shall provide the applicable Extension Request (which may be in the form of a term sheet posted to a website for the benefit of the Lenders) at least five (5) Business Days prior to the date on which Lenders under the Existing Revolving Credit Loan Facility are requested to respond (although any changes to terms previously announced shall only require two (2) Business Days' notice), and shall agree to such procedures, if any, as may be reasonably requested by, or acceptable to, the Administrative Agent, in each case acting reasonably to accomplish the purposes of this Section 2.18. No Lender shall have any obligation to agree to have any of its Revolving Credit Commitments of any Existing Revolving Credit Loan Facility converted into Extended Revolving Credit Commitments pursuant to any Extension Request or offer made pursuant to clause (e) below. Any Lender (each, an "**Extending Revolving Credit Lender**") wishing to have all or a portion of its Revolving Credit Commitments under the Existing Revolving Credit Loan Facility subject to such Extension Request converted into Extended Revolving Credit Commitments shall notify the Administrative Agent (each, a

"**Revolving Credit Extension Election**") on or prior to the date specified in such Extension Request of the amount of its Revolving Credit Commitments under the Existing Revolving Credit Loan Facility which it has elected to request be converted into Extended Revolving Credit Commitments (subject to any customary minimum denomination requirements imposed by the Administrative Agent). In the event that the aggregate amount of Revolving Credit Commitments under the Existing Revolving Credit Loan Facility in respect of which applicable Revolving Credit Lenders shall have accepted the relevant Extension Request exceeds the amount of Extended Revolving Credit Commitments requested to be extended pursuant to the Extension Request, Revolving Credit Commitments subject to Revolving Credit Extension Elections shall be converted to Extended Revolving Credit Commitments on a pro rata basis (subject to rounding by the Administrative Agent, which shall be conclusive) based on the aggregate amount of Revolving Credit Commitments included in each such Revolving Credit Extension Election.

(c) Extended Revolving Credit Commitments shall be established pursuant to an Extension Amendment amending the terms of this Agreement among the Borrower, the Administrative Agent, each Extending Revolving Credit Lender providing an Extended Revolving Credit Commitment thereunder and each applicable L/C Issuer, which shall be consistent with the provisions set forth in Section 2.18(a) above and reasonably satisfactory to the Administrative Agent. Each such Extension Amendment shall include representations (x) as to the accuracy of representations and warranties set forth in Article V of this Agreement and in the other Loan Documents in all material respects immediately before and after giving effect to such Extension Amendment and the transactions contemplated thereby and (y) that no Default shall have occurred and be continuing as of the effective date of such Extension Amendment, after giving effect to such Extension Amendment and the transactions contemplated thereby. The effectiveness of any such Extension Amendment shall be subject to any Extension Minimum Condition (unless waived by the Borrower) and, to the extent reasonably requested by the Administrative Agent, be subject to receipt by the Administrative Agent of (i) board resolutions and officers' certificates consistent with those delivered on the Closing Date, (ii) customary opinions of counsel to the Loan Parties reasonably acceptable to the Administrative Agent and (iii) supplemental or reaffirmation agreements and/or such amendments to the Collateral Documents and/or the Guaranty as may be reasonably requested by the Administrative Agent in order to ensure that the Extended Revolving Credit Commitments are provided with the benefit of the applicable Loan Documents. The Administrative Agent shall promptly notify each Lender as to the effectiveness of each such Extension Amendment. Each of the parties hereto hereby (A) agrees that, notwithstanding anything to the contrary set forth in Section 10.01, this Agreement and the other Loan Documents may be amended pursuant to an Extension Amendment, without the consent of any other Lenders, to the extent reasonably required to (i) reflect the existence and terms of the Extended Revolving Credit Commitments incurred pursuant thereto (including changes and additional terms as agreed by the relevant Lenders and permitted pursuant to Section 2.18(a)) and (ii) effect such other amendments to this Agreement and the other Loan Documents as may be necessary or appropriate, in the reasonable opinion of the Administrative Agent and the Borrower, to effect the provisions of this Section, and the Required Lenders hereby expressly and irrevocably, for the benefit of all parties hereto, authorize the Administrative Agent to enter into such Extension Amendment and (B) consents to the transactions contemplated by this Section 2.18 (including, for the avoidance of doubt, payment of interest, fees or premiums in respect of any Extended Revolving Credit Commitments on such terms as may be set forth in the relevant Extension Amendment).

(d) No conversion of Revolving Credit Commitments (and related Revolving Credit Loans) pursuant to any Extension Amendment in accordance with this Section 2.18 shall constitute a voluntary or mandatory payment or prepayment for purposes of this Agreement.

(e) Notwithstanding anything to the contrary contained above, at any time following the establishment of a Revolving Credit Loan Extension Series (and so long as the last sentence of Section 2.18(b) was not applicable thereto), the Borrower may offer any Lender of the relevant Existing

Revolving Credit Loan Facility (without being required to make the same offer to any or all other Lenders) who failed to make a Revolving Credit Extension Election in respect of all or a portion of its Revolving Credit Commitments on or prior to the date specified in the Extension Request relating to such Revolving Credit Loan Extension Series the right to convert all or any portion of its Revolving Credit Commitments (and related extensions of credit) under the respective Existing Revolving Credit Loan Facility into Extended Revolving Credit Commitments (and related extensions of credit) under such Revolving Credit Loan Extension Series; *provided* that (A) such offer and any related acceptance (x) shall be in accordance with such procedures, if any, as may be reasonably requested by, or acceptable to, the Administrative Agent and (y) shall be on identical terms (including as to the proposed interest rates and fees payable, but excluding any arrangement, structuring or other fees payable in connection therewith that are not generally shared with the relevant Lenders) to those offered to the Lenders who agreed to convert their Revolving Credit Commitments under the Existing Revolving Credit Loan Facility into Extended Revolving Credit Commitments pursuant to the respective Extension Request, (B) any Lender which agrees to an extension pursuant to this clause (e) shall enter into a joinder agreement to the respective Extension Amendment in form and substance reasonably satisfactory to the Administrative Agent and the Borrower and executed by such Lender, the Administrative Agent and the Borrower (and the Required Lenders hereby irrevocably authorize the Administrative Agent to enter into any such joinder agreement) and (C) the Extended Revolving Credit Commitments of any such Lender that are converted pursuant to this clause (e) shall be in an aggregate amount that is not less than a Dollar Amount of $5,000,000 (or, if such Lender's outstanding Revolving Credit Commitments amount is less than a Dollar Amount of $5,000,000, such lesser amount), unless each of the Borrower and the Administrative Agent otherwise consents.

(f) In the event that the Administrative Agent determines in its sole discretion that the allocation of Extended Revolving Credit Commitments of a given Revolving Credit Loan Extension Series to a given Lender was incorrectly determined as a result of manifest administrative error in the receipt and processing of a Revolving Credit Extension Election timely submitted by such Lender in accordance with the procedures set forth in the applicable Extension Amendment, then the Administrative Agent, the Borrower and such affected Lender may (and hereby are authorized to), in their sole discretion and without the consent of any other Lender, enter into an amendment to this Agreement and the other Loan Documents (each, a "**Corrective Revolving Credit Extension Amendment**") within 15 days following the effective date of such Extension Amendment, which Corrective Revolving Credit Extension Amendment shall (i) provide for the conversion and extension of Extended Revolving Credit Commitments of the applicable Revolving Credit Loan Extension Series into which such other Revolving Credit Commitments were initially converted, in the amount such Lender would have held had such administrative error not occurred and had such Lender received the minimum allocation of the applicable Loans or Commitments to which it was entitled under the terms of such Extension Amendment in the absence of such error, (ii) be subject to the satisfaction of such conditions as the Administrative Agent, the Borrower and such Lender may agree (including conditions of the type required to be satisfied for the effectiveness of an Extension Amendment described in Section 2.18(c)), and (iii) effect such other amendments of the type (with appropriate reference and nomenclature changes) described in the last sentence of Section 2.18(c).

(g) This Section 2.18 shall supersede any provisions in Section 2.05, Section 2.12, Section 2.13, Section 8.03 or Section 10.01 to the contrary.

Section 2.19 Defaulting Lenders. Notwithstanding any provision of this Agreement to the contrary, if any Lender becomes a Defaulting Lender, then the following provisions shall apply for so long as such Lender of a given Class is a Defaulting Lender:

(a) Waivers and Amendments. That Defaulting Lender's right to approve or disapprove any amendment, modification, waiver or consent with respect to this Agreement shall be restricted as set forth in the definition of Required Lenders, Required Facility Lenders, Required Term Lenders and Required Revolving Credit Lenders;

(b) Reallocation of Payments. Any payment of principal, interest, fees or other amounts received by the Administrative Agent for the account of that Defaulting Lender (whether voluntary or mandatory, at maturity, pursuant to Article VIII or otherwise), shall not be paid or distributed to that Defaulting Lender, but will instead be retained by the Administrative Agent in a segregated non-interest bearing account until the Termination Date and shall be applied at such time or times as may be reasonably determined by the Administrative Agent and the Borrower as follows: first, to the payment of any amounts owing by that Defaulting Lender to the Administrative Agent hereunder; second, to the payment on a pro rata basis of any amounts owing by that Defaulting Lender to any L/C Issuer hereunder; third, if so determined by the Administrative Agent or requested by the applicable L/C Issuer or the Borrower, as applicable, to be held as Cash Collateral for future funding obligations of that Defaulting Lender of any participation in any Letter of Credit; fourth, as the Borrower may request (so long as no Default exists), to the funding of any Loan in respect of which that Defaulting Lender has failed to fund its portion thereof as required by this Agreement; fifth, if so determined by the Administrative Agent and the Borrower, to be held in a non-interest bearing deposit account and released in order to satisfy obligations of that Defaulting Lender to fund Loans under this Agreement; sixth, to the payment of any amounts owing to the Lenders, any L/C Issuer as a result of any judgment of a court of competent jurisdiction obtained by any Lender, any L/C Issuer against that Defaulting Lender as a result of that Defaulting Lender's breach of its obligations under this Agreement; seventh, to the payment of any amounts owing to the Borrower as a result of any judgment of a court of competent jurisdiction obtained by the Borrower against that Defaulting Lender as a result of that Defaulting Lender's breach of its obligations under this Agreement; and eighth, after the Termination Date, to that Defaulting Lender or as otherwise directed by a court of competent jurisdiction; *provided* that if (x) such payment is a payment of the principal amount of any Loans or L/C Borrowings in respect of which that Defaulting Lender has not fully funded its appropriate share and (y) such Loans or L/C Borrowings were made at a time when the conditions set forth in Section 4.02 were satisfied or waived, such payment shall be applied solely to pay the Loans of, and L/C Borrowings owed to, all Non-Defaulting Lenders on a pro rata basis prior to being applied to the payment of any Loans of, or L/C Borrowings owed to, that Defaulting Lender. Any payments, prepayments or other amounts paid or payable to a Defaulting Lender that are applied (or held) to pay amounts owed by a Defaulting Lender or to post Cash Collateral pursuant to this Section 2.19(b) shall be deemed paid to and redirected by that Defaulting Lender, and each Lender irrevocably consents hereto;

(c) Certain Fees. That Defaulting Lender shall not be entitled to receive any commitment fee pursuant to Section 2.09 for any period during which that Lender is a Defaulting Lender (and the Borrower shall not be required to pay any such fee that otherwise would have been required to have been paid to that Defaulting Lender);

(d) if any Letter of Credit Exposure exists at the time a Revolving Credit Lender of a given Class becomes a Defaulting Lender then:

(i) all or any part of such Letter of Credit Exposure shall be reallocated, for each applicable Class or Facility, among the Revolving Credit Lenders that are Non-Defaulting Lenders, in respect of such Class or Facility, in accordance with their respective Revolving Credit Percentages but only to the extent (x) the sum of the Revolving Credit Exposures of all Revolving Credit Lenders that are Non-Defaulting Lenders in respect of such Class or Facility plus such Defaulting Lender's Letter of Credit Exposure does not exceed the aggregate amount of all Non-Defaulting

Lenders' Revolving Credit Commitments for the applicable Class or Facility, (y) immediately following the reallocation to a Revolving Credit Lender that is a Non-Defaulting Lender, the Revolving Credit Exposure of such Revolving Credit Lender does not exceed its Revolving Credit Commitment for the applicable Class or Facility at such time and (z) the conditions set forth in Sections 4.02(a) and (b) are satisfied at the time of such reallocation (and, so long as the Borrower has been provided with prior written notice of such reallocation, the Borrower shall be deemed to have represented and warranted that such conditions are satisfied at such time (unless the Borrower shall have otherwise notified the Administrative Agent at such time));

(ii) if the reallocation described in clause (i) above cannot, or can only partially, be effected, the Borrower shall, within two (2) Business Days following notice by the Administrative Agent, Cash Collateralize in a manner reasonably satisfactory to the applicable L/C Issuer such Defaulting Lender's Letter of Credit Exposure after giving effect to any partial reallocation pursuant to clause (i) above), in an aggregate amount equal to 100% of such Defaulting Lender's Letter of Credit Exposure or for so long as such Letter of Credit Exposure;

(iii) the Borrower shall not be required to pay any fees to such Defaulting Lender pursuant to Section 2.03(i) with respect to such Defaulting Lender's Letter of Credit Exposure, except to the extent the Defaulting Lender has Cash Collateralized such Defaulting Lender's Letter of Credit Exposure;

(iv) if the Letter of Credit Exposure of the Non-Defaulting Lenders is reallocated pursuant to this Section 2.19(d), then the fees payable to the Revolving Credit Lenders of the applicable Class pursuant to Section 2.03(i) shall be adjusted in accordance with such Non-Defaulting Lenders' Revolving Credit Percentages; and

(v) if any Defaulting Lender's Letter of Credit Exposure is neither Cash Collateralized nor reallocated pursuant to this Section 2.19(d), then, without prejudice to any rights or remedies of any L/C Issuer or any Revolving Credit Lender hereunder, all letter of credit fees payable under Section 2.03(i) with respect to such Defaulting Lender's Letter of Credit Exposure shall be payable to each L/C Issuer until such Letter of Credit Exposure is Cash Collateralized and/or reallocated;

(e) notwithstanding anything to the contrary contained in Section 2.03, so long as any Revolving Credit Lender is a Defaulting Lender (i) no L/C Issuer shall be required to issue, amend or increase any Letter of Credit, unless it is satisfied that the related exposure will be 100% covered by the Revolving Credit Commitments of the Non-Defaulting Lenders and/or Cash Collateral has been provided by the Borrower in accordance with Section 2.03(g) and Section 2.19(d), and (ii) participating interests in any such newly issued or increased Letter of Credit shall be allocated among Revolving Credit Lenders of the applicable Class that are Non-Defaulting Lenders in a manner consistent with Section 2.19(d)(i) (and Defaulting Lenders shall not participate therein); and

(f) In the event that the Administrative Agent, the Borrower and each L/C Issuer each agrees that a Defaulting Lender has adequately remedied all matters that caused such Revolving Credit Lender to be a Defaulting Lender, then (i) the Letter of Credit Exposure of the Revolving Credit Lenders of the applicable Class shall be readjusted to reflect the inclusion of such Revolving Credit Lender's Revolving Credit Commitments and on such date such Revolving Credit Lender shall purchase at par such of the Revolving Credit Loans of the other Revolving Credit Lenders as the Administrative Agent shall determine may be necessary in order for such Revolving Credit Lender to hold such Revolving Credit Loans in accordance with its Revolving Credit Percentage (*provided* that no adjustments will be made retroactively with respect to fees accrued or payments made by or on behalf of

the Borrower while that Lender was a Defaulting Lender; and *provided, further,* that except to the extent otherwise expressly agreed by the affected parties, no change hereunder from Defaulting Lender to Lender will constitute a waiver or release of any claim of any party hereunder arising from that Lender's having been a Defaulting Lender) and (ii) so long as no Event of Default then exists, all funds held as Cash Collateral shall thereafter be promptly returned to the Borrower. If the Revolving Credit Commitments have been terminated, all other Obligations in respect of the Revolving Credit Facility have been paid in full and no Letters of Credit are outstanding, then all funds held as Cash Collateral shall thereafter be promptly returned to the Borrower.

Section 2.20 [Reserved].

Section 2.21 [Reserved].

Section 2.22 Currency Equivalents.

(a) The Administrative Agent shall determine the Dollar Amount of each Revolving Credit Loan denominated in an Alternative Currency and the applicable L/C Issuer shall determine the Dollar Amount of the L/C Obligation in respect of each Letter of Credit denominated in an Alternative Currency (i) as of the first day of each Interest Period applicable thereto and (ii) as of the first day of each fiscal quarter of the Borrower, and shall promptly notify the Administrative Agent (in the case of a determination by a L/C Issuer) who shall promptly notify the Borrower and the Lenders of each Dollar Amount so determined by it. Each such determination shall be based on the Spot Rate (x) on the date of the related Request for Credit Extension for purposes of the initial such determination for any Revolving Credit Loan or Letter of Credit and (y) on the fourth Business Day prior to the date as of which such Dollar Amount is to be determined, for purposes of any subsequent determination.

(b) If after giving effect to any such determination of a Dollar Amount, the sum of the aggregate Outstanding Amount of the Revolving Credit Loans denominated in Alternative Currencies and the L/C Obligations denominated in Alternative Currencies exceeds the aggregate amount of Revolving Credit Commitments then in effect by 5% or more, the Borrower shall, within five (5) Business Days of receipt of notice thereof from the Administrative Agent setting forth such calculation in reasonable detail, prepay the applicable outstanding Dollar Amount of the Revolving Credit Loans denominated in Alternative Currencies or take other action as the Administrative Agent, in its discretion, may direct (including Cash Collateralization of the applicable L/C Obligations in amounts from time to time equal to such excess) to the extent necessary to eliminate any such excess.

Section 2.23 Loan Repricing Protection. At the time of the effectiveness of any Repricing Transaction that is consummated on or prior to the twelve (12) month anniversary of the Closing Date, the Borrower agrees to pay to the Administrative Agent, for the ratable account of each Term Lender with Initial Term Loans that are either prepaid, refinanced, substituted, replaced or otherwise subjected to a pricing reduction in connection with such Repricing Transaction (including, if applicable, any Non-Consenting Lender), a fee in an amount equal to 1.00% of (x) in the case of a Repricing Transaction described in clause (i) of the definition thereof, the aggregate principal amount of all Initial Term Loans prepaid, refinanced, substituted or replaced in connection with such Repricing Transaction and (y) in the case of a Repricing Transaction described in clause (ii) of the definition thereof, the aggregate principal amount of all Initial Term Loans outstanding on such date that are subject to an effective pricing reduction pursuant to such Repricing Transaction. Such fees shall be earned, due and payable upon the date of the effectiveness of such Repricing Transaction.

ARTICLE III

Taxes, Increased Costs Protection and Illegality

Section 3.01 Taxes. (a) Except as required by law, any and all payments by the Borrower or any Guarantor to or for the account of any Agent or any Lender under any Loan Document shall be made free and clear of and without deduction for any and all present or future taxes, duties, levies, imposts, deductions, assessments, fees, withholdings or similar charges imposed by any Governmental Authority, and all liabilities (including additions to tax, penalties and interest) with respect thereto ("**Taxes**"), excluding, in the case of each Agent and each Lender, (i) Taxes imposed on or measured by net income (however denominated), franchise Taxes or branch profits Taxes, in each case imposed by the jurisdiction (or any political subdivision thereof) under the laws of which it is organized or in which its principal office is located or, in the case of any Lender, in which its applicable Lending Office is located, (ii) Taxes (other than those described in clause (i)) imposed by reason of any connection between such Agent or Lender and any taxing jurisdiction other than a connection arising solely by having executed or entered into any Loan Document, having received payments thereunder or having been a party to, having performed its obligations under, having received or perfected a security interest under, having entered into any other transaction pursuant to and/or having enforced, any Loan Documents, (iii) with respect to any Lender, any withholding Tax that is or would be required to be withheld pursuant to Laws in effect at the time such Lender becomes a party hereto (or changes its applicable Lending Office), except to the extent that such Lender's assignor (if any), immediately prior to the assignment to such Lender, or such Lender, immediately prior to such Lender's change in Lending Office, was entitled to additional amounts in respect of such withholding Tax pursuant to this Section 3.01(a), (iv) any withholding Taxes imposed as a result of the failure of any Agent or Lender to comply with the provisions of Section 3.01(b), Section 3.01(c)(i) and Section 3.01(c)(ii) (in the case of any Foreign Lender, as defined below) or the provisions of Section 3.01(c)(iii) (in the case of any U.S. Lender, as defined below), (v) any withholding Taxes imposed pursuant to FATCA, (vi) any U.S. backup withholding taxes, and (vii) additions to tax, penalties and interest on the foregoing amounts in clauses (i) through (vi) (all such non-excluded taxes, duties, levies, imposts, deductions, assessments, fees, withholdings or similar charges and liabilities being hereinafter referred to as "**Indemnified Taxes**"). If the Borrower, a Guarantor or any other applicable withholding agent is required to deduct any Indemnified Taxes or Other Taxes (as defined below) from or in respect of any sum payable by the Borrower or applicable Guarantor under any Loan Document to any Agent or any Lender, (i) the sum payable shall be increased as necessary so that after all required deductions have been made (including deductions applicable to additional sums payable under this Section 3.01(a)), each of such Agent or such Lender receives an amount equal to the sum it would have received had no such deductions been made, (ii) the applicable withholding agent shall make such deductions, (iii) the applicable withholding agent shall pay the full amount deducted to the relevant taxing authority, and (iv) within thirty (30) days after the date of any such payment by the Borrower or any Guarantor (or, if receipts or evidence are not available within thirty (30) days, as soon as practicable thereafter), the Borrower or Guarantor shall furnish to such Agent or Lender (as the case may be) the original or a facsimile copy of a receipt evidencing payment thereof to the extent such a receipt has been made available to the Borrower or Guarantor (or other evidence of payment reasonably satisfactory to the Administrative Agent). If the Borrower or any Guarantor fails to pay any Indemnified Taxes or Other Taxes when due to the appropriate taxing authority or fails to remit to any Agent or any Lender the required receipts or other required documentary evidence that has been made available to the Borrower or Guarantor, the Borrower or Guarantor shall indemnify such Agent and such Lender for any incremental Taxes that may become payable by such Agent or such Lender arising out of such failure.

(b) Any Agent or Lender that is entitled to an exemption from or reduction of withholding Tax with respect to payments made under any Loan Document shall deliver to the Borrower and the Administrative Agent, at the time or times reasonably requested by the Borrower or the

Administrative Agent, such properly completed and executed documentation reasonably requested by the Borrower or the Administrative Agent as will permit such payments to be made without withholding or at a reduced rate of withholding. In addition, any Agent or Lender, if reasonably requested by Borrower or the Administrative Agent, shall deliver such other documentation prescribed by applicable Laws or reasonably requested by the Borrower or the Administrative Agent as will enable the Borrower or the Administrative Agent to determine whether or not such Agent or Lender is subject to backup withholding or information reporting requirements. Notwithstanding anything to the contrary in the preceding two sentences, the completion, execution and submission of such documentation (other than such documentation set forth in Section 3.01(c) below) shall not be required if in the Lender's reasonable judgment such completion, execution or submission would subject such Lender to any material unreimbursed cost or expense or would materially prejudice the legal or commercial position of such Lender.

(c) Without limiting the generality of the foregoing:

(i) To the extent it is legally eligible to do so, each Agent or Lender that is not a U.S. Person (each a "**Foreign Lender**") agrees to complete and deliver to the Borrower and the Administrative Agent on or prior to the date on which the Foreign Lender becomes a party hereto, two (2) accurate and complete signed copies of whichever of the following is applicable: (i) IRS Form W-8BEN or IRS Form W-8BEN-E (as applicable) or successor form certifying that it is entitled to benefits under an income tax treaty to which the United States is a party; (ii) IRS Form W-8ECI or successor form certifying that the income receivable pursuant to any Loan Document is effectively connected with the conduct of a trade or business in the United States; (iii) if the Foreign Lender is not (A) a bank described in Section 881(c)(3)(A) of the Code, (B) a 10-percent shareholder described in Section 871(h)(3)(B) of the Code, or (C) a controlled foreign corporation related to the Borrower within the meaning of Section 881(c)(3)(C)) of the Code, a certificate to that effect in substantially the form attached hereto as Exhibit H (a "**Non-Bank Certificate**") and an IRS Form W-8BEN or IRS Form W-8BEN-E(as applicable) or successor form, certifying that the Foreign Lender is not a United States person; (iv) to the extent a Foreign Lender is not the beneficial owner for U.S. federal income tax purposes, IRS Form W-8IMY (or any successor forms) of the Foreign Lender, accompanied by, as and to the extent applicable, a Form W-8BEN or IRS Form W-8BEN-E (as applicable), Form W-8ECI, Non-Bank Certificate (*provided*, that if the Foreign Lender is a partnership (and not a Participating Lender), the Foreign Lender may provide a Non-Bank Certificate on behalf of its beneficial owners), IRS Form W-9, Form W-8IMY (or other successor forms) and any other required supporting information from each beneficial owner (it being understood that a Foreign Lender need not provide certificates or supporting documentation from beneficial owners if (x) the Foreign Lender is a "qualified intermediary" or "withholding foreign partnership" for U.S. federal income tax purposes and (y) such Foreign Lender is as a result able to establish, and does establish, that payments to such Foreign Lender are, to the extent applicable, entitled to an exemption from or, if an exemption is not available, a reduction in the rate of, U.S. federal withholding taxes without providing such certificates or supporting documentation); or (v) any other form prescribed by applicable requirements of U.S. federal income tax law as a basis for claiming exemption from or a reduction in U.S. federal withholding tax duly completed together with such supplementary documentation as may be prescribed by applicable requirements of law to permit the Borrower and the Administrative Agent to determine the withholding or deduction required to be made.

(ii) (1) In addition, each such Foreign Lender shall, to the extent it is legally eligible to do so, (i) promptly submit to the Borrower and the Administrative Agent two (2) accurate and complete signed copies of such other or additional forms or certificates (or such successor forms or certificates as shall be adopted from time to time by the relevant taxing authorities) as may then be applicable or available to secure an exemption from or reduction in the rate of U.S. federal

withholding tax (A) on or before the date that such Foreign Lender's most recently delivered form, certificate or other evidence expires or becomes obsolete or inaccurate in any material respect, (B) after the occurrence of a change in the Foreign Lender's circumstances requiring a change in the most recent form, certificate or evidence previously delivered by it to the Borrower and the Administrative Agent, and (C) from time to time thereafter if reasonably requested by the Borrower or the Administrative Agent, and (ii) promptly notify the Borrower and the Administrative Agent, in writing, of any change in the Foreign Lender's circumstances which would modify or render invalid any claimed exemption or reduction.

(2) If a payment made to a Lender or any Agent under any Loan Document would be subject to U.S. federal withholding tax imposed by FATCA if such Lender or such Agent were to fail to comply with the applicable reporting requirements of FATCA (including those contained in Section 1471(b) or 1472(b) of the Code, as applicable), such Lender or such Agent shall deliver to the Borrower and the Administrative Agent at the time or times prescribed by law and at such time or times reasonably requested by the Borrower or the Administrative Agent such documentation prescribed by applicable Laws (including as prescribed by Section 1471(b)(3)(C)(i) of the Code) and such additional documentation reasonably requested by the Borrower or the Administrative Agent as may be necessary for the Borrower and the Administrative Agent to comply with their obligations under FATCA, to determine whether such Lender or such Agent has complied with such Lender's or such Agent's obligations under FATCA or to determine the amount, if any, to deduct and withhold from such payment. Solely for purposes of this clause (2), "FATCA" shall include any amendments made to FATCA after the date of this Agreement.

(iii) Each Agent or Lender that is a U.S. Person (each a "**U.S. Lender**") agrees to complete and deliver to the Borrower and the Administrative Agent two (2) copies of accurate and complete signed IRS Form W-9 or successor form certifying that such U.S. Lender is not subject to United States federal backup withholding tax (i) on or prior to the Closing Date (or on or prior to the date it becomes a party to this Agreement), (ii) on or before the date that such form expires or becomes obsolete or inaccurate in any material respect, (iii) after the occurrence of a change in the U.S. Lender's circumstances requiring a change in the most recent form previously delivered by it to the Borrower and the Administrative Agent, and (iv) from time to time thereafter if reasonably requested by the Borrower or the Administrative Agent; provided, however, that if such Agent or Lender is a disregarded entity for U.S. federal income tax purposes, it shall provide the appropriate withholding form of its owner (together with appropriate supporting documentation).

(d) **[Reserved]**.

(e) The Borrower agrees to pay any and all present or future stamp, court or documentary taxes and any other excise (in the nature of a documentary or similar tax), property, intangible, filing or mortgage recording taxes or charges or similar levies imposed by any Governmental Authority which arise from the execution, delivery, performance, enforcement or registration of, or otherwise with respect to, any Loan Document (including additions to tax, penalties and interest related thereto) excluding, in each case, such amounts imposed in connection with an Assignment and Assumption, grant of a participation, transfer or assignment to or designation of a new applicable Lending Office or other office for receiving payments under any Loan Document, except to the extent that any such Assignment and Assumption, grant of a participation, transfer or assignment to or designation of a new applicable Lending Office or other office for receiving payments under any Loan Document was made at the request of the Borrower pursuant to Section 3.07 (all such non-excluded taxes described in this Section 3.01(e) being hereinafter referred to as "**Other Taxes**").

(f) If any Indemnified Taxes with respect to any payment received by any Agent or Lender in respect of any Loan Document, or any Other Taxes, are directly asserted against any Agent or Lender, such Agent or Lender may pay such Indemnified Taxes or Other Taxes and the Loan Parties will jointly and severally indemnify and hold harmless such Agent or Lender for the full amount of such Indemnified Taxes and Other Taxes (and any Indemnified Taxes and Other Taxes imposed on amounts payable under this Section 3.01), and any reasonable out-of-pocket expenses arising therefrom or with respect thereto, whether or not such Taxes or Other Taxes were correctly or legally imposed or asserted. Payments under this Section 3.01(f) shall be made within ten (10) days after the date the Borrower receives written demand for payment from such Agent or Lender. A certificate as to the amount of such payment or liability delivered to the Borrower by an Agent or a Lender (with a copy to the Administrative Agent) shall be conclusive absent manifest error.

(g) Each Lender shall severally indemnify the Administrative Agent, within 10 days after demand therefor, for (i) any Taxes attributable to such Lender (but only to the extent that any Loan Party has not already indemnified the Administrative Agent for such Taxes and without limiting the obligation of the Loan Parties to do so) and (ii) any Taxes attributable to such Lender's failure to comply with the provisions of Section 10.7(e) relating to the maintenance of a Participant Register, in either case, that are payable or paid by the Administrative Agent in connection with any Loan Document, and any reasonable expenses arising therefrom or with respect thereto, whether or not such Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. A certificate as to the amount of such payment or liability delivered to any Lender by the Administrative Agent shall be conclusive absent manifest error. Each Lender hereby authorizes the Administrative Agent to set off and apply any and all amounts at any time owing to such Lender under any Loan Document or otherwise payable by the Administrative Agent to the Lender from any other source against any amount due to the Administrative Agent under this paragraph (g).

(h) If the Borrower determines in good faith that a reasonable basis exists for contesting any Taxes for which indemnification has been demanded or additional amounts have been payable hereunder, the relevant Lender or the relevant Agent, as applicable, shall cooperate with the Borrower in a reasonable challenge of such Taxes if so requested by the Borrower; *provided* that (i) such Lender or Agent determines in its reasonable discretion that it would not be prejudiced by cooperating in such challenge, (ii) the Borrower pays all related expenses of such Agent or Lender, (iii) the Borrower indemnifies such Lender or Agent for any liabilities or other costs incurred by such party in connection with such challenge and (iv) Borrower indemnifies Lender or the relevant Agent, as applicable, for any Indemnified Taxes or Other Taxes before any such contest.

(i) If any Agent or any Lender determines, in its sole discretion exercised in good faith, that it has received a refund in respect of any Indemnified Taxes or Other Taxes as to which it has been indemnified by the Borrower or any Guarantor, as the case may be, or with respect to which the Borrower or any Guarantor, as the case may be, has paid additional amounts pursuant to this Section 3.01, it shall promptly remit such refund to the Borrower (but only to the extent of indemnity payments made, or additional amounts paid, by the Borrower or any Guarantor, as the case may be, under this Section 3.01 with respect to the Indemnified Taxes or Other Taxes giving rise to such refund), net of all reasonable out-of-pocket expenses (including any Taxes) incurred by such Agent or such Lender and without interest (other than any interest paid by the relevant Governmental Authority with respect to such refund); *provided* that the Borrower, upon the request of such Agent or such Lender, agrees to repay the amount paid over to the Borrower (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) to such Agent or such Lender in the event such Agent or such Lender is required to repay such refund to such Governmental Authority. Such Agent or such Lender, as the case may be, shall provide the Borrower with a copy of any notice of assessment or other evidence reasonably available of the requirement to repay such refund received from the relevant Governmental Authority (*provided* that such Lender or such Agent may delete any information therein that such Lender or such Agent deems confidential or not relevant to such refund in its reasonable discretion).

(j) Each Lender agrees that, upon the occurrence of any event giving rise to the operation of Sections 3.01(a) with respect to such Lender, it will, if requested by the Borrower in writing, use commercially reasonable efforts (subject to legal and regulatory restrictions) to mitigate the effect of any such event, including by designating another Lending Office for any Loan or Letter of Credit affected by such event and by completing and delivering or filing any Tax-related forms which such Lender is legally eligible to deliver and which would reduce or eliminate any amount of Indemnified Taxes or Other Taxes required to be deducted or withheld or paid by the Borrower; *provided* that such efforts are made at the Borrower's expense and on terms that, in the reasonable judgment of such Lender, do not cause such Lender and its Lending Office(s) to suffer any economic, legal or regulatory disadvantage; and *provided, further* that nothing in this Section 3.01(j) shall affect or postpone any of the Obligations of the Borrower or the rights of such Lender pursuant to Sections 3.01(a) or (f) Notwithstanding any other provision of this Agreement, the Borrower and the Administrative Agent may deduct and withhold any taxes required by any Laws to be deducted and withheld from any payment under any of the Loan Documents, subject to the provisions of this Section 3.01.

(k) Subject to clause (l), each party's obligations under this Section 3.01 shall survive the resignation or replacement of the Administrative Agent or any assignment of rights by, or the replacement of, a Lender, the termination of the Commitments and the repayment, satisfaction or discharge of all obligations under the Loan Documents.

(l) With respect to any Lender's claim for compensation under this Section 3.01, the Borrower shall not be required to compensate such Lender for any amount incurred unless such Lender notifies the Borrower of the event that gives rise to such claim within 180 days after such Lender obtains knowledge of such event.

(m) For the avoidance of doubt, the term "Lender" shall, for purposes of this Section 3.01, include any L/C Issuer.

(n) Without limiting the provisions of Sections 3.01(a) or (f) above, each Lender shall indemnify the Borrower, and shall make payment in respect thereof within ten (10) days after demand therefor, against any and all taxes excluded from the definition of Taxes under clauses (iii), (iv) or (vi) of the first sentence of Section 3.01(a) (and any related additions to tax, penalties and interest under clause (vii) thereof) imposed in respect of such Lender, and any reasonable expenses arising therefrom or with respect thereto, that are incurred by or asserted against the Borrower by any Governmental Authority as a result of the failure by such Lender to deliver, or as a result of the inaccuracy, inadequacy or deficiency of, any documentation required to be delivered by such Lender to the Borrower pursuant to Sections 3.01(b), (c)(i), (c)(ii) or (c)(iii).

Section 3.02 Illegality. If any Lender reasonably determines that any Law has made it unlawful, or that any Governmental Authority has asserted that it is unlawful, for any Lender or its applicable Lending Office to make, maintain or fund Loans whose interest is determined by reference to the Eurocurrency Rate (whether denominated in Dollars or an Alternative Currency), or to determine or charge interest rates based upon the Adjusted Eurocurrency Rate, or any Governmental Authority has imposed material restrictions on the authority of such Lender to purchase or sell, or to take deposits of, Dollars or any Alternative Currency in the applicable interbank market, then, on notice thereof by such Lender to the Borrower through the Administrative Agent, (i) any obligation of such Lender to make or continue Eurocurrency Rate Loans in the affected currency or currencies or to convert Base Rate Loans to Eurocurrency Rate Loans shall be suspended and (ii) if such notice asserts the illegality of such Lender

making or maintaining Base Rate Loans the interest rate on which is determined by reference to the Adjusted Eurocurrency Rate component of the Base Rate, the interest rate on which Base Rate Loans of such Lender, shall, if necessary to avoid such illegality, be determined by the Administrative Agent without reference to the Eurocurrency Rate component of the Base Rate, in each case until such Lender notifies the Administrative Agent and the Borrower that the circumstances giving rise to such determination no longer exist. Upon receipt of such notice, (x) the Borrower shall, upon demand from such Lender (with a copy to the Administrative Agent), prepay or, (I) if applicable and such Loans are denominated in Dollars, convert all of such Lender's Eurocurrency Rate Loans to Base Rate Loans (the interest rate on which Base Rate Loans of such Lender shall, if necessary to avoid such illegality, be determined by the Administrative Agent without reference to the Adjusted Eurocurrency Rate component of the Base Rate), or (II) if applicable and such Loans are denominated in an Alternative Currency, to the extent the Borrower and all Appropriate Lenders agree, convert such Loans to Loans bearing interest at an alternative rate mutually acceptable to the Borrower and all of the Appropriate Lenders, in each case, either on the last day of the Interest Period therefor, if such Lender may lawfully continue to maintain such Eurocurrency Rate Loans to such day, or immediately, if such Lender may not lawfully continue to maintain such Eurocurrency Rate Loans and (y) if such notice asserts the illegality of such Lender determining or charging interest rates based upon the Eurocurrency Rate, the Administrative Agent shall during the period of such suspension compute the Base Rate applicable to such Lender without reference to the Eurocurrency Rate component thereof until the Administrative Agent is advised in writing by such Lender that it is no longer illegal for such Lender to determine or charge interest rates based upon the Eurocurrency Rate. Upon any such prepayment or conversion, the Borrower shall also pay accrued interest on the amount so prepaid or converted and all amounts due, if any, in connection with such prepayment or conversion under Section 3.05. Each Lender agrees to designate a different Lending Office if such designation will avoid the need for such notice and will not, in the good faith judgment of such Lender, otherwise be materially disadvantageous to such Lender.

Section 3.03 Inability to Determine Rates. If the Required Lenders reasonably determines that for any reason, adequate and reasonable means do not exist for determining the Eurocurrency Rate for any requested Interest Period with respect to a proposed Eurocurrency Rate Loan, or that the Eurocurrency Rate for any requested Interest Period with respect to a proposed Eurocurrency Rate Loan does not adequately and fairly reflect the cost to such Lenders of funding such Loan, or that deposits are not being offered to banks in the relevant interbank market for the applicable amount and the Interest Period of such Eurocurrency Rate Loan, the Administrative Agent will promptly so notify the Borrower and each Lender. Thereafter, (x) the obligation of the Lenders to make or maintain Eurocurrency Rate Loans in the affected currency or currencies shall be suspended and (y) in the event of a determination described in the preceding sentence with respect to the Eurocurrency Rate component of the Base Rate, the utilization of the Eurocurrency Rate component in determining the Base Rate shall be suspended, in each case until the Administrative Agent (upon the instruction of the Required Lenders) revokes such notice. Upon receipt of such notice, the Borrower may revoke any pending request for a Borrowing of, conversion to or continuation of Eurocurrency Rate Loans or, failing that, will be deemed to have converted such request into a request for a Borrowing of Base Rate Loans in the amount specified therein (or, in the case of a pending request for a Loan denominated in an Alternative Currency, the Borrower and the Lenders may establish a mutually acceptable alternative rate).

Section 3.04 Increased Cost and Reduced Return; Capital Adequacy; Reserves on Eurocurrency Rate Loans, etc.

(a) Increased Costs Generally. If any Change in Law shall:

(i) impose, modify or deem applicable any reserve, special deposit, compulsory loan, insurance charge or similar requirement against assets of, deposits with or for the account of, or credit extended or participated in by, any Lender;

(ii) subject any Lender to any tax of any kind whatsoever with respect to this Agreement or any Eurocurrency Rate Loan made by it, or change the basis of taxation of payments to such Lender in respect thereof (except, in each case, for Indemnified Taxes, amounts excluded from the definition of Indemnified Taxes pursuant to clauses (i) through (vi) of the first sentence of Section 3.01(a) (and any additions to tax, penalties and interest on the foregoing amounts in said clauses (i) through (vi)) that are imposed with respect to payments for or on account of any Agent or any Lender under any Loan Document and any Other Taxes and amounts excluded from the definition of Other Taxes pursuant to Section 3.01(e)); or

(iii) (A) impose on any Lender any increase in the cost to such Lender of agreeing to make or making, funding or maintaining Eurocurrency Rate Loans or (as the case may be) issuing or participating in Letters of Credit, or (B) cause a reduction in the amount received or receivable by any Lender in connection with any of the foregoing, that is not otherwise accounted for in the definition of Adjusted Eurocurrency Rate (excluding for purposes of this Section 3.04(a) any such increased costs or reduction in amount resulting from (x) reserve requirements contemplated by Section 3.04(d) and (y) amounts otherwise excluded in the parenthetical in clause (ii) immediately above);

or the result of any of the foregoing shall be to increase the cost to such Lender of making or maintaining any Loan the interest on which is determined by reference to the Eurocurrency Rate or issuing or participating in any Letters of Credit (or of maintaining its obligation to make any such Loan or issue or participate in any such Letter of Credit), or to reduce the amount of any sum received or receivable by such Lender (whether of principal, interest or any other amount) then, from time to time within fifteen (15) days after demand by such Lender setting forth in reasonable detail such increased costs or such reduction in amount (with a copy of such demand to the Administrative Agent), the Borrower will pay to such Lender such additional amount or amounts as will compensate such Lender for such additional costs incurred or reduction suffered. At any time that any Eurocurrency Rate Loan is affected by the circumstances described in this Section 3.04(a), the Borrower may, subject to Section 3.05, either (i) if the affected Eurocurrency Rate Loan is then being made pursuant to a Borrowing, cancel such Borrowing by giving the Administrative Agent telephonic notice (confirmed promptly in writing) thereof on the same date that the Borrower receives any such demand from such Lender or (ii) if the affected Eurocurrency Rate Loan is then outstanding, upon at least three Business Days' notice to the Administrative Agent, require the affected Lender to convert such Eurocurrency Rate Loan into a Base Rate Loan, if applicable.

(b) Capital Requirements. If any Lender reasonably determines that the introduction of any Change in Law regarding capital adequacy or liquidity requirements, or any change therein or the interpretation thereof, in each case after the date hereof, or compliance by such Lender (or its Lending Office) therewith, has the effect of reducing the rate of return on the capital of such Lender, or any corporation or holding company controlling such Lender as a consequence of such Lender's obligations hereunder (taking into consideration its policies and the policies of such Lender's holding company with respect to capital adequacy and liquidity), then from time to time upon demand of such Lender setting forth in reasonable detail the charge and the calculation of such reduced rate of return (with a copy of such demand to the Administrative Agent), the Borrower will pay to such Lender, as the case may be, such additional amount or amounts as will compensate such Lender or such Lender's holding company for any such reduction suffered.

(c) Certificates for Reimbursement. A certificate of a Lender setting forth the amount or amounts necessary to compensate such Lender or its holding company, as the case may be, as specified in subclause (a) or (b) of this Section 3.04 and delivered to the Borrower shall be conclusive absent manifest error. The Borrower shall pay such Lender, as the case may be, the amount shown as due on any such certificate within ten (10) days after receipt thereof.

(d) Reserves on Eurocurrency Rate Borrowings. The Borrower shall pay to each Lender, (i) as long as such Lender shall be required to maintain reserves with respect to liabilities or assets consisting of or including Eurocurrency Rate funds or deposits, additional interest on the unpaid principal amount of each Eurocurrency Rate Loan equal to the actual costs of such reserves allocated to such Loan by such Lender (as determined by such Lender in good faith, which determination shall be conclusive in the absence of manifest error), and (ii) as long as such Lender shall be required to comply with any reserve ratio requirement or analogous requirement of any other central banking or financial regulatory authority imposed in respect of the maintenance of the Commitments or the funding of the Eurocurrency Rate Loans, such additional costs (expressed as a percentage per annum and rounded upwards, if necessary, to the nearest five decimal places) equal to the actual costs allocated to such Commitment or Loan by such Lender (as determined by such Lender in good faith, which determination shall be conclusive absent manifest error) which in each case shall be due and payable on each date on which interest is payable on such Loan; *provided* the Borrower shall have received at least fifteen (15) days' prior notice (with a copy to the Administrative Agent) of such additional interest or cost from such Lender; *provided, further*, that any such costs described in clauses (d)(i) and (d)(ii) resulting from reserve requirements contemplated by the definition of Adjusted Eurocurrency Rate shall be excluded for all purposes under this Section 3.04(d). If a Lender fails to give notice fifteen (15) days prior to the relevant Interest Payment Date, such additional interest or cost shall be due and payable fifteen (15) days from receipt of such notice.

(e) Delay in Requests. Failure or delay on the part of any Lender to demand compensation pursuant to the foregoing provisions of this Section 3.04 shall not constitute a waiver of such Lender's right to demand such compensation; *provided* that the Borrower shall not be required to compensate a Lender pursuant to the foregoing provisions of this Section 3.04 for any increased costs incurred or reductions suffered more than one hundred and eighty (180) days prior to the date that such Lender notifies the Borrower of the Change in Law giving rise to such increased costs or reductions and of such Lender's intention to claim compensation therefor (except that, if the Change in Law giving rise to such increased costs or reductions is retroactive, then the 180-day period referred to above shall be extended to include the period of retroactive effect thereof). No Lender shall demand compensation pursuant to this Section 3.04 unless such Lender is generally making corresponding demands on similar types of borrowers for similar amounts pursuant to similar provisions in other loan documents to which such Lender is a party.

(f) Mitigation. If any Lender requests compensation under this Section 3.04, then such Lender will, if requested by the Borrower, use commercially reasonable efforts to designate another Lending Office for any Loan or Letter of Credit affected by such event; *provided* that such efforts are made at the Borrower's expense and on terms that, in the reasonable judgment of such Lender, cause such Lender and its Lending Office(s) to suffer no economic, legal or regulatory disadvantage; and *provided, further*, that nothing in this Section 3.04(f) shall affect or postpone any of the Obligations of the Borrower or the rights of such Lender pursuant to Sections 3.04(a), (b), (c), (d) or (e).

Section 3.05 Funding Losses. Upon written demand of any Lender (with a copy to the Administrative Agent) from time to time, which demand shall set forth in reasonable detail the basis for requesting such amount, the Borrower shall promptly compensate such Lender for and hold such Lender harmless from any loss, cost or expense incurred by it as a result of:

(a) any continuation, conversion, payment or prepayment of any Eurocurrency Rate Loan on a day prior to the last day of the Interest Period for such Loan (whether voluntary, mandatory, automatic, by reason of acceleration, or otherwise);

(b) any failure by the Borrower (for a reason other than the failure of such Lender to make a Loan) to prepay, borrow, continue or convert any Eurocurrency Rate Loan on the date or in the amount notified by the Borrower; or

(c) any assignment of a Eurocurrency Rate Loan on a day prior to the last day of the Interest Period therefor as a result of a request by the Borrower pursuant to Section 3.07,

including any loss or expense (excluding loss of anticipated profits or margin) actually incurred by reason of the liquidation or reemployment of funds obtained by it to maintain such Loan or from fees payable to terminate the deposits from which such funds were obtained.

Section 3.06 Matters Applicable to All Requests for Compensation.

(a) Designation of a Different Lending Office. If any Lender requests compensation under Section 3.04, or the Borrower is required to pay any additional amount to any Lender or any Governmental Authority for the account of any Lender or L/C Issuer pursuant to Section 3.01, or if any Lender gives a notice pursuant to Section 3.02, then such Lender or L/C Issuer, as applicable shall use reasonable efforts to designate a different Lending Office for funding or booking its Loans hereunder or issuing Letters of Credit hereunder or to assign its rights and obligations hereunder to another of its offices, branches or affiliates, if, in the judgment of such Lender or L/C Issuer, as applicable, such designation or assignment (i) would eliminate or reduce amounts payable pursuant to Section 3.01 or Section 3.04, as the case may be, in the future, or eliminate the need for the notice pursuant to Section 3.02, as applicable, and (ii) in each case, would not subject such Lender or L/C Issuer, as applicable to any unreimbursed cost or expense and would not otherwise be disadvantageous to such Lender or L/C Issuer, as applicable in any material economic, legal or regulatory respect.

(b) Suspension of Lender Obligations. If any Lender requests compensation by the Borrower under Section 3.04, the Borrower may, by notice to such Lender (with a copy to the Administrative Agent), suspend the obligation of such Lender to make or continue Eurocurrency Rate Loans denominated in Dollars from one Interest Period to another Interest Period, or to convert Base Rate Loans into Eurocurrency Rate Loans denominated in Dollars, until the event or condition giving rise to such request ceases to be in effect (in which case the provisions of Section 3.06(c) shall be applicable); *provided* that such suspension shall not affect the right of such Lender to receive the compensation so requested.

(c) If the obligation of any Lender to make or continue from one Interest Period to another Interest Period any Eurocurrency Rate Loan denominated in Dollars, or to convert Base Rate Loans into Eurocurrency Rate Loans denominated in Dollars shall be suspended pursuant to Section 3.06(b) hereof, such Lender's Eurocurrency Rate Loans denominated in Dollars shall be automatically converted into Base Rate Loans on the last day(s) of the then current Interest Period(s) for such Eurocurrency Rate Loans (or, in the case of an immediate conversion required by Section 3.02, on such earlier date as required by Law) and, unless and until such Lender gives notice as provided below

that the circumstances specified in Section 3.01, Section 3.02, Section 3.03 or Section 3.04 hereof that gave rise to such conversion no longer exist:

(i) to the extent that such Lender's Eurocurrency Rate Loans have been so converted, all payments and prepayments of principal that would otherwise be applied to such Lender's Eurocurrency Rate Loans denominated in Dollars shall be applied instead to its Base Rate Loans; and

(ii) all Loans that would otherwise be made or continued from one Interest Period to another Interest Period by such Lender as Eurocurrency Rate Loans denominated in Dollars shall be made or continued instead as Base Rate Loans, and all Base Rate Loans of such Lender that would otherwise be converted into Eurocurrency Rate Loans denominated in Dollars shall remain as Base Rate Loans.

(d) Conversion of Eurocurrency Rate Loans. If any Lender gives notice to the Borrower (with a copy to the Administrative Agent) that the circumstances specified in Section 3.02, 3.03 or 3.04 hereof that gave rise to the conversion of such Lender's Eurocurrency Rate Loans denominated in Dollars no longer exist (which such Lender agrees to do promptly upon such circumstances ceasing to exist) at a time when Eurocurrency Rate Loans denominated in Dollars made by other Lenders are outstanding, such Lender's Base Rate Loans shall be automatically converted, on the first day(s) of the next succeeding Interest Period(s) for such outstanding Eurocurrency Rate Loans denominated in Dollars, to the extent necessary so that, after giving effect thereto, all Loans of a given Class held by the Lenders of such Class holding Eurocurrency Rate Loans denominated in Dollars and by such Lenders are held pro rata (as to principal amounts, interest rate basis, and Interest Periods) in accordance with their respective Pro Rata Shares.

(e) Notwithstanding anything contained herein to the contrary, a Lender shall not be entitled to any compensation pursuant to Section 3.04 to the extent such Lender is not imposing such charges or requesting such compensation from borrowers (similarly situated to the Borrower hereunder) under comparable syndicated credit facilities.

Section 3.07 Replacement of Lenders under Certain Circumstances. If (i) any Lender becomes a Defaulting Lender, (ii) any Lender requests compensation under Section 3.04 or ceases to make Eurocurrency Rate Loans as a result of any condition described in Section 3.02 or Section 3.04, (iii) the Borrower is required to pay any Taxes or additional amounts to any Lender or any Governmental Authority for the account of any Lender pursuant to Section 3.01, (iv) any Lender is a Non-Consenting Lender or (v) any other circumstance exists hereunder that gives the Borrower the right to replace a Lender as a party hereto, then the Borrower may, at its sole expense and effort, upon notice to such Lender and the Administrative Agent, require such Lender to assign and delegate, without recourse (in accordance with and subject to the restrictions contained in, and consents required by, Section 10.07), all of its interests, rights and obligations under this Agreement and the related Loan Documents to one or more Eligible Assignees (none of whom shall be a Defaulting Lender) that shall assume such obligations (any of which assignee may be another Lender, if a Lender accepts such assignment); *provided* that:

(a) the Borrower shall have paid to the Administrative Agent the assignment fee specified in Section 10.07(b)(iv);

(b) such Lender shall have received payment of an amount equal to the outstanding principal of its Loans, accrued interest thereon, accrued fees and all other amounts payable to it hereunder and under the other Loan Documents (including any amounts payable under Section 3.05) from the assignee (to the extent of such outstanding principal and accrued interest and fees) or the Borrower (in the case of all other amounts);

(c) such Lender being replaced pursuant to this Section 3.07 shall (i) execute and deliver an Assignment and Assumption with respect to such Lender's Commitment and outstanding Loans and participations in L/C Obligations, and (ii) deliver any Notes evidencing such Loans to the Borrower or Administrative Agent (or a lost or destroyed note indemnity in lieu thereof); *provided* that the failure of any such Lender to deliver such Notes shall not render such sale and purchase (and the corresponding assignment) invalid and such assignment shall be recorded in the Register and the Notes shall be deemed to be canceled upon such failure;

(d) pursuant to any Assignment and Assumption executed pursuant to Section 3.07(c), (A) the assignee Lender shall acquire all or a portion, as the case may be, of the assigning Lender's Commitment and outstanding Loans and participations in L/C Obligations, (B) all obligations of the Borrower owing to the assigning Lender relating to the Loans and participations so assigned shall be paid in full by the assignee Lender to such assigning Lender concurrently with such assignment and assumption and (C) upon such payment and, if so requested by the assignee Lender, delivery to the assignee Lender of the appropriate Note or Notes executed by the Borrower, the assignee Lender shall become a Lender hereunder and the assigning Lender shall cease to constitute a Lender hereunder with respect to such assigned Loans, Commitments and participations, except with respect to indemnification provisions under this Agreement, which shall survive as to such assigning Lender;

(e) in the case of any such assignment resulting from a claim for compensation under Section 3.04 or payments required to be made pursuant to Section 3.01, such assignment will result in a reduction in such compensation or payments thereafter; and

(f) such assignment does not conflict with applicable Laws.

(g) In connection with any such replacement, if any such Lender being replaced pursuant to this Section 3.07 does not execute and deliver to the Administrative Agent a duly executed Assignment and Assumption reflecting such replacement within five (5) Business Days of the date on which the assignee Lender executes and delivers such Assignment and Assumption to such Lender being replaced pursuant to this Section 3.07, then such Lender being replaced pursuant to this Section 3.07 shall be deemed to have executed and delivered such Assignment and Assumption without any action on the part of such Lender.

Notwithstanding anything to the contrary contained above, any Lender that acts as an L/C Issuer may not be replaced hereunder at any time that it has any Letter of Credit issued and outstanding hereunder unless any such Letters of Credit have been Cash Collateralized or other arrangements reasonably satisfactory to such L/C Issuer shall have been made with respect to each such outstanding Letter of Credit and the Lender that acts as the Administrative Agent may not be replaced hereunder except in accordance with the terms of Section 9.09.

In the event that (i) the Borrower or the Administrative Agent has requested that the Lenders consent to a departure or waiver of any provisions of the Loan Documents or agree to any amendment or modification thereto, (ii) the consent, waiver or amendment or modification in question requires the agreement of each Lender, all affected Lenders or all the Lenders in accordance with the terms of Section 10.01 with respect to a certain Class or Classes of the Loans and (iii) the Required Lenders or Required Facility Lenders, as applicable, have agreed to such consent, waiver or amendment or modification, then any Lender who does not agree to such consent, waiver or amendment or modification shall be deemed a "**Non-Consenting Lender.**" If any applicable Lender shall be deemed a Non-Consenting Lender and is required to assign all or any portion of its Initial Term Loans pursuant to this Section 3.07 on or prior to the one year anniversary of the Closing Date in connection with any such waiver, amendment or modification constituting a Repricing Transaction, the Borrower shall pay to such Non-Consenting Lender the fee set forth in Section 2.23 to the extent applicable.

A Lender shall not be required to make any such assignment or delegation if, prior thereto, as a result of a waiver by such Lender or otherwise, the circumstances entitling the Borrower to require such assignment and delegation cease to apply.

Section 3.08 Survival. All of the Borrower's obligations under this Article III shall survive termination of the Aggregate Commitments, repayment of all other Obligations hereunder and resignation of the Administrative Agent or the Collateral Agent.

ARTICLE IV
Conditions Precedent to Credit Extensions

Section 4.01 Conditions to Initial Credit Extension. The obligation of each Lender or L/C Issuer to make its initial Credit Extension hereunder on the Closing Date is subject to satisfaction or due waiver by the Engagement Parties of each of the following conditions precedent:

(a) The Administrative Agent's receipt of the following, each of which shall be originals, facsimiles or electronic copies in ".pdf" or ".tif" format by electronic mail (followed promptly by originals) unless otherwise specified, each properly executed by a Responsible Officer of the signing Loan Party (if applicable):

(i) a Loan Notice or Letter of Credit Application, as applicable, relating to the initial Credit Extension and which shall be delivered on the Closing Date;

(ii) a Note executed by the Borrower in favor of each Lender that has requested a Note at least two (2) Business Days in advance of the Closing Date;

(iii) executed counterparts of this Agreement duly executed by the Borrower;

(iv) each Guaranty and other Collateral Document set forth on Schedule 1.01B required to be executed on the Closing Date as indicated on such schedule, duly executed by each Loan Party party thereto as of the Closing Date, together with:

(A) certificates, if any, representing the Pledged Equity referred to therein (except as otherwise set forth on Schedule 1.01B) accompanied by undated stock powers executed in blank and instruments evidencing the Pledged Debt indorsed in blank (except as otherwise set forth on Schedule 1.01B); and

(B) evidence that all other actions, recordings and filings (except as otherwise set forth in Schedule 1.01B) that the Administrative Agent may deem reasonably necessary to satisfy the Collateral and Guarantee Requirement shall have been taken, completed or otherwise provided for in a manner reasonably satisfactory to the Administrative Agent;

(v) such documents and certification (including Organization Documents) as the Administrative Agent may reasonably require to evidence that the Borrower and each Guarantor is duly organized or formed, such certificates of good standing or status (to the extent that such concepts exist) from the applicable secretary of state (or equivalent authority) of the jurisdiction of organization of each Loan Party (in each case, to the extent applicable), certificates of customary

resolutions or other customary action, incumbency certificates and/or other customary certificates of Responsible Officers of each Loan Party evidencing the identity, authority and capacity of each Responsible Officer thereof authorized to act as a Responsible Officer in connection with this Agreement and the other Loan Documents to which such Loan Party is a party or is to be a party on the Closing Date;

(vi) a customary opinion from Sidley Austin LLP, counsel to the Loan Parties;

(vii) evidence that all insurance (other than title insurance) required to be maintained pursuant to the Loan Documents has been obtained and is in effect;

(viii) copies of recent Uniform Commercial Code, tax and intellectual property Lien searches and copies of judgment searches, in each case, in each jurisdiction reasonably requested by the Administrative Agent in respect of the Loan Parties; and

(ix) a certificate attesting to the Solvency of the Borrower and its Restricted Subsidiaries, on a consolidated basis, on the Closing Date after giving effect to the Transaction, from the chief financial officer of the Borrower.

(b) All fees, premiums, expenses (including legal fees and expenses, title premiums, survey charges and recording taxes and fees) and other transaction costs incurred in connection with the Transaction (including to fund any OID and upfront fees) and expenses required to be paid under the Engagement Letter and the Fee Letter on the Closing Date to the Agents, the Lead Arrangers and the Lenders to the extent invoiced in reasonable detail at least two (2) Business Days before the Closing Date (except as otherwise reasonably agreed to by the Borrower) shall have been paid in full to the extent then due.

(c) Prior to, or substantially concurrently with, the initial Credit Extensions, (i) the Borrower shall have terminated the Existing Credit Agreement and all related liens and security interests (it being understood that any letters of credit, bank guarantees and similar accommodations outstanding thereunder may remain outstanding to the extent deemed reissued under this Agreement or otherwise Cash Collateralized in a manner reasonably satisfactory to the Arrangers on the Closing Date).

(d) The Arrangers shall have received the Annual Financial Statements.

(e) The Engagement Parties shall have received at least three (3) days prior to the Closing Date all documentation and other information about the Borrower and each Guarantor reasonably requested in writing by them at least ten (10) Business Days prior to the Closing Date in order to comply with applicable "know your customer" and anti-money laundering rules and regulations, including the PATRIOT Act.

(f) Since December 31, 2015, there not having occurred any event, change, condition, occurrence or circumstance which, either individually or in the aggregate, has had, or would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Without limiting the generality of the provisions of the last paragraph of Section 9.03, for purposes of determining compliance with the conditions specified in this Section 4.01, each Lender that has signed this Agreement shall be deemed to have consented to, approved or accepted or to be satisfied with, each document or other matter required thereunder to be consented to or approved by or acceptable or satisfactory to a Lender.

Section 4.02 Conditions to All Credit Extensions. The obligation of each Lender and L/C Issuer to honor any Request for Credit Extension (other than a Loan Notice requesting only a conversion of Loans to the other Type, a continuation of Eurocurrency Rate Loans or a Borrowing pursuant to any Incremental Amendment) is subject to the following conditions precedent:

(a) The representations and warranties of the Borrower and each other Loan Party contained in Article V or any other Loan Document shall be true and correct in all material respects on and as of the date of such Credit Extension; *provided* that, to the extent that such representations and warranties specifically refer to an earlier date, they shall be true and correct in all material respects as of such earlier date; *provided*, *further,* that, any representation and warranty that is qualified as to "materiality," "Material Adverse Effect" or similar language shall be true and correct in all respects on such respective dates.

(b) At the time of and immediately after giving effect to any Borrowing, no Default shall have occurred and be continuing.

(c) The Administrative Agent and, if applicable, the relevant L/C Issuer shall have received a Request for Credit Extension in accordance with the requirements hereof.

Each Request for Credit Extension (other than a Loan Notice requesting only a conversion of Loans to the other Type or a continuation of Eurocurrency Rate Loans or a Borrowing in connection with any Incremental Amendment) submitted by the Borrower shall be deemed to be a representation and warranty that the conditions specified in Sections 4.02(a) and (b) have been satisfied on and as of the date of the applicable Credit Extension.

ARTICLE V
Representations and Warranties

On the Closing Date and to the extent required pursuant to Section 4.02 hereof, the Borrower represents and warrants to the Administrative Agent, the Collateral Agent, the L/C Issuers and the Lenders that:

Section 5.01 Existence, Qualification and Power. Each Loan Party and each of its respective Restricted Subsidiaries that is a Material Subsidiary (a) is a Person duly organized, incorporated or formed, validly existing and in good standing under the Laws of the jurisdiction of its incorporation or organization (to the extent such concept exists in such jurisdiction), (b) has all corporate or other organizational power and authority to (i) own or lease its assets and carry on its business as currently conducted and (ii) in the case of the Loan Parties, execute, deliver and perform its obligations under the Loan Documents to which it is a party, (c) is duly qualified and in good standing (to the extent such concept exists in such jurisdiction) under the Laws of each jurisdiction where its ownership, lease or operation of properties or the conduct of its business requires such qualification, and (d) has all requisite governmental licenses, authorizations, consents and approvals to operate its business as currently conducted; except in each case referred to in clauses (a) (other than with respect to the due organization, formation, incorporation or existence of the Loan Parties), (b)(i), (c) or (d), to the extent that failure to do so would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Section 5.02 Authorization; No Contravention. (a) The execution, delivery and performance by each Loan Party of each Loan Document to which it is a party and the consummation of the Transaction have been duly authorized by all necessary corporate or other organizational action.

(b) The execution, delivery and performance by each Loan Party of each Loan Document to which such Loan Party is a party and the consummation of the Transaction do not and will not (A) materially contravene the terms of any of its Organization Documents; (B) conflict with or result in any breach or contravention of, or the creation of any material Lien upon any of the property or assets of such Loan Party or any of the Restricted Subsidiaries (other than as permitted by Section 7.01) under (I) any Contractual Obligation to which such Loan Party is a party or affecting such Loan Party or the properties of such Loan Party or any of its Subsidiaries or (II) any order, injunction, writ or decree of any Governmental Authority or any arbitral award to which such Loan Party or its property is subject; or (C) violate any applicable Laws; except with respect to any conflict, breach, contravention or violation (but not creation of Liens) referred to in clauses (B) and (C), to the extent that such conflict, breach, contravention or violation would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Section 5.03 Governmental Authorization; Other Consents. No material approval, consent, exemption, authorization, or other action by, or notice to, or filing with, any Governmental Authority or any other Person is necessary or required in connection with the execution, delivery or performance by any Loan Party of this Agreement or any other Loan Document, except for (i) filings or other actions necessary to perfect the Liens on the Collateral granted by the Loan Parties in favor of the Secured Parties, (ii) the approvals, consents, exemptions, authorizations, actions, notices and filings that have been duly obtained, taken, given or made and are in full force and effect (except to the extent not required to be obtained, taken, given or made or in full force and effect pursuant to the Collateral and Guarantee Requirement), (iii) those approvals, consents, exemptions, authorizations or other actions, notices or filings described in the Collateral Documents, and (iv) those approvals, consents, exemptions, authorizations or other actions, notices or filings, the failure of which to obtain or make would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Section 5.04 Binding Effect. This Agreement and each other Loan Document has been duly executed and delivered by each Loan Party that is a party thereto. This Agreement and each other Loan Document constitutes a legal, valid and binding obligation of each Loan Party, enforceable against each Loan Party that is party hereto and thereto in accordance with its respective terms, except as such enforceability may be limited by Debtor Relief Laws or other Laws affecting creditors' rights generally and by general principles of equity and principles of good faith and fair dealing.

Section 5.05 Financial Statements; No Material Adverse Effect. (a) The Annual Financial Statements and the Quarterly Financial Statements fairly present in all material respects the financial position of the Borrower and its Subsidiaries as of the dates thereof and their results of operations for the period covered thereby in accordance with GAAP consistently applied throughout the periods covered thereby, except as otherwise expressly noted therein (subject, in the case of the Quarterly Financial Statements to changes resulting from normal year-end adjustments and the absence of footnotes).

(b) Since the December 31, 2015, there has been no event or circumstance, either individually or in the aggregate, that has had or would reasonably be expected to have a Material Adverse Effect.

Section 5.06 Litigation. There are no actions, suits, proceedings, claims, investigations or disputes pending or, to the knowledge of the Borrower, threatened in writing, at law, in equity, in arbitration or before any Governmental Authority, by or against the Borrower or any of the Restricted Subsidiaries or against any of their properties that would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Section 5.07 Labor Matters. Except as would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, there are no strikes, lockouts or slowdowns against the Borrower or any Restricted Subsidiary pending or, to the knowledge of the Borrower, threatened.

Section 5.08 Ownership of Property; Liens. Each of the Borrower and the Restricted Subsidiaries has good record and indefeasible title in fee simple to, or valid leasehold interests in, or easements or other limited property interests in, all real property necessary in the ordinary conduct of its business, free and clear of all Liens except for Liens permitted by Section 7.01 and except where the failure to have such title or other property interests described above would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Section 5.09 Environmental Matters. (a) Except as would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, (i) the Borrower and the Restricted Subsidiaries are in compliance with all Environmental Laws in all jurisdictions in which the Borrower and each of the Restricted Subsidiaries, as the case may be, is currently doing business (including having obtained all Environmental Permits required for the operation of the business) and (ii) neither the Borrower nor any of the Restricted Subsidiaries is subject to any pending, or to the knowledge of the Borrower, threatened Environmental Claim or other Environmental Liability.

(b) Neither the Borrower nor any of the Restricted Subsidiaries has treated, stored, transported or disposed of Hazardous Materials at or from any of its current or former real estate or facilities in a manner that would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Section 5.10 Taxes. Except as would not, either individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect, the Borrower and the Restricted Subsidiaries have timely filed all federal and state and other Tax returns and reports required to be filed, and have timely paid all federal and state and other Taxes, assessments, fees and other governmental charges (including satisfying its withholding Tax obligations) levied or imposed on their properties, income or assets or otherwise due and payable, except those which are being contested in good faith by appropriate actions and for which adequate reserves have been provided in accordance with GAAP.

Section 5.11 ERISA Compliance. (a) (i) No ERISA Event has occurred or is reasonably expected to occur; (ii) no Pension Plan has failed to satisfy the minimum funding standards (within the meaning of Section 412 of the Code or Section 302 of ERISA) applicable to such Pension Plan; (iii) neither the Borrower nor any of its ERISA Affiliates has incurred, or reasonably expects to incur, any liability (and no event has occurred which, with the giving of notice under Section 4219 of ERISA, would result in such liability) under Section 4201 et seq. of ERISA with respect to a Multiemployer Plan; and (iv) neither the Borrower nor any of its ERISA Affiliates has engaged in a transaction that is subject to Section 4069 or Section 4212(c) of ERISA, except, with respect to each of the foregoing clauses of this Section 5.11(a), as would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

(b) Except where noncompliance or the incurrence of a material obligation would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, each Foreign Plan has been maintained in substantial compliance with its terms and with the requirements of any and all applicable Laws, and neither the Borrower nor any Restricted Subsidiary has incurred any material obligation in connection with the termination of or withdrawal from any Foreign Plan.

Section 5.12 Subsidiaries. As of the Closing Date, (a) neither the Borrower nor any other Loan Party has any Subsidiaries other than those specifically disclosed on Schedule 5.12, (b) all of the outstanding Equity Interests in the Restricted Subsidiaries have been validly issued and are fully paid and (if applicable) nonassessable, and (c) all outstanding Equity Interests owned by the Borrower or any other Loan Party in any of their respective Subsidiaries are owned free and clear of all Liens of any Person except (x) to the extent permitted by the Collateral and Guarantee Requirement, (y) those created under the Collateral Documents and (z) any nonconsensual Lien that is permitted under Section 7.01. As of the Closing Date, Schedule 5.12 and 4 to the Perfection Certificate (a) sets forth the name and jurisdiction of each Subsidiary, (b) sets forth the ownership interest of the Borrower in each of its Subsidiaries, including the percentage of such ownership and (c) identifies each Subsidiary that is a Subsidiary the Equity Interests of which are required to be pledged on the Closing Date pursuant to the Collateral and Guarantee Requirement.

Section 5.13 Margin Regulations; Investment Company Act; EEA Financial Institutions. (a) As of the Closing Date, not more than 25% of the value of the Collateral of the Borrower and its Restricted Subsidiaries, on a consolidated basis, is Margin Stock. No Loan Party is engaged nor will it engage, principally or as one of its important activities, in the business of purchasing or carrying margin stock (within the meaning of Regulation U issued by the FRB), or extending credit for the purpose of purchasing or carrying margin stock, in each case, in a manner that would violate Regulation U, and no proceeds of any Borrowings or drawings under any Letter of Credit will be used for any purpose that violates Regulation U.

(b) No Loan Party is an "investment company" as defined in the Investment Company Act of 1940.

(c) No Loan Party is an EEA Financial Institution.

Section 5.14 Disclosure. No written information or written data furnished or concerning the Loan Parties that has been made available to any Agent or any Lender by or on behalf of any Loan Party in connection with the transactions contemplated hereby and the negotiation of this Agreement or delivered hereunder or under any other Loan Document (as modified or supplemented by other information so furnished), when taken as a whole, contains any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements contained therein not materially misleading in light of the circumstances under which such statements were made (after giving effect to all supplements and updates thereto); provided, that (a) with respect to financial estimates, projected financial information, forecasts and other forward-looking information, the Borrower represents and warrants only that such information, when taken as a whole, was prepared in good faith based upon assumptions believed by the Borrower to be reasonable at the time of preparation and at the time such financial estimates, projected financial information, forecasts and other forward looking information are made available to any Agent or Lender; it being understood that (i) such projections are not to be viewed as facts, (ii) such projections are subject to significant uncertainties and contingencies, many of which are beyond the Borrower's control, (iii) no assurance can be given that any particular projections will be realized and (iv) actual results during the period or periods covered by any such projections may differ significantly from the projected results and such differences may be material and (b) no representation or warranty is made with respect to information of a general economic or general industry nature.

Section 5.15 Intellectual Property; Licenses, Etc. The Borrower and the Restricted Subsidiaries have good and marketable title to, or a valid license or right to use, all patents, patent rights, trademarks, service marks, trade names, copyrights, technology, software, know-how database rights, rights of privacy and publicity, licenses and other intellectual property rights (collectively, "**IP Rights**") that are necessary for the operation of their respective businesses as currently conducted, except where the

failure to have any such rights, either individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect. The operation of the respective businesses of the Borrower or any of its Restricted Subsidiaries as currently conducted does not infringe upon, misuse, misappropriate or violate any rights held by any Person except for such infringements, misuses, misappropriations or violations that, either individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect (except that, with respect to patents, the foregoing representation is made to the knowledge of the Borrower). No claim or litigation regarding any IP Rights is pending or threatened in writing against the Borrower or any of its Restricted Subsidiaries, which, either individually or in the aggregate, could reasonably be expected to have a Material Adverse Effect.

Section 5.16 Solvency. On the Closing Date, after giving effect to the Transaction, the Borrower and its Restricted Subsidiaries, on a consolidated basis, are Solvent.

Section 5.17 Use of Proceeds. All proceeds of the Facilities shall be used as provided in Section 6.17.

Section 5.18 Compliance with Laws. Each Loan Party and each Restricted Subsidiary is in compliance with the requirements of all applicable Laws and all orders, writs, injunctions and decrees applicable to it or to its properties, except in such instances in which (i) such requirement of Law or order, writ, injunction or decree is being contested in good faith by appropriate actions diligently conducted or (ii) the failure to comply therewith could not reasonably be expected to have a Material Adverse Effect.

Section 5.19 Collateral Documents. Subject to the terms of Section 4.01 and except as otherwise contemplated hereby or under any other Loan Documents, the provisions of the Collateral Documents, together with such filings and other actions required to be taken hereby or by the applicable Collateral Documents (including the delivery to the Administrative Agent of any Pledged Debt and any Pledged Equity required to be delivered pursuant to the applicable Collateral Documents), are effective to create in favor of the Collateral Agent for the benefit of the Secured Parties a legal, valid, enforceable and, to the extent applicable under applicable Laws, perfected Lien on the Collateral with the ranking or priority required by the relevant Collateral Documents (subject to Liens permitted by Section 7.01) on all right, title and interest of the Borrower and the other applicable Loan Parties, respectively, in the Collateral described therein (other than such Collateral in which a security interest cannot be perfected under the Uniform Commercial Code or by possession or control).

Notwithstanding anything herein (including this Section 5.19) or in any other Loan Document to the contrary, neither the Borrower nor any other Loan Party makes any representation or warranty as to (A) the effects of perfection or non-perfection, the priority or the enforceability of any pledge of or security interest in any Equity Interests of any Subsidiary that is not a Loan Party, or as to the rights and remedies of the Agents or any Lender with respect thereto, under foreign Law, (B) the pledge or creation of any security interest, or the effects of perfection or non-perfection, the priority or the enforceability of any pledge of or security interest to the extent such pledge, security interest, perfection or priority is not required pursuant to the Collateral and Guarantee Requirement or (C) on the Closing Date and until required pursuant to Section 6.11, 6.13 or 4.01(a)(iv), the pledge or creation of any security interest, or the effects of perfection or non-perfection, the priority or enforceability of any pledge or security interest to the extent not required on the Closing Date pursuant to Section 4.01(a)(iv).

Section 5.20 PATRIOT Act; FCPA; OFAC. (a) Each of the Borrower and the Restricted Subsidiaries and, to the knowledge of the Borrower, each director, officer, agent, employee and controlled Affiliate of the Borrower and the Restricted Subsidiaries, is in compliance, in all material respects, with the Trading with the Enemy Act, as amended, and each of the foreign assets control

regulations of the United States Treasury Department (31 CFR Subtitle B, Chapter V, as amended) and any other enabling legislation or executive order relating thereto, the PATRIOT Act and any other applicable terrorism and money laundering Laws of the United States.

(b) Each of the Borrower and the Restricted Subsidiaries and, to the knowledge of the Borrower, each director, officer, agent, employee and controlled Affiliate of the Borrower and the Restricted Subsidiaries, is in compliance, in all material respects, with all laws, rules, and regulations of any jurisdiction applicable to the Borrower or any of its Restricted Subsidiaries from time to time concerning or relating to bribery or corruption (collectively, "**Anti-Corruption Laws**"). No part of the proceeds of the Loans will be used, directly or, to the knowledge of the Borrower and the Restricted Subsidiaries, indirectly for any payments to any governmental official or employee, political party, official of a political party, candidate for political office, or anyone else acting in an official capacity, in order to obtain, retain or direct business or obtain any improper advantage, in violation of any Anti-Corruption Laws.

(c) None of the Borrower or any of the Restricted Subsidiaries nor, to the knowledge of the Borrower, any director, officer, agent, employee or controlled Affiliate of the Borrower or any of the Restricted Subsidiaries, is currently the subject of any economic or financial sanctions or trade embargoes imposed, administered or enforced from time to time by (a) the U.S. government, including those administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury or the U.S. Department of State, or (b) the United Nations Security Council, the European Union, any European Union member state or Her Majesty's Treasury of the United Kingdom or other relevant sanctions authority having jurisdiction over the Borrower or its Restricted Subsidiaries (collectively, "**Sanctions**" and the associated Laws, collectively, "**Sanctions Laws**") or is a Sanctioned Person. Each of the Borrower and the Restricted Subsidiaries and, to the knowledge of the Borrower, each director, officer, agent, employee and controlled Affiliate of the Borrower and the Restricted Subsidiaries, is in compliance, in all material respects, with all Sanctions Laws. None of the Borrower or any of the Restricted Subsidiaries will directly or, to the knowledge of the Borrower and the Restricted Subsidiaries, indirectly use the proceeds of the Loans or otherwise make available such proceeds to any Person, for the purpose of financing the activities of any Person or in any country or territory that at such time is the subject of any Sanctions.

ARTICLE VI

Affirmative Covenants

So long as any Lender shall have any Commitment hereunder or any Loan or other Obligation hereunder (other than (i) contingent indemnification obligations as to which no claim has been asserted and (ii) Obligations under Secured Hedge Agreements and Obligations under Secured Cash Management Agreements) shall remain unpaid or unsatisfied or any Letter of Credit shall remain outstanding (other than the Letters of Credit which have been Cash Collateralized), the Borrower shall, and shall (except in the case of the covenants set forth in Section 6.01, Section 6.02, Section 6.03 and Section 6.15) cause each of the Restricted Subsidiaries to:

Section 6.01 Financial Statements. Deliver to the Administrative Agent for prompt further distribution, subject to Section 10.07(l), to each Lender each of the following and shall take the following actions:

(a) within one hundred twenty (120) days after the end of each fiscal year of the Borrower (commencing with the fiscal year of the Borrower ending December 31, 2016), a consolidated balance sheet of the Borrower and its Subsidiaries as at the end of such fiscal year, and the related

consolidated statements of income or operations, stockholders' equity and cash flows for such fiscal year together with related notes thereto, setting forth in each case in comparative form the figures for the previous fiscal year, all in reasonable detail and prepared in accordance with GAAP, audited and accompanied by an opinion of an independent registered public accounting firm of nationally recognized standing, which opinion shall be prepared in accordance with generally accepted auditing standards and shall not be subject to any "going concern" or like qualification or exception or any qualification or exception as to the scope of such audit (other than as may be required as a result of (x) a prospective default or event of default with respect to any financial covenant (including the financial covenant set forth in Section 7.11), (y) in the case of the Term Lenders, an actual Default with respect to the financial covenant set forth in Section 7.11 or any other financial covenant not applicable to the Term Loans or (z) the impending maturity of the Loans, any Incremental Equivalent Debt and Refinancing Equivalent Debt);

(b) within forty-five (45) days after the end of each of the first three (3) fiscal quarters of each fiscal year of the Borrower (commencing with the fiscal quarter ending March 31, 2017), a consolidated balance sheet of the Borrower and its Subsidiaries as at the end of such fiscal quarter, and the related (i) consolidated statements of income or operations for such fiscal quarter and for the portion of the fiscal year then ended and (ii) consolidated statements of cash flows for the portion of the fiscal year then ended, setting forth in each case in comparative form the figures for the corresponding fiscal quarter of the previous fiscal year (in the case of consolidated statements of income or operations) and the corresponding portion of the previous fiscal year, all in reasonable detail and certified by a Responsible Officer of the Borrower as fairly presenting in all material respects the financial position, results of operations and cash flows of the Borrower and its Subsidiaries in accordance with GAAP, subject only to normal year-end audit adjustments and the absence of footnotes;

(c) within one hundred twenty (120) days after the end of each fiscal year (beginning with the fiscal year of the Borrower ending December 31, 2016), a consolidated budget for the then-current fiscal year as customarily prepared by management of the Borrower and setting forth the material underlying assumptions based on which such consolidated budget was prepared (including any projected consolidated balance sheet of the Borrower and its Subsidiaries as of the end of the then-current fiscal year and the related consolidated statements of projected operations or income and projected cash flow, in each case, to the extent prepared by management of the Borrower and included in such consolidated budget, which projected financial statements shall be prepared in good faith on the basis of assumptions believed to be reasonable at the time of preparation of such projected financial statements, it being understood that actual results may vary from such projections and that such variations may be material); and

(d) simultaneously with the delivery of each set of consolidated financial statements referred to in Section 6.01(a) and Section 6.01(b) above, if applicable, an internally prepared management summary of pro forma adjustments necessary to eliminate the accounts of Unrestricted Subsidiaries (if any) from such consolidated financial statements.

Notwithstanding the foregoing, the obligations in clauses (a) and (b) of this Section 6.01 may be satisfied with respect to financial information of the Borrower and its Subsidiaries by furnishing (A) the applicable financial statements of any Permitted Parent or (B) the Borrower's or such entity's Form 10-K or 10-Q, as applicable, filed with the SEC; *provided* that, with respect to each of clauses (A) and (B), (i) to the extent such information relates to a parent of the Borrower, such information is accompanied by an internally prepared management summary of consolidating information that explains in reasonable detail the differences between the information relating to such parent and its Subsidiaries on a consolidated basis, on the one hand, and the information relating to the Borrower and the Subsidiaries on a consolidated basis, on the other hand and (ii) to the extent such information is in lieu of information

required to be provided under Section 6.01(a), such materials are accompanied by an opinion of an independent registered public accounting firm of nationally recognized standing, which opinion shall be prepared in accordance with generally accepted auditing standards and shall not be subject to any "going concern" or like qualification or exception or any qualification or exception as to the scope of such audit (other than as may be required as a result of (x) a prospective default or event of default with respect to any financial covenant (including the financial covenant set forth in Section 7.11), (y) in the case of the Term Lenders, an actual Default with respect to the financial covenant set forth in Section 7.11 or any other financial covenant not applicable to the Term Loans or (z) the impending maturity of the Loans, any Incremental Equivalent Debt, Refinancing Equivalent Debt and any other Indebtedness having an aggregate principal amount in excess of the Threshold Amount).

Any financial statements required to be delivered pursuant to Sections 6.01(a) or (b) shall not be required to contain purchase accounting adjustments relating to any acquisition to the extent it is not practicable to include any such adjustments in such financial statements.

Section 6.02 Certificates; Other Information. Deliver to the Administrative Agent for prompt further distribution to each Lender:

(a) no later than five (5) days after the delivery of the financial statements referred to in Sections 6.01(a) and (b), a duly completed Compliance Certificate;

(b) promptly after the same are publicly available, copies of all annual, regular, periodic and special reports, proxy statements and registration statements which the Borrower or any Restricted Subsidiary files with the SEC or with any similar Governmental Authority that may be substituted therefor or with any national securities exchange, as the case may be (other than amendments to any registration statement (to the extent such registration statement, in the form it became effective, is delivered to the Administrative Agent), exhibits to any registration statement and, if applicable, any registration statement on Form S-8), and in any case not otherwise required to be delivered to the Administrative Agent pursuant to any other provision of this Article VI;

(c) promptly after the furnishing thereof, copies of any material statements or material reports furnished to any holder of any class or series of debt securities of any Loan Party having an aggregate outstanding principal amount greater than the Threshold Amount, so long as the aggregate outstanding principal amount thereunder is greater than the Threshold Amount and not otherwise required to be furnished to the Administrative Agent pursuant to any other provision of this Article VI;

(d) together with the delivery of a Compliance Certificate with respect to the financial statements referred to in Section 6.01(a), (i) a report setting forth the information required by Section 3.03(c) of the Security Agreement (or confirming that there has been no change in such information since the Closing Date or the date of the last such report) and (ii) a list of each Subsidiary of the Borrower that identifies each Subsidiary as a Restricted Subsidiary or an Unrestricted Subsidiary and/or an Immaterial Subsidiary as of the date of delivery of such Compliance Certificate or a confirmation that there is no change in such information since the later of the Closing Date and the date of the last such list; and

(e) promptly such additional financial information regarding any Loan Party or any Restricted Subsidiary as the Administrative Agent may from time to time on its own behalf or on behalf of any Lender reasonably request; *provided* that such financial information is otherwise prepared by such Loan Party in the ordinary course of business and is of a type customarily provided to lenders in similar syndicated credit facilities; *provided further*, that none of the Borrower or any of the Restricted Subsidiaries will be required to disclose, permit the inspection, examination or making copies or abstracts

of, or discussion of, any document, information or other matter that (i) constitutes non-financial trade secrets, (ii) in respect of which disclosure to the Administrative Agent or any Lender (or their respective representatives or contractors) is prohibited by Law or any binding agreement with any third party or (iii) is subject to attorney-client or similar privilege or constitutes attorney work product; *provided* that, to the extent legally permissible, the Borrower shall notify the Administrative Agent that any such document, information or other matter is being withheld pursuant to clauses (e)(i), (e)(ii) or (e)(iii) of this Section 6.02 and shall use commercially reasonable efforts to communicate, to the extent permitted, the applicable information in a way that would not violate such restrictions and to eliminate such restrictions.

Documents certificates, other information and notices required to be delivered pursuant to Section 6.01 and 6.02(b) and (c) may be delivered electronically and if so delivered, shall be deemed to have been delivered on the date (i) on which the Borrower (or any Permitted Parent) posts such documents, or provides a link thereto on its website on the Internet at the website address listed on Schedule 10.02; or (ii) on which such documents are delivered by the Borrower (or any Permitted Parent) (including by facsimile or electronic mail) to the Administrative Agent or its designee for posting) on the Borrower's behalf on Intralinks®, Syndtrak® or another relevant website, if any, to which each Lender and the Administrative Agent have access (whether a commercial, third-party website or whether sponsored by the Administrative Agent); or (iii) with respect to the items required to be delivered pursuant to Section 6.02(b) above in respect of information filed by the Borrower or any Restricted Subsidiary with any securities exchange or the SEC or any governmental or private regulatory authority (other than Form 10-K and 10-Q reports satisfying the requirements in Sections 6.01(a) and (b) respectively), such items have been made available on the website of such exchange authority or the SEC; *provided* that: (A) upon written request by the Administrative Agent, the Borrower shall deliver paper (which may be electronic copies delivered via electronic mail) copies of such documents to the Administrative Agent for further distribution to each Lender until a written request to cease delivering paper copies is given by the Administrative Agent on behalf of such Lender and (B) other than with respect to items required to be delivered pursuant to Section 6.02(b) above, the Borrower (or any Permitted Parent) shall notify (which may be by facsimile or electronic mail) the Administrative Agent of the posting of any such documents and provide to the Administrative Agent by electronic mail electronic versions (i.e., soft copies) of such documents. Each Lender shall be solely responsible for timely accessing posted documents or requesting delivery of paper copies of such documents from the Administrative Agent and maintaining its copies of such documents.

The Borrower hereby acknowledges that (a) the Administrative Agent and/or the Lead Arrangers will make available to the Lenders and the L/C Issuers materials and/or information provided by or on behalf of the Borrower hereunder (collectively, "**Borrower Materials**") by posting the Borrower Materials on Intralinks®, Syndtrak® or another similar electronic system (the "**Platform**") and (b) certain of the Lenders (each, a "**Public Lender**") may have personnel who do not wish to receive material non-public information (within the meaning of the United States federal securities laws) with respect to the Borrower or its Affiliates, or the respective securities of any of the foregoing, and who may be engaged in investment and other market-related activities with respect to such Persons' securities. The Borrower hereby agrees that it will identify that portion of the Borrower Materials that may be distributed to the Public Lenders and that (w) all such Borrower Materials that are to be made available to Public Lenders shall be clearly and conspicuously marked "PUBLIC," which, at a minimum, shall mean that the word "PUBLIC" shall appear prominently on the first page thereof, (x) by marking Borrower Materials "PUBLIC," the Borrower shall be deemed to have authorized the Administrative Agent, the Lead Arrangers, the L/C Issuers and the Lenders to treat such Borrower Materials as either information that is publicly available (or could be derived from publicly available information) or not material information (although it may be confidential, sensitive and proprietary) with respect to such Person or its securities for purposes of United States federal securities laws (*provided*, *however*, that to the extent such Borrower Materials constitute Information, they shall be treated as set forth in Section 10.08); and (y) all Borrower

Materials specifically marked "PUBLIC" are permitted to be made available through a portion of the Platform designated "Public Lender". Notwithstanding the foregoing, the Borrower shall be under no obligation to mark any Borrower Materials "PUBLIC."

Section 6.03 Notices. Promptly after a Responsible Officer obtains actual knowledge thereof, notify the Administrative Agent:

(a) of the occurrence of any Event of Default; and

(b) of (i) any dispute, litigation, investigation or proceeding between the Borrower or any Restricted Subsidiary and any arbitrator or Governmental Authority, (ii) the filing or commencement of, or any material development in, any litigation or proceeding affecting the Borrower or any Restricted Subsidiary or any Subsidiary, including pursuant to any applicable Environmental Laws or in respect of IP Rights, the occurrence of any non-compliance by the Borrower or any Restricted Subsidiary or any of its Subsidiaries with, or liability under, any Environmental Law or Environmental Permit, or (iii) the occurrence of any ERISA Event or with respect to a Foreign Plan, a termination, withdrawal or noncompliance with applicable Laws or plan terms that, in any such case referred to in clauses (i), (ii) or (iii), has resulted or would reasonably be expected to result in a Material Adverse Effect.

Each notice pursuant to this Section 6.03 shall be accompanied by a written statement of a Responsible Officer of the Borrower (x) that such notice is being delivered pursuant to Sections 6.03(a) or (b) (as applicable) and (y) setting forth details of the occurrence referred to therein and stating what action the Borrower has taken and proposes to take with respect thereto.

Section 6.04 Payment of Obligations. Timely pay, discharge or otherwise satisfy, as the same shall become due and payable, all of its obligations and liabilities in respect of Taxes imposed upon it or upon its income or profits or in respect of its property, except, in each case, to the extent (i) any such Tax is being contested in good faith and by appropriate actions for which appropriate reserves have been established in accordance with GAAP or (ii) the failure to pay or discharge the same would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

Section 6.05 Preservation of Existence, Etc.. (a) Preserve, renew and maintain in full force and effect its legal existence under the Laws of the jurisdiction of its organization or incorporation and (b) take all reasonable action to obtain, preserve, renew and keep in full force and effect those of its rights (including its good standing where applicable in the relevant jurisdiction and IP Rights), licenses, permits, privileges, and franchises, which are material to the conduct of its business, except in the case of clause (a) or (b) to the extent (x) (other than with respect to the preservation of the existence of the Borrower) that failure to do so would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect or (y) pursuant to any merger, amalgamation, consolidation, liquidation, dissolution or Disposition permitted by Article VII.

Section 6.06 Maintenance of Properties. Except if the failure to do so would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, maintain, preserve and protect all of its material properties and equipment necessary in the operation of its business in good working order, repair and condition, ordinary wear and tear excepted and casualty or condemnation excepted.

Section 6.07 Maintenance of Insurance.

(a) Maintain with insurance companies that the Borrower believes (in the good faith judgment of its management) are financially sound and reputable at the time the relevant coverage is

placed or renewed or with a Captive Insurance Subsidiary, insurance with respect to its properties and business against loss or damage, of such types and in such amounts as reasonably determined in good faith by the management of the Borrower as appropriate for the business of the Borrower and its Restricted Subsidiaries (after giving effect to any self-insurance reasonable and customary for similarly situated Persons as reasonably determined in good faith by the management of the Borrower as appropriate for the business of the Borrower and its Restricted Subsidiaries), and will furnish to the Lenders, upon reasonable written request from the Administrative Agent, information presented in reasonable detail as to the insurance so carried. The Borrower shall use commercially reasonable efforts to ensure that each such policy of insurance (other than business interruption insurance (if any), director and officer insurance and worker's compensation insurance) shall, unless otherwise agreed by the Administrative Agent, as appropriate, (i) name the Collateral Agent, on behalf of the Secured Parties, as an additional insured thereunder as its interests may appear and/or (ii) in the case of each casualty insurance policy, contain a loss payable clause or endorsement that names the Collateral Agent, on behalf of the Secured Parties, as the loss payee thereunder (in the case of property insurance with respect to the Collateral).

(b) If any portion of any Material Real Property that is subject to a Mortgage is at any time located in an area identified by the Federal Emergency Management Agency (or any successor agency) as a special flood hazard area with respect to which flood insurance has been made available under the Flood Insurance Laws, then the Borrower shall, or shall cause the applicable Loan Party to, (i) maintain, or cause to be maintained, with a financially sound and reputable insurer, flood insurance in an amount and otherwise sufficient to comply with all applicable rules and regulations promulgated pursuant to the Flood Insurance Laws and (ii) deliver to the Administrative Agent evidence of such compliance in form and substance reasonably acceptable to the Administrative Agent.

Section 6.08 Compliance with Laws. Comply in all material respects with its Organization Documents and the requirements of all Laws (including without limitation the Laws referred to in Section 5.20) and all orders, writs, injunctions and decrees of any Governmental Authority applicable to it or to its business or property, and have appropriate controls and safeguards in place designed to prevent any proceeds of any Loans from being used contrary to the representations and undertakings set forth herein, except, in each case, in instances in which (i) such requirement of Law, order, writ, injunction or decree is being contested in good faith by appropriate actions diligently conducted or (ii) the failure to comply therewith (or the failure to maintain such policies or procedures or have such appropriate controls) would not reasonably be expected individually or in the aggregate to have a Material Adverse Effect. Within 180 days after the Closing Date (or such longer period as the Administrative Agent may agree to in its reasonable discretion), the Borrower and its Subsidiaries shall implement and maintain policies and procedures designed to promote and achieve compliance by the Borrower, its Subsisdiaries and their respective directors, officers, employees and agents with the Laws referred to in Section 5.20.

Section 6.09 Books and Records. Maintain proper books of record and account, in which entries that are full, true and correct in all material respects and are in conformity with GAAP in all material respects shall be made of all material financial transactions and matters involving the assets and business of the Loan Parties, as the case may be in a manner that permits preparation of the financial statements in accordance with GAAP (it being understood and agreed that certain Foreign Subsidiaries may maintain additional individual books and records in a manner that permits preparation of its financial statements in accordance with the generally accepted accounting principles that are applicable in their respective jurisdictions of organization and that such maintenance shall not constitute a breach of the representations, warranties or covenants hereunder).

Section 6.10 Inspection Rights. Permit representatives and independent contractors of the Administrative Agent to visit and inspect any of its properties, to examine its corporate, financial and operating records, and make copies thereof or abstracts therefrom (other than the records of the Board of Directors of such Loan Party or such Restricted Subsidiary), and to discuss its affairs, finances and accounts with its directors, officers, and independent public accountants (subject to such accountants' customary policies and procedures), all at the reasonable expense of the Borrower and at such reasonable times during normal business hours and as often as may be reasonably desired, upon reasonable advance notice to the Borrower; *provided* that, only the Administrative Agent on behalf of the Lenders may exercise rights of the Administrative Agent and the Lenders under this Section 6.10 and the Administrative Agent shall not exercise such rights more often than one (1) time during any calendar year absent the existence of an Event of Default and such one (1) time shall be at the Borrower's expense (it being understood that unless an Event of Default has occurred and is continuing, the Administrative Agent shall only visit locations where books and records and/or senior officers are located); *provided*, *further*, that when an Event of Default exists, the Administrative Agent (or any of its respective representatives or independent contractors) on behalf of the Lenders may do any of the foregoing at the expense of the Borrower at any time during normal business hours and upon reasonable advance notice. The Administrative Agent shall give the Borrower the opportunity to participate in any discussions with the Borrower's independent public accountants. Notwithstanding anything to the contrary in this Section 6.10, none of the Borrower or any of the Restricted Subsidiaries will be required to disclose, permit the inspection, examination or making copies or abstracts of, or discussion of, any document, information or other matter that (a) constitutes non-financial trade secrets, (b) in respect of which disclosure to the Administrative Agent or any Lender (or their respective representatives or contractors) is prohibited by Law or any binding agreement with any third party or (c) is subject to attorney-client or similar privilege or constitutes attorney work product; *provided* that, to the extent legally permissible, the Borrower shall notify the Administrative Agent that any such document, information or other matter is being withheld pursuant to clauses (a), (b) or (c) of this Section 6.10 and shall use commercially reasonable efforts to communicate, to the extent permitted, the applicable information in a way that would not violate such restrictions and to eliminate such restrictions.

Section 6.11 Covenant to Guarantee Obligations and Give Security. From and after the Closing Date, at the Borrower's expense, in accordance with and subject to the terms, conditions, and limitations of Collateral and Guarantee Requirement and any applicable limitation in any Collateral Document, take all action necessary or reasonably requested by the Administrative Agent or the Collateral Agent to ensure that the Collateral and Guarantee Requirement continues to be satisfied, including:

(a) upon the formation, incorporation or acquisition of any new direct or indirect wholly owned Domestic Subsidiary (in each case, other than an Excluded Subsidiary) by any Loan Party, the designation in accordance with Section 6.14 of any existing direct or indirect wholly owned Domestic Subsidiary as a Restricted Subsidiary (other than an Excluded Subsidiary) or upon any wholly owned Domestic Subsidiary ceasing to be an Excluded Subsidiary:

(i) within the later of forty-five (45) days (or ninety (90) days in the case of any item or deliverable with respect to Material Real Property and subject to the limitations set forth in Section 6.13(b)) or the date of delivery of the Compliance Certificate for any fiscal quarter in which such formation, incorporation, acquisition or designation occurred (or, in each case, such longer period as the Administrative Agent may agree to in its reasonable discretion) after such formation, incorporation, acquisition or designation:

(1) cause each such Domestic Subsidiary that is required to become a Guarantor under the Collateral and Guarantee Requirement to furnish to the Collateral Agent a description of the Material Real Properties owned by such Domestic Subsidiary in detail reasonably satisfactory to the Collateral Agent;

(2) cause each such Domestic Subsidiary that is required to become a Guarantor pursuant to the Collateral and Guarantee Requirement to duly execute and deliver to the Collateral Agent Mortgages with respect to any Material Real Property, joinders to the Guaranty, Security Agreement Supplements, Intellectual Property Security Agreements and other security agreements and documents (including, with respect to Mortgages, the documents listed in Section 6.13(b) and subject to the limitation set forth therein) required by the Collateral Documents or, as reasonably requested by and in form and substance reasonably satisfactory to the Collateral Agent (consistent with the Security Agreement, Intellectual Property Security Agreements and other Collateral Documents in effect on the Closing Date), in each case granting Liens required by the Collateral and Guarantee Requirement;

(3) cause each such Domestic Subsidiary that is required to become a Guarantor pursuant to the Collateral and Guarantee Requirement to deliver any and all certificates representing Equity Interests (to the extent certificated and required to be delivered pursuant to the Collateral Document under which a security interest has been granted over such Equity Interests) that are required to be pledged pursuant to the Collateral and Guarantee Requirement, accompanied by undated stock powers or other appropriate instruments of transfer executed in blank and instruments evidencing the intercompany Indebtedness held by such Domestic Subsidiary and required to be pledged pursuant to the Collateral Documents, indorsed in blank to the Collateral Agent;

(4) take and cause the applicable Domestic Subsidiary and each direct or indirect parent of such applicable Domestic Subsidiary that is required to become a Guarantor pursuant to the Collateral and Guarantee Requirement to take whatever action (including the recording of Mortgages, the filing of financing statements under the Uniform Commercial Code or other applicable Laws and other applicable registration forms and filing statements, and delivery of stock and membership interest certificates to the extent certificated) as may be necessary in the reasonable opinion of the Administrative Agent to vest in the Collateral Agent (or in any representative of the Collateral Agent designated by it) valid, enforceable and, to the extent applicable under applicable Laws, perfected (to the extent required by the Collateral and Guarantee Requirement and the Collateral Documents) Liens required by the Collateral and Guarantee Requirement, enforceable against all third parties in accordance with their terms, except as such enforceability may be limited by Debtor Relief Laws and by general principles of equity (regardless of whether enforcement is sought in equity or at law);

(ii) within (45) days (or ninety (90) days in the case of any opinion with respect to Material Real Property and subject to the limitations set forth in Section 6.13(b)) (or, in each case, such longer period as the Administrative Agent may agree to in its reasonable discretion and, in any event, not prior to the date of delivery of the Compliance Certificate for any fiscal quarter in which such formation, incorporation, acquisition or designation occurred) after the reasonable request, if any, therefor by the Administrative Agent, deliver to the Administrative Agent a signed copy of an opinion, addressed to the Administrative Agent and the other Secured Parties, of counsel for the Loan Parties reasonably acceptable to the Administrative Agent as to such matters set forth in this Section 6.11(a) as the Administrative Agent may reasonably request;

(b) (i) to the extent not executed and delivered on the Closing Date, execute and deliver or cause to be executed and delivered the Collateral Documents and Guarantees set forth on Schedule 1.01B on or prior to the dates corresponding to such Collateral Documents and Guarantees set forth on Schedule 1.01B or such longer period as the Administrative Agent may agree to in its reasonable discretion; and

(ii) after the Closing Date, promptly after the acquisition of any Material Real Property by any Loan Party, and to the extent such Material Real Property shall not already be subject to a valid, enforceable and, to the extent applicable under applicable Law, perfected Lien pursuant to the Collateral and Guarantee Requirement, the Borrower shall give notice thereof to the Collateral Agent and will take, or cause the relevant Loan Party to take the actions referred to in Section 6.13(b).

Section 6.12 Compliance with Environmental Laws. Except, in each case, to the extent that the failure to do so would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, comply, and take all reasonable actions to cause any lessees and other Persons operating or occupying its properties to comply with all applicable Environmental Laws and Environmental Permits.

Section 6.13 Further Assurances. Subject to the provisions and limitations of the Collateral and Guarantee Requirement and any applicable limitations in any Collateral Document and in each case at the expense of the Borrower:

(a) Promptly upon reasonable request by the Administrative Agent or the Collateral Agent or as may be required by applicable Laws (i) correct any material defect or error that may be discovered in the execution, acknowledgment, filing or recordation of any Collateral Document or other document or instrument relating to any Collateral and (ii) do, execute, acknowledge, deliver, record, re-record, file, re-file, register and re-register any and all such further acts, deeds, certificates, assurances and other instruments as the Administrative Agent or Collateral Agent may reasonably request from time to time in order to carry out more effectively the purposes of the Collateral Documents.

(b) In the case of any Material Real Property acquired after the Closing Date by any Loan Party, provide the Collateral Agent with a Mortgage in respect of such Material Real Property within ninety (90) days (or such longer period as the Administrative Agent may agree in its sole discretion) of the acquisition of such Material Real Property in each case together with:

(i) evidence that counterparts of the Mortgages have been duly executed, acknowledged and delivered and are in form suitable for filing or recording in all filing or recording offices that the Collateral Agent may deem reasonably necessary or desirable in order to create a valid, enforceable and, to the extent applicable under applicable Laws, perfected Lien on such Material Real Property in favor of the Collateral Agent for the benefit of the Secured Parties and that all filing and recording taxes and fees have been paid or otherwise provided for in a manner reasonably satisfactory to the Collateral Agent;

(ii) fully paid American Land Title Association Lender's Extended Coverage title insurance policies or the equivalent or other form available in each applicable jurisdiction (the "**Mortgage Policies**") in form and substance, with endorsements available in the applicable jurisdiction and in amount, reasonably acceptable to the Collateral Agent (not to exceed the value of the real properties covered thereby), issued, coinsured and reinsured by title insurers reasonably acceptable to the Collateral Agent, insuring the Mortgages to be valid subsisting Liens on the real property described therein in the ranking or the priority of which it is expressed to have within the Mortgage Policies, subject only to Liens permitted by Section 7.01, and providing for such other affirmative insurance (including endorsements for future advances under the Loan Documents) and such coinsurance and direct access reinsurance as the Collateral Agent may reasonably request and is available in the applicable jurisdiction;

(iii) to the extent reasonably requested by the Administrative Agent, opinions of local counsel for the Loan Parties in states in which such Material Real Property is located, with respect to the due execution and authority, enforceability and perfection of the Mortgages and any related fixture filings in form and substance reasonably satisfactory to the Administrative Agent;

(iv) a completed "Life-of-Loan" Federal Emergency Management Agency flood hazard determination with respect to each Material Real Property (together with a notice about special flood hazard area status and flood disaster assistance duly executed by the Borrower and the applicable Loan Party relating thereto) and, if such Material Real Property is located in a special flood hazard area, evidence of flood insurance in accordance with Section 6.07(b);

(v) as promptly as practicable after the reasonable request therefor by the Administrative Agent or the Collateral Agent, surveys and Phase I type environmental assessment reports and appraisals (if required under FIRREA), flood certifications under Regulation H of the FRB (together with evidence of federal flood insurance for any such property located in a flood hazard area); provided that the Administrative Agent may in its reasonable discretion accept any such existing report or survey to the extent prepared as of a date reasonably satisfactory to the Administrative Agent; provided, however, that there shall be no obligation to deliver to the Administrative Agent any environmental site assessment report whose disclosure to the Administrative Agent would require the consent of a Person other than the Borrower or one of its Subsidiaries, where, despite the commercially reasonable efforts of the Borrower to obtain such consent, such consent cannot be obtained; and

(vi) such other evidence that all other actions that the Administrative Agent or Collateral Agent may reasonably deem necessary or desirable in order to create valid and subsisting Liens on the real property described in the Mortgages has been taken.

(c) Upon the formation or incorporation of a Permitted Parent, cause such Permitted Parent to, subject to clause (ii) below, within forty-five (45) days (or ninety (90) days in the case of any item or deliverable with respect to Material Real Property and subject to the limitations set forth in Section 6.13(b)) after such formation or incorporation:

(i) duly execute and deliver to the Collateral Agent Mortgages with respect to any Material Real Property, joinders to the Guaranty, Security Agreement Supplements, Intellectual Property Security Agreements and other security agreements and documents (including, with respect to Mortgages, the documents listed in Section 6.13(b) and subject to the limitation set forth therein) required by the Collateral Documents or, as reasonably requested by and in form and substance reasonably satisfactory to the Collateral Agent (consistent with the Security Agreement, Intellectual Property Security Agreements and other Collateral Documents in effect on the Closing Date), in each case granting Liens required by the Collateral and Guarantee Requirement;

(ii) notwithstanding the foregoing, within fifteen (15) days after such formation or incorporation, pledge to the Collateral Agent, for the benefit of the Secured Parties, 100% of the Equity Interests of the Borrower and deliver any and all certificates representing such Equity Interests, accompanied by undated stock powers or other appropriate instruments of transfer executed in blank; and

(iii) take whatever action (including the recording of Mortgages, the filing of financing statements under the Uniform Commercial Code or other applicable Laws and other

applicable registration forms and filing statements, and delivery of stock and membership interest certificates to the extent certificated) as may be necessary in the reasonable opinion of the Administrative Agent to vest in the Collateral Agent (or in any representative of the Collateral Agent designated by it) valid, enforceable and, to the extent applicable under applicable Laws, perfected (to the extent required by the Collateral and Guarantee Requirement and the Collateral Documents) Liens required by the Collateral and Guarantee Requirement, enforceable against all third parties in accordance with their terms, except as such enforceability may be limited by Debtor Relief Laws and by general principles of equity (regardless of whether enforcement is sought in equity or at law).

Section 6.14 Designation of Subsidiaries. The board of directors (or any committee thereof) of the Borrower may at any time designate (or re-designate) any Restricted Subsidiary as an Unrestricted Subsidiary or designate (or re-designate, as the case may be) any Unrestricted Subsidiary as a Restricted Subsidiary; *provided* that (i) immediately before and after such designation (or re-designation), no Event of Default shall have occurred and be continuing, (ii) immediately after giving effect to such designation the Borrower shall be in compliance with Section 7.11 (calculated on a Pro Forma Basis), whether or not the Borrower would otherwise be required to be in compliance with the Financial Covenant (and, as a condition precedent to the effectiveness of any such designation, the Borrower shall deliver to the Administrative Agent a notice of such designation, which shall be deemed to be a representation that such designation is in compliance with this Section 6.14), as of the last day of the most recently ended Test Period on or prior to the date of determination, (iii) no Subsidiary may be designated as an Unrestricted Subsidiary if, after such designation, it would be a "Restricted Subsidiary" for the purpose of any Junior Financing, any Incremental Equivalent Debt, any Refinancing Equivalent Debt or any Permitted Refinancing of any of the foregoing and (iii) the Investment resulting from the designation of such Subsidiary as an Unrestricted Subsidiary as described in the immediately succeeding sentence is permitted by Section 7.02. The designation of any Subsidiary as an Unrestricted Subsidiary shall constitute an Investment by the Borrower therein at the date of designation in an amount equal to the fair market value as determined by the Borrower in good faith of the Borrower's or a Subsidiary's (as applicable) Investment therein. The designation of any Unrestricted Subsidiary as a Restricted Subsidiary shall constitute the incurrence at the time of designation of any Indebtedness or Liens of such Subsidiary existing at such time and a return on any Investment by the Borrower in Unrestricted Subsidiaries pursuant to the preceding sentence in an amount equal to the fair market value as determined by the Borrower in good faith at the date of such designation of the Borrower's or a Subsidiary's (as applicable) Investment in such Subsidiary.

Section 6.15 Maintenance of Ratings. Use commercially reasonable efforts to maintain (i) a public corporate credit rating (but not a specific rating) from S&P and a public corporate family rating (but not a specific rating) from Moody's, in each case in respect of the Borrower, (ii) a public rating (but not a specific rating) in respect of the Initial Term Loans from each of S&P and Moody's and (iii) a public rating (but not a specific rating) in respect of the Revolving Credit Commitments from S&P).

Section 6.16 Post-Closing Actions. take each action set forth on Schedule 6.16 within the period set forth on such Schedule 6.16 for such action; provided that, in each case, the Administrative Agent may, in its sole reasonable discretion, grant extensions of the time periods set forth on such Schedule 6.16 and, each representation or warranty which would be true, each covenant or agreement which would be complied with, and each condition which would be satisfied, in each case as set forth in any Loan Document, but for an action set forth on Schedule 6.16 not having been completed, will be deemed true, complied with, or satisfied, as the case may be, unless such action is not completed within the period set forth in Schedule 6.16 for such action (as such period may be extended by the Administrative Agent).

Section 6.17 Use of Proceeds. Use the proceeds (a) of the Initial Term Loans, whether directly or indirectly, to repay obligations in respect of the Existing Credit Agreement, to consummate the Transactions, to pay Transaction Expenses, to fund cash on the Borrower's and its Subsidiaries' balance sheet, for working capital and other general corporate purposes (including to fund OID or upfront fees in connection with the Transaction, Capital Expenditures, Permitted Acquisitions and other permitted Investments, Restricted Payments, refinancing of indebtedness and any other transaction not prohibited by this Agreement), (b) of the Revolving Credit Loans and Letters of Credit made available on the Closing Date, for working capital needs, to pay Transaction Expenses to the extent required (including to fund OID or upfront fees in connection with the Transaction), and to backstop, replace or cash collateralize letters of credit outstanding on the Closing Date under the Existing Credit Agreement, and (c) of any Borrowing after the Closing Date, for any purpose not otherwise prohibited under this Agreement, including for general corporate purposes, working capital needs, Capital Expenditures, Permitted Acquisitions and other permitted Investments, Restricted Payments, refinancing of indebtedness and any other transaction not prohibited by this Agreement.

Section 6.18 Quarterly Conference Calls. Quarterly, at a time mutually agreed with the Administrative Agent that is promptly after the delivery of the the financial statements referred to in Section 6.01(a) and Section 6.01(b), and with reasonable advance notice to Lenders, commencing with the delivery of information with respect to the fiscal year ending December 31, 2016, participate in a conference call for Lenders to discuss the financial position and results of operations of Borrower and its Subsidiaries for the most recently-ended period for which financial statements have been delivered.

ARTICLE VII

Negative Covenants

So long as any Lender shall have any Commitment hereunder or any Loan or other Obligation hereunder (other than (i) contingent indemnification obligations as to which no claim has been asserted and (ii) Obligations under Secured Hedge Agreements and Obligations under Secured Cash Management Agreements) shall remain unpaid or unsatisfied, or any Letter of Credit shall remain outstanding (other than Letters of Credit which have been Cash Collateralized), the Borrower shall not, nor shall the Borrower permit any Restricted Subsidiary to:

Section 7.01 Liens. Create, incur, assume or suffer to exist any Lien upon any of its property, assets or revenues, whether now owned or hereafter acquired, other than the following:

(a) (i) Liens created pursuant to any Loan Document and (ii) Liens on cash or deposits to Cash Collateralize any Letters of Credit as contemplated hereunder;

(b) Liens existing on the date hereof and set forth on Schedule 7.01(b);

(c) Liens for Taxes that are not overdue for a period of more than thirty (30) days or if more than thirty (30) days overdue, that are being contested in good faith and by appropriate actions for which appropriate reserves have been established in accordance with GAAP or with respect to which the failure to make payment could not reasonably be expected to have a Material Adverse Effect;

(d) statutory or common law Liens of landlords, sublandlords, carriers, warehousemen, mechanics, materialmen, repairmen, construction contractors or other like Liens, or other customary Liens in favor of landlords, so long as, in each case, such Liens secure amounts not overdue for a period of more than sixty (60) days or, if more than sixty (60) days overdue (i) no other action has been taken to enforce such Lien, (ii) such Lien is being contested in good faith and by appropriate actions for which appropriate reserves have been established in accordance with GAAP or (iii) with respect to which the failure to make payment could not reasonably be expected to have a Material Adverse Effect;

(e) pledges or deposits (i) in the ordinary course of business in connection with workers' compensation, unemployment insurance and other social security laws or similar legislation, health, disability or other employee benefits, (ii) in the ordinary course of business securing liability for reimbursement or indemnification obligations of insurance carriers providing property, casualty or liability insurance to the Borrower or any Subsidiaries or any other insurance or self-insurance arrangements and (iii) in respect of letters of credit or bank guarantees that have been posted by the Borrower or any Restricted Subsidiaries to support the payments of the items set forth in clauses (i) and (ii) of this Section 7.01(e);

(f) pledges or deposits (i) to secure the performance of bids, tenders, trade contracts, governmental contracts and leases (other than Indebtedness for borrowed money), statutory obligations, surety, stay, customs, bid and appeal bonds, performance and return of money bonds, performance and completion guarantees, agreements with utilities and other obligations of a like nature (including those to secure health, safety and environmental obligations) incurred in the ordinary course of business or consistent with industry practice and (ii) in respect of letters of credit or bank guarantees that have been posted to support payment of the items set forth in clause (i) of this Section 7.01(f);

(g) easements, servitudes, rights-of-way, restrictions (including zoning, building and similar restrictions), encroachments, protrusions, covenants, variations in area of measurement, declarations on or with respect to the use of property, matters of record affecting title, liens restricting or prohibiting access to or from lands abutting on controlled access highways or covenants affecting the use to which lands may be put, and other similar encumbrances and title defects affecting real property that, in the aggregate, do not in any case materially interfere with the ordinary conduct of the business of the Borrower and its Subsidiaries taken as a whole, or the use of the property for its intended purpose, and any other exceptions to title on the Mortgage Policies accepted by the Collateral Agent in accordance with this Agreement;

(h) Liens arising from judgments or orders for the payment of money (or appeal or other surety bonds relating thereto) not constituting an Event of Default under Section 8.01(g);

(i) (i) Liens securing obligations in respect of Indebtedness permitted under Section 7.03(e); *provided* that (A) such Liens are created within 360 days of the acquisition, construction, repair, lease or improvement of the property subject to such Liens, (B) such Liens do not at any time encumber any property other than the property financed by such Indebtedness, replacements thereof and additions and accessions to such property and the proceeds and the products thereof and customary security deposits and (B) such Liens do not at any time extend to or cover any assets (except for additions and accessions to such assets, the proceeds and products thereof and customary security deposits) other than the assets subject to, or acquired, constructed, repaired or improved with the proceeds of such Indebtedness; *provided* that, in the case of each of subclauses (B) and (C), individual financings provided by one lender may be cross collateralized to other financings provided by such lender or its Affiliates and (ii) Liens on assets of Non-Loan Parties securing Indebtedness of such Restricted Subsidiaries permitted pursuant to Section 7.03 or other obligations of any Non-Loan Party not constituting Indebtedness;

(j) (i) leases, licenses, subleases or sublicenses (including with respect IP Rights) granted to others in the ordinary course of business (or other agreements under which the Borrower or any Restricted Subsidiary has granted rights to end users to access and use the Borrower's or any Restricted Subsidiary's products, technologies or services in the ordinary course of business) which do not (A) interfere in any material respect with the business of the Borrower and the Subsidiaries, taken as a whole,

or (B) secure any Indebtedness for borrowed money and (ii) the rights reserved or vested in any Person by the terms of any lease, license, sublease, sublicense, franchise, grant or permit held by the Borrower or any other Restricted Subsidiaries or by a statutory provision, to terminate any such lease, license, sublease, sublicense, franchise, grant or permit, or to require annual or periodic payments as a condition to the continuance thereof;

(k) Liens (i) in favor of customs and revenue authorities arising as a matter of law to secure payment of customs duties in connection with the importation of goods in the ordinary course of business, (ii) attaching to commodity trading accounts or other commodities brokerage accounts incurred in the ordinary course of business and (iii) on specific items of inventory or other goods and proceeds thereof of any Person securing such Person's obligations in respect of bankers' acceptances, letters of credit or customs bonds (or similar obligations) issued or created for the account of such Person to facilitate the purchase, shipment or storage of such inventory or such other goods in the ordinary course of business;

(l) Liens (i) of a collection bank arising under Section 4-208 of the Uniform Commercial Code or other similar provisions of applicable Laws on the items in the course of collection and (ii) in favor of a banking or other financial institution arising as a matter of common or statutory Law or under customary general terms and conditions encumbering deposits or other funds maintained with a financial institution (including the right of setoff) and that are within the general parameters customary in the banking industry or arising pursuant to such banking institution's general terms and conditions;

(m) Liens (i) on advances of cash or Cash Equivalents in favor of the seller of any property to be acquired in an Investment permitted pursuant to Section 7.02(f), Section 7.02(i), Section 7.02(j), Section 7.02(n), Section 7.02(p), Section 7.02(q), Section 7.02(s), Section 7.02(t), Section 7.02(u), Section 7.02(dd), Section 7.02(ff) and Section 7.02(gg) to be applied against the purchase price for such Investment or, (ii) consisting of an agreement to Dispose of any property in a Disposition permitted under Section 7.05, in each case, solely to the extent such Investment or Disposition, as the case may be, would have been permitted on the date of the creation of such Lien or on the date of any contract for such Investment or Disposition;

(n) Liens on property of (and Equity Interests in) any Restricted Subsidiary securing Indebtedness of such Restricted Subsidiary incurred pursuant to Section 7.03(b);

(o) Liens in favor of the Borrower or a Restricted Subsidiary securing Indebtedness permitted under Section 7.03; provided that no Loan Party shall grant a Lien in favor of any Non-Loan Party;

(p) Liens existing on property at the time of its acquisition or existing on the property of any Person at the time such Person becomes a Restricted Subsidiary, in each case after the date hereof, which at the election of the Borrower, shall be subject to a First Lien Intercreditor Agreement, Second Lien Intercreditor Agreement or other lien subordination and intercreditor agreement reasonably satisfactory to the Borrower and the Administrative Agent; *provided* that (i) such Lien was not created in contemplation of such acquisition or such Person becoming a Restricted Subsidiary, (ii) such Lien does not extend to or cover any other property of the Borrower or any Restricted Subsidiary other than the Person(s) acquired and/or formed to make such acquisitions and Subsidiaries of such Person(s) (other than the proceeds or products thereof and other than after-acquired property of and Equity Interests in such acquired Restricted Subsidiary (it being understood and agreed that individual financings by any lender may be cross-collateralized to other financings provided by such lender or its Affiliates)) and (iii) the Indebtedness secured thereby is permitted under Section 7.03(e), (g) (but excluding, in the case of any Unrestricted Subsidiary designated (or redesignated) as a Restricted Subsidiary, Liens securing Indebtedness permitted pursuant to Section 7.03(g)(ii)), (n) or (u);

(q) any interest or title (and any encumbrances on such interest or title) of a lessor, sublessor, licensor or sublicensor or secured by a lessor's, sublessor's, licensor's or sublicensor's interest under leases or subleases (other than Capitalized Leases) or licenses or sublicenses entered into by the Borrower or any of the Restricted Subsidiaries in the ordinary course of business;

(r) (i) Liens arising out of conditional sale, title retention, consignment or similar arrangements for sale of goods entered into by the Borrower or any of the Restricted Subsidiaries in the ordinary course of business and (ii) Liens or other similar provisions of applicable Laws under Article 2 of the Uniform Commercial Code or similar provisions of applicable Laws in favor of a seller or buyer of goods;

(s) Liens deemed to exist in connection with Investments in repurchase agreements under Section 7.02 and reasonable customary initial deposits and margin deposits and similar Liens attaching to commodity trading accounts or other brokerage accounts maintained in the ordinary course of business and not for speculative purposes;

(t) to the extent constituting Liens, Dispositions expressly permitted under Section 7.05;

(u) Liens that are customary contractual rights of setoff or banker's liens (i) relating to the establishment of depository relations with banks or other deposit-taking financial institutions in the ordinary course and not given in connection with the issuance of Indebtedness, (ii) relating to pooled deposit, automatic clearinghouse accounts or sweep accounts of the Borrower or any of the Restricted Subsidiaries to permit satisfaction of overdraft or similar obligations incurred in the ordinary course of business of the Borrower or any of the Restricted Subsidiaries or (iii) relating to purchase orders and other agreements entered into with customers of the Borrower or any of the Restricted Subsidiaries in the ordinary course of business;

(v) Liens solely on any cash money deposits made by the Borrower or any of the Restricted Subsidiaries in connection with any letter of intent or purchase agreement permitted hereunder;

(w) ground leases or subleases in respect of real property on which facilities or equipment owned or leased by the Borrower or any of its Subsidiaries are located;

(x) Liens evidenced by the filing of Uniform Commercial Code financing statements or similar public filings, registrations or agreements in foreign jurisdictions, in each case, relating to leases permitted under this Agreement, and other precautionary statements, filings or agreements;

(y) Liens on insurance policies and the proceeds thereof securing the financing of the premiums with respect thereto;

(z) customary rights of first refusal and tag, drag and similar rights in joint venture agreements entered into in the ordinary course of business;

(aa) customary Liens of an indenture trustee on money or property held or collected by it to secure fees, expenses and indemnities owing to it by any obligor under an indenture;

(bb) any encumbrance or restriction (including put and call arrangements) with respect to Equity Interests of any Joint Venture, Subsidiary that is not wholly owned or similar arrangement pursuant to any Joint Venture, non-wholly owned Subsidiary or similar agreement and not for Indebtedness for borrowed money, other than Indebtedness (to the extent otherwise permitted or not prohibited hereunder) of such Joint Venture or non-wholly owned Subsidiary;

(cc) Liens securing obligations in respect of any Secured Hedge Agreement and any Secured Cash Management Agreement permitted under Section 7.03(s) (or any Permitted Refinancing in respect thereof);

(dd) **[Reserved]**;

(ee) any zoning, building or similar law or right reserved to or vested in any Governmental Authority to control or regulate the use of any real property that does not materially interfere with the ordinary conduct of the business of the Borrower and the Subsidiaries, taken as a whole;

(ff) the modification, replacement, renewal, refinancing or extension of any Lien permitted by clauses (b), (i), (n), (p), (oo) and (pp) of this Section 7.01; *provided* that (i) the Lien does not extend to any additional property other than (A) after-acquired property that is affixed or incorporated into the property covered by such Lien or financed or refinanced by Indebtedness permitted under Section 7.03, or after-acquired property of the applicable Restricted Subsidiary to the extent the security agreements in place at the time of the acquisition of such Restricted Subsidiary required the grant of such Lien in after-acquired property, and (B) proceeds and products thereof (it being understood and agreed that individual financings by any lender may be cross-collateralized to other financings provided by such lender or its Affiliates), and (ii) the replacement, renewal, extension or refinancing of the obligations secured or benefited by such Liens is, if constituting Indebtedness, permitted by Section 7.03;

(gg) Liens on the Collateral securing Refinancing Equivalent Debt and related obligations and any Permitted Refinancing of any of the foregoing; *provided* that (x) any such Liens securing such Indebtedness that is secured by the Collateral on a *pari passu* basis (but without regard to control of remedies) with the Obligations shall be subject to a First Lien Intercreditor Agreement or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent and (y) any such Liens securing such Indebtedness that is secured by the Collateral on a junior basis to the Liens securing the Obligations shall be subject to a Second Lien Intercreditor Agreement or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent;

(hh) (i) deposits of cash with the owner or lessor of premises leased or operated by the Borrower or any of the Subsidiaries and (ii) cash collateral on deposit with banks or other financial institutions issuing letters of credit (or backstopping such letters of credit) or other equivalent bank guarantees issued naming as beneficiaries the owners or lessors of premises leased or operated by the Borrower or any of the Subsidiaries, in each case in the ordinary course of business of the Borrower and such Subsidiaries to secure the performance of the Borrower's or such Subsidiary's obligations under the terms of the lease for such premises;

(ii) Liens on cash or Cash Equivalents used to defease or to satisfy and discharge Indebtedness; provided that such defeasance or satisfaction and discharge is not prohibited hereunder;

(jj) Liens securing obligations in respect of Indebtedness permitted under Section 7.03(r) and related obligations (and, in each case, any Permitted Refinancings thereof); *provided* that (x) any such Liens securing such Indebtedness that is secured by the Collateral on a *pari passu* basis (but

without regard to control of remedies) with the Obligations shall be subject to a First Lien Intercreditor Agreement or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent and (y) any such Liens securing such Indebtedness that is secured by the Collateral on a junior basis to the Liens securing the Obligations shall be subject to a Second Lien Intercreditor Agreement or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent;

(kk) **[Reserved]**;

(ll) **[Reserved]**;

(mm) Liens securing obligations in respect of letters of credit, bank guarantees, bankers acceptance, warehouse receipts or similar obligations permitted to be incurred pursuant to Sections 7.03(p) and (q) and covering (i) the property (or the documents of title in respect of such property) financed by such letters of credit, bank guarantees, bankers acceptance, warehouse receipts or similar obligations and the proceeds and products thereof or (ii) cash collateral provided to support such obligations;

(nn) Liens on goods or inventory the purchase, shipment or storage price of which is financed by a documentary letter of credit, bank guarantee or bankers' acceptance issued or created for the account of the Borrower or any Restricted Subsidiary in the ordinary course of business; *provided* that such Lien secures only the obligations of the Borrower or its Restricted Subsidiaries in respect of such letter of credit, bank guarantee or banker's acceptance to the extent permitted to be incurred pursuant to Section 7.03;

(oo) other Liens securing Indebtedness or other obligations in an aggregate principal amount at the time of incurrence of such Indebtedness not exceeding the greater of (x) $25,000,000 and (y) 20% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of incurrence of Indebtedness secured by such Lien (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination; *provided* that, if the most recent Compliance Certificate delivered pursuant to Section 6.02(a) demonstrates, on a Pro Forma Basis, a Total Net Leverage Ratio of 3.00:1.00 or less, the Borrower or any Restricted Subsidiaries may secure up to the greater of (x) $25,000,000 and (y) 20% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of incurrence of Indebtedness secured by such Lien (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination, of additional Indebtedness or other obligations under this clause (oo) (including any modification, replacement, renewal, refinancing or extension in reliance on clause (ff) of this Section 7.01), which, in each case under this Section 7.01(oo), at the election of the Borrower, shall be subject to a First Lien Intercreditor Agreement, Second Lien Intercreditor Agreement or other lien subordination and intercreditor agreement reasonably satisfactory to the Borrower and the Administrative Agent;

(pp) Liens securing obligations in respect of any Indebtedness of a Loan Party permitted by Sections 7.03(g)(ii), (g)(iii) or (n); *provided* that (i) with respect to any such Liens securing Indebtedness or other obligations that are secured by the Collateral on a *pari passu* basis (but without regard to control of remedies) with the Obligations (x) the Borrower shall be in compliance with a Total Net First Lien Leverage Ratio of equal to or less than 2.75:1.00 (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination and (y) such Liens (other than with respect to purchase money and similar obligations) shall be subject to a First Lien Intercreditor Agreement or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and Administrative Agent, and (ii) with respect to any such Liens securing Indebtedness or other obligations that are secured by the Collateral on a junior basis to the Liens securing

the Obligations (x) the Borrower shall be in compliance with a Total Net Senior Secured Leverage Ratio of equal to or less than 4.00:1.00 (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination and (y) such Liens (other than with respect to purchase money and similar obligations) shall be subject to a Second Lien Intercreditor Agreement or to other customary intercreditor agreements or arrangements reasonably acceptable to the Borrower and the Administrative Agent;

(qq) Liens of bailees in the ordinary course of business;

(rr) Liens securing obligations (other than obligations representing Indebtedness for borrowed money) under operating, reciprocal easement or similar agreements entered into in the ordinary course of business of the Borrower and its Subsidiaries; and

(ss) utility and similar deposits in the ordinary course of business.

The expansion of Liens by virtue of accrual of interest, the accretion of accreted value, the payment of interest or dividends in the form of additional Indebtedness, amortization of OID and increases in the amount of Indebtedness outstanding solely as a result of fluctuations in the exchange rate of currencies will not be deemed to be an incurrence of Liens for purposes of this Section 7.01.

For purposes of determining compliance with this Section 7.01, (x) a Lien need not be incurred solely by reference to one category of Liens described in clauses (a) through (ss) above but may be incurred under any combination of such categories (including in part under one such category and in part under any other such category) and (y) in the event that a Lien (or any portion thereof) meets the criteria of one or more of such categories of Liens described in clauses (a) through (ss) above, the Borrower shall, in its sole discretion, classify or may subsequently reclassify at any time such Lien (or any portion thereof) in any manner that complies with this covenant.

Section 7.02 Investments. Make or hold any Investments, except:

(a) Investments in assets that are Cash Equivalents or were Cash Equivalents when such Investment was made;

(b) loans, promissory notes or advances to future, present or former officers, directors, members of management, employees and consultants of the Borrower (or any Permitted Parent) or any of the Restricted Subsidiaries (i) for reasonable and customary business-related travel, entertainment, relocation, housing and analogous ordinary business purposes or consistent with past practices, (ii) in connection with such Person's purchase of Equity Interests of the Borrower (or any Permitted Parent thereof); *provided* that, to the extent such loans or advances are made in cash, the amount of such loans and advances used to acquire such Equity Interests shall be contributed or paid to the Borrower in cash and (iii) for any other purpose in an aggregate principal amount outstanding not to exceed $5,000,000 at any time;

(c) Investments (i) by the Borrower or any Restricted Subsidiary that is a Loan Party in the Borrower or any Restricted Subsidiary that is a Loan Party, (ii) by any Non-Loan Party in any other Non-Loan Party, (iii) by any Non-Loan Party in the Borrower or any Restricted Subsidiary that is a Loan Party and (iv) by any Loan Party in any Non-Loan Party; *provided* that (A) any such Investments made by a Loan Party pursuant to this clause (iv) in the form of intercompany loans shall have been pledged to the Collateral Agent for the benefit of the Secured Parties to the extent required by the Collateral Documents and the Collateral and Guarantee Requirement and (B) the aggregate amount of Investments of the Loan Parties made in Non-Loan Parties pursuant to this clause (iv) shall not exceed when combined with, and

without duplication of, the aggregate amount of Investments made by Loan Parties in Non-Loan Parties pursuant to Section 7.02(i)(ii), in each case, outstanding at such time, the greater of (x) $50,000,000 and (y) 45% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of such Investment (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(d) Investments consisting of extensions of credit in the nature of accounts receivable or notes receivable arising from the grant of trade credit in the ordinary course of business, and Investments received in satisfaction or partial satisfaction thereof and other credits to suppliers, in each case, in the ordinary course of business;

(e) Investments consisting of Liens, Indebtedness, fundamental changes, Dispositions, Restricted Payments and prepayments of Indebtedness permitted under Section 7.01, Section 7.03 (other than Section 7.03(c)(ii) or (d)), Section 7.04 (other than Section 7.04(c)(ii) or (f)), Section 7.05 (other than Section 7.05(d)(ii)), Section 7.06 (other than Section 7.06(d) or (g)(iii)) and Section 7.13, respectively;

(f) Investments existing on the date hereof or made pursuant to legally binding commitments in existence or otherwise contemplated on the date hereof (i) set forth on Schedule 7.02(f), (ii) consisting of intercompany Investments outstanding on the date hereof, and (iii) any modification, replacement, renewal, reinvestment or extension of any of the foregoing; *provided* that (x) the amount of any Investment permitted pursuant to this Section 7.02(f) is not increased from the amount of such Investment on the Closing Date except pursuant to the terms of such Investment as of the Closing Date or as otherwise permitted by another clause of this Section 7.02 and (y) any Investment in the form of Indebtedness of any Loan Party owed to any Non-Loan Party shall be unsecured and subordinated to the Obligations pursuant to an Intercompany Note;

(g) Investments in Swap Contracts of the type permitted under Section 7.03;

(h) promissory notes and other non-cash consideration that is permitted to be received in connection with Dispositions permitted by Section 7.05;

(i) the purchase or other acquisition of all or substantially all of the property and assets of any Person or of assets constituting a business unit, a line of business or division of such Person or Equity Interests in a Person that, upon the consummation thereof, will be a Restricted Subsidiary of the Borrower (including as a result of a merger or consolidation and/or any Investment in any Subsidiary that serves to increase the equity ownership of the Borrower or any Restricted Subsidiary therein); *provided* that with respect to each purchase or other acquisition made pursuant to this Section 7.02(i) (each, a "**Permitted Acquisition**"):

(i) the property, assets and businesses acquired in such purchase or other acquisition shall, to the extent required hereunder and under the other Loan Documents, constitute Collateral and the applicable Loan Party, any such newly created or acquired Subsidiary and the Subsidiaries of such created or acquired Subsidiary (in each case, to the extent required under the Collateral and Guarantee Requirement) shall have complied with the requirements of Section 6.11, within the times specified therein (for the avoidance of doubt, this clause (i) shall not override any provisions of the Collateral and Guarantee Requirement, subject to the limit in clause (ii) below);

(ii) the aggregate amount of such Investments made by Loan Parties in Persons that are not or do not become Loan Parties shall not exceed when combined with, and without duplication of, the aggregate amount of Investments made by Loan Parties in Restricted Subsidiaries

that are Non-Loan Parties pursuant to Section 7.02(c)(iv), in each case, outstanding at such time, the greater of (x) $50,000,000 and (y) 45% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of such Investment (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination; it being understood that the limitations set forth in this clause (i)(ii) shall not apply in the event that the Person acquired pursuant to this Section 7.02(i) becomes a Guarantor even though such Person owns Equity Interests in Persons that are not otherwise required to become Guarantors;

(iii) immediately after giving effect to such purchase or acquisition, the Borrower and the Restricted Subsidiaries shall be in compliance with Section 7.07;

(iv) on the date on which the definitive agreement governing the relevant transaction is executed, (1) immediately before and immediately after giving Pro Forma Effect to any such purchase or other acquisition (including any Indebtedness to be incurred in connection therewith), no Event of Default shall have occurred and be continuing and (2) immediately after giving effect to any such purchase or other acquisition with aggregate consideration in excess of $50,000,000, the Borrower shall be in compliance with Section 7.11, solely to the extent then in effect, as of the last day of the most recently ended Test Period on or prior to the date of determination (calculated on a Pro Forma Basis); and

(v) with respect to any such transaction, the aggregate consideration of which is in excess of $50,000,000, the Borrower shall have delivered to the Administrative Agent, on behalf of the Lenders, a certificate of a Responsible Officer, in form and substance reasonably satisfactory to the Administrative Agent, certifying that all of the requirements set forth in this Section 7.02(i) have been satisfied or will be satisfied on or prior to the consummation of such purchase or other acquisition (including calculations in reasonable detail as to satisfaction of clause (iv) above);

(j) so long as immediately after giving effect to any such Investment, no Event of Default would result therefrom, other Investments in an amount not to exceed the Available Amount immediately prior to the time of the making of such Investment;

(k) Investments in the ordinary course of business consisting of Uniform Commercial Code Article 3 endorsements for collection or deposit (or similar provisions of Law) and Article 4 customary trade arrangements with customers consistent with past practices (or similar provisions of Law);

(l) Investments (including debt obligations and Equity Interests) received (i) in connection with the bankruptcy workout, recapitalization or reorganization of suppliers and customers or in settlement of delinquent obligations of, or other disputes with or judgments against, customers and suppliers arising in the ordinary course of business, (ii) upon the foreclosure with respect to any secured Investment, (iii) as a result of the settlement, compromise or resolution of litigation, arbitration or other disputes or (iv) in settlement of debts created in the ordinary course of business;

(m) loans and advances to any Permitted Parent in lieu of, and not in excess of the amount of (after giving effect to any other loans, advances or Restricted Payments in respect thereof), Restricted Payments to the extent permitted to be made to such Permitted Parent in accordance with Section 7.06;

(n) other Investments that do not exceed in the aggregate the greater of (i) $50,000,000 and (ii) 45% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of such Investment (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(o) advances of payroll payments to directors, officers, employees, members of management and consultants in the ordinary course of business;

(p) Investments to the extent that payment for such Investments is made solely with Qualified Equity Interests of the Borrower (or any Permitted Parent);

(q) Investments held by a Restricted Subsidiary acquired after the Closing Date or of a Person merged into, amalgamated with or consolidated into the Borrower or a Restricted Subsidiary in accordance with Section 7.04 after the Closing Date to the extent that such Investments were not made in contemplation of or in connection with such acquisition, merger, amalgamation or consolidation and were in existence on the date of such acquisition, merger, amalgamation or consolidation;

(r) Guarantees by the Borrower or any of the Restricted Subsidiaries (i) of leases (other than Capitalized Leases) or of other obligations that do not constitute Indebtedness, in each case entered into in the ordinary course of business and (ii) of Indebtedness to the extent permitted under Section 7.03.

(s) Investments made by (i) any Non-Loan Party to the extent such Investments are financed with the proceeds received by such Restricted Subsidiary from an Investment in such Restricted Subsidiary made pursuant to Section 7.02(c)(iv), Section 7.02(i)(ii), Section 7.02(n), Section 7.02(p), Section 7.02(t), Section 7.02(u), Section 7.02(dd) and Section 7.02(ff) and (ii) any Loan Party in any Non-Loan Party consisting of contributions or other Dispositions of Equity Interests of Persons that are Non-Loan Parties;

(t) Investments in the amount of any Excluded Contribution to the extent Not Otherwise Applied;

(u) Investments by the Borrower or a Restricted Subsidiary in (i) Joint Ventures and (ii) Subsidiaries that are not wholly owned, in an aggregate amount, taken together with all other Investments made pursuant to this clause (u), not to exceed the greater of $25,000,000 and 25% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of such Investment (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(v) **[Reserved]**;

(w) defined contribution pension scheme, unfunded pension fund and other employee benefit plan obligations and liabilities to the extent that they are permitted to remain unfunded under applicable Laws;

(x) **[Reserved]**;

(y) Investments in any Subsidiary in connection with reorganizations and related activities related to tax planning; *provided* that, after giving effect to any such reorganization and related activities, the security interest of the Collateral Agent in the Collateral, taken as a whole, is not materially impaired or after giving effect to such Investment, the Borrower shall otherwise be in compliance with Section 6.11;

(z) Investments consisting of the licensing or contribution of IP Rights pursuant to joint marketing, joint manufacturing, supply and profit-sharing arrangements with other Persons;

(aa) Investments consisting of, or to finance purchases and acquisitions of, inventory, supplies, materials, services or equipment or purchases of contract rights or licenses or leases of IP Rights in the ordinary course of business;

(bb) Investments in any Subsidiary or any Joint Venture in connection with intercompany cash management arrangements or related activities arising in the ordinary course of business;

(cc) Investments in prepaid expenses, negotiable instruments held for collection and lease, utility and workers compensation, performance and similar deposits entered into as a result of the operations of the business in the ordinary course of business;

(dd) Investments in an aggregate amount that does not exceed, together with the aggregate amount of Restricted Payments made in reliance on Section 7.06(k) and prepayments, redemptions, purchases, defeasances and other payments in respect of Junior Financings made in reliance on Section 7.13(a)(iv), the greater of (i) $25,000,000 and (ii) 20% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of such Investment (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(ee) **[Reserved]**;

(ff) Investments in an unlimited amount so long as on the earlier of the date on which the Investment is made and the date on which the definitive agreement governing the relevant Investment containing a legally binding commitment to make such Investment is made, the Borrower shall be in compliance with a Total Net Leverage Ratio of equal to or less than 2.00:1.00 (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination; *provided* that the aggregate amount of any such Investment made by Loan Parties in Non-Loan Parties shall not exceed the greater of (i) $25,000,000 and (ii) 20% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of such Investment (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(gg) Investments in the property, assets or business of a Person engaged in a similar line of business to the business of the Borrower and its Subsidiaries in an aggregate amount not to exceed the greater of $25,000,000 and 20% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of such Investment (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(hh) **[Reserved]**; and

(ii) Guarantee obligations of the Borrower or any Restricted Subsidiary in respect of letters of support, guarantees or similar obligations issued, made or incurred for the benefit of any Subsidiary of the Borrower to the extent required by law or in connection with any statutory filing or the delivery of audit opinions performed in jurisdictions.

For the avoidance of doubt, if an Investment would be permitted under any provision of this Section 7.02 (other than Section 7.02(i)) and as a Permitted Acquisition, such Investment need not satisfy the requirements otherwise applicable to Permitted Acquisitions unless such Investments are consummated in reliance on Section 7.02(i).

Any Investment that exceeds the limits of any particular clause set forth above may be allocated amongst more than one of such clauses to permit the incurrence or holding of such Investment to the extent such excess is permitted as an Investment under such other clauses.

Section 7.03 Indebtedness. Create, incur or assume any Indebtedness or issue any Disqualified Equity Interest, other than:

(a) Indebtedness under the Loan Documents;

(b) (i) Indebtedness existing on the date hereof set forth on Schedule 7.03(b) and any Permitted Refinancing thereof and (ii) intercompany Indebtedness outstanding on the date hereof and any Permitted Refinancing thereof; *provided* that all such Indebtedness of any Loan Party owed to any Non-Loan Party shall be unsecured and subordinated to the Obligations pursuant to an Intercompany Note;

(c) (i) Guarantees by the Borrower and the Restricted Subsidiaries in respect of Indebtedness or other obligations of the Borrower or any of the Restricted Subsidiaries otherwise permitted hereunder; *provided* that (A) no Guarantee by any Restricted Subsidiary of any Junior Financing shall be permitted unless such Restricted Subsidiary shall have also provided a Guarantee of the Obligations substantially on the terms set forth in the Guaranty and (B) if the Indebtedness being guaranteed is by its express terms subordinated to the Obligations, such Guarantee shall be subordinated to the Guaranty on terms, taken as a whole, at least as favorable to the Lenders, in all material respects, as those contained in the subordination of such Indebtedness and (ii) any Guarantee permitted as an Investment under Section 7.02;

(d) Indebtedness of the Borrower or any of the Restricted Subsidiaries owing to the Borrower or any Restricted Subsidiary to the extent constituting an Investment permitted by Section 7.02; *provided* that all such Indebtedness of any Loan Party owed to any Non-Loan Party shall be subject to an Intercompany Note;

(e) (i) (x) Attributable Indebtedness relating to any transaction, (y) other Indebtedness (including Capitalized Leases) of the Borrower and the Restricted Subsidiaries financing the acquisition, lease, construction, repair, replacement or improvement of property (real or personal), equipment or other fixed or capital assets, so long as such Indebtedness is incurred substantially concurrently with, or no later than two hundred and seventy (270) days after, the applicable acquisition, lease, construction, repair, replacement or improvement and (z) Attributable Indebtedness arising out of any sale-leaseback transactions; *provided* that the aggregate principal amount of such Indebtedness pursuant to this clause (e) shall not exceed the greater of (A) $30,000,000 and (B) 25% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of incurrence of such Indebtedness (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination, and (ii) any Permitted Refinancing of any Indebtedness incurred under Section 7.03(e)(i);

(f) Indebtedness in respect of Swap Contracts; *provided* that such obligations are (or were) entered into by such Person in the ordinary course of business for the purpose of (i) limiting interest rate risk with respect to any Indebtedness permitted to be incurred hereunder, (ii) fixing or hedging currency exchange rate risk, or (iii) fixing or hedging commodity price risk with respect to any commodity purchases or sales, and, in each case, not for purposes of speculation;

(g) Indebtedness

(i) of any Person that becomes a Restricted Subsidiary after the date hereof, which Indebtedness is existing at the time such Person becomes a Restricted Subsidiary and is not incurred in contemplation of such Person becoming a Restricted Subsidiary, that is non-recourse to the Borrower or any Restricted Subsidiary (other than any Subsidiary of such Person that is a Subsidiary on the date such Person becomes a Restricted Subsidiary after the date hereof) and, in each case, any Permitted Refinancing of any Indebtedness under this Section 7.03(g)(i),

(ii) (x) of the Borrower or any Restricted Subsidiary assumed in connection with any Investment permitted under this Agreement so long as, in the case of any such assumed Indebtedness in excess of $40,000,000, after giving Pro Forma Effect to the assumption of such Indebtedness pursuant to this clause (g)(ii)(x), the Total Net Leverage Ratio is less than or equal to 5.00:1.00 as of the last day of the most recently ended Test Period on or prior to the date of determination and such Indebtedness is not incurred in contemplation of such Investment and, in each case, (y) any Permitted Refinancing of any Indebtedness assumed under this Section 7.03(g)(ii);

(iii) (x) of the Borrower or any Restricted Subsidiary incurred to finance any Investment permitted under this Agreement so long as after giving Pro Forma Effect to the incurrence of such Indebtedness pursuant to this clause (g)(iii)(x), the Total Net Leverage Ratio as of the last day of the most recently ended Test Period on or prior to the date of determination is either (A) less than or equal to 5.00:1.00, or (B) no greater than the Total Net Leverage Ratio immediately prior to such Investment and, in each case, (y) any Permitted Refinancing of any Indebtedness incurred under this Section 7.03(g)(iii); *provided*, that the aggregate principal amount of any such Indebtedness of Restricted Subsidiaries that are Non-Loan Parties pursuant to this clause (g)(iii) would not, when combined with, and without duplication of, the aggregate principal amount of Indebtedness of Restricted Subsidiaries that are Non-Loan Parties pursuant to Section 7.03(n), in each case, outstanding at such time, exceed the greater of (A) $30,000,000 and (B) 25% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of incurrence of such Indebtedness (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(h) (i) Refinancing Equivalent Debt and (ii) any Permitted Refinancing of the foregoing;

(i) Indebtedness representing deferred compensation or similar arrangements to current, future or former officers, directors, employees, members of management or consultants of the Borrower (or any Permitted Parent) and the Subsidiaries;

(j) Indebtedness to future, present or former officers, directors, employees, members of management and consultants, their respective estates, executors, administrators, heirs, family members, legatees, distributees, spouses, former spouses, domestic partners and former domestic partners of the Borrower (or any Permitted Parent) or any Subsidiary to finance the purchase or redemption of Equity Interests of the Borrower (or any Permitted Parent) permitted by Section 7.06;

(k) Indebtedness incurred by the Borrower or any of the Restricted Subsidiaries in any acquisition consummated prior to the Closing Date, a Permitted Acquisition, any other Investment expressly permitted hereunder or not prohibited hereunder or any Disposition, in each case to the extent constituting obligations under noncompete agreements, consulting agreements, indemnification obligations or obligations in respect of purchase price (including earn-outs) or other similar deferred purchase price or arrangements or adjustments;

(l) Indebtedness consisting of obligations of the Borrower and the Restricted Subsidiaries under incentive, non-compete, consulting, deferred compensation or other similar arrangements with current, future or former officers, directors, employees, members of management and consultants incurred by such Person in connection with acquisitions consummated prior to the Closing Date, Permitted Acquisitions or any other Investment expressly permitted hereunder or not prohibited hereunder or Disposition of any business, assets or Subsidiary permitted hereunder;

(m) Indebtedness (i) arising from the honoring by a bank or other financial institution of a check, draft or similar instrument drawn against insufficient funds in the ordinary course of business; *provided* that such Indebtedness is extinguished within five (5) Business Days of its incurrence and (ii) Cash Management Obligations and other Indebtedness in respect of cash pooling arrangements, netting services, automatic clearinghouse arrangements, overdraft protections, employee credit card programs and other cash management and similar arrangements in the ordinary course of business and any Guarantees thereof;

(n) Indebtedness of the Borrower and the Restricted Subsidiaries in an aggregate principal amount not to exceed the greater of $50,000,000 and 45% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries, in each case determined at the time of incurrence of such Indebtedness (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination and, in the case of any Indebtedness incurred under this Section 7.03(n), any Permitted Refinancing in respect thereof; *provided* that the aggregate principal amount of any such Indebtedness of Restricted Subsidiaries that are Non-Loan Parties pursuant to this clause (n) would not, when combined with, and without duplication of, the aggregate principal amount of Indebtedness of Restricted Subsidiaries that are Non-Loan Parties pursuant to Section 7.03(g)(iii), in each case, outstanding at such time, exceed the greater of (i) $30,000,000 and (ii) 25% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of incurrence of such Indebtedness (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(o) Indebtedness consisting of (i) the financing of insurance premiums or (ii) take-or-pay obligations contained in supply arrangements, in each case, in the ordinary course of business;

(p) Indebtedness incurred by the Borrower or any of the Restricted Subsidiaries in respect of letters of credit, bank guarantees, bankers' acceptances, warehouse receipts or similar instruments issued or created in the ordinary course of business or consistent with past practice, including in respect of workers compensation, unemployment insurance and other social security legislation, health, disability or other employee benefits or property, casualty or liability insurance or other insurance or self-insurance or other Indebtedness with respect to reimbursement-type obligations regarding workers compensation claims or supporting the type of obligations described in Section 7.01(e), (f), or (hh) (whether or not such obligations are secured by a Lien);

(q) obligations (including in respect of letters of credit, bank guarantees, bankers' acceptances, warehouse receipts or similar instruments issued or created in the ordinary course of business or consistent with past practice) in respect of bids, tenders, trade contracts, governmental contracts and leases, statutory obligations, surety, stay, customs, bid, and appeal bonds, performance and return of money bonds, performance and completion guarantees, agreements with utilities and other obligations of a like nature (including those to secure health, safety and environmental obligations), in each case in the ordinary course of business or consistent with past practice;

(r) (i) Incremental Equivalent Debt and (ii) any Permitted Refinancing thereof;

(s) Indebtedness in an aggregate outstanding principal amount not exceeding the amount of obligations in respect of any Secured Hedge Agreement or any Secured Cash Management Agreement and not incurred in violation of Section 7.03(f) or Section 7.03(m), respectively;

(t) **[Reserved]**;

(u) Indebtedness incurred by a Restricted Subsidiary that is not a Guarantor which, when aggregated with the principal amount of all other Indebtedness incurred pursuant to this clause (u) and then outstanding, does not exceed the greater of (i) $25,000,000 and (ii) 25% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries determined at the time of incurrence of such Indebtedness (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(v) **[Reserved]**;

(w) Indebtedness of any Restricted Subsidiary supported by a Letter of Credit;

(x) unsecured Indebtedness in respect of obligations of the Borrower or any Restricted Subsidiary to pay the deferred purchase price of goods or services or progress payments in connection with such goods and services; *provided* that such obligations are incurred in connection with open accounts extended by suppliers on customary trade terms in the ordinary course of business and not in connection with the borrowing of money;

(y) Indebtedness in respect of letters of credit, bank guarantees or similar instruments issued for general corporate purposes and denominated in currencies other than Dollars and Alternative Currencies in an aggregate principal amount not to exceed $5,000,000 outstanding at any time;

(z) Indebtedness in respect of any bankers' acceptance supporting trade payables, warehouse receipts or similar facilities entered into in the ordinary course of business;

(aa) all premiums (if any), interest (including post-petition interest), fees, expenses, charges and additional or contingent interest on obligations described in clauses (a) through (z) above; and

(bb) to the extent constituting Indebtedness, Guarantees in the ordinary course of business of the obligations of suppliers, customers, franchisees and licensees of the Borrower and its Subsidiaries.

For purposes of determining compliance with this Section 7.03, in the event that an item of Indebtedness (or any portion thereof) at any time, whether at the time of incurrence or upon the application of all or a portion of the proceeds thereof or subsequently, meets the criteria of more than one of the categories described above in Sections 7.03(a) through (bb), the Borrower, in its sole discretion, may classify or reclassify (or later divide, classify or reclassify) such item of Indebtedness (or any portion thereof) in any one or more of the types of Indebtedness described in Sections 7.03(a) through (bb) and shall only be required to include the amount and type of such Indebtedness in such of the above clauses as determined by the Borrower at such time. The Borrower will be entitled to divide and classify an item of Indebtedness in more than one of the types of Indebtedness described in Sections 7.03(a) through (bb).

The accrual of interest, the accretion of accreted value, the payment of interest in the form of additional Indebtedness, the payment of dividends on Disqualified Equity Interests in the form of additional shares of Disqualified Equity Interests, accretion or amortization of OID or liquidation

preference and increases in the amount of Indebtedness outstanding solely as a result of fluctuations in the exchange rate of currencies will not be deemed to be an incurrence of Indebtedness for purposes of this Section 7.03. The principal amount of any non-interest bearing Indebtedness or other discount security constituting Indebtedness at any date shall be the principal amount thereof that would be shown on a consolidated balance sheet of the Borrower dated such date prepared in accordance with GAAP.

Notwithstanding the above, if any Indebtedness is incurred as Permitted Refinancing Indebtedness originally incurred pursuant to this Section 7.03, and such Permitted Refinancing Indebtedness would cause any applicable Dollar-denominated, Consolidated EBITDA or financial ratio restriction contained in this Section 7.03 to be exceeded if calculated on the date of such Permitted Refinancing, such Dollar-denominated, Consolidated EBITDA or financial ratio restriction, as applicable, shall be deemed not to have been exceeded so long as the principal amount of such Permitted Refinancing Indebtedness is permitted to be incurred pursuant to the definition of "Permitted Refinancing".

Section 7.04 Fundamental Changes. Merge, dissolve, liquidate, consolidate with or into another Person, or Dispose of (whether in one transaction or in a series of transactions) all or substantially all of its assets (whether now owned or hereafter acquired) to or in favor of any Person, except that:

(a) any Restricted Subsidiary may merge or consolidate with (i) the Borrower (including a merger, the purpose of which is to reorganize the Borrower into a new jurisdiction); *provided* that (x) the Borrower shall be the continuing or surviving Person or the continuing or surviving Person shall expressly assume the obligations of the Borrower under the Loan Documents in a manner reasonably acceptable to the Administrative Agent and (y) such merger or consolidation does not result in the Borrower ceasing to be organized under the Laws of the United States, any state thereof or the District of Columbia or (ii) any one or more other Restricted Subsidiaries; *provided* that when any Non-Loan Party is merging with another Restricted Subsidiary that is a Loan Party, a Loan Party shall be the continuing or surviving Person or, to the extent constituting and Investment, such Investment must be permitted by Section 7.02;

(b) (i) any Non-Loan Party may merge or consolidate with or into any other Restricted Subsidiary of the Borrower that is not a Loan Party, (ii) any Restricted Subsidiary may merge or consolidate with or into any other Restricted Subsidiary of the Borrower that is a Loan Party, (iii) any merger the sole purpose of which is to reincorporate or reorganize any Non-Loan Party in another jurisdiction, subject to compliance with the requirements of Section 6.11, (iv) any Restricted Subsidiary may liquidate or dissolve or change its legal form if the Borrower determines in good faith that such action is in the best interests of the Borrower and the Restricted Subsidiaries and is not materially disadvantageous to the Lenders, (v) any Restricted Subsidiary may merge or consolidate with any other Person in order to effect a Permitted Acquisition or other Investment permitted by Section 7.02, *provided* that the surviving entity shall be subject to the requirements of Section 6.11 (to the extent applicable) and (vi) any Loan Party may merge or consolidate with or into any other Restricted Subsidiary of the Borrower that is not a Loan Party to the extent constituting an Investment permitted by Section 7.02;

(c) any Restricted Subsidiary may Dispose of all or substantially all of its assets (upon voluntary liquidation or otherwise) to the Borrower or a Restricted Subsidiary; *provided* that if the transferor in such a transaction is a Loan Party, then (i) the transferee must be a Loan Party or (ii) such Investment must be a permitted Investment in accordance with Section 7.02 (other than Section 7.02(e)) or a Disposition permitted by Section 7.05;

(d) so long as no Event of Default exists or would result therefrom, the Borrower may (i) merge, amalgamate or consolidate with any other Person; *provided* that (x) the Borrower shall be

the continuing or surviving corporation or the continuing or surviving Person shall expressly assume the obligations of the Borrower under the Loan Documents in a manner reasonably acceptable to the Administrative Agent (including with respect to the to the continued perfection of Liens and satisfaction of customary PATRIOT Act requirements), and (y) such merger, amalgamation or consolidation does not result in the Borrower ceasing to be organized or existing under the laws of the United States, any state thereof, the District of Columbia or any territory thereof, or (ii) change its legal form if the Borrower determines that such action is in its best interests and makes such change in a manner reasonably acceptable to the Administrative Agent (including with respect to the continued perfection of Liens and satisfaction of customary PATRIOT Act requirements);

(e) **[Reserved]**;

(f) any Restricted Subsidiary may merge, amalgamate or consolidate with any other Person in order to effect an Investment permitted pursuant to Section 7.02 (other than Section 7.02(e)); and

(g) any Restricted Subsidiary may engage in a merger, dissolution, liquidation, consolidation or Disposition, the purpose of which is to effect a Disposition permitted pursuant to Section 7.05 (other than Section 7.05(e)).

Section 7.05 Dispositions. Make any Disposition, except:

(a) Dispositions of obsolete, damaged, worn out, used or surplus property, whether now owned or hereafter acquired, in the ordinary course of business and Dispositions of property no longer used or useful in the conduct of the business of the Borrower and the Restricted Subsidiaries;

(b) Dispositions of (i) inventory, (ii) equipment and goods held for sale in the ordinary course of business and (iii) immaterial assets (considered in the aggregate) in the ordinary course of business not in excess of $1,000,000 in any fiscal year;

(c) (i) any exchange or swap of assets, or lease, assignment or sublease of any real property or personal property for like property for use in a business not in contravention with Section 7.07 and (ii) Dispositions of property to the extent that (x) such property is exchanged for credit against the purchase price of similar replacement property or (y) the proceeds of such Disposition are promptly applied to the purchase price of such replacement property;

(d) Dispositions of property among the Borrower and the Restricted Subsidiaries; *provided* that if the transferor of such property is a Loan Party (i) the transferee thereof must be a Loan Party, (ii) to the extent constituting an Investment, such Investment must be a permitted Investment in accordance with Section 7.02 (other than Section 7.02(e)) or (iii) the consideration paid in connection therewith shall be cash or Cash Equivalents paid contemporaneous with the consummation of the transaction and shall be in an amount not less than the lesser of the fair market value of the property disposed of or the minimum transfer pricing requirements determined pursuant to a transfer pricing study performed by an independent registered public accounting firm of nationally recognized standing applicable thereto;

(e) Dispositions permitted by Section 7.02 (other than Section 7.02(e)), Section 7.04 (other than Section 7.04(g)), Section 7.06 (other Section 7.06(d)) and Section 7.13 and Liens permitted by Section 7.01 (other than Section 7.01(m)(ii));

(f) Dispositions with respect to property of the Borrower or any Restricted Subsidiary pursuant to sale-leaseback transactions; *provided* that, the Net Cash Proceeds thereof are applied in accordance with Section 2.05(b)(ii);

(g) Dispositions of (i) Cash Equivalents and (ii) other current assets that were Cash Equivalents when the original Investment in such assets was made and which thereafter fail to satisfy the definition of Cash Equivalents;

(h) leases, subleases, licenses or sublicenses (including the provision of software under an open source license), in each case in the ordinary course of business and which do not materially interfere with the business of the Borrower and the Restricted Subsidiaries, taken as a whole;

(i) transfers of property subject to Casualty Events;

(j) Dispositions of property not otherwise permitted under this Section 7.05; *provided* that (i) at the time of such Disposition (other than any such Disposition made pursuant to a commitment entered into at a time when no Event of Default exists), no Event of Default shall exist or would result from such Disposition and (ii) with respect to any Disposition pursuant to this clause (j) for a purchase price in excess of $5,000,000, the Borrower or any of the Restricted Subsidiaries shall receive not less than 75% of such consideration in the form of cash or Cash Equivalents (in each case, free and clear of all Liens, other than Liens permitted by Section 7.01); *provided*, however, that for the purposes of this clause (ii), (A) any liabilities (as shown on the Borrower's or such Restricted Subsidiary's most recent balance sheet or in the footnotes thereto) of the Borrower or such Restricted Subsidiary, that (i) are assumed by the transferee with respect to the applicable Disposition, (ii) for which the Borrower and all of the Restricted Subsidiaries shall have been validly released by all applicable creditors in writing or (iii) are otherwise cancelled or terminated in connection with the transaction with such transferee (other than intercompany debt owed to the Borrower or its Restricted Subsidiaries), (B) any securities, notes or other obligations or assets received by the Borrower or such Restricted Subsidiary from such transferee that are converted by the Borrower or such Restricted Subsidiary into cash or Cash Equivalents (to the extent of the cash or Cash Equivalents received) within one hundred and eighty (180) days following the closing of the applicable Disposition and (C) any Designated Non-Cash Consideration received in respect of such Disposition having an aggregate fair market value as determined by the Borrower in good faith, taken together with all other Designated Non-Cash Consideration received pursuant to this clause (C) that is at that time outstanding, not in excess of $5,000,000, with the fair market value of each item of Designated Non-Cash Consideration being measured at the time received and without giving effect to subsequent changes in value, shall be deemed to be cash;

(k) Dispositions of Investments in Joint Ventures or any Subsidiary that is not wholly owned to the extent required by, or made pursuant to customary buy/sell arrangements between, the joint venture or similar parties set forth in joint venture arrangements and/or similar binding arrangements;

(l) Dispositions of accounts receivable in connection with the collection, compromise or settlement thereof or in bankruptcy or similar proceedings;

(m) any issuance or sale of Equity Interests in, or sale of Indebtedness or other securities of, an Unrestricted Subsidiary;

(n) to the extent allowable under Section 1031 of the Code (or comparable provision of Law of any foreign jurisdiction and, in each case, any successor provision), any exchange of like property for use in any business conducted by the Borrower or any of the Restricted Subsidiaries that is not in contravention of Section 7.07;

(o) the unwinding of any Cash Management Obligations or Swap Contract;

(p) sales or other dispositions by the Borrower or any Restricted Subsidiary of assets in connection with the closing or sale of an office in the ordinary course of business of the Borrower and the Restricted Subsidiaries, which consist of leasehold interests in the premises of such office, the equipment and fixtures located at such premises and the books and records relating exclusively and directly to the operations of such office; *provided* that as to each and all such sales and closings, (A) no Event of Default shall result therefrom and (B) such sale shall be on commercially reasonable prices and term in a *bona fide* arm's length transaction;

(q) the lapse, abandonment or sale in the ordinary course of business of any registrations or applications for registration of any immaterial IP Rights or other IP Rights that in reasonable good faith judgment of the Borrower are no longer economically practicable or commercially desirable to maintain or used or useful in the business of the Borrower and the Restricted Subsidiaries (taken as a whole);

(r) any Disposition by reason of the exercise of termination rights under any lease, sublease, license, sublicense, concession or other agreement;

(s) any surrender or waiver of contractual rights or the settlement, release, recovery on or surrender of contractual rights or other claims of any kind;

(t) the discount of inventory, accounts receivable or notes receivable in the ordinary course of business or the conversion of accounts receivable to notes receivable or Investments permitted hereunder;

(u) any Disposition of assets of the Borrower or any Restricted Subsidiary or sale or issuance of Equity Interests of any Restricted Subsidiary, which assets or Equity Interests so Disposed have an aggregate fair market value of less than $5,000,000 in the aggregate for any fiscal year;

(v) any grant in the ordinary course of business of any license of patents, trademarks, know-how or any other IP Rights, including, but not limited to, grants of franchises or licenses, franchise or license master agreements and/or area development agreements;

(w) Dispositions contemplated on the Closing Date and set forth on Schedule 7.05(w);

(x) Dispositions required to be made to comply with the order of any Governmental Authority or applicable Laws;

(y) the sale of motor vehicles and information technology equipment purchased at the end of an operating lease and resold thereafter;

(z) Dispositions of real property and related assets in the ordinary course of business in connection with relocation activities for directors, officers, members of management, employees or consultants;

(aa) the sale, transfer, license, lease or other disposition of Equity Interest in, or property of, any Subsidiary that is not a Loan Party or any Joint Venture; *provided* that the consideration for such sale, transfers, licenses, leases or other Dispositions shall not exceed, with respect to any individual disposition, $3,000,000;

(bb) licenses and sublicenses (including with respect to IP Rights) granted to others in connection with a Disposition otherwise permitted under this Section 7.05 or Joint Ventures permitted hereunder;

(cc) samples, including time limited evaluation software, provided to customers or prospective customers;

(dd) de minimis amounts of equipment provided to employees; and

(ee) the Borrower and any Restricted Subsidiary may (i) convert any intercompany Indebtedness to Equity Interests; (ii) settle, discount, write off, forgive or cancel any intercompany Indebtedness or other obligation owing by the Borrower or any Restricted Subsidiary; and (iii) settle, discount, write off, forgive or cancel any Indebtedness owing by any present or former consultants, directors, officers or employees of the Borrower or any Subsidiary or any of their successors or assigns, to the extent made in the ordinary course of business;

provided that any Disposition of any property pursuant to Sections 7.05(b)(i), (c), (f), (g) and (j), shall be for no less than the fair market value of such property at the time of such Disposition as determined by the Borrower in good faith. To the extent any Collateral is Disposed of as expressly permitted by this Section 7.05 to any Person other than a Loan Party, such Collateral shall be sold free and clear of the Liens created by the Loan Documents, and the Administrative Agent and the Collateral Agent, as applicable, shall be authorized to take any actions deemed appropriate in order to effect the foregoing.

Section 7.06 Restricted Payments. Declare or make, directly or indirectly, any Restricted Payment, except:

(a) each Restricted Subsidiary may make Restricted Payments to the Borrower and to the other Restricted Subsidiaries (and, in the case of a Restricted Payment by a non-wholly owned Restricted Subsidiary, to the Borrower and any other Restricted Subsidiaries and to each other owner of Equity Interests of such Restricted Subsidiary based on their relative ownership interests of the relevant class of Equity Interests);

(b) the Borrower and each of the Restricted Subsidiaries may declare and make dividend payments or other distributions payable solely in the Equity Interests (other than Disqualified Equity Interests not otherwise permitted by Section 7.03) of such Person;

(c) so long as (x) no Event of Default shall have occurred and be continuing or would result therefrom, and (y) immediately after giving effect to such Restricted Payment, the Total Net Leverage Ratio (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination is less than or equal to 4.00:1.00 as certified by a Responsible Officer of the Borrower, the Borrower and the Restricted Subsidiaries may make Restricted Payments in an amount not to exceed the Available Amount immediately prior to the time of the making of such Restricted Payment;

(d) to the extent constituting Restricted Payments, the Borrower and the Restricted Subsidiaries may enter into and consummate transactions (and the Restricted Subsidiaries may make

Restricted Payments to the Borrower to permit it to consummate transactions of the type) expressly permitted by any provision of Section 7.02 (other than Section 7.02(e)), Section 7.03, Section 7.04, Section 7.05 or Section 7.08 (other than Section 7.08(k));

(e) redemptions, repurchases, retirements or other acquisitions of Equity Interests in the Borrower or any of the Restricted Subsidiaries deemed to occur upon exercise of stock options or warrants or similar rights if such Equity Interests represent a portion of the exercise price of such options or warrants or similar rights;

(f) the Borrower and the Restricted Subsidiaries may pay (or make Restricted Payments to allow any Permitted Parent to pay, so long as in the case of any payment in respect of Equity Interests of any Permitted Parent, the amount of such Restricted Payment is directly attributable to the Equity Interests of the Borrower owned by such Permitted Parent) for the repurchase, retirement or other acquisition or retirement for value of Equity Interests of the Borrower (or any Permitted Parent) held by any future, present or former officers, directors, employees, members of management and consultants (or their respective estates, executors, administrators, heirs, family members, legatees, distributes, spouses, former spouses, domestic partners and former domestic partners) of the Borrower (or any Permitted Parent) or any of its Subsidiaries in connection with the death, disability, retirement or termination of employment or service of any such Person (or a breach of any non-compete or other restrictive covenant or confidentiality obligations of any such Person at any time after such Person's disability, retirement or termination of employment or service) in an aggregate amount after the Closing Date, together with the aggregate amount of loans and advances to the Borrower made pursuant to Section 7.02(m) in lieu of Restricted Payments permitted by this clause (f), not to exceed the greater of (w) $10,000,000 and (x) 10% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination in the aggregate in any calendar year (it being understood that any unused amounts in any calendar year may be carried over to the succeeding calendar year and shall increase the preceding amount during such succeeding calendar year); *provided* that such amount in any calendar year may be increased by an amount not to exceed (y) the cash proceeds received by the Borrower or any of the Restricted Subsidiaries from the sale of Equity Interests (other than Disqualified Equity Interests, Excluded Contributions or Specified Equity Contributions) of the Borrower or any Permitted Parent (to the extent contributed to the Borrower) to any future, present or former employee, officer, director, member of management or consultant (or the estates, executors, administrators, heirs, family members, legatees, distributees, spouse, former spouse, domestic partner or former domestic partner of any of the foregoing) of the Borrower and its Subsidiaries or any Permitted Parent that occurs after the Closing Date, plus (z) the cash proceeds of key man life insurance policies received by the Borrower or the Restricted Subsidiaries after the Closing Date; *provided*, *further*, that (1) the Borrower may elect to apply all or any portion of the aggregate increase contemplated by clauses (y) and (z) above in any calendar year and (2) cancellation of Indebtedness owing to the Borrower or any Restricted Subsidiary from any future, present or former employee, officer, director, member of management or consultant (or the estates, executors, administrators, heirs, family members, legatees, distributes, spouse, former spouse, domestic partner or former domestic partner of any of the foregoing) of the Borrower or any Permitted Parent or any Subsidiary in connection with a repurchase of Equity Interests of the Borrower (or any Permitted Parent) will not be deemed to constitute a Restricted Payment for purposes of this Section 7.06 or any other provision of this Agreement;

(g) the Borrower and the Restricted Subsidiaries may make Restricted Payments to any Permitted Parent:

(i) the proceeds of which shall be used to pay (or make Restricted Payments to allow any Permitted Parent to pay)) operating costs and expenses of such Persons incurred

in the ordinary course of business and other corporate overhead costs and expenses (including administrative, legal, accounting and similar expenses provided by third parties), which are reasonable and customary and incurred in the ordinary course of business, attributable to the ownership or operations of the Borrower or its Restricted Subsidiaries;

(ii) the proceeds of which shall be used to pay (or make Restricted Payments to allow any Permitted Parent to pay) franchise taxes and other fees, taxes and expenses required to maintain its (or any of such Permitted Parent's) corporate or legal existence;

(iii) to finance any Investment permitted to be made pursuant to Section 7.02; *provided* that (A) such Restricted Payment shall be made substantially concurrently with the closing of such Investment and (B) such Persons shall, promptly following the closing thereof, cause (1) all property acquired (whether assets or Equity Interests) to be contributed to the Borrower or a Restricted Subsidiary or (2) the merger amalgamation, consolidation or sale of all or substantially all assets (to the extent permitted in Section 7.04) of the Person formed or acquired into the Borrower or a Restricted Subsidiary in order to consummate such Investment, in each case, in accordance with the requirements of Section 6.11 and Section 7.02;

(iv) the proceeds of which shall be used to pay (or make Restricted Payments to allow any Permitted Parent to pay) costs, fees and expenses related to any equity or debt offering permitted by this Agreement (whether or not successful);

(v) the proceeds of which (A) shall be used to pay customary salary, bonus, severance and other benefits payable to, and indemnities provided on behalf of, directors, officers, employees, members of management and consultants of such Persons and any payroll, social security or similar taxes in connection therewith to the extent such salaries, bonuses and other benefits are attributable to the ownership or operation of the Borrower and its Subsidiaries or (B) shall be used to make payments permitted under Sections 7.08(g), (i), (j), (k), (l), (m), (q), (t), (v) and (aa) (but only to the extent such payments have not been and are not expected to be made by the Borrower or a Restricted Subsidiary);

(vi) the proceeds of which will be used to make payments due or expected to be due to cover social security, medicare, withholding and other taxes payable in connection with any management equity plan or stock option plan or any other management or employee benefit plan or agreement of such Persons or to make any other payment that would, if made by the Borrower or any Restricted Subsidiary, be permitted;

(vii) the proceeds of which shall be used to pay cash, in lieu of issuing fractional shares, in connection with the exercise of warrants, options or other securities convertible into or exchangeable for Equity Interests of such Persons; and

(viii) the proceeds of which are necessary to permit such Persons to pay present or future consolidated or combined income taxes (calculated at the highest combined federal, state and local corporate and individual income tax rates applicable to the item of income in question) that are attributable to the ownership or operations of, but not payable directly by, the Borrower or any Restricted Subsidiary or, to the extent of the amount of dividends or distributions actually received from Unrestricted Subsidiaries, that are attributable to the ownership or operations of such Unrestricted Subsidiaries;

(h) the Borrower or any of the Restricted Subsidiaries may pay cash in lieu of fractional Equity Interests in connection with any dividend, split or combination thereof, any Permitted Acquisition or any exercise of warrants, options or other securities convertible into or exchangeable for Equity Interests;

(i) the declaration and payment of dividends on the Borrower's (or any Permitted Parent) and any Restricted Subsidiary's common stock after the Closing Date of up to 6.00% per annum of Net Cash Proceeds received from a Qualified IPO by the Borrower (or any Permitted Parent);

(j) redemptions, repurchases, retirements or other acquisitions of Equity Interests (i) deemed to occur on the exercise of options by the delivery of Equity Interests in satisfaction of the exercise price of such options or (ii) in consideration of withholding or similar taxes payable by any future, present or former officer, employee, director, member of management or consultant (or their respective estates, executors, administrators, heirs, family members, legatees, distributees, spouses, former spouses, domestic partners and former domestic partners), including deemed repurchases in connection with the exercise of stock options;

(k) so long as no Event of Default exists or would result therefrom, the Borrower and the Restricted Subsidiaries may make Restricted Payments in an aggregate amount not to exceed, together with the aggregate amount of Investments pursuant to Section 7.02(dd) and prepayments, redemptions, purchases, defeasances and other payments in respect of Junior Financings made pursuant to Section 7.13(a)(iv), the greater of (x) $25,000,000 and (y) 20% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination;

(l) the Borrower and any Restricted Subsidiary may pay compensation in the ordinary course of business and pursuant to arm's length arrangements to future, present or former officers, directors, members of management or consultants and employees for services rendered to or for the Borrower or any Restricted Subsidiary (to the extent that such payments would not otherwise fail to be treated as a Restricted Payment, in which event they must also be permitted under another exception under this Section 7.06);

(m) Restricted Payments that are made with Excluded Contributions to the extent Not Otherwise Applied;

(n) (i) the redemption, repurchase, retirement or other acquisition of any Equity Interests ("**Retired Capital Stock**") of the Borrower or any Permitted Parent in exchange for, or out of the proceeds of, the substantially concurrent sale of, Equity Interests of the Borrower or any Permitted Parent or contributions to the equity capital of the Borrower (other than any Disqualified Equity Interests or any Equity Interests sold to a Subsidiary of Borrower) (collectively, including any such contributions, "**Refunding Capital Stock**") and (ii) the declaration and payment of dividends on the Retired Capital Stock out of the proceeds of the substantially concurrent sale (other than to a Subsidiary of the Borrower) of Refunding Capital Stock;

(o) so long as no Event of Default exists or would result therefrom, the Borrower may make Restricted Payments so long as immediately after giving effect to such Restricted Payment, the Total Net Leverage Ratio (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination is equal to or less than 2.00:1.00 as certified by a Responsible Officer of the Borrower;

(p) the making of any Restricted Payments for purposes of making AHYDO Catch-Up Payments relating to Indebtedness of the Borrower and its Restricted Subsidiaries;

(q) the making of any Restricted Payment within 60 days after the date of declaration thereof, if at the date of such declaration such Restricted Payment would have complied with another provision of this Section 7.06; *provided* that the making of such Restricted Payment will reduce capacity for Restricted Payments pursuant to such other provision when so made; and

(r) the making of the Dividend on or prior to the date which is 45 days after the Closing Date (or such longer period as the Administrative Agent may agree to in its reasonable discretion).

Section 7.07 Change in Nature of Business. Engage in any material line of business substantially different from those lines of business conducted by the Borrower or any of the Restricted Subsidiaries on the Closing Date or any business or any other activities that are reasonably similar, ancillary, incidental, complementary or related to, or a reasonable extension, development or expansion of, the businesses conducted or proposed to be conducted by the Borrower or any of the Restricted Subsidiaries on the Closing Date.

Section 7.08 Transactions with Affiliates. Enter into any transaction of any kind with any Affiliate of the Borrower, whether or not in the ordinary course of business, involving aggregate consideration in excess of $2,000,000 for any individual transaction or series of related transactions, other than:

(a) transactions between or among the Borrower and/or one or more of the Restricted Subsidiaries or any entity that becomes a Restricted Subsidiary as a result of such transaction;

(b) transactions on terms substantially as favorable to the Borrower or such Restricted Subsidiary as would be obtainable by the Borrower or such Restricted Subsidiary at the time in a comparable arm's-length transaction with a Person other than an Affiliate;

(c) the existence of, or the performance by the Borrower or any Restricted Subsidiary of its obligations under the terms of, any stockholders agreement (including any registration rights agreement or purchase agreement related thereto) to which it is a party as of the Closing Date, and any transaction, agreement or arrangement described in this Agreement and, in each case, any amendment thereto or similar transactions, agreements or arrangements which it may enter into thereafter; *provided*, however, that the existence of, or the performance by Borrower or any Restricted Subsidiary of its obligations under, any future amendment to any such existing transaction, agreement or arrangement or under any similar transaction, agreement or arrangement entered into after the Closing Date shall only be permitted by this clause (c) to the extent that the terms of any such existing transaction, agreement or arrangement, taken as a whole, or new transaction, agreement or arrangement are not otherwise more disadvantageous to the Lenders in any material respect than the original transaction, agreement or arrangement as in effect on the Closing Date;

(d) **[reserved]**;

(e) the issuance or transfer of Equity Interests of the Borrower (or any Permitted Parent) to any Person (including any officer, director, employee, member of management or consultant of the Borrower or any of its Subsidiaries or any Permitted Parent);

(f) **[reserved]**;

(g) employment and severance arrangements between the Borrower and the Restricted Subsidiaries and their respective directors, officers, employees, members of management or consultants in the ordinary course of business and transactions pursuant to stock option plans and employee benefit plans and arrangements;

(h) the licensing of trademarks, copyrights or other IP Rights in the ordinary course of business to permit the commercial exploitation of IP Rights between or among Affiliates and Subsidiaries of the Borrower;

(i) the payment of customary fees and reasonable out-of-pocket costs to, and indemnities provided on behalf of, future, present or former directors, officers, employees, members of management and consultants of the Borrower and the Restricted Subsidiaries (or any Permitted Parent) in the ordinary course of business to the extent attributable to the ownership or operation of the Borrower and the Restricted Subsidiaries;

(j) any agreement, instrument or arrangement as in effect as of the Closing Date and set forth on Schedule 7.08, or any amendment thereto (so long as any such amendment, taken as a whole, is not more disadvantageous to the Lenders in any material respect as compared to the applicable agreement as in effect on the Closing Date);

(k) Restricted Payments permitted under Section 7.06;

(l) customary payments by the Borrower and any of the Restricted Subsidiaries made for any financial advisory, financing, underwriting or placement services or in respect of other investment banking activities (including in connection with acquisitions or divestitures), which payments are approved by a majority of the disinterested members of the board of directors of the Borrower in good faith (which, for the avoidance of doubt, may include payments to Affiliates of Permitted Holders);

(m) transactions in which the Borrower or any of the Restricted Subsidiaries, as the case may be, delivers to the Administrative Agent a letter from an Independent Financial Advisor stating that such transaction is fair to the Borrower or such Restricted Subsidiary from a financial point of view or meets the requirements of clause (b) of this Section 7.08;

(n) **[reserved]**;

(o) **[reserved]**;

(p) **[reserved]**;

(q) payments to or from, and transactions with, Joint Ventures (to the extent any such Joint Venture is only an Affiliate as a result of Investments by the Borrower and the Restricted Subsidiaries in such Joint Venture), non-wholly owned Subsidiaries and Unrestricted Subsidiaries in the ordinary course of business to the extent otherwise permitted under Section 7.02;

(r) the payment of customary and reasonable out-of-pocket costs and expenses relating to registration rights and indemnities provided to equity holders of the Borrower or any Permitted Parent;

(s) **[reserved]**;

(t) payments or loans (or cancellation of loans) or advances to employees, officers, directors, members of management or consultants (or the estates, executors, administrators, heirs, family members, legatees, distributes, spouse, former spouse, domestic partner or former domestic partner or any

of the foregoing) of the Borrower, any Permitted Parent or any of its Subsidiaries and employment agreements, consulting arrangements, severance arrangements, stock option plans and other similar arrangements with such employees, officers, directors, members of management or consultants (or the estates, executors, administrators, heirs, family members, legatees, distributes, spouse, former spouse, domestic partner or former domestic partner of any of the foregoing);

(u) transactions with customers, clients, suppliers or purchasers or sellers of goods or services, or transactions otherwise relating to the purchase or sale of goods or services, in each case in the ordinary course of business and otherwise in compliance with the terms of this Agreement, which are fair to the Borrower and its Restricted Subsidiaries, in the reasonable determination of the board of directors or the senior management of the Borrower, or are on terms at least as favorable as might reasonably have been obtained at such time from an unaffiliated party;

(v) the entering into of any tax sharing agreement or arrangement to the extent payments under such agreement or arrangement would otherwise be permitted under Section 7.06;

(w) any contribution to the capital of the Borrower or any of its Restricted Subsidiaries;

(x) transactions permitted under Section 7.04 and/or Section 7.05 solely for the purpose of (a) forming a holding company, or (b) reincorporating the Borrower in a new jurisdiction;

(y) **[reserved]**;

(z) the formation and maintenance of any consolidated group or subgroup for tax, accounting or cash pooling or management purposes in the ordinary course of business;

(aa) the issuance of securities or other payments, awards or grants in cash, securities or otherwise pursuant to, or the funding of, employment arrangements, stock option and stock ownership plans or similar employee benefit plans approved by the board of directors of the Borrower in good faith;

(bb) investments by the Permitted Holders in debt securities of the Borrower or any of its Restricted Subsidiaries (and payment of reasonable out-of-pocket expenses incurred by the Permitted Holders in connection therewith) so long as, when such debt securities were initially issued, non-Affiliates were generally being offered the opportunity to invest in such debt securities on terms no less favorable than the terms offered to the Permitted Holders; and

(cc) transactions undertaken in good faith (as certified by a Responsible Officer of the Borrower) for the purpose of improving the consolidated tax efficiency of the Borrower and its Subsidiaries and not for the purpose of circumventing any covenant set forth in this Agreement.

Section 7.09 Burdensome Agreements. Enter into or permit to exist any Contractual Obligation (other than this Agreement or any other Loan Document) that limits the ability of (a) any Non-Loan Party to make Restricted Payments to (directly or indirectly) or to make or repay loans or advances to any Loan Party or (b) any Loan Party to create, incur, assume or suffer to exist Liens on property of such Person for the benefit of the Lenders with respect to any Facility and the Obligations under the Loan Documents; *provided* that the foregoing clauses (a) and (b) shall not apply to Contractual Obligations that:

(a) (x) exist on the date hereof and (y) to the extent set forth in an agreement evidencing Indebtedness, are set forth in any agreement evidencing any permitted modification,

replacement, renewal, extension or refinancing of such Indebtedness so long as such modification, replacement, renewal, extension or refinancing does not expand the scope of such Contractual Obligation in a material respect;

(b) are binding on a Restricted Subsidiary at the time such Restricted Subsidiary first becomes a Restricted Subsidiary, so long as such Contractual Obligations were not entered into in contemplation of such Person becoming a Restricted Subsidiary;

(c) represent Indebtedness of a Non-Loan Party that is permitted by Section 7.03;

(d) are required by or pursuant to, applicable Laws;

(e) are customary restrictions that arise in connection with (x) any Lien permitted by Sections 7.01(a), (i), (l), (m), (n), (p), (s), (u), (v), (y), (aa), (cc), (ff), (gg), (hh), (ii), (jj), (oo) and/or (pp) or any document in connection therewith *provided* that such restriction relates only to the property subject to such Lien or (y) any Disposition permitted by Section 7.05 applicable pending such Disposition solely to the assets subject to such Disposition;

(f) are customary provisions in joint venture agreements and other similar agreements applicable to Joint Ventures and non-wholly owned Subsidiaries permitted under Section 7.02 and applicable solely to such Person entered into in the ordinary course of business;

(g) are negative pledges and restrictions on Liens in favor of any holder of Indebtedness permitted under Section 7.03 but solely to the extent any negative pledge relates to the property financed by or the subject of such Indebtedness and the proceeds and products thereof;

(h) are customary restrictions on leases, subleases, licenses, sublicenses, Equity Interests, or asset sale agreements and other similar agreements otherwise permitted hereby so long as such restrictions relate to the assets subject thereto;

(i) comprise restrictions imposed by any agreement relating to secured Indebtedness permitted pursuant to Sections 7.03(b), (e), (g), (h), (n), (o) (i), (r), (s), (u) or (z) to the extent that such restrictions apply only to the property or assets securing such Indebtedness;

(j) are customary provisions restricting subletting or assignment of any lease governing a leasehold interest of any Restricted Subsidiary;

(k) are customary provisions restricting assignment of any agreement entered into in the ordinary course of business;

(l) are restrictions on cash or other deposits imposed by customers under contracts entered into in the ordinary course of business;

(m) are customary restrictions in any Incremental Equivalent Debt or any Refinancing Equivalent Debt (so long as such restrictions shall not conflict with this Agreement);

(n) arise in connection with cash or other deposits permitted under Section 7.01;

(o) comprise restrictions imposed by any agreement governing Indebtedness entered into after the Closing Date and permitted under Section 7.03 that are, at the time such agreement in entered into, taken as a whole, in the good faith judgment of the Borrower, not materially more restrictive

with respect to the Borrower or any Restricted Subsidiary than (x) customary market terms for Indebtedness of such type, (y) the restrictions contained in this Agreement or (z) restrictions in effect on the Closing Date (pursuant to documents in effect on the Closing Date), so long as the Borrower shall have determined in good faith that such restrictions will not affect its obligation or ability to make any payments required hereunder;

(p) apply by reason of any applicable Laws, rule, regulation or order or are required by any Governmental Authority having jurisdiction over the Borrower's or Restricted Subsidiary's status (or the status of any Subsidiary of such Restricted Subsidiary) as a Captive Insurance Subsidiary;

(q) are contracts or agreements for the sale or Disposition of assets, including any restriction with respect to a Subsidiary imposed pursuant to an agreement entered into for the sale or Disposition of the Equity Interests or assets of such Subsidiary;

(r) comprise restrictions on cash or other deposits or net worth imposed by customers under contracts entered into in the ordinary course of business;

(s) **[reserved]**; or

(t) any encumbrances or restrictions imposed by any amendments, modifications, restatements, renewals, increases, supplements, refundings, replacements or refinancings of the contracts, instruments or obligations referred to in clauses (a) through (r) above; *provided* that such amendments, modifications, restatements, renewals, increases, supplements, refundings, replacements or refinancings are, in the good faith judgment of the Borrower, no more restrictive in any material respect with respect to such restrictions than those contained in such contracts, instruments or obligations prior to such amendment, modification, restatement, renewal, increase, supplement, refunding, replacement or refinancing.

Section 7.10 [Reserved].

Section 7.11 Financial Covenant. On any Compliance Date, permit the Total Net Leverage Ratio as of such Compliance Date to be greater than 5.00:1.00. The provisions of this Section 7.11 are for the benefit of the Revolving Credit Lenders only and the Required Revolving Credit Lenders may (a) amend, waive or otherwise modify this Section 7.11 or the defined terms used solely for purposes of this Section 7.11 or (b) waive any Default resulting from a breach of this Section 7.11, in each case under the foregoing clauses (a) and (b), without the consent of any Lenders other than the Required Revolving Credit Lenders in accordance with the provisions of Section 10.01.

Section 7.12 Accounting Changes. Make any change in fiscal year; *provided*, *however*, that the Borrower may, upon written notice to the Administrative Agent, change its fiscal year to any other fiscal year reasonably acceptable to the Administrative Agent, in which case, the Borrower and the Administrative Agent will, and are hereby authorized by the Lenders to, make any adjustments to this Agreement that are necessary to reflect such change in fiscal year.

Section 7.13 Prepayments, Etc. of Indebtedness; Certain Amendments. (a) Prepay, redeem, purchase, defease or otherwise satisfy prior to the scheduled maturity thereof in any manner (it being understood that payments of regularly scheduled principal, interest, mandatory prepayments, mandatory offers to purchase, fees, expenses and indemnification obligations and any AHYDO Catch-Up Payment shall be permitted) any Indebtedness for borrowed money of a Loan Party that is contractually subordinated in right of payment to the Obligations or secured by Liens that are contractually subordinated to the Liens securing the Obligations, in each case, expressly by its terms (other than

Indebtedness among the Borrower and its Subsidiaries) (collectively, "**Junior Financing**"), except (i) the refinancing thereof with the Net Cash Proceeds of, or in exchange for, any Permitted Refinancing, (ii) the prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition of any Junior Financing in exchange for, or out of the proceeds of, the substantially concurrent sale of, Equity Interests of the Borrower (or any Permitted Parent or any Restricted Subsidiary) or contributions to the equity capital of the Borrower or any Restricted Subsidiary (other than any Disqualified Equity Interests), (iii) the prepayment of Indebtedness of the Borrower or any Restricted Subsidiary owed to Borrower or a Restricted Subsidiary or the prepayment of any other Junior Financing with the proceeds of any other Junior Financing otherwise permitted by Section 7.03, (iv) the prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition of Junior Financing in an aggregate amount, not to exceed (together with the aggregate amount of Investments pursuant to Section 7.02(dd) and Restricted Payments made pursuant to Section 7.06(k)), the greater of (x) $25,000,000 and (y) 20% of Consolidated EBITDA of the Borrower and the Restricted Subsidiaries (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination, (v) so long as (x) no Event of Default shall have occurred and be continuing or would result therefrom, and (y) immediately after giving effect to such prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition, the Total Net Leverage Ratio (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination is less than or equal to 4.00:1.00, the prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition of Junior Financing in an amount not to exceed the Available Amount immediately prior to the time of the making of such prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition, (vi) the prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition of Junior Financing so long as immediately after giving effect to such prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition, the Total Net Leverage Ratio (calculated on a Pro Forma Basis) as of the last day of the most recently ended Test Period on or prior to the date of determination is equal to or less than 2.00:1.00, (vii) the prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition of Junior Financing prior to their scheduled maturity that are made with Excluded Contributions to the extent Not Otherwise Applied and/or (viii) the prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition of Junior Financing within 60 days of the date of a redemption notice if, at the date of any prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition notice in respect thereof, such prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition would have complied with another provision of this Section 7.13; *provided* that such prepayment, redemption, repurchase, defeasance, exchange, acquisition or retirement or other acquisition under this Section 7.13(a)(viii) shall reduce capacity under such other provision, or (b) make any payment in violation of any subordination terms of any Junior Financing that is subordinated in right of payment to the Obligations expressly by its terms.

(b) Amend, modify or change in any manner that would be materially adverse to the interests of the Lenders, any term or condition of any Junior Financing Documentation in respect of any Junior Financing that is subordinated in right of payment to the Obligations expressly by its terms (other than as a result of a Permitted Refinancing thereof) without the consent of the Administrative Agent (which consent shall not be unreasonably withheld or delayed).

(c) Amend, modify or change its certificate or articles of incorporation (including by the filing or modification of any certificate or articles of designation), certificate of formation, limited liability company agreement or by-laws (or the equivalent organizational documents), as applicable, in each case, in any manner materially adverse to the interests of the Lenders.

Section 7.14 Permitted Parent. In the case of any Permitted Parent, conduct, transact or otherwise engage in any material business or operations other than the following (and activities incidental thereto): (i) its ownership of the Equity Interests of the Borrower and its Subsidiaries, (ii) the maintenance of its legal existence (including the ability to incur fees, costs and expenses relating to such maintenance), (iii) the performance of its obligations with respect to or under the Loan Documents, Incremental Equivalent Debt, Refinancing Equivalent Debt, (iv) making dividends and distributions; *provided* that any such dividends and distributions made with any amounts received pursuant to transactions permitted under Section 7.06 shall be used solely for the purposes contemplated by Section 7.06, (v) making Investments in its Subsidiaries, (vi) participating in tax, accounting and other administrative matters as a member of the consolidated, combined, unitary or similar group that included any Permitted Parent and the Borrower, (vii) holding any cash, Cash Equivalents or other property (but not operate any property), (viii) providing indemnification and contribution, directors, officers, employees, members of management and consultants, (ix) making Investments in assets that are Cash Equivalents at the time such Investment is made, (x) any offering of its common stock or any other issuance of Equity Interests, including a Qualified IPO, (xi) making contributions to the capital of the Borrower and guaranteeing obligations of its Subsidiaries and (xii) activities incidental to a Permitted Acquisition or similar permitted Investment if all assets acquired through such Investment is contributed to the Borrower or a Restricted Subsidiary in connection with the consummation of such Investment.

ARTICLE VIII

Events of Default and Remedies

Section 8.01 Events of Default. Each of the events referred to in clauses (a) through (k) of this Section 8.01 shall constitute an "**Event of Default**":

(a) Non-Payment. The Borrower fails to pay (i) when and as required to be paid herein, any amount of principal of any Loan, or (ii) within five (5) Business Days after the same becomes due, any interest on any Loan or reimbursement obligation in respect of any Letter of Credit, or any regularly scheduled fees or other amounts payable hereunder; or

(b) Specific Covenants. The Borrower or any Restricted Subsidiary fails to perform or observe any term, covenant or agreement contained in:

(i) any of Section 6.03(a) (*provided*, that the delivery of a notice of an Event of Default, as applicable, at any time will cure any Event of Default resulting from a breach of Section 6.03(a) arising solely from the failure to timely deliver such notice), Section 6.05(a) (solely with respect to the Borrower), Section 6.13(c), Section 6.17 or Article VII (other than Section 7.11); or

(ii) Section 7.11; *provided* that an Event of Default under this clause (ii) is subject to cure pursuant to Section 8.04; *provided*, *further*, that an Event of Default under this clause (ii) shall not constitute an Event of Default for purposes of any Term Loan or Term Commitments unless and until the Required Revolving Credit Lenders have actually declared all outstanding obligations under the Revolving Credit Facility to be immediately due and payable pursuant to Section 8.02 as a result of the Borrower's failure to comply with the financial covenant contained in Section 7.11 and such declaration has not been rescinded; or

(c) Other Defaults. Any Loan Party fails to perform or observe any other covenant or agreement (not specified in Section 8.01(a) or (b) above) contained in any Loan Document on its part to be performed or observed and such failure continues for thirty (30) days after the receipt by the Borrower of written notice thereof from the Administrative Agent; or

(d) Representations and Warranties. Any representation, warranty, certification or statement of fact made or deemed made by the Borrower or any Guarantor herein, in any other Loan Document, or in any document required to be delivered in connection herewith or therewith shall be incorrect in any material respect when made or deemed made; or

(e) Cross-Default. Any Loan Party or any Restricted Subsidiary (A) fails to make any payment beyond the applicable grace period, if any, whether by scheduled maturity, required prepayment, acceleration, demand, or otherwise, in respect of any Indebtedness (other than Indebtedness hereunder) having an aggregate outstanding principal amount (individually or in the aggregate with all other Indebtedness as to which such a failure shall exist) of not less than the Threshold Amount or (B) fails to observe or perform any other agreement or condition relating to any such Indebtedness, or any other event occurs (other than, with respect to Indebtedness consisting of Swap Contracts, termination events or equivalent events pursuant to the terms of such Swap Contracts and not as a result of any default thereunder by any Loan Party), the effect of which default or other event is to cause, or to permit the holder or holders of such Indebtedness (or a trustee or agent on behalf of such holder or holders or beneficiary or beneficiaries) to cause, with the giving of notice if required, such Indebtedness to become due or to be repurchased, prepaid, defeased or redeemed (automatically or otherwise), or an offer to repurchase, prepay, defease or redeem such Indebtedness to be made, prior to its stated maturity; *provided* that this clause (e)(B) shall not apply to secured Indebtedness that becomes due as a result of the voluntary sale or transfer of the property or assets securing such Indebtedness, if such sale or transfer is permitted hereunder; *provided*, *further*, that such failure is unremedied or is not waived by the holders of such Indebtedness prior to any termination of the Commitments or acceleration of the Loans pursuant to Section 8.02; or

(f) Insolvency Proceedings, Etc. The Borrower or any Material Subsidiary institutes or consents to the institution of any proceeding under any Debtor Relief Law, or makes an assignment for the benefit of creditors; or applies for or consents to the appointment of any receiver, receiver or manager, trustee, custodian, conservator, liquidator, rehabilitator, administrator, administrative receiver or similar officer for it or for all or any material part of its property; or any receiver, receiver or manager, trustee, custodian, conservator, liquidator, rehabilitator, administrator, administrative receiver or similar officer is appointed without the application or consent of such Person and the appointment continues undischarged or unstayed for sixty (60) calendar days; or any proceeding under any Debtor Relief Law relating to any such Person or to all or any material part of its property is instituted without the consent of such Person and continues undismissed or unstayed for sixty (60) calendar days, or an order for relief is entered in any such proceeding; or

(g) Judgments. There is entered against the Borrower or any Restricted Subsidiary a final judgment or order for the payment of money in an aggregate amount exceeding the Threshold Amount (to the extent not covered by self-insurance (if applicable), independent third-party insurance as to which the insurer has been notified of such judgment or order and has not denied coverage thereof or indemnification) and such judgment or order shall not have been satisfied, vacated, discharged or stayed or bonded pending an appeal for a period of sixty (60) consecutive days; or

(h) ERISA. (i) An ERISA Event occurs with respect to a Pension Plan or Multiemployer Plan which has resulted or would reasonably be expected to result in liability of the Borrower or any of its ERISA Affiliates under Title IV of ERISA in an aggregate amount which would reasonably be expected to result in a Material Adverse Effect or (ii) with respect to a Foreign Plan, a termination, withdrawal or noncompliance with applicable Laws or plan terms that would reasonably be expected to result in a Material Adverse Effect; or

(i) Invalidity of Loan Documents. Any material provision of the Loan Documents, taken as a whole, at any time after its execution and delivery and for any reason other than as expressly permitted hereunder or thereunder (including as a result of a transaction permitted under Section 7.04 or 7.05) or as a result of acts or omissions by the Administrative Agent, the Collateral Agent or any Lender or the satisfaction in full of all the Obligations, ceases to be in full force and effect; or the Borrower contests in writing the validity or enforceability of the Loan Documents, taken as a whole; or any Loan Party denies in writing that it has any or further liability or obligation under the Loan Documents, taken as a whole (other than as a result of repayment in full of the Obligations and termination of the Aggregate Commitments), or purports in writing to revoke or rescind the Loan Documents, taken as a whole; or

(j) Collateral Documents. Any Collateral Document with respect to a material portion of the Collateral after delivery thereof pursuant to Section 4.01, 6.11 or 6.13, shall for any reason (other than pursuant to the terms hereof or thereof including as a result of a transaction permitted under Section 7.04 or 7.05) cease to create, or any Lien with respect to a material portion of the Collateral purported to be created by such Collateral Document shall be asserted in writing by the Borrower or any other Loan Party not to be, a valid, enforceable and, to the extent applicable under applicable Laws, perfected Lien, with the priority required by the Collateral Documents (or other security purported to be created on the applicable Collateral), on and security interest in any material portion of the Collateral purported to be covered thereby, subject to Liens permitted under Section 7.01, except to the extent that (i) any such perfection or priority is not required pursuant to the Collateral and Guarantee Requirement, (ii) any such loss of perfection or priority results from the failure of the Administrative Agent or the Collateral Agent to take any action within their control, including the failure to maintain possession of certificates actually delivered to it representing securities pledged under the Collateral Documents or to file Uniform Commercial Code continuation statements, (iii) as to Collateral consisting of real property, such losses are covered by a lender's title insurance policy and such insurer has not denied coverage; or (iv) such loss of enforceable or perfected, as applicable, security interest may be remedied by the filing of appropriate documentation without the loss of priority; or

(k) Change of Control. There occurs any Change of Control.

Section 8.02 Remedies upon Event of Default. If any Event of Default occurs and is continuing, the Administrative Agent may with the consent of, and shall at the request of, the Required Lenders (or the Required Revolving Credit Lenders, in the case of an Event of Default in respect of Section 7.11 (subject to the provisions of Section 8.01(b)(ii) and Section 8.04)) take any or all of the following actions:

(a) declare the commitment of each Lender to make Loans and any obligation of the L/C Issuers to make L/C Credit Extensions to be terminated, whereupon such commitments and obligations shall be terminated;

(b) declare the unpaid principal amount of all outstanding Loans, all interest accrued and unpaid thereon, and all other amounts owing or payable hereunder or under any other Loan Document to be immediately due and payable, without presentment, demand, protest or other notice of any kind, all of which are hereby expressly waived by the Borrower;

(c) require that the Borrower Cash Collateralize the L/C Obligations; and

(d) exercise on behalf of itself and the Lenders all rights and remedies available to it and the Lenders under the Loan Documents or applicable Laws,

provided that (x) upon the occurrence of an actual or deemed entry of an order for relief with respect to the Borrower under the Bankruptcy Code of the United States, the obligation of each Lender to make Loans and any obligation of the L/C Issuers to make L/C Credit Extensions shall automatically terminate, the unpaid principal amount of all outstanding Loans and all interest and other amounts as aforesaid shall automatically become due and payable, and the obligation of the Borrower to Cash Collateralize the L/C Obligations as aforesaid shall automatically become effective, in each case without further act of the Administrative Agent or any Lender and (y) in the case of an event under paragraph (b)(ii) of Section 8.01 in respect of a failure to observe or perform the covenant under Section 7.11, the actions set forth above may not be taken until the ability to exercise the Cure Right under Section 8.04 has expired (but may be taken as soon as the ability to exercise the Cure Right has expired to the extent it has not been so exercised).

Notwithstanding anything to the contrary, if the only Events of Default then having occurred and continuing are pursuant to a failure to observe the financial covenant contained in Section 7.11, the Administrative Agent shall only take the actions set forth in this Section 8.02 at the request of the Required Revolving Credit Lenders (as opposed to Required Lenders); *provided* that the Administrative Agent may take such actions at the request of the Required Term Lenders to the extent the Required Revolving Credit Lenders have actually declared all outstanding obligations under the Revolving Credit Facility to be immediately due and payable pursuant to clause (b) above as a result of the Borrower's failure to observe the financial covenant contained in Section 7.11 and such declaration has not be rescinded.

Section 8.03 Application of Funds. After the exercise of remedies provided for in Section 8.02 (or after the Loans have automatically become immediately due and payable and the L/C Obligations have automatically been required to be Cash Collateralized as set forth in the proviso to Section 8.02), subject to any Intercreditor Agreement, any amounts received on account of the Obligations shall be applied by the Administrative Agent in the following order:

First, to payment of that portion of the Obligations constituting fees, indemnities, expenses and other amounts (other than principal and interest, but including Attorney Costs payable under Section 10.04 and amounts payable under Article III) payable to the Administrative Agent and the Collateral Agent, in each case, in its capacity as such;

Second, to payment of that portion of the Obligations constituting fees, indemnities and other amounts (other than principal and interest) payable to the Lenders (including Attorney Costs payable under Section 10.04 and amounts payable under Article III), ratably among them in proportion to the amounts described in this clause *Second* payable to them;

Third, to payment of that portion of the Obligations constituting accrued and unpaid interest on the Loans and L/C Borrowings, ratably among the Lenders in proportion to the respective amounts described in this clause *Third* payable to them;

Fourth, to payment of that portion of the Obligations constituting unpaid principal of the Loans and L/C Borrowings, the Obligations under Secured Hedge Agreements and Obligations under Secured Cash Management Agreements, ratably among the Secured Parties in proportion to the respective amounts described in this clause *Fourth* held by them;

Fifth, to the Administrative Agent for the account of the L/C Issuers, to Cash Collateralize that portion of L/C Obligations comprised of the aggregate undrawn amount of Letters of Credit;

Sixth, to the payment of all other Obligations of the Loan Parties that are due and payable to the Administrative Agent and the other Secured Parties on such date, ratably based upon the respective aggregate amounts of all such Obligations owing to the Administrative Agent and the other Secured Parties on such date; and

Last, the balance, if any, after all of the Obligations have been paid in full, to the Borrower or as otherwise required by Law.

Notwithstanding the foregoing, amounts received from any Guarantor that is not an "eligible contract participant" (as defined in the Commodity Exchange Act) shall not be applied to its Obligations that are Excluded Swap Obligations, but appropriate adjustments shall be made with respect to payments from other Loan Parties to preserve the allocation of amounts paid to Obligations otherwise set forth in clause *Fourth* of this Section 8.03.

Subject to Section 2.03(c), amounts used to Cash Collateralize the aggregate undrawn amount of Letters of Credit pursuant to clause *Fifth* above shall be applied to satisfy drawings under such Letters of Credit as they occur. If any amount remains on deposit as Cash Collateral after all Letters of Credit have either been fully drawn or expired without any pending drawing thereon, such remaining amount shall be applied to the other Obligations, if any, in the order set forth above and, if no Obligations remain outstanding, to the Borrower.

Section 8.04 Borrower's Right to Cure. (a) Notwithstanding anything to the contrary contained in Section 8.01 or 8.02, for purposes of determining whether any Event of Default or potential Event of Default under the covenant set forth in Section 7.11 has occurred, as of any date, and at any time after the end of the applicable fiscal quarter until the expiration of the fifteenth (15th) Business Day after the date on which financial statements are required to be delivered pursuant to Sections 6.01(a) or (b), as applicable with respect to the applicable fiscal quarter hereunder (the "**Cure Expiration Date**"), any Person (so long as no Change of Control results therefrom) may make a Specified Equity Contribution directly or indirectly to the Borrower, and the Borrower may apply the amount of the net cash proceeds thereof to increase Consolidated EBITDA with respect to such fiscal quarter (the "**Cure Right**"); *provided* that such net cash proceeds are actually received by the Borrower as cash common equity or any other Qualified Equity Interests (including through capital contribution of such net cash proceeds to the Borrower) no later than the Cure Expiration Date.

(b) The right to make a Specified Equity Contribution is subject to the following conditions: (i) no more than two Specified Equity Contributions may be made in any period of four consecutive fiscal quarters, (ii) no more than five Specified Equity Contributions will be made in the aggregate during the term of this Agreement, (iii) the net cash proceeds of any Specified Equity Contribution shall be no more than the amount required to cause the Borrower to be in pro forma compliance with Section 7.11 for any applicable period, (iv) there shall be no pro forma reduction in Indebtedness with the proceeds of any Specified Equity Contribution for determining compliance with Section 7.11 for the 4-fiscal quarter period ending with the fiscal quarter ended immediately prior to the exercise of the Cure Right unless such Specified Equity Contribution is actually applied to prepay Loans under this Agreement, and (v) all Specified Equity Contributions shall be disregarded for purposes of determining pricing, financial ratio-based conditions, Available Amount, Excluded Contributions or baskets with respect to covenants contained in the Loan Documents.

(c) Notwithstanding anything to the contrary contained in Section 8.01 or 8.02, (A) upon receipt of a Specified Equity Contribution by the Borrower or any other Loan Party, the covenant set forth in Section 7.11 shall be deemed satisfied and complied with as of the end of the relevant fiscal quarter with the same effect as though there had been no failure to comply with Section 7.11 and any

Default related to any failure to comply with Section 7.11 (or any other Default resulting directly therefrom) shall be deemed not to have occurred for any purpose under the Loan Documents and (B) unless the Administrative Agent has received a written notice from the Borrower of its intent not to make a Specified Equity Contribution and exercise its rights under this Section 8.04 prior to the Cure Expiration Date, neither the Administrative Agent nor any Lender shall exercise any rights or remedies under Section 8.02 (or under any other Loan Document) available during the continuance of any Event of Default on the basis of any actual or purported failure to comply with Section 7.11 (or any other Default resulting directly therefrom) until such failure is not cured with the proceeds of a Specified Equity Contribution on or prior to the Cure Expiration Date.

ARTICLE IX

Administrative Agent and Other Agents

Section 9.01 Appointment and Authority of the Administrative Agent.

(a) Each Lender and L/C Issuer hereby irrevocably appoints JPMorgan Chase Bank, N.A. to act on its behalf as the Administrative Agent hereunder and under the other Loan Documents and authorizes the Administrative Agent to take such actions on its behalf and to exercise such powers as are delegated to the Administrative Agent by the terms hereof or thereof, together with such actions and powers as are reasonably incidental thereto. The provisions of this Article IX, other than in respect of Section 9.09, Section 9.11 and Section 9.14, are solely for the benefit of the Administrative Agent and the Lenders and each L/C Issuer, and the Loan Parties shall not have rights as a third party beneficiary of any such provision. In performing its functions and duties hereunder, the Administrative Agent shall act solely as agent of the Lenders and does not assume and shall not be deemed to have assumed any obligation towards or relationship of agency or trust with or for the Borrower or any of its Subsidiaries, except as expressly set forth herein or in the other Loan Documents.

(b) Each L/C Issuer shall act on behalf of the Lenders with respect to any Letters of Credit issued by it and the documents associated therewith, and each such L/C Issuer shall have all of the benefits and immunities (i) provided to the Agents in this Article IX with respect to any acts taken or omissions suffered by such L/C Issuer in connection with Letters of Credit issued by it or proposed to be issued by it and the applications and agreements for letters of credit pertaining to such Letters of Credit as fully as if the term "Agent" as used in this Article IX and Article X and in the definition of "Agent-Related Person" included such L/C Issuer with respect to such acts or omissions, and (ii) as additionally provided herein with respect to such L/C Issuer.

(c) The Administrative Agent shall also act as the "collateral agent" under the Loan Documents, and each of the Lenders (including in its capacities as a Lender, L/C Issuer (if applicable) and a potential Hedge Bank and/or Cash Management Bank) hereby irrevocably appoints and authorizes the Administrative Agent to act as the agent of (and to hold any security interest created by the Collateral Documents for and on behalf of or in trust for) the Secured Parties for purposes of acquiring, holding and enforcing any and all Liens on Collateral granted by any of the Loan Parties to secure any of the Obligations, together with such powers and discretion as are reasonably incidental thereto. In this connection, the Administrative Agent, as "collateral agent" (and any co-agents, sub-agents and attorneys-in-fact appointed by the Administrative Agent pursuant to Section 9.05 for purposes of holding or enforcing any Lien on the Collateral (or any portion thereof) granted under the Collateral Documents, or for exercising any rights and remedies thereunder at the direction of the Administrative Agent), shall be entitled to the benefits of all provisions of this Article IX (including Section 9.07, as though such co-agents, sub-agents and attorneys-in-fact were the "collateral agent" under the Loan Documents) as if set forth in full herein with respect thereto. Without limiting the generality of the foregoing, each of the

Lenders (including in its capacities as a Lender, L/C Issuer (if applicable) and a potential Hedge Bank and/or Cash Management Bank) hereby expressly authorizes the Administrative Agent to (i) execute any and all documents (including releases) with respect to the Collateral and the rights of the Secured Parties with respect thereto (including any First Lien Intercreditor Agreement, any Second Lien Intercreditor Agreement and/or any other intercreditor agreements entered into in connection herewith, and security trust documents), as contemplated by, in accordance with or otherwise in connection with the provisions of this Agreement and the Collateral Documents and acknowledge and agree that any such action by any Agent shall bind the Lenders and (ii) negotiate, enforce or settle any claim, action or proceeding affecting the Lenders in their capacity as such, at the direction of the Required Lenders, which negotiation, enforcement or settlement will be binding upon each Lender.

Section 9.02 Rights as a Lender. Any Person serving as an Agent (including as Administrative Agent) or L/C Issuer hereunder shall have the same rights and powers in its capacity as a Lender as any other Lender and may exercise the same as though it were not an Agent or L/C Issuer, and the agency created hereby shall in no way impose any duties or obligations upon any Agent or L/C Issuer in its individual capacity as a Lender hereunder. The term "Lender" or "Lenders" shall, unless otherwise expressly indicated or unless the context otherwise requires, include each Person serving as an Agent or L/C Issuer hereunder in its individual capacity. Such Person and its Affiliates may accept deposits from, lend money to, own securities of, act as the financial advisor or in any other advisory capacity for and generally engage in any kind of business with the Borrower or any Subsidiary or other Affiliate thereof as if such Person were not an Agent or L/C Issuer hereunder and without any duty to provide notice or account therefor to the Lenders. The Lenders acknowledge that, pursuant to such activities, any Agent or L/C Issuer or its Affiliates may receive information regarding any Loan Party or any of its Affiliates (including information that may be subject to confidentiality obligations in favor of such Loan Party or such Affiliate) and acknowledge that no Agent or L/C Issuer shall be under any obligation to provide such information to them.

Section 9.03 Exculpatory Provisions. Neither the Administrative Agent nor any other Agent shall have any duties or obligations except those expressly set forth herein and in the other Loan Documents. Without limiting the generality of the foregoing, an Agent (including the Administrative Agent):

(a) shall not be subject to any fiduciary or other implied (or express) duties, regardless of whether a Default has occurred and is continuing and without limiting the generality of the foregoing, the use of the term "agent" herein and in the other Loan Documents with reference to any Agent is not intended to connote any fiduciary or other implied (or express) obligations arising under any agency doctrine of any applicable Laws and instead, such term is used merely as a matter of market custom, and is intended to create or reflect only an administrative relationship between independent contracting parties;

(b) shall not have any duty to take any discretionary action or exercise any discretionary powers, except discretionary rights and powers expressly contemplated hereby or by the other Loan Documents that such Agent is required to exercise as directed in writing by the Required Lenders (or such other number or percentage of the Lenders as shall be expressly provided for herein or in the other Loan Documents); *provided* that no Agent shall be required to take any action (or where so instructed, refrain from exercising) that, in its opinion or the opinion of its counsel, may expose such Agent to liability or that is contrary to any Loan Document or applicable Laws;

(c) shall not, except as expressly set forth herein and in the other Loan Documents, have any duty to disclose, and shall not be liable for the failure to disclose, any information relating to the Borrower or any of its Affiliates that is communicated to or obtained by any Person serving as an Agent or any of its Affiliates in any capacity; and

(d) shall not have any liability arising from confirmations of the amount of outstanding Loans or L/C Obligations or the component amounts thereof.

The Administrative Agent shall not be liable for any action taken or not taken by it (i) with the consent or at the request of the Required Lenders (or such other number or percentage of the Lenders as shall be necessary, or as the Administrative Agent shall believe in good faith shall be necessary, under the circumstances as provided in Section 8.02 and Section 10.01) or (ii) in the absence of its own gross negligence or willful misconduct as determined by the final, non-appealable judgment of a court of competent jurisdiction, in connection with its duties expressly set forth herein. The Administrative Agent shall be deemed not to have knowledge of any Default unless and until notice describing such Default is given to the Administrative Agent by the Borrower or a Lender.

No Agent-Related Person shall be responsible for or have any duty to ascertain or inquire into (i) any recital, statement, warranty or representation made in or in connection with this Agreement or any other Loan Document, (ii) the contents of any certificate, report or other document delivered hereunder or thereunder or in connection herewith or therewith, (iii) the performance or observance of any of the covenants, agreements or other terms or conditions set forth herein or therein or the occurrence of any Default (including compliance with the terms and conditions of Section 10.07(h)(iii)), (iv) the validity, enforceability, effectiveness or genuineness of this Agreement, any other Loan Document or any other agreement, instrument or document, or the creation, perfection or priority of any Lien purported to be created by the Collateral Documents, (v) the value or the sufficiency of any Collateral, (vi) the satisfaction of any condition set forth in Article IV or elsewhere herein, other than to confirm receipt of items expressly required to be delivered to the Administrative Agent, or (vii) to inspect the properties, books or records of any Loan Party or any Affiliate thereof.

Section 9.04 Reliance by the Administrative Agent. The Administrative Agent shall be entitled to rely upon, and shall not incur any liability for relying upon, any notice, request, certificate, consent, statement, instrument, document or other writing (including any electronic message, Internet or intranet website posting or other distribution) believed by it to be genuine and to have been signed, sent or otherwise authenticated by the proper Person. The Administrative Agent also may rely upon any statement made to it orally or by telephone and believed by it to have been made by the proper Person, and shall not incur any liability for relying thereon. In determining compliance with any condition hereunder to the making of a Loan that by its terms must be fulfilled to the satisfaction of a Lender, the Administrative Agent may presume that such condition is satisfactory to such Lender unless the Administrative Agent shall have received notice to the contrary from such Lender prior to the making of such Loan. The Administrative Agent may consult with legal counsel (who may be counsel for the Borrower), independent accountants and other experts selected by it, and shall not be liable for any action taken or not taken by it in accordance with the advice of any such counsel, accountants or experts.

The Administrative Agent may at any time request instructions from the Lenders with respect to any actions or approvals which by the terms of this Agreement or of any of the Loan Documents the Administrative Agent is permitted or desires to take or to grant, and the Administrative Agent shall be fully justified in failing or refusing to take any action under any Loan Document unless it shall first receive such advice or concurrence of the Required Lenders as it deems appropriate and, if it so requests, it shall first be indemnified to its satisfaction by the Lenders against any and all liability and expense which may be incurred by it by reason of taking or continuing to take any such action. No Lender shall have any right of action whatsoever against the Administrative Agent as a result of the Administrative Agent acting or refraining from acting under this Agreement or any of the other Loan

Documents in accordance with the instructions of the Required Lenders. The Administrative Agent shall in all cases be fully protected in acting, or in refraining from acting, under this Agreement or any other Loan Document in accordance with a request or consent of the Required Lenders (or such greater number of Lenders as may be expressly required hereby in any instance) and such request and any action taken or failure to act pursuant thereto shall be binding upon all the Lenders; *provided* that the Administrative Agent shall not be required to take any action that, in its opinion or in the opinion of its counsel, may expose the Administrative Agent to liability or that is contrary to any Loan Document or applicable Laws.

Section 9.05 Delegation of Duties. The Administrative Agent may perform any and all of its duties and exercise its rights and powers hereunder or under any other Loan Documents by or through any one or more sub agents appointed by the Administrative Agent. The Administrative Agent and any such sub agent may perform any and all of its duties and exercise its rights and powers by or through their respective Agent-Related Persons. The exculpatory and indemnification provisions of this Article IX shall apply to any such sub agent and to the Agent-Related Persons of the Administrative Agent and any such sub agent, and shall apply to their respective activities in connection with the syndication of the credit facilities provided for herein as well as activities as Administrative Agent. Notwithstanding anything herein to the contrary, with respect to each sub agent appointed by Administrative Agent, (i) such sub agent shall be a third party beneficiary under this Agreement with respect to all such rights, benefits and privileges (including exculpatory rights and rights to indemnification) and shall have all of the rights and benefits of a third party beneficiary, including an independent right of action to enforce such rights, benefits and privileges (including exculpatory rights and rights to indemnification) directly, without the consent or joinder of any other Person, against any or all of Loan Parties and the Lenders, (ii) such rights, benefits and privileges (including exculpatory rights and rights to indemnification) shall not be modified or amended without the consent of such sub agent, and (iii) such sub agent shall only have obligations to the Administrative Agent and not to any Loan Party, Lender or any other Person and no Loan Party, Lender or any other Person shall have any rights, directly or indirectly, as a third party beneficiary or otherwise, against such sub agent; *provided* that the appointment of any sub agent shall not relieve the Administrative Agent of its obligations hereunder or under any other Loan Documents.

Section 9.06 Non-Reliance on Administrative Agent and Other Lenders; Disclosure of Information by Agents. Each Lender acknowledges that no Agent-Related Person has made any representation or warranty to it, and that no act by any Agent hereafter taken, including any consent to and acceptance of any assignment or review of the affairs of any Loan Party or any Affiliate thereof, shall be deemed to constitute any representation or warranty by any Agent-Related Person to any Lender as to any matter, including whether Agent-Related Persons have disclosed material information in their possession. Each Lender represents to each Agent that it has, independently and without reliance upon any Agent-Related Person and based on such documents and information as it has deemed appropriate, made its own appraisal of an investigation into the business, prospects, operations, property, financial and other condition and creditworthiness of the Loan Parties and their respective Subsidiaries, and all applicable bank or other regulatory Laws relating to the transactions contemplated hereby, and made its own decision to enter into this Agreement and to extend credit to the Borrower and the other Loan Parties hereunder. Each Lender also represents that it will, independently and without reliance upon any Agent-Related Person and based on such documents and information as it shall deem appropriate at the time, continue to make its own credit analysis, appraisals and decisions in taking or not taking action under this Agreement and the other Loan Documents, and to make such investigations as it deems necessary to inform itself as to the business, prospects, operations, property, financial and other condition and creditworthiness of the Borrower and the other Loan Parties. Except for notices, reports and other documents expressly required to be furnished to the Lenders by any Agent herein, such Agent shall not have any duty or responsibility to provide any Lender with any credit or other information concerning the business, prospects, operations, property, financial and other condition or creditworthiness of any of the Loan Parties or any of their respective Affiliates which may come into the possession of any Agent-Related Person.

Section 9.07 Indemnification of Agents. Whether or not the transactions contemplated hereby are consummated, the Lenders shall indemnify upon demand the Administrative Agent and each other Agent-Related Person (solely to the extent any such Agent-Related Person was performing services on behalf of the Administrative Agent) (to the extent not reimbursed by or on behalf of any Loan Party and without limiting the obligation of any Loan Party to do so), pro rata, and hold harmless the Administrative Agent and each other Agent-Related Person (solely to the extent any such Agent-Related Person was performing services on behalf of the Administrative Agent) from and against any and all Indemnified Liabilities incurred by it; *provided* that no Lender shall be liable for the payment to any Agent-Related Person of any portion of such Indemnified Liabilities resulting from such Agent-Related Person's own gross negligence or willful misconduct, as determined by the final, non-appealable judgment of a court of competent jurisdiction; *provided* that no action taken in accordance with the directions of the Required Lenders (or such other number or percentage of the Lenders as shall be required by the Loan Documents) shall be deemed to constitute gross negligence or willful misconduct for purposes of this Section 9.07. In the case of any investigation, litigation or proceeding giving rise to any Indemnified Liabilities, this Section 9.07 applies whether any such investigation, litigation or proceeding is brought by any Lender or any other Person. Without limitation of the foregoing, each Lender shall reimburse the Administrative Agent upon demand for its ratable share of any costs or out-of-pocket expenses (including Attorney Costs) incurred by the Administrative Agent in connection with the preparation, syndication, execution, delivery, administration, modification, amendment or enforcement (whether through negotiations, legal proceedings or otherwise) of, or legal advice in respect of rights or responsibilities under, this Agreement, any other Loan Document, or any document contemplated by or referred to herein, to the extent that the Administrative Agent is not reimbursed for such expenses by or on behalf of the Borrower; *provided* that such reimbursement by the Lenders shall not affect the Borrower's continuing reimbursement obligations with respect thereto; *provided, further,* that the failure of any Lender to indemnify or reimburse the Administrative Agent shall not relieve any other Lender of its obligation in respect thereof.

If any indemnity furnished to the Administrative Agent for any purpose shall, in the opinion of the Administrative Agent, be insufficient or become impaired, the Administrative Agent may call for additional indemnity from the Lenders and cease, or not commence, to do the acts indemnified against until such additional indemnity is furnished; *provided*, in no event shall this sentence require any Lender to indemnify the Administrative Agent against any liability, obligation, loss, damage, penalty, action, judgment, suit, cost, expense or disbursement in excess of such Lender's pro rata share thereof; and *provided, further*, this sentence shall not be deemed to require any Lender to indemnify the Administrative Agent against any Indemnified Liabilities resulting from the Administrative Agent's own gross negligence or willful misconduct, as determined by the final, non-appealable judgment of a court of competent jurisdiction. The undertaking in this Section 9.07 shall survive termination of the Aggregate Commitments, the payment and satisfaction of all other Obligations and the resignation of the Administrative Agent.

Section 9.08 No Other Duties; Other Agents, Lead Arrangers, Managers, Etc. Each Agent hereby agrees to act in its capacity as such upon the express conditions contained herein and the other Loan Documents, as applicable. Anything herein to the contrary notwithstanding, none of the Bookrunners, Lead Arrangers, Syndication Agent or other Agents listed on the cover page hereof shall have any powers, duties or responsibilities under this Agreement or any of the other Loan Documents, except in its capacity, as applicable, as the Administrative Agent or a Lender hereunder and such Persons shall have the benefit of this Article IX. Without limiting the foregoing, none of the Lenders or other Persons so identified shall have or be deemed to have any agency or fiduciary or trust relationship with

any Lender, the Borrower or any of their respective Subsidiaries. Each Lender acknowledges that it has not relied, and will not rely, on any of the Lenders or other Persons so identified in deciding to enter into this Agreement or in taking or not taking action hereunder.

Section 9.09 Resignation of Administrative Agent or Collateral Agent. The Administrative Agent or Collateral Agent may at any time resign by giving thirty (30) days' prior written notice of its resignation to the Lenders, the L/C Issuers and the Borrower. If an Agent-Related Distress Event has occurred, either the Required Lenders or the Borrower (other than during the existence of an Event of Default pursuant to Section 8.01(a) or Section 8.01(f) (solely with respect to the Borrower)) may, upon ten (10) days' notice, remove the Administrative Agent or Collateral Agent. Upon receipt of any such notice of resignation or removal, the Required Lenders shall have the right, with the consent of the Borrower (which consent of the Borrower shall not be unreasonably withheld, conditioned or delayed in the case of a successor that is a commercial bank with a combined capital and surplus of at least $5,000,000,000, but may otherwise be withheld in the Borrower's sole discretion) at all times other than during the existence of an Event of Default pursuant to Section 8.01(a) or 8.01(f) (solely with respect to the Borrower), to appoint a successor, which shall be a Lender or a bank with an office in the United States, or an Affiliate of any such Lender or bank with an office in the United States (in each case, other than a Disqualified Institution). If no such successor shall have been so appointed by the Required Lenders and shall have accepted such appointment within thirty (30) days after the receipt of such removal notice or the retiring Administrative Agent or Collateral Agent, as applicable, gives notice of its resignation, then the Administrative Agent or the Collateral Agent shall notify the Borrower and the Lenders that no qualifying Person has accepted such appointment and then (i) in the case of the retiring Administrative Agent or Collateral Agent, the retiring Administrative Agent or Collateral Agent, as applicable, may on behalf of the Lenders and the L/C Issuers, appoint a successor Administrative Agent or Collateral Agent, as applicable, meeting the qualifications set forth above with the consent of the Borrower (such consent not to be unreasonably withheld, conditioned or delayed); *provided* that no consent of the Borrower shall be required if an Event of Default under Section 8.01(a) or 8.01(f) (solely with respect to the Borrower) has occurred and is continuing or (ii) in the case of a removal, the Borrower may, after consulting with the Required Lenders, appoint a successor Administrative Agent or Collateral Agent, as applicable, meeting the qualifications set forth above; *provided* that if no qualifying Person has accepted such appointment, then such resignation or removal shall nonetheless become effective (in the case of clause (i) above, in accordance with such notice from the Administrative Agent or the Collateral Agent, as applicable, to that effect) and (A) the retiring or removed Administrative Agent or Collateral Agent, as applicable, shall be discharged from its duties and obligations hereunder and under the other Loan Documents (except that (x) in the case of any Collateral security held by the Administrative Agent or Collateral Agent on behalf of the Lenders or L/C Issuers under any of the Loan Documents, the retiring or removed Administrative Agent or Collateral Agent, as applicable, shall continue to hold such Collateral security (including any Collateral security subsequently delivered to the Administrative Agent or Collateral Agent, as applicable) as bailee, trustee or other applicable capacity until such time as a successor of such Agent is appointed, (y) the Administrative Agent or Collateral Agent, as applicable, shall continue to act as collateral agent for the purposes of identifying a "security agent" (or similar title) in any filing or recording financing statements, amendments thereto or other applicable filings or recordings with any Governmental Authority necessary for the perfection of the liens on Collateral securing the Obligations to the extent required by the Loan Documents and (z) it shall continue to be subject to Section 10.08 until the date that is two (2) years after the termination of this Agreement) and (B) all payments, communications and determinations provided to be made by, to or through the Administrative Agent shall instead be made by or to each Lender and the L/C Issuer directly (and each Lender and L/C Issuer will cooperate with the Borrower to enable the Borrower to take such actions), until such time as the Required Lenders or the Borrower, as applicable, appoint a successor Administrative Agent or Collateral Agent, as applicable, as provided for above in this Section 9.09. Upon the acceptance of a successor's appointment as Administrative Agent or Collateral Agent, as applicable,

hereunder and upon the execution and filing or recording of such financing statements, or amendments thereto, and such amendments or supplements to the Mortgages, and such other instruments or notices, as may be necessary or desirable, or as the Required Lenders may request, in order to (i) continue the perfection of the Liens granted or purported to be granted by the Collateral Documents or (ii) otherwise ensure that the requirements of Section 6.11 and the Collateral and Guarantee Requirement are satisfied, such successor shall succeed to and become vested with all of the rights, powers, privileges and duties of the retiring (or retired) or removed Administrative Agent or Collateral Agent, as applicable, and the retiring (or retired) or removed Administrative Agent or Collateral Agent, as applicable, shall be discharged from all of its duties and obligations hereunder or under the other Loan Documents (if not already discharged therefrom as provided above in this Section 9.09) other than its obligations under Section 10.08. The fees payable by the Borrower to a successor Administrative Agent or Collateral Agent, as applicable, shall be the same as those payable to its predecessor unless otherwise agreed between the Borrower and such successor. After the retiring or removed Administrative Agent's or Collateral Agent's resignation or removal hereunder and under the other Loan Documents, (x) the provisions of this Article IX and Section 10.04 and Section 10.05 shall continue in effect for the benefit of such retiring or removed Administrative Agent or Collateral Agent, as applicable, its sub-agents and their respective Agent-Related Persons in respect of any actions taken or omitted to be taken by any of them solely in respect of the Loan Documents or Obligations, as applicable, while the retiring Agent was acting as Administrative Agent or Collateral Agent, as applicable and (y) Section 10.08 shall continue to be binding upon the Administrative Agent, the Collateral Agent and such other Persons until the date that is two (2) years after the termination of this Agreement.

Any resignation by JPMorgan Chase Bank, N.A., as Administrative Agent pursuant to this Section 9.10 shall also constitute its resignation as L/C Issuer. Upon the acceptance of a successor's appointment as Administrative Agent hereunder, (i) such successor shall succeed to and become vested with all of the rights, powers, privileges and duties of the retiring L/C Issuer and (ii) the retiring L/C Issuer shall be discharged from all of their respective duties and obligations hereunder or under the other Loan Documents.

Section 9.10 Administrative Agent May File Proofs of Claim. In case of the pendency of any proceeding under any Debtor Relief Law or any other judicial proceeding relative to any Loan Party, the Administrative Agent (irrespective of whether the principal of any Loan or L/C Obligation shall then be due and payable as herein expressed or by declaration or otherwise and irrespective of whether the Administrative Agent shall have made any demand on the Borrower) shall be entitled and empowered, by intervention in such proceeding or otherwise:

(i) to file a verified statement pursuant to rule 2019 of the Federal Rules of Bankruptcy Procedure that, in its sole opinion, complies with such rule's disclosure requirements for entities representing more than one creditor;

(ii) to file and prove a claim for the whole amount of the principal and interest owing and unpaid in respect of the Loans, L/C Obligations and all other Obligations that are owing and unpaid and to file such other documents as may be necessary or advisable in order to have the claims of the Lenders, the L/C Issuers and the Administrative Agent (including any claim for the reasonable compensation, expenses, disbursements and advances of the Lenders, the L/C Issuers and the Administrative Agent and their respective agents and counsel and all other amounts due the Lenders, the L/C Issuers and the Administrative Agent under Sections 2.03(h) and (i), Section 2.09 and Section 10.04) allowed in such judicial proceeding; and

(iii) to collect and receive any monies or other property payable or deliverable on any such claims and to distribute the same, and any custodian, receiver, assignee, trustee,

liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Lender to make such payments to the Administrative Agent and, in the event that the Administrative Agent shall consent to the making of such payments directly to the Lenders, to pay to the Administrative Agent any amount due for the reasonable compensation, expenses, disbursements and advances of the Agents and their respective agents and counsel, and any other amounts due the Administrative Agent under Section 2.09 and Section 10.04. To the extent that the payment of any such compensation, expenses, disbursements and advances of Administrative Agent, its agents and counsel, and any other amounts due Administrative Agent under Section 2.09 and Section 10.04 out of the estate in any such proceeding, shall be denied for any reason, payment of the same shall be secured by a Lien on, and shall be paid out of, any and all distributions, dividends, money, securities and other properties that the Lenders may be entitled to receive in such proceeding whether in liquidation or under any plan of reorganization or arrangement or otherwise.

Nothing contained herein shall be deemed to authorize the Administrative Agent to authorize or consent to or accept or adopt on behalf of any Lender any plan of reorganization, arrangement, adjustment or composition affecting the Obligations or the rights of any Lender or to authorize the Administrative Agent to vote in respect of the claim of any Lender in any such proceeding.

Section 9.11 Collateral and Guaranty Matters. Each of the Lenders (including in its capacities as a potential Cash Management Bank and a potential Hedge Bank) irrevocably agree (and authorizes the Administrative Agent and/or the Collateral Agent, as the case may be, to take any advisable action to effectuate any of the following):

(a) to enter into and sign for and on behalf of the Lenders as Secured Parties the Collateral Documents for the benefit of the Lenders and the Secured Parties;

(b) that any Lien on any property granted to or held by the Administrative Agent or the Collateral Agent under any Loan Document shall be automatically released (i) upon expiration or termination of the Aggregate Commitments and payment in full of all Obligations (other than (w) outstanding Letters of Credit that have been Cash Collateralized, (x) Obligations under Secured Hedge Agreements, (y) Obligations under Secured Cash Management Agreements and (z) contingent indemnification or expense reimbursement obligations not yet accrued and payable) (the "**Termination Date**"), (ii) at the time the property subject to such Lien is transferred or to be transferred as part of or in connection with any transfer permitted hereunder or under any other Loan Document to any Person other than a Loan Party (whether as a Disposition or an Investment), (iii) subject to Section 10.01, if the release of such Lien is approved, authorized or ratified in writing by the Required Lenders (or such other number or percentage of the Lenders as shall be expressly provided for herein or in the other Loan Documents), (iv) if the property subject to such Lien is owned by a Guarantor, upon release of such Guarantor from its obligations under its Guaranty pursuant to clause (d) below or (v) if and to the extent such property constitutes an Excluded Asset;

(c) to release or subordinate any Lien on any property granted to or held by the Administrative Agent or the Collateral Agent under any Loan Document to, and to the extent required by, the holder of any Lien on such property that is permitted by Section 7.01(i), Section 7.01(n), Section 7.01(p), or, to the extent related to the foregoing, Section 7.01(ff);

(d) that any Guarantor shall be automatically released from its obligations under the Guaranty if such Person ceases to be a wholly owned Restricted Subsidiary that is a Domestic Subsidiary and not an Excluded Subsidiary as a result of a transaction or designation permitted hereunder (including as a result of a Guarantor being redesignated as an Unrestricted Subsidiary); *provided* that no such release shall occur if such Guarantor continues (after giving effect to the consummation of such transaction or designation) to be a guarantor in respect of any Indebtedness of the Borrower or any Guarantor;

(e) **[reserved]**; and

(f) to act collectively through the Administrative Agent and, without limiting the delegation of authority to the Administrative Agent set forth herein, the Required Lenders shall direct the Administrative Agent with respect to the exercise of rights and remedies hereunder (including with respect to alleging the existence or occurrence of, and exercising rights and remedies as a result of, any Default or Event of Default in each case that could be waived with the consent of the Required Lenders), and such rights and remedies shall not be exercised other than through the Administrative Agent; *provided* that the foregoing shall not preclude any Lender from exercising any right of set-off in accordance with the provisions of Section 10.09 or enforcing compliance with the provisions set forth in the first proviso of Section 10.01 or from exercising rights and remedies (other than the enforcement of Collateral) with respect to any payment default after the occurrence of the Maturity Date with respect to any Loans made by it.

In connection with any request to the Administrative Agent by the Borrower to take any of the foregoing actions, the Borrower shall deliver a certificate signed by a Responsible Officer that certifies that the proposed transaction complies with the terms of the Credit Agreement.

Upon request by the Administrative Agent at any time, the Required Lenders (or such other number or percentage of the Lenders as shall be expressly provided for herein or in the other Loan Documents) will confirm in writing the Administrative Agent's or Collateral Agent's authority to release or subordinate its interest in particular types or items of property, or to release any Guarantor from its obligations under the Guaranty pursuant to this Section 9.11. In each case as specified in this Section 9.11, the applicable Agent will (and each Lender irrevocably authorizes the applicable Agent to), at the Borrower's expense, execute and deliver to the applicable Loan Party such documents as such Loan Party may reasonably request to evidence the release or subordination of such item of Collateral from the assignment and security interest granted under the Collateral Documents, or to evidence the release of such Guarantor from its obligations under the Guaranty, in each case in accordance with the terms of the Loan Documents and this Section 9.11; *provided*, that the Borrower has delivered a certificate, executed by a Responsible Officer of the Borrower on or prior to the date any such action is requested to be taken by the Administrative Agent, certifying that the applicable transaction is permitted under the Loan Documents (and the Lenders hereby authorize the Administrative Agent to rely upon such certificate in performing its obligations under this Section 9.11).

Section 9.12 Intercreditor Agreements. The Administrative Agent and the Collateral Agent are authorized to enter into any First Lien Intercreditor Agreement, any Second Lien Intercreditor Agreement and/or any other intercreditor arrangements entered into in connection herewith (and any amendments, amendments and restatements, restatements or waivers of or supplements to or other modifications to, such agreements in connection with the incurrence by any Loan Party of any Indebtedness (or any Permitted Refinancing of the foregoing) in order to permit such Indebtedness to be secured by a valid and enforceable lien (with such priority as may be designated by the Borrower or relevant Subsidiary, to the extent such priority is permitted by the Loan Documents)), and the parties hereto acknowledge that any First Lien Intercreditor Agreement (if entered into), any Second Lien Intercreditor Agreement (if entered into) and/or any other intercreditor arrangements entered into in connection herewith, will be binding upon them. Each Lender (a) hereby agrees that it will be bound by and will take no actions contrary to the provisions of any First Lien Intercreditor Agreement (if entered into), any Second Lien Intercreditor Agreement (if entered into) and/or any other intercreditor arrangements entered into in connection herewith and (b) hereby authorizes and instructs the

Administrative Agent and Collateral Agent to enter into, if applicable, any First Lien Intercreditor Agreement, any Second Lien Intercreditor Agreement and/or any other intercreditor arrangements entered into in connection herewith (and any amendments, amendments and restatements, restatements or waivers of or supplements to or other modifications to, such agreements in connection with the incurrence by any Loan Party of any Indebtedness (or any Permitted Refinancing of the foregoing) in order to permit such Indebtedness to be secured by a valid and enforceable lien (with such priority as may be designated by the Borrower or relevant Subsidiary, to the extent such priority is permitted by the Loan Documents)), and to subject the Liens on the Collateral securing the Obligations to the provisions thereof.

Section 9.13 Secured Cash Management Agreements and Secured Hedge Agreements. Except as otherwise expressly set forth herein or in any Guaranty or any Collateral Document, no Cash Management Bank or Hedge Bank that obtains the benefits of Section 8.03, any Guaranty or any Collateral by virtue of the provisions hereof or of any Guaranty or any Collateral Document shall have any right to notice of any action or to consent to, direct or object to any action hereunder or under any other Loan Document or otherwise in respect of the Collateral (including the release or impairment of any Collateral) other than in its capacity as a Lender and, in such case, only to the extent expressly provided in the Loan Documents. Notwithstanding any other provision of this Article IX to the contrary, the Administrative Agent shall not be required to verify the payment of, or that other satisfactory arrangements have been made with respect to, Obligations under Secured Cash Management Agreements or Obligations arising under Secured Hedge Agreements unless the Administrative Agent has received written notice of such Obligations under Secured Cash Management Agreements or such Obligations arising under Secured Hedge Agreements (*provided* that written notice of a Master Agreement shall constitute written notice of all Obligations arising under every Secured Hedge Agreement entered into pursuant to such Master Agreement), together with such supporting documentation as the Administrative Agent may request, from the applicable Cash Management Bank or Hedge Bank, as the case may be.

ARTICLE X

Miscellaneous

Section 10.01 Amendments, Etc. (A) Except as otherwise set forth in this Agreement, no amendment, modification, supplement or waiver of any provision of this Agreement or any other Loan Document, and no consent to any departure by the Borrower or any other Loan Party therefrom, shall be effective unless in writing signed by the Required Lenders (other than (x) with respect to any amendment, modification, supplement or waiver contemplated in clause (i) or clause (l) below, which shall only require the consent of the Required Facility Lenders under the applicable Class, as applicable, and (y) with respect to any amendment, modification or waiver contemplated in clauses (a), (b), (c), (d), (e), (f)(i), (j) or (k) below, which shall only require the consent of the Lenders expressly set forth therein and not the Required Lenders) (or by the Administrative Agent with the consent of the Required Lenders, the Required Facility Lenders or the applicable Lenders, as the case may be) and the Borrower or the applicable Loan Party, as the case may be, and each such waiver, amendment, modification, supplement or consent shall be effective only in the specific instance and for the specific purpose for which given; *provided* that, no such amendment, modification, supplement, waiver or consent shall:

(a) extend or increase the Commitment of any Lender without the written consent of each Lender directly and adversely affected thereby (it being understood that a waiver of (or amendment to the terms of) any condition precedent set forth in Section 4.01 or Section 4.02 or the waiver of any Default, mandatory prepayment or mandatory reduction of the Commitments shall not constitute an extension or increase of any Commitment of any Lender);

(b) postpone any date scheduled for, or reduce the amount of, any payment of principal or interest under Section 2.07 or Section 2.08 without the written consent of each Lender directly and adversely affected thereby, it being understood that the waiver of (or amendment to the terms of) any mandatory prepayment of the Loans shall not constitute a postponement of any date scheduled for the payment of principal or interest and it further being understood that any change to the definition of Total Net First Lien Leverage Ratio, Total Net Senior Secured Leverage Ratio, Total Net Leverage Ratio, or any other ratio used as a basis to calculate the amount of any principal or interest payment or in the component definitions thereof shall not constitute a reduction in any amount of interest or fee;

(c) reduce the principal of, or the rate of interest specified herein on, any Loan or L/C Borrowing, or (subject to clauses (i), (ii) and (iii) of the second proviso to this Section 10.01) any fees (including fees set forth in Section 2.23) or other amounts payable hereunder or under any other Loan Document without the written consent of each Lender directly and adversely affected thereby, it being understood that any change to the definitions of the Total Net Leverage Ratio, the Total Net First Lien Leverage Ratio, the Total Net Senior Secured Leverage Ratio or, in each case, in the component definitions thereof shall not constitute a reduction in the rate of interest; *provided* that only the consent of the Required Lenders shall be necessary to amend the definition of "Default Rate" or to waive any obligation of the Borrower to pay interest at the Default Rate;

(d) with respect to any change to any pro rata sharing provision, the consent of all Lenders directly and adversely affected thereby shall be required;

(e) except in a transaction permitted by Section 7.04, permit assignment of rights and obligations of the Borrower hereunder, without the written consent of each Lender directly and adversely affected thereby;

(f) (i) change any provision of this Section 10.01 or the definition of "Required Lenders," "Required Facility Lenders," or "Required Revolving Credit Lenders" without the written consent of each Lender directly and adversely affected thereby or (ii) reduce any of the voting percentages set forth in the definition of "Required Lenders" without the written consent of each Lender;

(g) other than in connection with a transaction permitted under Section 7.04 or Section 7.05, release all or substantially all of the Collateral in any transaction or series of related transactions, without the written consent of each Lender;

(h) other than in connection with a transaction permitted under Section 7.04 or Section 7.05, release all or substantially all of the aggregate value of the Guaranty or all or substantially all of the Guarantors, without the written consent of each Lender;

(i) amend, waive or otherwise modify any term or provision (including the availability and conditions to funding under Section 2.14 with respect to New Term Loans and New Revolving Credit Commitments) which directly affects Lenders of one or more New Term Loans and New Revolving Credit Commitments and does not directly adversely affect Lenders under any other Class, in each case, without the written consent of the Required Facility Lenders under such applicable New Term Loans or New Revolving Credit Commitments (and in the case of multiple Classes which are affected, such Required Facility Lenders shall consent together as one Class); *provided* that no such amendment shall affect any Lender's right with respect to the protection afforded to it by the "Specified Representations" or with respect to any Event of Default under Section 8.01(a) or Section 8.01(f), in each case, in connection with the funding of any such New Term Loan or New Revolving Credit Commitment.

(j) change the currency in which any Loan or Letter of Credit is denominated or issued, as the case may be, without the written consent of the Lender holding such Loans or the applicable L/C Issuer and each Lender with exposure in respect of such L/C Obligation; or

(k) amend Section 1.13 or the definition of "Alternative Currency" without the written consent of each applicable Lender.

and *provided, further,* that (i) no amendment, waiver or consent shall, unless in writing and signed by each L/C Issuer in addition to the Lenders required above, adversely affect the rights or duties of such L/C Issuer under this Agreement or any Issuer Document relating to any Letter of Credit issued or to be issued by it, (ii) no amendment, waiver or consent shall, unless in writing and signed by the Administrative Agent in addition to the Lenders required above, adversely affect the rights or duties of, or any fees or other amounts payable to, the Administrative Agent under this Agreement or any other Loan Document and (iii) Section 10.07(g) may not be amended, waived or otherwise modified without the consent of each Granting Lender all or any part of whose Loans are being funded by an SPC at the time of such amendment, waiver or other modification. Any such waiver and any such amendment, modification or supplement in accordance with the terms of this Section 10.01 shall apply equally to each of the Lenders and shall be binding on the Loan Parties, the Lenders, the Agents and all future holders of the Loans and Commitments. Notwithstanding anything to the contrary herein, no Defaulting Lender shall have any right to approve or disapprove any amendment, waiver, or consent hereunder, except that the Commitment of such Lender may not be increased or extended without the consent of such Lender (it being understood that any Commitments or Loans held or deemed held by any Defaulting Lender shall be excluded for a vote of the Lenders hereunder requiring any consent of the Lenders).

(B) Notwithstanding anything to the contrary herein:

(a) amendments and waivers of Section 7.11 and Section 8.04 (or any definition related thereto (but solely for the limited purposes of how any such defined term is used with respect to determining compliance with any such sections)) or any Default resulting from a failure to perform or observe Section 7.11 or Section 8.04 will require only the approval of the Required Revolving Credit Lenders;

(b) no Lender consent is required to effect any amendment, modification or supplement to any First Lien Intercreditor Agreement, any Second Lien Intercreditor Agreement and/or any other intercreditor arrangements entered into in connection herewith (i) that is for the purpose of adding the holders of Indebtedness (or any Permitted Refinancing of the foregoing) (or a Representative with respect thereto) as parties thereto, as expressly contemplated by the terms of such First Lien Intercreditor Agreement, such Second Lien Intercreditor Agreement or such other intercreditor arrangement, as applicable (it being understood that any such amendment, modification or supplement may make such other changes to the applicable intercreditor agreement as, in the good faith determination of the Administrative Agent, are required to effectuate the foregoing, (ii) that is expressly contemplated by any First Lien Intercreditor Agreement, any Second Lien Intercreditor Agreement and/or any other intercreditor arrangements entered into in connection herewith or (iii) that effects changes that are not material to the interests of the Lenders; *provided* that no such agreement shall directly and adversely amend, modify or otherwise affect the rights or duties of the Administrative Agent or the Collateral Agent hereunder or under any other Loan Document without the prior written consent of the Administrative Agent or the Collateral Agent, as applicable;

(c) this Agreement may be amended (or amended and restated) with the written consent of the Administrative Agent, the Borrower and the Lenders providing the relevant Replacement Term Loans (as such term is defined below) to permit the refinancing of all or any portion of any Class of

Term Loans outstanding (the "**Replaced Term Loans**") with one or more tranches of term loans hereunder (the "**Replacement Term Loans**"); *provided* that (i) the aggregate principal amount of such Replacement Term Loans shall not exceed the aggregate principal amount of such Replaced Term Loans plus an amount equal to unpaid accrued interest, fees, premium (including call and tender premiums) thereon, defeasance costs, and fees and expenses incurred (including OID, upfront fees and similar items), in connection with such refinancing, (ii) the weighted average life and final maturity of such Replacement Term Loans shall not be shorter or earlier, as the case may be, than the weighted average life of such Replaced Term Loans at the time of such refinancing and (iii) all other terms (other than maturity and pricing) applicable to such Replacement Term Loans shall be substantially the same as, and no more favorable to the Lenders providing such Replacement Term Loans than, the terms applicable to such Replaced Term Loans, except to the extent necessary to provide for covenants and other terms applicable to any period after the maturity date in respect of the Replaced Term Loans in effect immediately prior to such refinancing or such other terms applicable to such Replacement Term Loans that are reflective of market terms and conditions for such Replacement Term Loans at the time of the issuance thereof (as determined by the Borrower in good faith). Each amendment to this Agreement providing for Replacement Term Loans may, without the consent of any other Lenders, effect such amendments to this Agreement and the other Loan Documents as may be necessary or appropriate, in the opinion of the Administrative Agent and the Borrower, to effect the provisions of this paragraph, and for the avoidance of doubt, this paragraph shall supersede any other provisions in this Section 10.01 to the contrary;

(d) this Agreement may be amended (or amended and restated) with the written consent of the Required Lenders, the Administrative Agent and the Borrower (i) to add one or more additional credit facilities to this Agreement and to permit the extensions of credit from time to time outstanding thereunder and the accrued interest and fees in respect thereof to share ratably in the benefits of this Agreement and the other Loan Documents with the Term Loans and the Revolving Credit Loans and the accrued interest and fees in respect thereof and (ii) to include appropriately the Lenders holding such credit facilities in any determination of the Required Lenders; and

(e) amendments and waivers of Section 2.03 and definitions used therein with respect to the matters regarding the mechanics and terms of issuance of Letters of Credit will require only the approval of the Borrower, the Administrative Agent and the applicable L/C Issuer so long as any such amendment or waiver are not adverse, in any material respect (taken as a whole), to the interests of the Lenders.

Notwithstanding anything to the contrary contained in this Section 10.01, the Guaranty, the Collateral Documents and related documents executed by the Loan Parties or the Subsidiaries in connection with this Agreement and the other Loan Documents may be in a form reasonably determined by the Administrative Agent and may be, together with this Agreement, amended, modified and waived with the consent of the Administrative Agent at the request of the Borrower without the need to obtain the consent of any other Lender if such amendment, modification or waiver is delivered in order (i) to comply with local Law or advice of local counsel, or (ii) to cause such Guaranty, Collateral Document or other document to be consistent with this Agreement and the other Loan Documents.

Notwithstanding anything to the contrary contained in this Section 10.01, if at any time after the Closing Date, the Administrative Agent and the Borrower shall have jointly identified an obvious error (including, but not limited to, an incorrect cross-reference) or any error or omission of a technical or immaterial nature, in each case, in any provision of this Agreement or any other Loan Document (including, for the avoidance of doubt, any exhibit, schedule or other attachment to any Loan Document), then the Administrative Agent (acting in its sole discretion) and the Borrower or any other relevant Loan Party shall be permitted to amend such provision. The Administrative Agent shall notify the Lenders of such amendment and such amendment shall become effective five (5) Business Days after such notification unless the Required Lenders object to such amendment in writing delivered to the Administrative Agent prior to such time.

Section 10.02 Notices and Other Communications; Facsimile Copies.

(a) General. Except in the case of notices and other communications expressly permitted to be given by telephone (and except as provided in subclause (b) below), all notices and other communications provided for herein shall be in writing and shall be delivered by hand or overnight courier service, mailed by certified or registered mail or sent by facsimile as follows, and all notices and other communications expressly permitted hereunder to be given by telephone shall be made to the applicable telephone number, as follows:

(i) if to the Borrower, any other Loan Party or the Administrative Agent or an L/C Issuer, to the address, facsimile number, electronic mail address or telephone number specified for such Person on Schedule 10.02 or to such other address, facsimile number, electronic mail address or telephone number as shall be designated by such party in a written notice to the other parties; and

(ii) if to any other Lender, to the address, facsimile number, electronic mail address or telephone number specified in its Administrative Questionnaire or to such other address, facsimile number, electronic mail address or telephone number as shall be designated by such party in a written notice to the Borrower, the Administrative Agent and the L/C Issuers.

All such notices and other communications shall be deemed to be given or made upon the earlier to occur of (i) actual receipt by the relevant party hereto and (ii) (A) if delivered by hand or by courier, when signed for by or on behalf of the relevant party hereto; (B) if delivered by mail, four (4) Business Days after deposit in the mails, postage prepaid; (C) if delivered by facsimile, when sent and receipt has been confirmed by telephone; and (D) if delivered by electronic mail (which form of delivery is subject to the provisions of Section 10.02(c)), when delivered; *provided* that notices and other communications to the Administrative Agent and the L/C Issuers pursuant to Article II shall not be effective until actually received by such Person. In no event shall a voice mail message be effective as a notice, communication or confirmation hereunder.

(b) Electronic Communication. Notices and other communications to the Lenders hereunder may be delivered or furnished by electronic communication (including e-mail and Internet or intranet websites) pursuant to procedures approved by the Administrative Agent; *provided* that the foregoing shall not apply to notices to any Lender pursuant to Article II if such Lender, as applicable, has notified the Administrative Agent that it is incapable of receiving notices under such Article by electronic communication. The Administrative Agent or a Loan Party may, in its discretion, agree to accept notices and other communications to it hereunder by electronic communications pursuant to procedures approved by it; *provided* that approval of such procedures may be limited to particular notices or communications.

(c) Unless the Administrative Agent otherwise prescribes, (i) notices and other communications sent to an e-mail address shall be deemed received upon the sender’s receipt of an acknowledgement from the intended recipient (such as by the “return receipt requested” function, as available, return e-mail or other written acknowledgement), *provided* that if such notice or other communication is not sent during the normal business hours of the recipient, such notice or communication shall be deemed to have been sent at the opening of business on the next Business Day for the recipient, and (ii) notices or communications posted to an Internet or intranet website shall be deemed received upon the deemed receipt by the intended recipient at its e-mail address as described in the foregoing clause (i) of notification that such notice or communication is available and identifying the website address therefor.

(d) The Platform. THE PLATFORM IS PROVIDED "AS IS" AND "AS AVAILABLE." THE AGENT PARTIES (AS DEFINED BELOW) DO NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE BORROWER MATERIALS OR THE ADEQUACY OF THE PLATFORM, AND EXPRESSLY DISCLAIM LIABILITY FOR ERRORS IN OR OMISSIONS FROM THE BORROWER MATERIALS. NO WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF THIRD PARTY RIGHTS OR FREEDOM FROM VIRUSES OR OTHER CODE DEFECTS, IS MADE BY ANY AGENT PARTY IN CONNECTION WITH THE BORROWER MATERIALS OR THE PLATFORM. In no event shall the Administrative Agent or any of its Agent-Related Persons or any Lead Arranger (collectively, the "**Agent Parties**") have any liability to the Borrower, any Lender, or any other Person for losses, claims, damages, liabilities or expenses of any kind (whether in tort, contract or otherwise) arising out of the Borrower's or the Administrative Agent's transmission of Borrower Materials through the Internet, except to the extent that such losses, claims, damages, liabilities or expenses are determined by a court of competent jurisdiction by a final and non-appealable judgment to have resulted from the gross negligence, bad faith or willful misconduct of such Agent Party; *provided*, *however*, that in no event shall any Agent Party have any liability to the Borrower, any Lender or any other Person for indirect, special, incidental, consequential or punitive damages (as opposed to direct or actual damages).

(e) Change of Address. Any Loan Party and the Administrative Agent may change its address, facsimile, electronic mail address or telephone number for notices and other communications hereunder by written notice to the other parties hereto. Each other Lender may change its address, facsimile, electronic mail address or telephone number for notices and other communications hereunder by written notice to the Borrower and the Administrative Agent. In addition, each Lender agrees to notify the Administrative Agent from time to time to ensure that the Administrative Agent has on record (i) an effective address, contact name, telephone number, facsimile number and electronic mail address to which notices and other communications may be sent and (ii) accurate wire instructions for such Lender. Furthermore, each Public Lender agrees to cause at least one individual at or on behalf of such Public Lender to at all times have selected the "Private Side Information" or similar designation on the content declaration screen of the Platform in order to enable such Public Lender or its delegate, in accordance with such Public Lender's compliance procedures and applicable Laws, including foreign, United States federal and state securities Laws, to make reference to Borrower Materials that are not made available through the "Public Side Information" portion of the Platform and that may contain material non-public information with respect to the Borrower or its securities for purposes of foreign, United States federal or state securities laws.

(f) Reliance by the Administrative Agent. The Administrative Agent and the Lenders shall be entitled to rely and act upon any notices (including telephonic Loan Notices) purportedly given by or on behalf of the Borrower even if (i) such notices were not made in a manner specified herein, were incomplete or were not preceded or followed by any other form of notice specified herein, or (ii) the terms thereof, as understood by the recipient, varied from any confirmation thereof. All telephonic notices to and other telephonic communications with the Administrative Agent may be recorded by the Administrative Agent, and each of the parties hereto hereby consents to such recording.

Section 10.03 No Waiver; Cumulative Remedies. No failure by any Lender or the Administrative Agent to exercise, and no delay by any such Person in exercising, any right, remedy, power or privilege hereunder or under any other Loan Document shall operate as a waiver thereof; nor shall any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other

or further exercise thereof or the exercise of any other right, remedy, power or privilege. The rights, remedies, powers and privileges herein provided, and provided under each other Loan Document, are cumulative and not exclusive of any rights, remedies, powers and privileges provided by Law.

Anything contained in any of the Loan Documents to the contrary notwithstanding, the Borrower, the Administrative Agent, the Collateral Agent and each Secured Party hereby agree that (a) no Secured Party shall have any right individually to realize upon any of the Collateral or to enforce the Guarantee, it being understood and agreed that all powers, rights and remedies hereunder may be exercised solely by the Administrative Agent, on behalf of the Secured Parties in accordance with the terms hereof and all powers, rights and remedies under the Collateral Documents may be exercised solely by the Collateral Agent, and (b) in the event of a foreclosure by the Collateral Agent on any of the Collateral pursuant to a public or private sale or other disposition, the Collateral Agent or any Lender may be the purchaser or licensor of any or all of such Collateral at any such sale or other disposition and the Collateral Agent, as agent for and representative of the Secured Parties (but not any Lender or Lenders in its or their respective individual capacities unless the Required Lenders shall otherwise agree in writing) shall be entitled, for the purpose of bidding and making settlement or payment of the purchase price for all or any portion of the Collateral sold at any such public sale, to use and apply any of the Obligations as a credit on account of the purchase price for any collateral payable by the Collateral Agent at such sale or other disposition.

Section 10.04 Attorney Costs and Expenses. Subject to Section 10.07(l), the Borrower agrees (a) regardless of whether the Closing Date occurs, to pay or reimburse the Administrative Agent and the Lead Arrangers for all reasonable and documented in reasonable detail out-of-pocket expenses incurred on or after the Closing Date (*provided* that in the case of payment to be made on the Closing Date, such expenses are to be invoiced at least two (2) Business Days prior to the Closing Date and otherwise, within thirty (30) days following written demand therefor) in connection with the preparation, syndication, execution, delivery and administration of this Agreement and the other Loan Documents and any amendment, waiver, consent or other modification of the provisions hereof and thereof (whether or not the transactions contemplated thereby are consummated), limited, in the case of legal fees and expenses, to the Attorney Costs of one counsel to the Administrative Agent and the Lead Arrangers taken as a whole (and of a single local counsel to the Administrative Agent and the Lead Arrangers taken as a whole in each appropriate jurisdiction (which may be a single local counsel acting in multiple material jurisdictions)) (in each case, except allocated costs of in-house counsel), and (b) after the Closing Date, promptly following written demand therefor, to pay or reimburse the Administrative Agent, the Lead Arrangers and the Lenders for all reasonable and documented in reasonable detail out-of-pocket costs and expenses incurred in connection with the enforcement of any rights or remedies under this Agreement or the other Loan Documents (including all such costs and expenses incurred during any legal proceeding, including any proceeding under any Debtor Relief Law, limited in the case of out-of-pocket legal fees and expenses, to the Attorney Costs of one counsel to the Administrative Agent and the Lenders taken as a whole (and of a single local counsel to the Administrative Agent and the Lead Arrangers taken as a whole in each appropriate jurisdiction (which may be a single local counsel acting in multiple material jurisdictions) and, solely in the event of an actual or perceived conflict of interest between the Administrative Agent, the Lead Arrangers and the Lenders, where the Lender or Lenders affected by such conflict of interest inform the Borrower in writing of such conflict of interest and thereafter retains its own counsel, one additional counsel in each appropriate jurisdiction to each group of affected Lenders similarly situated taken as a whole) (in each case, except allocated costs of in-house counsel)). The agreements in this Section 10.04 shall survive the termination of the Aggregate Commitments and repayment of all other Obligations.

Section 10.05 Indemnification by the Borrower. Subject to Section 10.07(l), the Borrower shall indemnify and hold harmless the Administrative Agent, the Collateral Agent, each Lender,

each L/C Issuer, the Lead Arrangers, the Bookrunners, the Syndication Agent and their respective Affiliates, directors, officers, employees, partners, representatives, controlling persons, members, agents, advisors, equity holders and successors (collectively the "**Indemnitees**") from and against any and all losses, claims, damages and liabilities that may be asserted or awarded against the Indemnitees and expenses of any third party that may be awarded against any Indemnitee and other reasonable and documented out-of-pocket expenses incurred in connection therewith asserted against any such Indemnitee relating to or arising out of or in connection with (but limited, in the case of out-of-pocket legal fees and expenses, to the Attorney Costs of one counsel to all Indemnitees taken as a whole and, if reasonably necessary, a single local counsel for all Indemnitees taken as a whole in each appropriate jurisdiction (which may be a single local counsel acting in multiple material jurisdictions), and solely in the case of an actual or perceived conflict of interest where the Indemnitee affected by such conflict of interest informs the Borrower in writing of such conflict of interest and thereafter retains its own counsel, one additional counsel in each appropriate jurisdiction to each group of affected Indemnitees similarly situated taken as a whole) (a) the execution, delivery, performance or administration of any Loan Document or any other agreement, letter or instrument delivered in connection with the transactions contemplated thereby or the consummation of the transactions contemplated thereby, (b) any Commitment, Loan or Letter of Credit or the use or proposed use of the proceeds therefrom (including any refusal by an L/C Issuer to honor a demand for payment under a Letter of Credit if the documents presented in connection with such demand do not strictly comply with the terms of such Letter of Credit), or (c) any actual or alleged presence or release of Hazardous Materials on or from any real property currently or formerly owned or operated by the Borrower or any other Loan Party, or any Environmental Liability arising out of the activities or operations of the Borrower or any other Loan Party or (d) any actual or prospective claim, litigation, investigation or proceeding relating to any of the foregoing, whether based on contract, tort or any other theory (including any investigation of, preparation for, or defense of any pending or threatened claim, investigation, litigation or proceeding) and regardless of whether any Indemnitee is a party thereto and without regard to the exclusive or contributory negligence of any Indemnitees (all the foregoing, collectively, the "**Indemnified Liabilities**"); *provided* that such indemnity shall not, as to any Indemnitee, be available to the extent that such Indemnified Liabilities resulted from (w) the gross negligence, bad faith or willful misconduct of such Indemnitee or of any of its Related Indemnified Persons as determined by a final, non-appealable judgment of a court of competent jurisdiction, (x) a material breach of any obligations under any Loan Document by such Indemnitee or of any of its Related Indemnified Persons as determined by a final, non-appealable judgment of a court of competent jurisdiction, or (y) any dispute solely among Indemnitees or of any Related Indemnified Person other than any claims against an Indemnitee in its capacity or in fulfilling its role as the Administrative Agent, the Collateral Agent, a Lead Arranger or a Bookrunner under the Facilities and other than any claims arising out of any act or omission of the Borrower or any of its Affiliates. Notwithstanding the foregoing, the Borrower shall not be liable for any settlement entered into by any Indemnitee or any Related Indemnified Person, without the Borrower's prior written consent (such consent not to be unreasonably withheld or delayed), but, if such settlement occurs with Borrower's written consent or if there is a final judgment for the plaintiff not consented to by any Indemnitee or any Related Indemnified Person in any action or claim with respect to any of the foregoing, the Borrower will be liable for such settlement or such final judgment and will indemnify and hold harmless each Indemnitee from and against any and all losses, claims, damages, liabilities and reasonable and documented out-of-pocket expenses by reason of such settlement or judgment in accordance with this Section 10.05. To the extent that the undertakings to indemnify and hold harmless set forth in this Section 10.05 may be unenforceable in whole or in part because they are violative of any applicable Laws or public policy, the Borrower shall contribute the maximum portion that it is permitted to pay and satisfy under applicable Laws to the payment and satisfaction of all Indemnified Liabilities incurred by the Indemnitees or any of them. Notwithstanding the foregoing, each Indemnitee shall be obligated to refund or return any and all amounts paid by the Borrower under this Section 10.05 to such Indemnitee for any losses, claims, damages, liabilities and expenses to the extent such Indemnitee is not entitled to payment

of such amounts in accordance with the terms hereof. The Borrower shall not, without the prior written consent of any Indemnitee (which consent shall not be unreasonably withheld, delayed or conditioned), effect any settlement of any pending or threatened claim, litigation, investigation or proceeding in respect of which indemnity could have been sought hereunder by such Indemnitee unless such settlement (a) includes an unconditional release of such Indemnitee from all liability arising out of such claim, litigation, investigation or proceeding and (b) does not include any statement as to, or any admission of, fault, culpability, wrongdoing or a failure to act by or on behalf of such Indemnitee. Each Indemnitee shall give (subject to restrictions pursuant to attorney-client privilege, law, rule or regulation, or any obligation of confidentiality) such information and assistance to the Borrower as the Borrower may reasonably request in connection with any claim, litigation, investigation or proceeding in connection with any losses, claims, damages, liabilities and expenses, unless the Indemnitee reasonably determines there are conflicts of interest between the Borrower and the Indemnitee. No Indemnitee or any Loan Party or Affiliate thereof shall be liable for any damages arising from the use by others of any information or other materials obtained through Intralinks®, Syndtrak® or other similar information transmission systems in connection with this Agreement, except to the extent resulting from the willful misconduct, bad faith or gross negligence of such Indemnitee or any of its Related Indemnified Persons, as determined by a final and non-appealable judgment of a court of competent jurisdiction), nor shall any Indemnitee or any Loan Party have any liability for any special, punitive, exemplary, indirect or consequential damages relating to this Agreement or any other Loan Document or arising out of its activities in connection herewith or therewith (whether before or after the Closing Date) (in each case, other than, in the case of any Loan Party, in respect of any such damages incurred or paid by an Indemnitee to a third party and otherwise required to be indemnified by a Loan Party under this Section 10.05). In the case of an investigation, litigation or other proceeding to which the indemnity in this Section 10.05 applies, such indemnity shall be effective whether or not such investigation, litigation or proceeding is brought by any Loan Party, its directors, equity holders or creditors or an Indemnitee or any other Person, whether or not any Indemnitee is otherwise a party thereto and whether or not any of the transactions contemplated hereunder or under any of the other Loan Documents are consummated. All amounts due under this Section 10.05 shall be paid within thirty (30) days after written demand therefor (together with backup documentation supporting such reimbursement request); *provided*, however, that such Indemnitee shall promptly refund such amount to the extent that there is a final non-appealable judicial determination by a court of competent jurisdiction that such Indemnitee was not entitled to indemnification rights with respect to such payment pursuant to the express terms of this Section 10.05. The agreements in this Section 10.05 shall survive the resignation of the Administrative Agent, the replacement of any Lender, the termination of the Aggregate Commitments and the repayment, satisfaction or discharge of all the other Obligations. Each Indemnitee shall promptly notify the Borrower upon receipt of written notice of any claim or threat to institute a claim; *provided* that any failure by any Indemnitee to give such notice shall not relieve the Borrower from the obligation to indemnify such Indemnitee in accordance with the terms of this Section 10.05 except to the extent that the Borrower is materially prejudiced by such failure. This Section 10.05 shall not apply to Taxes, Other Taxes or amounts excluded from the definition of Taxes pursuant to clauses (i) through (vi) of the first sentence of Section 3.01(a) (and any additions to tax, penalties and interest on the foregoing amounts in clauses (i) through (vi)), which shall be governed by Section 3.01, except to the extent such amounts represent losses, claims, damages, etc. arising from a non-tax claim (including a value added tax or similar tax charged with respect to the supply of legal or other services).

Section 10.06 Marshaling; Payments Set Aside. None of the Administrative Agent or any Lender shall be under any obligation to marshal any assets in favor of the Loan Parties or any other party or against or in payment of any or all of the Obligations. To the extent that any payment by or on behalf of the Borrower is made to any Agent or any Lender, or any Agent or any Lender exercises its right of setoff, and such payment or the proceeds of such setoff or any part thereof is subsequently invalidated, declared to be fraudulent or preferential, set aside or required (including pursuant to any settlement entered into by such Agent or such Lender in its discretion) to be repaid to a trustee, receiver or

any other party, in connection with any proceeding under any Debtor Relief Law or otherwise, then (a) to the extent of such recovery, the obligation or part thereof originally intended to be satisfied shall be revived and continued in full force and effect as if such payment had not been made or such setoff had not occurred, and (b) each Lender severally agrees to pay to the Administrative Agent upon demand its applicable share of any amount so recovered from or repaid by any Agent, *plus* interest thereon from the date of such demand to the date such payment is made at a rate per annum equal to the applicable Overnight Rate from time to time in effect.

Section 10.07 Successors and Assigns.

(a) The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns permitted hereby, except that the Borrower may not, except as permitted by Section 7.04, assign or otherwise transfer any of its rights or obligations hereunder without the prior written consent of the Administrative Agent and each Lender and no Lender may assign or otherwise transfer any of its rights or obligations hereunder except (i) to an assignee in accordance with the provisions of subclause (b) of this Section, (ii) by way of participation in accordance with the provisions of subclause (d) of this Section, (iii) by way of pledge or assignment of a security interest subject to the restrictions of subclause (f) of this Section, or (iv) to an SPC in accordance with the provisions of subclause (g) of this Section or (v) with respect to any assignment or transfer to or by any Disqualified Institution, in accordance with subclause (l) of this Section). Nothing in this Agreement, expressed or implied, shall be construed to confer upon any Person (other than the parties hereto, their respective successors and assigns permitted hereby, Participants to the extent provided in subclause (d) of this Section and, to the extent expressly contemplated hereby, the Agent-Related Persons of each of the Administrative Agent and the Lenders) any legal or equitable right, remedy or claim under or by reason of this Agreement.

(b) Assignments by Lenders. Any Lender may at any time assign to one or more assignees all or a portion of its rights and obligations under this Agreement (including all or a portion of its Commitment and the Loans (including for purposes of this Section 10.07(b), participations in L/C Obligations) at the time owing to it); *provided* that any such assignment shall be subject to the following conditions:

(i) Minimum Amounts.

(A) in the case of an assignment of the entire remaining amount of the assigning Lender's Commitment or Loans of any Class at the time owing to it or in the case of an assignment to a Lender, an Affiliate of a Lender or an Approved Fund, no minimum amount need be assigned; and

(B) in any case not described in subclause (b)(i)(A) of this Section, the aggregate amount of the Commitment or, the principal outstanding balance of the Loans of the assigning Lender subject to each such assignment, determined as of the date the Assignment and Assumption with respect to such assignment is delivered to the Administrative Agent or, if "Trade Date" is specified in the Assignment and Assumption, as of the Trade Date, shall not be less than a Dollar Amount of $5,000,000 (in the case of the Revolving Credit Facility), or a Dollar Amount of $1,000,000 (in the case of a Term Loan, unless each of the Administrative Agent and, so long as no Event of Default under Section 8.01(a) or, solely with respect to the Borrower, Section 8.01(f) has occurred and is continuing, the Borrower otherwise consents (each such consent not to be unreasonably withheld, conditioned or delayed); *provided*, *however*, that concurrent assignments to members of an Assignee Group and concurrent assignments from members of an Assignee Group to a single Eligible Assignee (or to an Eligible Assignee and members of its Assignee Group) will be treated as a single assignment for purposes of determining whether such minimum amount has been met.

(ii) Proportionate Amounts. Each partial assignment shall be made as an assignment of a proportionate part of all the assigning Lender's rights and obligations under this Agreement with respect to the Loans or the Commitment assigned.

(iii) Required Consents. No consent shall be required for any assignment except to the extent required by subclause (b)(i)(B) of this Section and, in addition:

(A) the consent of the Borrower (such consent not to be unreasonably withheld or delayed) shall be required unless (1) an Event of Default under Section 8.01(a) or, solely with respect to the Borrower, Section 8.01(f), has occurred and is continuing at the time of such assignment, (2) in the case of an assignment of a Term Loan, such assignment is to a Term Loan Lender, an Affiliate of a Term Loan Lender or an Approved Fund of a Term Loan Lender or (3) in the case of an assignment of a Revolving Credit Loan or Revolving Credit Commitment, such assignment is to a Revolving Credit Lender; *provided*, that, subject to clause (v) below, the Borrower shall be deemed to have consented to any such assignment of a Term Loan unless the Borrower shall object thereto by written notice to the Administrative Agent within ten (10) Business Days after having received such written notice thereof;

(B) the consent of the Administrative Agent (such consent not to be unreasonably withheld or delayed) shall be required unless (1) in the case of an assignment of a Term Loan, such assignment is to a Term Loan Lender, an Affiliate of a Term Loan Lender or an Approved Fund of a Term Loan Lender or to a Person that is not a Lender, an Affiliate of such Lender or an Approved Fund with respect to such Lender or (2) in the case of an assignment of a Revolving Credit Loan or Revolving Credit Commitment, such assignment is to a Revolving Credit Lender; *provided*, *however*, that the consent of the Administrative Agent shall not be required for any assignment pursuant to Section 10.07(m) or to an Affiliated Lender or a Person that upon effectiveness of an assignment would be an Affiliated Lender, except for the separate consent rights of the Administrative Agent pursuant to clause (h)(iv) of this Section 10.07; and

(C) the consent of each L/C Issuer (such consent not to be unreasonably withheld or delayed) shall be required if such assignment is to a Person that is not a Lender, an Affiliate of such Lender or an Approved Fund with respect to such Lender; *provided*, *however*, that the consent of each L/C Issuer shall not be required for any assignment of a Term Loan or any assignment to an Affiliated Lender or a Person that upon effectiveness of an assignment would be an Affiliated Lender.

(iv) Assignment and Assumption. The parties to each assignment shall execute and deliver to the Administrative Agent an Assignment and Assumption, together with a processing and recordation fee of $3,500 (other than in connection with any assignment effected pursuant to any primary syndication of the Facility); *provided* that the Administrative Agent may, in its sole discretion, elect to waive or reduce such processing and recordation fee in the case of any assignment. The Eligible Assignee, if it shall not be a Lender, shall deliver to the Administrative Agent an Administrative Questionnaire. All assignments shall be by novation unless otherwise agreed to, or required by, the Administrative Agent.

(v) No Assignments to Certain Persons. Notwithstanding anything to the contrary contained herein, no such assignment shall be made (A) to the Borrower or any of the Borrower's Subsidiaries except as permitted under Section 2.05(a)(iv) or Section 10.07(m), (B) subject to the immediately preceding clause (A) above and subclause (h) below, to any of the Borrower's Affiliates, (C) to a natural person, (D) to a Defaulting Lender or (E) to a Disqualified Institution.

This clause (b) shall not prohibit any Lender from assigning all or a portion of its rights and obligations among separate Facilities or Classes of Loans or Commitments on a non-pro rata basis.

In connection with any assignment of rights and obligations of any Defaulting Lender hereunder, no such assignment shall be effective unless and until, in addition to the other conditions thereto set forth herein, the parties to the assignment shall make such additional payments to the Administrative Agent in an aggregate amount sufficient, upon distribution thereof as appropriate (which may be outright payment, purchases by the assignee of participations or subparticipations, or other compensating actions, including funding, with the consent of the Borrower and the Administrative Agent, the applicable Pro Rata Share of Loans previously requested but not funded by the Defaulting Lender, to each of which the applicable assignee and assignor hereby irrevocably consent), to (x) pay and satisfy in full all payment liabilities then owed by such Defaulting Lender to the Administrative Agent or any Lender hereunder (and interest accrued thereon) and (y) acquire (and fund as appropriate) its full Pro Rata Share of all Loans and participations in Letters of Credit in accordance with its Pro Rata Share. Notwithstanding the foregoing, in the event that any assignment of rights and obligations of any Defaulting Lender hereunder shall become effective under applicable Laws without compliance with the provisions of this paragraph, then the assignee of such interest shall be deemed to be a Defaulting Lender for all purposes of this Agreement until such compliance occurs.

Subject to acceptance and recording thereof by the Administrative Agent pursuant to clause (c) of this Section (and, in the case of an Affiliated Lender or a Person that, after giving effect to such assignment, would become an Affiliated Lender, subject to the requirements of clause (h) of this Section), from and after the effective date specified in each Assignment and Assumption, the assignee thereunder shall be a party to this Agreement and, to the extent of the interest assigned by such Assignment and Assumption, have the rights and obligations of a Lender under this Agreement, and the assigning Lender thereunder shall, to the extent of the interest assigned by such Assignment and Assumption, be released from its obligations under this Agreement (and, in the case of an Assignment and Assumption covering all of the assigning Lender's rights and obligations under this Agreement, such Lender shall cease to be a party hereto but shall continue to be entitled to the benefits of Section 3.01, Section 3.04, Section 3.05, Section 10.04 and Section 10.05 with respect to facts and circumstances occurring prior to the effective date of such assignment and shall continue to be bound by Section 10.08). Upon request, and the surrender by the assigning Lender of its Note, the Borrower (at its own expense) shall execute and deliver a Note to the assignee Lender. Any assignment or transfer by a Lender of rights or obligations under this Agreement that does not comply with this subsection shall be treated for purposes of this Agreement as a sale by such Lender of a participation in such rights and obligations in accordance with clause (d) of this Section.

(c) The Administrative Agent, acting solely for this purpose as a non-fiduciary agent of the Borrower, shall maintain at the Administrative Agent's Office a copy of each Assignment and Assumption delivered to it and a register for the recordation of the names and addresses of the Lenders, and the Commitments of, and principal amounts (and related interest amounts) of the Loans, L/C Obligations (specifying the Unreimbursed Amounts), L/C Borrowings and amounts due under Section 2.03, owing to each Lender pursuant to the terms hereof from time to time (the "**Register**"). The entries in the Register shall, subject to clause (h) of this Section, be conclusive absent manifest error, and the Borrower, the Agents and the Lenders shall treat each Person whose name is recorded in the Register pursuant to the terms hereof as a Lender hereunder for all purposes of this Agreement, notwithstanding notice to the contrary. The Register shall be available for inspection by the Borrower, any Agent and any Lender, at any reasonable time and from time to time upon reasonable prior notice. This Section 10.07(c)

and Section 2.11 shall be construed so that all Loans, L/C Obligations, L/C Borrowings and amounts due under Section 2.03 are at all times maintained in "registered form" within the meaning of Section 163(f), Section 871(h)(2) and Section 881(c)(2) of the Code and any related Treasury regulations (or any other relevant or successor provisions of the Code or of such Treasury regulations).

(d) Any Lender may at any time, without the consent of, or notice to, the Borrower, the Administrative Agent or the L/C Issuers, sell participations to any Person (other than a natural person or the Borrower or any of the Borrower's Affiliates or Subsidiaries (other than Affiliated Debt Funds), Defaulting Lender or to a Disqualified Institution) (each, a "**Participant**") in all or a portion of such Lender's rights and/or obligations under this Agreement (including all or a portion of its Commitment and/or the Loans (including such Lender's participation in L/C Obligations) owing to it); *provided* that (i) such Lender's obligations under this Agreement shall remain unchanged, (ii) such Lender shall remain solely responsible to the other parties hereto for the performance of such obligations and (iii) the Borrower, the Agents and the other Lenders shall continue to deal solely and directly with such Lender in connection with such Lender's rights and obligations under this Agreement. Any agreement or instrument pursuant to which a Lender sells such a participation shall provide that such Lender shall retain the sole right to enforce this Agreement and the other Loan Documents and to approve any amendment, modification or waiver of any provision of this Agreement or any other Loan Document; *provided* that such agreement or instrument may provide that such Lender will not, without the consent of the Participant, agree to any amendment, waiver or other modification described in clauses (a), (b), (c), (g) and (h) of the first proviso to Section 10.01(A) that directly and adversely affects such Participant, in each case only to the extent that the affirmative vote of such Lender from which such Participant purchased the participation would be required under such Section. Subject to clause (e) of this Section, the Borrower agrees that each Participant shall be entitled to the benefits of Sections 3.01, 3.04 and 3.05 (subject to the limitations and requirements of such section, including Sections 3.01(c)(i) and (c)(ii) or Section 3.01(c)(iii), as applicable and Section 3.06 and Section 3.07) (through the applicable Lender) to the same extent as if it were a Lender and had acquired its interest by assignment pursuant to subsection (b) of this Section. To the extent permitted by applicable Laws, each Participant also shall be entitled to the benefits of Section 10.09 as though it were a Lender; *provided* that such Participant agrees to be subject to Section 2.13 as though it were a Lender. The Borrower and the Lenders expressly acknowledge that the Administrative Agent (in its capacity as such or as an arranger, bookrunner or other agent hereunder) shall not have any obligation to monitor whether participations are made to Disqualified Institutions or natural persons and none of the Borrower or the Lenders will bring any claim to such effect.

(e) Limitations upon Participant Rights. A Participant shall not be entitled to receive any greater payment under Section 3.01, 3.04 or 3.05 than the applicable Lender would have been entitled to receive with respect to the participation sold to such Participant, except to the extent that either (1) the sale of the participation to such Participant is made with the Borrower's prior written consent, which consent shall state that it is being given pursuant to Section 10.07(e) of this Agreement or (2) such entitlement to receive a greater payment results from an adoption of or any change in any Law or in the interpretation or application thereof or compliance by any Lender with any request or directive (whether or not having the force of law) from any central bank or other Governmental Authority made subsequent to the date hereof that occurs after the Participant acquired the applicable participation. Each Lender that sells a participation pursuant to Section 10.07(d) shall, acting solely for U.S. federal income tax purposes as a non-fiduciary agent of the Borrower, maintain a register complying with the requirements of Section 163(f), Section 871(h) and Section 881(c)(2) of the Code and the Treasury regulations issued thereunder on which it records the name and address of each Participant and the principal amounts of each Participant's participation interest with respect to the Loans (each, a **"Participant Register"**); *provided* that no Lender shall have any obligation to disclose all or any portion of the Participant Register to any Person (including the identity of any Participant or any information relating to a Participant's interest in

any Commitments, Loans or its other obligations under this Agreement) except to the extent that the relevant parties, acting reasonably and in good faith, determine that such disclosure is necessary to establish that such Commitment, Loan or other obligation is in registered form under Section 5f.103-1(c) of the United States Treasury Regulations. The entries in the Participant Register shall be conclusive absent manifest error, and such Lender shall treat each Person whose name is recorded in the Participant Register as the owner of such participation for all purposes of this Agreement notwithstanding any notice to the contrary. For the avoidance of doubt, the Administrative Agent (in its capacity as Administrative Agent) shall have no responsibility for maintaining a Participant Register.

(f) Any Lender may at any time pledge or assign a security interest in all or any portion of its rights under this Agreement (including under its Note, if any) to secure obligations of such Lender, including any pledge or assignment to secure obligations to a Federal Reserve Bank or to any central bank having jurisdiction over such Lender; *provided* that no such pledge or assignment shall release such Lender from any of its obligations hereunder or substitute any such pledgee or assignee for such Lender as a party hereto.

(g) Notwithstanding anything to the contrary contained herein, any Lender (a "**Granting Lender**") may grant to a special purpose funding vehicle identified as such in writing from time to time by the Granting Lender to the Administrative Agent and the Borrower (an "**SPC**") the option to provide all or any part of any Loan that such Granting Lender would otherwise be obligated to make pursuant to this Agreement; *provided* that (i) nothing herein shall constitute a commitment by any SPC to fund any Loan, (ii) if an SPC elects not to exercise such option or otherwise fails to make all or any part of such Loan, the Granting Lender shall be obligated to make such Loan pursuant to the terms hereof and (iii) such SPC and the applicable Loan or any applicable part thereof, shall be appropriately reflected in the Participant Register. Each party hereto hereby agrees that (i) neither the grant to any SPC nor the exercise by any SPC of such option shall increase the costs or expenses or otherwise increase or change the obligations of the Borrower under this Agreement (including its obligations under Section 3.01, 3.04 or 3.05), unless the grant to such SPC is made with the Borrower's prior written consent, which consent shall state that it is being given pursuant to Section 10.07(g) of this Agreement, (ii) no SPC shall be liable for any indemnity or similar payment obligation under this Agreement for which a Lender would be liable, and (iii) the Granting Lender shall for all purposes, including the approval of any amendment, waiver or other modification of any provision of any Loan Document, remain the lender of record hereunder. The making of a Loan by an SPC hereunder shall utilize the Commitment of the Granting Lender to the same extent, and as if, such Loan were made by such Granting Lender. In furtherance of the foregoing, each party hereto hereby agrees (which agreement shall survive the termination of this Agreement) that, prior to the date that is one year and one day after the payment in full of all outstanding commercial paper or other senior debt of any SPC, it will not institute against, or join any other Person in instituting against, such SPC any bankruptcy, reorganization, arrangement, insolvency, or liquidation proceeding under the laws of the United States or any state thereof. Notwithstanding anything to the contrary contained herein, any SPC may (i) with notice to, but without prior consent of the Borrower and the Administrative Agent and with the payment of a processing fee of $3,500 (which processing fee may be waived by the Administrative Agent in its sole discretion), assign all or any portion of its right to receive payment with respect to any Loan to the Granting Lender and (ii) disclose on a confidential basis any non-public information relating to its funding of Loans to any rating agency, commercial paper dealer or provider of any surety or Guarantee or credit or liquidity enhancement to such SPC. If a Granting Lender grants an option to an SPC as described herein and such grant is not reflected in the Register, the Granting Lender shall maintain a separate register on which it records the name and address of each SPC and the principal amount (and related interest) of each SPC's interest with respect to the Loans, L/C Obligations or other interests hereunder, which entries shall be conclusive absent manifest error.

(h) Any Term Lender may, at any time, assign all or a portion of its rights and obligations solely with respect to Term Loans under this Agreement to a Person who is or will become, after such assignment, an Affiliated Lender or an Affiliated Debt Fund through (x) Dutch auctions or other offers to purchase open to all Term Lenders on a pro rata basis consistent with the procedures of the type described in Section 2.05(a)(iv) or (y) open market purchase on a non-pro rata basis, in each case subject to the following limitations:

(i) Affiliated Lenders will not receive information provided solely to Lenders by the Administrative Agent or any Lender and will not be permitted to attend or participate in meetings attended solely by the Lenders and the Administrative Agent, other than the right to receive notices of prepayments and other administrative notices in respect of its Term Loans required to be delivered to Lenders pursuant to Article II;

(ii) each Affiliated Lender shall either (I) make a representation to the selling Lender that it does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information) or (II) disclose that it cannot make such representation;

(iii) after giving effect to such assignment, the aggregate principal amount of Term Loans held by Affiliated Lenders shall not exceed 25% of the principal amount of all Term Loans at such time outstanding, in each case, after giving effect to any substantially simultaneous cancellation thereof (such percentage, the "**Affiliated Lender Cap**"); *provided* that each of the parties hereto agrees and acknowledges that the Administrative Agent shall not be liable for any losses, damages, penalties, claims, demands, actions, judgments, suits, costs, expenses and disbursements of any kind or nature whatsoever incurred or suffered by any Person in connection with any compliance or non-compliance with this clause (h)(iii) or any purported assignment exceeding the Affiliated Lender Cap; and

(iv) as a condition to each assignment pursuant to this clause (h), (A) the Administrative Agent shall have been provided a notice in the form of Exhibit E-2 to this Agreement in connection with each assignment to an Affiliated Lender or a Person that upon effectiveness of such assignment would constitute an Affiliated Lender, and (without limitation of the provisions of clause (iii) above) shall be under no obligation to record such assignment in the Register until three (3) Business Days after receipt of such notice and (B) the Administrative Agent shall have consented to such assignment (which consent shall not be withheld unless the Administrative Agent reasonably believes that such assignment would violate clause (h)(iii) of this Section 10.07).

Notwithstanding anything to the contrary contained herein, any Affiliated Lender or Affiliated Debt Fund that has purchased Term Loans pursuant to this clause (h) may, in its sole discretion but subject to the consent of the Borrower, contribute, directly or indirectly, the principal amount of such Term Loans, plus all accrued and unpaid interest thereon, to the Borrower (through any Permitted Parent) for the purpose of cancelling and extinguishing such Term Loans and such contribution may be in exchange for equity securities of the Borrower (or any Permitted Parent) otherwise permitted to be issued or incurred at such time. Upon the date of such contribution, assignment or transfer, (x) the aggregate outstanding principal amount of Term Loans shall reflect such cancellation and extinguishing of the Term Loans then held by the Borrower and (y) the Borrower shall promptly provide notice to the Administrative Agent of such contribution of such Term Loans, and the Administrative Agent, upon receipt of such notice, shall reflect the cancellation and extinguishing of the applicable Term Loans in the Register.

Each Lender participating in any assignment to Affiliated Lenders acknowledges and agrees that in connection with such assignment, (1) the Affiliated Lenders then may have, and later may come into possession of material non-public information, (2) such Lender has independently and, without reliance on the Affiliated Lenders or any of their Subsidiaries, the Borrower or any of its Subsidiaries, the Administrative Agent or any other Agent-Related Persons, made its own analysis and determination to participate in such assignment notwithstanding such Lender's lack of knowledge of the material non-public information, (3) none of the Affiliated Lenders or any of their Subsidiaries, the Borrower or any of its Subsidiaries shall be required to make any representation that it is not in possession of material non-public information, (4) none of the Affiliated Lenders or its Affiliates, the Borrower or any of its Subsidiaries or Affiliates, the Administrative Agent or any other Agent-Related Persons shall have any liability to such Lender, and such Lender hereby waives and releases, to the extent permitted by law, any claims such Lender may have against any Affiliated Lender or Affiliate thereof, the Borrower or any of its Subsidiaries or Affiliates, the Administrative Agent and any other Agent-Related Persons, under applicable Laws or otherwise, with respect to the nondisclosure of the material non-public information and (5) that the material non-public information may not be available to the Administrative Agent or the other Lenders. Each Affiliated Lender and each Affiliated Debt Fund agrees to notify the Administrative Agent promptly (and in any event within ten (10) Business Days) if it acquires any Person who is also a Lender, and each Lender agrees to notify the Administrative Agent promptly (and in any event within ten (10) Business Days) if it becomes an Affiliated Lender or an Affiliated Debt Fund. Such notice shall contain the type of information required and be delivered to the same addressee as set forth in Exhibit E-2.

(i) Notwithstanding anything in Section 10.01 or the definition of "Required Lenders" to the contrary:

(i) for purposes of determining whether the Required Lenders have (A) consented (or not consented) to any amendment, modification, waiver, consent or other action with respect to any of the terms of any Loan Document or any departure by any Loan Party therefrom, or subject to Section 10.07(j), any plan of reorganization pursuant to the U.S. Bankruptcy Code, (B) otherwise acted on any matter related to any Loan Document, or (C) directed or required the Administrative Agent or any Lender to undertake any action (or refrain from taking any action) with respect to or under any Loan Document, no Affiliated Lender shall have any right to consent (or not consent), otherwise act or direct or require the Administrative Agent or any Lender to take (or refrain from taking) any such action and all Term Loans held by such Affiliated Lenders shall be deemed to have been voted in the same proportion as the allocation of voting by Term Lenders that are not Affiliated Lenders for all purposes of calculating whether the Required Lenders have taken any actions;

(ii) Affiliated Debt Funds may not in the aggregate account for more than 49.9% of the amounts set forth in the calculation of Required Lenders and any amount in excess of 49.9% will be subject to the limitations set forth in clause (i)(i) above;

(iii) notwithstanding the above, Affiliated Lenders and Affiliated Debt Funds shall have the right to vote on any amendment, modification, waiver, consent or other action described in the first proviso to Section 10.01 or otherwise requiring the written consent of each Lender or of each Lender directly and adversely affected thereby; and

(iv) notwithstanding the above, no amendment, modification, waiver, consent or other action with respect to any of the terms of any Loan Document or any departure by any Loan Party therefrom may affect any Affiliated Lender or Affiliated Debt Fund in a manner that is disproportionate to the effect on any Lender of the same Class of that would deprive such Affiliated Lender or Affiliated Debt Fund of its pro rata share of any payments to which it is entitled.

(j) Notwithstanding anything in this Agreement or the other Loan Documents to the contrary, but subject to clauses (i), (iii) and (iv) above, each Affiliated Lender hereby agrees that, if a proceeding under any Debtor Relief Law shall be commenced by or against the Borrower or any other Loan Party at a time when such Lender is an Affiliated Lender, such Affiliated Lender irrevocably authorizes and empowers the Administrative Agent to vote on behalf of such Affiliated Lender with respect to the Term Loans held by such Affiliated Lender in any manner in the Administrative Agent's sole discretion, unless the Administrative Agent instructs such Affiliated Lender to vote, in which case such Affiliated Lender shall vote with respect to the Term Loans held by it as the Administrative Agent directs; *provided* that such Affiliated Lender shall be entitled to vote in accordance with its sole discretion (and not in accordance with the direction of the Administrative Agent) in connection with any plan of reorganization to the extent any such plan of reorganization proposes to treat any Obligations held by such Affiliated Lender in a manner that is less favorable in any material respect to such Affiliated Lender than the proposed treatment of similar Obligations held by Lenders that are not Affiliated Lenders. Each Affiliated Lender hereby irrevocably appoints the Administrative Agent (such appointment being coupled with an interest) as such Affiliated Lender's attorney-in-fact, with full authority in the place and stead of such Affiliated Lender and in the name of such Affiliated Lender (solely in respect of Term Loans and participations therein and not in respect of any other claim or status such Affiliated Lender may otherwise have), from time to time in the Administrative Agent's discretion to take any action and to execute any instrument that the Administrative Agent may deem reasonably necessary to carry out the provisions of this Section 10.07(j).

(k) Notwithstanding anything to the contrary contained herein, any L/C Issuer may, upon thirty (30) days' notice to the Borrower, the Administrative Agent and the Lenders, resign as an L/C Issuer, and any L/C Issuer may be removed at any time by the Borrower by notice to such L/C Issuer, the Administrative Agent and the Lenders; *provided* that on or prior to the expiration of such 30-day period with respect to such resignation, the relevant L/C Issuer shall have identified a successor L/C Issuer reasonably acceptable to the Borrower willing to accept its appointment as successor L/C Issuer. In the event of any such resignation or removal of an L/C Issuer, the Borrower shall be entitled to appoint from among the Lenders willing to accept such appointment a successor L/C Issuer; *provided* that no failure by the Borrower to appoint any such successor shall affect the resignation or removal of the relevant L/C Issuer, except as expressly provided above. If an L/C Issuer resigns or is removed as an L/C Issuer, it shall retain all the rights and obligations of an L/C Issuer hereunder with respect to all Letters of Credit outstanding as of the effective date of its resignation or removal as an L/C Issuer and all L/C Obligations with respect thereto (including the right to require the Lenders to make Revolving Credit Loans or fund risk participations in Unreimbursed Amounts pursuant to Section 2.03(c)).

(l) (i) In the case of any assignment or participation by a Lender without the Borrower's consent (A) to any Disqualified Institution or (B) to the extent the Borrower's consent is required under this Section 10.07 (and not deemed to have been given pursuant to Section 10.07(b)(iii)(A)), to any other Person, the Borrower shall be entitled to seek specific performance to unwind any such assignment or participation and/or specifically enforce this Section 10.07(l) in addition to injunctive relief (without posting a bond or presenting evidence of irreparable harm) or any other remedies available to the Borrower at law or in equity; it being understood and agreed that the Borrower and its Subsidiaries will suffer irreparable harm if any Lender breaches any obligation under this Section 10.07 as it relates to any assignment, participation or pledge of any Loan or Commitment to any Disqualified Institution or any other Person to whom the Borrower's consent is required but not obtained. Nothing in this Section 10.07(l) shall be deemed to prejudice any right or remedy that the Borrower may otherwise have at law or equity. Upon the request of any Lender, the Administrative Agent may and the Borrower will make the list of Disqualified Institutions (other than any Disqualified Institution that is a reasonably identifiable Affiliate of another Disqualified Institution on the basis of such Person's name) available to such Lender so long as such Lender agrees to keep the list of Disqualified Institutions confidential in accordance with the terms hereof and any such Lender may provide a copy of the list of Disqualified Institutions to any prospective lender or participant.

(ii) If any assignment or participation under this Section 10.07 is made to (1) any Affiliate of any Disqualified Institution (other than any Bona Fide Debt Fund) without the Borrower's prior written consent (any such person together with any Disqualified Institution, a "Disqualified Person") or (2) to the extent the Borrower's consent is required under this Section 10.07 (and not deemed to have been given pursuant to Section 10.07(b)(iii)(A)), to any other Person, then, in each case, the Borrower may, at its sole expense and effort, upon notice to the applicable Person and the Administrative Agent, (A) terminate any Commitment of such Person and repay all obligations of the Borrower owing to such Person, (B) in the case of any outstanding Term Loans, held by such Person, purchase such Term Loans by paying the least of (x) par, (y) the amount that such Person paid to acquire such Term Loans and (z) if reasonably obtainable public sources are available, the most recently available market price for such Term Loan based on such sources, plus accrued interest thereon, accrued fees and all other amounts payable to it hereunder (other than any prepayment premium) and/or (C) require such Person to assign, without recourse (in accordance with and subject to the restrictions contained in this Section 10.07), all of its interests, rights and obligations under this Agreement to one or more Eligible Assignees; provided that (I) in the case of clauses (B) and (C), the applicable Person has received payment of an amount equal to the least of (1) par, (2) the amount that such Person paid for the applicable Loans and (3) if reasonably obtainable public sources are available, the most recently available market price for such Term Loan based on such sources, plus accrued interest thereon, accrued fees and all other amounts payable to it hereunder (other than any prepayment premium), (II) in the case of clauses (A) and (B), the Borrower shall not be liable to the relevant Person under Section 3.05 if any Eurocurrency Rate Loan owing to such Person is repaid or purchased other than on the last day of the Interest Period relating thereto, (III) in the case of clause (C), the relevant assignment shall otherwise comply with this Section 10.07 (except that (x) no registration and processing fee required under this Section 10.07 shall be required with any assignment pursuant to this paragraph and (y) any Term Loan acquired by any Affiliated Lender pursuant to this paragraph will not be included in calculating compliance with the Affiliated Lender Cap for a period of 90 days following such transfer; provided that, to the extent the aggregate principal amount of Term Loans held by Affiliated Lenders exceeds the Affiliated Lender Cap on the 91st day following such transfer, then such excess amount shall either be (x) contributed to the Borrower or any of its subsidiaries and retired and cancelled immediately upon such contribution or (y) automatically cancelled)) and (IV) in no event shall such Disqualified Person be entitled to receive amounts set forth in Section 2.08(b). Further, any Disqualified Person identified by the Borrower to the Administrative Agent (A) shall not be permitted to (x) receive information or reporting provided by any Loan Party, the Administrative Agent or any Lender and/or (y) attend and/or participate in conference calls or meetings attended solely by the Lenders and the Administrative Agent, (B) (x) for purposes of determining whether the Required Lenders or the majority Lenders under any Class have (i) consented (or not consented) to any amendment, modification, waiver, consent or other action with respect to any of the terms of any Loan Document or any departure by any Loan Party therefrom, (ii) otherwise acted on any matter related to any Loan Document or (iii) directed or required the Administrative Agent or any Lender to undertake any action (or refrain from taking any action) with respect to or under any Loan Document, have a right to consent (or not consent), otherwise act or direct or require the Administrative Agent or any Lender to take (or refrain from taking) any such action or (y) for any other purpose for which any Lender is otherwise entitled to vote or consent, the Loans and Commitments of such Disqualified Person shall be deemed to vote in the same proportion as Lenders that are not Disqualified Persons (including in any proceeding under any Debtor Relief Law commenced by or against the Borrower or any other Loan Party) and (C) shall not be entitled to receive the benefits of Section 10.04 or Section 10.05. For the sake of clarity, the provisions in this Section 10.07(l) shall not apply to any Person that is an assignee of any Disqualified Person, if such assignee is not a Disqualified Person.

(m) Any Lender may, so long as no Event of Default has occurred and is continuing, at any time, assign all or a portion of its rights and obligations with respect to Term Loans under this Agreement to the Borrower or any of the Borrower's Subsidiaries through (x) Dutch auctions or other offers to purchase open to all Lenders on a pro rata basis consistent with the procedures set forth in Section 2.05(a)(iv) or (y) notwithstanding Sections 2.12 and 2.13 or any other provision in this Agreement, open market purchase on a non-pro rata basis; *provided* further that:

(i) (a) the principal amount of such Term Loans, along with all accrued and unpaid interest thereon, shall be deemed automatically cancelled and extinguished on the date of such contribution, assignment or transfer, (b) the aggregate outstanding principal amount of Term Loans of the remaining Lenders shall reflect such cancellation and extinguishment and (c) the Borrower or any of the Borrower's Subsidiaries, as applicable, shall promptly provide notice to the Administrative Agent of such contribution, assignment or transfer of such Term Loans, and the Administrative Agent, upon receipt of such notice, shall reflect the cancellation of the applicable Term Loans in the Register;

(ii) the Borrower or any of the Borrower's Subsidiaries that purchases any Term Loans pursuant to this clause (m) shall either (I) make a representation to the selling Lender that it does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information) or (II) disclose that it cannot make such representation; and

(iii) purchases of Term Loans pursuant to this Section 10.07(m) shall not be funded with the proceeds of Revolving Credit Loans.

Each Lender participating in any assignment to the Borrower or any Subsidiary (including pursuant to Section 2.05(a)(iv)) acknowledges and agrees that in connection with such assignment, (1) the Borrower and its Subsidiaries then may have, and later may come into possession of material non-public information, (2) such Lender has independently and, without reliance on the Affiliated Lenders or any of their Subsidiaries, the Borrower or any of its Subsidiaries, the Administrative Agent or any other Agent-Related Persons, made its own analysis and determination to participate in such assignment notwithstanding such Lender's lack of knowledge of the material non-public information, (3) none of the Borrower or any of its Subsidiaries shall be required to make any representation that it is not in possession of material non-public information, (4) none of the Borrower any of the its Subsidiaries, the Administrative Agent or any other Agent-Related Persons shall have any liability to such Lender, and such Lender hereby waives and releases, to the extent permitted by law, any claims such Lender may have against the Borrower or any of its Subsidiaries, the Administrative Agent and any other Agent-Related Persons, under applicable Laws or otherwise, with respect to the nondisclosure of the material non-public information and (5) that the material non-public information may not be available to the Administrative Agent or the other Lenders.

(n) The aggregate outstanding principal amount of the Term Loans of the applicable Class shall be deemed reduced by the full par value of the aggregate principal amount of the Term Loans purchased by, or contributed to (in each case, and subsequently cancelled hereunder), the Borrower pursuant to Section 10.07(h) or (m) and the principal repayment installments with respect to the Term Loans of such Class pursuant to Section 2.07(a)(i) or (a)(ii), as applicable, shall be reduced pro rata by the par value of the aggregate principal amount of Term Loans so purchased or contributed (and subsequently cancelled), with such reduction being applied solely to the Term Loans of the Lenders which sold such Term Loans.

Notwithstanding anything herein to the contrary, each of the Administrative Agent and the Borrower hereby consents to each assignment of Initial Term Loans effected (or to be effected) by JPMorgan Chase Bank, N.A. and Barclays Bank PLC (or any of their respective affiliates) to any of them (or any of their respective affiliates) or ultimate lenders of record under this Agreement (the identities of which were approved by the Borrower prior to the Closing Date) in connection with the primary syndication of the Initial Term Loans.

Section 10.08 Confidentiality. Each of the Administrative Agent, the Collateral Agent and the Lenders agrees to maintain the confidentiality of the Information in accordance with its customary procedures (as set forth below), except that Information may be disclosed (a) to its Affiliates and to its and its Affiliates' respective directors, officers, employees, legal counsel, independent auditors and other experts or agents who need to know such information in connection with the Transaction, are informed of the confidential nature of such Information and instructed to keep such Information confidential, (b) to the extent requested by any regulatory authority purporting to have jurisdiction over it (including any self-regulatory authority, such as the National Association of Insurance Commissioners), in which case, the Administrative Agent, the Collateral Agent and the Lenders agree to, to the extent practicable, inform the Borrower promptly thereof prior to such disclosure, unless such Person is prohibited by applicable Laws from so informing the Borrower, or except in connection with any request as part of any regulatory audit or examination conducted by bank accountants or any governmental or regulatory authority exercising examination or regulatory authority, (c) to the extent required by applicable Laws or by any subpoena or similar legal process; *provided* that the Administrative Agent or such Lender, as applicable, agrees that it will, to the extent practicable, notify the Borrower promptly thereof, unless such notification is prohibited by law, rule or regulation, or except in connection with any request as part of any regulatory audit or examination conducted by accountants or any governmental or regulatory authority exercising examination or regulatory authority, (d) to any other party hereto, (e) in connection with the exercise of any remedies hereunder or under any other Loan Document or any action or proceeding relating to this Agreement or any other Loan Document or the enforcement of rights hereunder or thereunder, (f) subject to an agreement containing provisions at least as restrictive as those of this Section 10.08, to (i) any assignee of or Participant in, or any prospective assignee of or Participant in, any of its rights or obligations under this Agreement or any Eligible Assignee invited to be an Additional Lender or (ii) any actual or prospective direct or indirect counterparty (or its advisors) to any swap or derivative transaction relating to the Borrower and its obligations, (g) with the consent of the Borrower, (h) to any rating agency when required by it (it being understood that, prior to any such disclosure, such rating agency shall undertake to preserve the confidentiality of any Information relating to the Loan Parties received by it from such Lender), (i) to the extent such Information (i) is at the time of such disclosure, or becomes, publicly available other than as a result of a breach of this Section by such Person or any Person identified in clause (a) above, (ii) is at the time of such disclosure, or becomes, available to the Administrative Agent, any Lender, or any of their respective Affiliates on a non-confidential basis from a source other than the Borrower or any of its Subsidiaries, and which source is not known by such Agent or Lender, after due inquiry, to be subject to a confidentiality restriction in respect thereof in favor of the Borrower or any Affiliate of the Borrower or (iii) is independently developed by such Person without reliance upon the Information, (j) to market data collectors, similar service providers to the lending industry, and service providers to the Administrative Agent, the Collateral Agent and the Lenders in connection with the administration and management of the Facilities; *provided* that such Information shall be limited to Information about the Facilities, or (k) for the purposes of establishing a "due diligence" defense; *provided*, *however*, that no disclosure shall be made to any Disqualified Institution to the extent the applicable list of Disqualified Institutions has been provided to such disclosing party (and is pemitted to be shared with prospective lenders or participants).

For purposes of this Section, "**Information**" means all information received from any Loan Party or any Subsidiary thereof (including, for the avoidance of doubt, their respective directors,

officers, employees, members of managements, consultants, representatives, agents and advisors) or in connection with an inspection of the books, records or properties of any Loan Party or the Subsidiaries thereof, in each case, relating to any Loan Party or any Subsidiary thereof or their respective businesses; it being understood that all information received from any Loan Party or any Subsidiary thereof (including, for the avoidance of doubt, their respective directors, officers, employees, members of managements, consultants, representatives, agents and advisors) after the date hereof relating to any Loan Party or any Subsidiary thereof or their respective businesses shall be deemed confidential unless such information is clearly identified at the time of delivery as not being confidential. Any Person required to maintain the confidentiality of Information as provided in this Section shall be considered to have complied with its obligation to do so in accordance with its customary procedures if such Person has exercised the same degree of care to maintain the confidentiality of such Information as such Person would accord to its own confidential information.

Each of the Administrative Agent and the Lenders acknowledges that (a) the Information may include material non-public information concerning the Borrower or a Subsidiary, as the case may be, (b) it has policies and procedures regarding the use of material non-public information and (c) it will handle such material non-public information in accordance with applicable Laws, including United States federal, state and foreign securities Laws, in accordance with its policies and procedures.

Section 10.09 Set-off. If an Event of Default shall have occurred and be continuing, each Lender and each of its Affiliates and each L/C Issuer and each of its Affiliates is hereby authorized at any time and from time to time, after obtaining the prior written consent of the Administrative Agent, to the fullest extent permitted by applicable Laws, to set off and apply any and all deposits (general or special, time or demand, provisional or final, in whatever currency) at any time held and other obligations (in whatever currency) at any time owing by such Lender or any such Affiliate or such L/C Issuer and its Affiliates, as the case may be, to or for the credit or the account of the Borrower or any other Loan Party against any and all of the Obligations (other than, with respect to any Guarantor, Excluded Swap Obligations of such Guarantor), irrespective of whether or not such Lender shall have made any demand under this Agreement or any other Loan Document and although such obligations of the Borrower or such Loan Party may be contingent or unmatured or denominated in a currency different from that of the applicable deposit or Indebtedness or are owed to a branch or office of such Lender different from the branch or office holding such deposit or obligated on such indebtedness; *provided* that in the event that any Defaulting Lender shall exercise any such right of setoff, (x) all amounts so set off shall be paid over immediately to the Administrative Agent for further application in accordance with the provisions of Section 2.19 and, pending such payment, shall be segregated by such Defaulting Lender from its other funds and deemed held in trust for the benefit of the Administrative Agent, the L/C Issuer(s), and the Lenders, and (y) the Defaulting Lender shall provide promptly to the Administrative Agent a statement describing in reasonable detail the Obligations owing to such Defaulting Lender as to which it exercised such right of setoff. The rights of each Lender and its Affiliates under this Section are in addition to other rights and remedies (including other rights of set-off) that such Lender or its Affiliates may have. Each Lender and L/C Issuer agrees to notify the Borrower and the Administrative Agent promptly after any such set-off and application made by such Lender or L/C Issuer, as the case may be; *provided* that the failure to give such notice shall not affect the validity of such set-off and application.

Section 10.10 Interest Rate Limitation. Notwithstanding anything to the contrary contained in any Loan Document, the interest paid or agreed to be paid under the Loan Documents shall not exceed the maximum rate of non-usurious interest permitted by applicable Laws (the "**Maximum Rate**"). If any Agent or any Lender shall receive interest in an amount that exceeds the Maximum Rate, the excess interest shall be applied to the principal of the Loans or, if it exceeds such unpaid principal, refunded to the Borrower. In determining whether the interest contracted for, charged, or received by an Agent or a Lender exceeds the Maximum Rate, such Person may, to the extent permitted by applicable

Laws, (a) characterize any payment that is not principal as an expense, fee, or premium rather than interest, (b) exclude voluntary prepayments and the effects thereof, and (c) amortize, prorate, allocate, and spread in equal or unequal parts the total amount of interest throughout the contemplated term of the Obligations hereunder.

Section 10.11 Counterparts; Integration; Effectiveness. This Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. This Agreement and the other Loan Documents constitute the entire contract among the parties relating to the subject matter hereof and supersede any and all previous agreements and understandings, oral or written, relating to the subject matter hereof. Except as provided in Section 4.01, this Agreement shall become effective when it shall have been executed by the Administrative Agent and when the Administrative Agent shall have received counterparts hereof that, when taken together, bear the signatures of each of the other parties hereto. Delivery of an executed counterpart of a signature page of this Agreement by telecopy or other electronic imaging (including in ".pdf" or ".tif" format) means shall be effective as delivery of a manually executed counterpart of this Agreement.

Section 10.12 Electronic Execution of Assignments and Certain Other Documents. The words "execution," "signed," "signature," and words of like import in any Assignment and Assumption or in any amendment or other modification hereof (including waivers and consents) shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity or enforceability as a manually executed signature or the use of a paper-based recordkeeping system, as the case may be, to the extent and as provided for in any applicable Laws, including the Federal Electronic Signatures in Global and National Commerce Act, the New York State Electronic Signatures and Records Act, or any other similar state laws based on the Uniform Electronic Transactions Act.

Section 10.13 Survival of Representations and Warranties. All representations and warranties made hereunder and in any other Loan Document or other document delivered pursuant hereto or thereto or in connection herewith or therewith shall survive the execution and delivery hereof and thereof. Such representations and warranties have been or will be relied upon by the Administrative Agent and each Lender, regardless of any investigation made by the Administrative Agent or any Lender or on their behalf and notwithstanding that the Administrative Agent or any Lender may have had notice or knowledge of any Default at the time of any Credit Extension, and shall continue in full force and effect as long as any Loan or any other Obligation hereunder shall remain unpaid or unsatisfied (other than (i) contingent indemnification obligations as to which no claim has been asserted and (ii) Obligations under Secured Hedge Agreements and Obligations under Secured Cash Management Agreements) or any Letter of Credit shall remain outstanding (other than Letters of Credit which have been Cash Collateralized).

Section 10.14 Severability. If any provision of this Agreement or the other Loan Documents is held to be illegal, invalid or unenforceable, (a) the legality, validity and enforceability of the remaining provisions of this Agreement and the other Loan Documents shall not be affected or impaired thereby and (b) the parties shall endeavor in good faith negotiations to replace the illegal, invalid or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the illegal, invalid or unenforceable provisions. The invalidity of a provision in a particular jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

Section 10.15 GOVERNING LAW; JURISDICTION.

(a) THIS AGREEMENT AND EACH OTHER LOAN DOCUMENT SHALL, EXCEPT AS OTHERWISE PROVIDED IN CERTAIN OF THE GUARANTY AND COLLATERAL DOCUMENTS, BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

(b) THE BORROWER, EACH AGENT AND EACH LENDER IRREVOCABLY AND UNCONDITIONALLY SUBMITS, FOR ITSELF AND ITS PROPERTY, TO THE EXCLUSIVE JURISDICTION OF THE COURTS OF THE STATE OF NEW YORK SITTING IN NEW YORK CITY IN THE BOROUGH OF MANHATTAN AND OF THE UNITED STATES DISTRICT COURT OF THE SOUTHERN DISTRICT OF NEW YORK, AND ANY APPELLATE COURT FROM ANY THEREOF, IN ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY OTHER LOAN DOCUMENT (EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN CERTAIN GUARANTY AND COLLATERAL DOCUMENTS), OR FOR RECOGNITION OR ENFORCEMENT OF ANY JUDGMENT, AND EACH OF THE PARTIES HERETO IRREVOCABLY AND UNCONDITIONALLY AGREES THAT ALL CLAIMS IN RESPECT OF ANY SUCH ACTION OR PROCEEDING MAY BE HEARD AND DETERMINED IN SUCH NEW YORK STATE COURT OR, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, IN SUCH FEDERAL COURT. EACH OF THE PARTIES HERETO AGREES THAT A FINAL JUDGMENT IN ANY SUCH ACTION OR PROCEEDING SHALL BE CONCLUSIVE AND MAY BE ENFORCED IN OTHER JURISDICTIONS BY SUIT ON THE JUDGMENT OR IN ANY OTHER MANNER PROVIDED BY LAW. EACH PARTY HERETO AGREES THAT THE AGENTS AND LENDERS RETAIN THE RIGHT TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY LAW OR TO BRING PROCEEDINGS AGAINST ANY LOAN PARTY IN THE COURTS OF ANY OTHER JURISDICTION IN CONNECTION WITH THE EXERCISE OF ANY RIGHTS UNDER ANY COLLATERAL DOCUMENT OR THE ENFORCEMENT OF ANY JUDGMENT.

(c) THE BORROWER, EACH AGENT AND EACH LENDER IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF VENUE OF ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY OTHER LOAN DOCUMENT IN ANY COURT REFERRED TO IN CLAUSE (b) OF THIS SECTION. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE DEFENSE OF AN INCONVENIENT FORUM TO THE MAINTENANCE OF SUCH ACTION OR PROCEEDING IN ANY SUCH COURT.

Section 10.16 WAIVER OF RIGHT TO TRIAL BY JURY. EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY OTHER LOAN DOCUMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH PARTY HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PERSON HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PERSON WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

Section 10.17 Binding Effect. This Agreement shall become effective when it shall have been executed by the Borrower and the Administrative Agent and the Administrative Agent shall have been notified by each Lender and L/C Issuer that each such Lender and L/C Issuer has executed it and thereafter shall be binding upon and inure to the benefit of the Borrower, each Agent and each Lender and their respective successors and assigns.

Section 10.18 Judgment Currency. If, for the purposes of obtaining judgment in any court, it is necessary to convert a sum due hereunder or any other Loan Document in one currency into another currency, the rate of exchange used shall be that at which in accordance with normal banking procedures the Administrative Agent could purchase the first currency with such other currency on the Business Day preceding that on which final judgment is given. The obligation of the Borrower in respect of any such sum due from it to the Administrative Agent or the Lenders hereunder or under the other Loan Documents shall, notwithstanding any judgment in a currency (the "**Judgment Currency**") other than that in which such sum is denominated in accordance with the applicable provisions of this Agreement (the "**Agreement Currency**"), be discharged only to the extent that on the Business Day following receipt by the Administrative Agent of any sum adjudged to be so due in the Judgment Currency, the Administrative Agent may in accordance with normal banking procedures purchase the Agreement Currency with the Judgment Currency. If the amount of the Agreement Currency so purchased is less than the sum originally due to the Administrative Agent from the Borrower in the Agreement Currency, the Borrower agrees, as a separate obligation and notwithstanding any such judgment, to indemnify the Administrative Agent or the Person to whom such obligation was owing against such loss. If the amount of the Agreement Currency so purchased is greater than the sum originally due to the Administrative Agent in such currency, the Administrative Agent agrees to return the amount of any excess to the Borrower (or to any other Person who may be entitled thereto under applicable Law).

Section 10.19 Lender Action. Each Lender agrees that it shall not take or institute any actions or proceedings, judicial or otherwise, for any right or remedy against any Loan Party under any of the Loan Documents or the Secured Hedge Agreements (including the exercise of any right of set-off, rights on account of any banker's lien or similar claim or other rights of self-help), or institute any actions or proceedings, or otherwise commence any remedial procedures, with respect to any Collateral or any other property of any such Loan Party, without the prior written consent of the Administrative Agent (which shall not be withheld in contravention of Section 9.04). The provision of this Section 10.19 is for the sole benefit of the Lenders and shall not afford any right to, or constitute a defense available to, any Loan Party.

Section 10.20 Use of Name, Logo, etc. Subject to the Borrower having been afforded a reasonable opportunity to review and to the Borrower's prior consent (such consent not to be unreasonably withheld, delayed or conditioned), each of the Administrative Agent and each Lead Arranger may publish, in the ordinary course of its business, customary advertising material relating to the financing transactions contemplated by this Agreement using any Loan Party's name, product photographs, logo or trademark.

Section 10.21 PATRIOT Act Notice. Each Lender that is subject to the PATRIOT Act and the Administrative Agent (for itself and not on behalf of any Lender) hereby notifies the Borrower that pursuant to the requirements of the PATRIOT Act, it is required to obtain, verify and record information that identifies each Loan Party, which information includes the name and address of each Loan Party and other information that will allow such Lender or the Administrative Agent, as applicable,

to identify each Loan Party in accordance with the PATRIOT Act. The Borrower shall, promptly following a request by the Administrative Agent or any Lender, provide all documentation and other information that the Administrative Agent or such Lender requests in order to comply with its ongoing obligations under applicable "know your customer" and anti-money laundering rules and regulations, including the PATRIOT Act.

Section 10.22 Service of Process. EACH PARTY HERETO IRREVOCABLY CONSENTS TO SERVICE OF PROCESS IN THE MANNER PROVIDED FOR NOTICES IN SECTION 10.02. NOTHING IN THIS AGREEMENT WILL AFFECT THE RIGHT OF ANY PARTY HERETO TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY APPLICABLE LAW.

Section 10.23 No Advisory or Fiduciary Responsibility. In connection with all aspects of each transaction contemplated hereby (including in connection with any amendment, waiver or other modification hereof or of any other Loan Document), the Borrower acknowledges and agrees, and acknowledges its Affiliates' understanding, that: (i) (A) the arranging and other services regarding this Agreement provided by the Agents, the Lead Arrangers and the Bookrunners are arm's-length commercial transactions between the Borrower and its Affiliates, on the one hand, and the Administrative Agents, the Lead Arrangers and the Bookrunners, on the other hand, (B) the Borrower has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate, and (C) the Borrower is capable of evaluating, and understands and accepts, the terms, risks and conditions of the transactions contemplated hereby and by the other Loan Documents; (ii) (A) the Agents, the Lead Arrangers and the Bookrunners are and have been, and each Lender is and has been, acting solely as a principal and, except as expressly agreed in writing by the relevant parties, have or has not been, are or is not, and will not be acting as an advisor, agent or fiduciary for the Borrower or any of its Affiliates, or any other Person and (B) none of the Agents, the Lead Arrangers, the Bookrunners nor any Lender has any obligation to the Borrower or any of its Affiliates with respect to the transactions contemplated hereby except those obligations expressly set forth herein and in the other Loan Documents; and (iii) the Agents, the Lead Arrangers, the Bookrunners, the Lenders and their respective Affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Borrower and its Affiliates, and none of the Agents, the Lead Arrangers, the Bookrunners nor any Lender has any obligation to disclose any of such interests to the Borrower or any of its respective Affiliates. To the fullest extent permitted by law, the Borrower hereby waives and releases any claims that it may have against the Agents, the Lead Arrangers, the Bookrunners or any Lender with respect to any breach or alleged breach of agency or fiduciary duty in connection with any aspect of any transaction contemplated hereby.

Section 10.24 Cashless Settlement. Notwithstanding anything to the contrary contained in this Agreement, any Lender may exchange, continue or rollover all or a portion of its Loans in connection with any refinancing, extension, loan modification or similar transaction permitted by the terms of this Agreement, pursuant to a cashless settlement mechanism approved by the Borrower, the Administrative Agent and such Lender.

Section 10.25 Acknowledgement and Consent to Bail-in of EEA Financial Institutions. Notwithstanding anything to the contrary in any Loan Document or in any other agreement, arrangement or understanding among any such parties, each party hereto acknowledges that any liability of any Lender that is an EEA Financial Institution arising under any Loan Document, to the extent such liability is unsecured, may be subject to the write-down and conversion powers of an EEA Resolution Authority and agrees and consents to, and acknowledges and agrees to be bound by:

(a) the application of any Write-Down and Conversion Powers by an EEA Resolution Authority to any such liabilities arising hereunder which may be payable to it by any Lender that is an EEA Financial Institution; and

(b) the effects of any Bail-in Action on any such liability, including, if applicable:

(i) a reduction in full or in part or cancellation of any such liability;

(ii) a conversion of all, or a portion of, such liability into shares or other instruments of ownership in such EEA Financial Institution, its parent undertaking, or a bridge institution that may be issued to it or otherwise conferred on it, and that such shares or other instruments of ownership will be accepted by it in lieu of any rights with respect to any such liability under this Agreement or any other Loan Document; or

(iii) the variation of the terms of such liability in connection with the exercise of the write-down and conversion powers of any EEA Resolution Authority.

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the date first above written.

CASA SYSTEMS, INC., as the Borrower

By: /s/ Jerry Guo
Name: Jerry Guo
Title: President & CEO

JPMORGAN CHASE BANK, N.A., as Administrative Agent, Collateral Agent, a Lender and an L/C Issuer

By: /s/ Justin Kelley
Name: Justin Kelley
Title: Executive Director

BARCLAYS BANK PLC, as a Lender and an L/C Issuer

By: /s/ Jeremy Hazan
Name: Jeremy Hazan
Title: Managing Director

Schedule 1.01B

Certain Security Interests and Guarantees

To be delivered on the Closing Date:

1. Security Agreement, dated as of the Closing Date, among Casa Systems, Inc., the Subsidiaries of Casa Systems, Inc. party thereto, as grantors, and JPMorgan Chase Bank, N.A., as Collateral Agent for the Secured Parties.
2. Trademark Security Agreement, dated as of the Closing Date, by Casa Systems, Inc., as grantor, in favor of JPMorgan Chase Bank, N.A., as the Collateral Agent.
3. Patent Security Agreement, dated as of the Closing Date, by Casa Systems, Inc., as grantor, in favor of JPMorgan Chase Bank, N.A., as the Collateral Agent.

Guarantor:

None.

Schedule 2.01

Commitments

Revolving Credit Lenders	Revolving Credit Commitment
JPMorgan Chase Bank, N.A.	$ 20,000,000
Barclays Bank PLC	$ 5,000,000

Term Lenders	Initial Term Commitment
JPMorgan Chase Bank, N.A.	$ 240,000,000
Barclays Bank PLC	$ 60,000,000

Schedule 5.12

Subsidiaries and Other Equity Investments

Name	Jurisdiction of Organization	Owner of Outstanding Equity Interests	Equity Interest	Ownership Percentage
Casa Systems Securities Corporation*	Massachusetts	Casa Systems, Inc.	100%	100%
Casa Properties LLC*	Delaware	Casa Systems, Inc.	100%	100%
Guangzhou Casa Communications Ltd.*	People's Republic of China	Casa Systems, Inc.	100%	100%
Casa Systems B.V.*	Netherlands	Casa Systems, Inc.	100%	100%
Casa Systems Canada Ltd.*	Canada	Casa Systems, Inc.	100%	100%
Casa Systems SAS*	France	Casa Systems, Inc.	100%	100%
Casa Communications Ltd.	Ireland	Casa Systems B.V.	100%	100%

* Issued Equity Interest being pledged as of the Closing Date in accordance with the Collateral and Guarantee Requirement.

Schedule 6.16

Post-Closing Actions

Requirement	Deadline
Insurance endorsements naming the Administrative Agent as mortgagee/loss payee and/or as an additional insured, as applicable, under each insurance policy with respect to such insurance as to which the Administrative Agent shall have reasonably requested to be so named on or before the Closing Date	Within 60 days of the Closing Date
Delivery of certificated Equity Interest referenced in clause (c) of the definition of Collateral and Guarantee Requirement	Within 30 days of the Closing Date

Schedule 7.01(b)

Existing Liens

Jurisdiction	Debtor	Secured Party	Filing Info	Collateral
Delaware Secretary of State	CASA SYSTEMS, INC. 100 Old River Road Andover, DE 01810	Citibank Europe PLC 1 North Wall Quay Dublin DU IRL, 1	2013 0985243 03/04/2013	All right, title and interest of CASA SYSTEMS, INC. ("Supplier") in and to all accounts and all other forms of obligations ("Accounts Receivable") owing to Supplier by LIBERTY GLOBAL B.V. and its subsidiaries and affiliates ("Account Debtor"), whether now existing or hereafter created, arising out of Supplier's sale and delivery of goods and services to Account Debtor, to the extent such Accounts Receivable are purchased by Secured Party under that certain Account Receivable Purchase Agreement between Secured Party and Supplier.

Schedule 7.02(f)

Existing Investments

1. That certain Loan Agreement (the "Agreement") dated as of August 3, 2016, between Casa Communications Limited, a private company with limited liability incorporated in Ireland (the "Borrower"), and Casa Systems, Inc., a Delaware corporation (the "Lender"), in which Lender has agreed to provide a loan facility to Borrower of up to a maximum of 10,000,000.00 Euros pursuant to the terms of the Agreement.

2. That certain Loan Agreement dated as of October 3, 2016 between Borrower and Lender in which Lender has agreed to provide a loan facility to Borrower of up to a maximum of $10,000,000.00 pursuant to the terms of the Loan Agreement.

Schedule 7.03(b)

Existing Indebtedness

1. That certain Loan Agreement (the "Agreement") dated as of August 3, 2016, between Casa Communications Limited, a private company with limited liability incorporated in Ireland (the "Borrower"), and Casa Systems, Inc., a Delaware corporation (the "Lender"), in which Lender has agreed to provide a loan facility to Borrower of up to a maximum of 10,000,000.00 Euros pursuant to the terms of the Agreement.

2. That certain Loan Agreement dated as of October 3, 2016 between Borrower and Lender in which Lender has agreed to provide a loan facility to Borrower of up to a maximum of $10,000,000.00 pursuant to the terms of the Loan Agreement.

Schedule 7.05(w)

Dispositions

None.

Schedule 7.08

Transactions with Affiliates

None.

Schedule 10.02

Administrative Agent's Office, Certain Addresses for Notices

BORROWER:

Casa Systems, Inc.
100 Old River Road, #100
Andover, MA 01810
Attn: Jerry Guo, President & CEO and Gary Hall, Chief Financial Officer
Phone: 978-688-6706
Fax: 978-688-6584
Email: ghall@casa-systems.com

With a copy to:

Kelly Dybala, Esq.
Sidley Austin LLP
2021 McKinney Avenue, Suite 2000
Dallas, TX 75201
Phone: 214-981-3426
Fax: 214-981-3400
Email: kdybala@sidley.com

ADMINISTRATIVE AGENT:

JPMorgan Chase Bank, N.A., as Administrative Agent
10 S Dearborn
Chicago, IL 60603
Attention: Ryan Bowman
Telephone: 312-732-4754
Fax: 844-560-5665
Email: Ryan.t.bowman@jpmorgan.com and Jpm.agency.cri@jpmoran.com

L/C ISSUER:

JPMorgan Chase Bank, N.A., as L/C Issuer
10 South Dearborn Street, 7th Floor
Chicago, Illinois 60603
Attention: Chicago LC Agency
Telecopy No. 888-292-9533
Email: Chicago.lc.agency.activity.team@jpmchase.com

EXHIBIT A
to the Credit Agreement

FORM OF LOAN NOTICE

Date: , 20

To: JPMorgan Chase Bank, N.A., as
Administrative Agent
10 S Dearborn
Chicago, IL 60603
Attention: Ryan Bowman
Telephone: (312) 732-4754
Fax: (844)-560-5665
e-mail: Ryan.t.bowman@jpmorgan.com; jpm.agency.cri@jpmorgan.com

Ladies and Gentlemen:

Reference is made to that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto. Capitalized terms used but not otherwise defined herein shall have the meanings assigned to them in the Credit Agreement.

The undersigned hereby requests (select one):

- A Borrowing of Loans
- A conversion of Loans made on .
- A continuation of Loans made on .

To be made on the terms set forth below:

1. Class of Borrowing: .[1]
2. On (which shall be a Business Day).

[1] E.g., Initial Term Loans, Revolving Credit Loans, New Term Loans, New Revolving Credit Loans, Refinancing Term Loans, Refinancing Revolving Credit Loans, Extended Term Loans, Extended Revolving Credit Loans or Replacement Term Loans.

3. In the principal amount of .

4. Comprised of [Type of Loans requested].[2]

5. For Eurocurrency Rate Loans: with an Interest Period of months.

6. Loans will be denominated in [Type of currency].[3]

The proceeds of the Loans requested hereby are to be made available by the Administrative Agent to the Borrower as follows:

Bank Name:

Bank Address:

ABA Number:

Attention:

Reference:

[Except in respect of any conversion or continuation of a Borrowing, the undersigned hereby represents and warrants to the Administrative Agent and the Lenders that the conditions to lending specified in Section 4.02(a) and (b) of the Credit Agreement will be satisfied as of the date of the Borrowing set forth above.][4]

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2 Specify whether Eurocurrency Rate Loan or Base Rate Loan, Revolving Credit Loans denominated in an Alternative Currency must be Eurocurrency Rate Loan.

3 Term Loans must be denominated in Dollars. Revolving Loans may be denominated in Dollars or in one or more Alternative Currencies.

4 Does not apply to any Borrowings pursuant to any Incremental Amendment.

CASA SYSTEMS, INC.

By: _____
Name:
Title:

[Signature Page to Loan Notice]

RESERVED

EXHIBIT C
to the Credit Agreement

FORM OF COMPLIANCE CERTIFICATE

[ ], 20

Reference is made to that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among, Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto. Capitalized terms used herein have the meanings attributed thereto in the Credit Agreement unless otherwise defined herein. Pursuant to Section 6.02(a) of the Credit Agreement, the undersigned, solely in his/her capacity as a [ ][5] of the Borrower, certifies as follows:

1. [Attached hereto as Exhibit A is a consolidated balance sheet of the Borrower and its Subsidiaries for the fiscal year ended [ ], 20 [ ], and the related consolidated statements of income or operations, stockholders' equity and cash flows for such fiscal year, together with related notes thereto, setting forth in each case in comparative form the figures for the previous fiscal year, all in reasonable detail and prepared in accordance with GAAP, audited and accompanied by an opinion of an independent registered public accounting firm of nationally recognized standing, which opinion shall be prepared in accordance with generally accepted auditing standards and shall not be subject to any "going concern" or like qualification or exception or any qualification or exception as to the scope of such audit (other than as may be required as a result of (x) a prospective default or event of default with respect to any financial covenant (including the financial covenant set forth in Section 7.11), (y) in the case of the Term Lenders, an actual Default with respect to the financial covenant set forth in Section 7.11 or any other financial covenant not applicable to the Term Loans or (z) the impending maturity of the Loans, any Incremental Equivalent Debt and Refinancing Equivalent Debt). Also attached hereto as Exhibit A is an internally prepared management summary of pro forma adjustments necessary to eliminate the accounts of Unrestricted Subsidiaries (if any) from such consolidated financial statements.][6,7] [Attached hereto as Exhibit A is a consolidated balance sheet of the Borrower and its Subsidiaries as at the end of the fiscal quarter ended [ ], and the related (i) consolidated statements of income or operations for such fiscal quarter and for the portion of the fiscal year then ended and (ii) consolidated statements of cash flows for the portion of the fiscal year then ended, setting forth in each case in comparative form the figures for the corresponding fiscal quarter of the previous fiscal year (in the case of consolidated statements of income or

5 To be a Responsible Officer of the Borrower.
6 To be included if accompanying annual financial statements only.
7 To the extent the financial information attached as Exhibit A relates to a Permitted Parent, such information shall be accompanied by an internally prepared management summary of consolidating information that explains in reasonable detail the differences between the information relating to such parent and its Subsidiaries on a consolidated basis, on the one hand, and the information relating to the Borrower and the Subsidiaries on a consolidated basis, on the other hand.

operations) and the corresponding portion of the previous fiscal year, all in reasonable detail (collectively, the "**Financial Statements**"). Such Financial Statements fairly present in all material respects the financial position, results of operations and cash flows of the Borrower and its Subsidiaries in accordance with GAAP, subject only to normal year-end adjustments and the absence of footnotes. Also attached hereto as Exhibit A is an internally prepared management summary of pro forma adjustments necessary to eliminate the accounts of Unrestricted [8,9] Subsidiaries (if any) from such consolidated financial statements.][8,9]

2. [To my knowledge, except as otherwise disclosed to the Administrative Agent pursuant to the Credit Agreement, no Default has occurred and is continuing.] [If unable to provide the foregoing certification, attach an Annex A specifying the details of the Default that has occurred and is continuing and any action taken or proposed to be taken with respect thereto.]

3. [Attached hereto as Schedule 1 are reasonably detailed calculations setting forth Excess Cash Flow for the most recently ended fiscal year, which calculations are true and accurate on and as of the date of this Certificate.][10]

4. [Attached hereto as Schedule 2 are reasonably detailed calculations, which calculations are true and accurate on and as of the date of this Certificate, of the Net Cash Proceeds received during the fiscal year ended December [ ], 20[ ] by or on behalf of the Borrower or any of its Restricted Subsidiaries in respect of any Disposition subject to prepayment pursuant to Section 2.05(b)(ii)(A) of the Credit Agreement and the portion of such Net Cash Proceeds that has been invested or is intended to be reinvested in accordance with Section 2.05(b)(ii)(B) of the Credit Agreement.][11]

5. Attached hereto as Schedule 3 are reasonably detailed calculations setting forth the Total Net Leverage Ratio for the most recent Test Period, which calculations are true and accurate on and as of the date of this Certificate, to be used to determine the Applicable Rate and compliance with the covenant set forth in Section 7.11 of the Credit Agreement.

6. [Attached hereto as Schedule 4 is an update of the information required pursuant to Section 3.03(c) of the Security Agreement][There has been no change in respect of the information required pursuant to Section 3.03(c) of the Security Agreement since [the Closing Date][the date of the last annual Compliance Certificate.]][12]

7. [Attached hereto as Annex B is a list of each Subsidiary of the Borrower that identifies each Subsidiary as a Restricted Subsidiary or an Unrestricted Subsidiary and/or an Immaterial Subsidiary] [There has been no change to the list of Subsidiaries of the Borrower or to

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8 To be included if accompanying quarterly financial statements only.

9 To the extent the financial information attached as Exhibit A relates to a parent of the Borrower, such information shall be accompanied by an internally prepared management summary of consolidating information that explains in reasonable detail the differences between the information relating to such parent and its Subsidiaries on a consolidated basis, on the one hand, and the information relating to the Borrower and the Subsidiaries on a consolidated basis, on the other hand.

10 To be included only in annual Compliance Certificate beginning with the annual compliance certificate for fiscal year ending December 31, 2017.

11 To be included only in annual Compliance Certificate.

12 To be included only in annual Compliance Certificate.

any such Subsidiary's designation as a Restricted Subsidiary, Unrestricted Subsidiary and/or Immaterial Subsidiary since [the Closing Date][the date of the last annual Compliance Certificate.]]][13]

[REMAINDER OF THE PAGE INTENTIONALLY LEFT BLANK]

13 To be included only in annual Compliance Certificate.

IN WITNESS WHEREOF, the undersigned, solely in his/her capacity as a [ ] of the Borrower, and not in his or her personal or individual capacity and without personal liability, has executed this certificate for and on behalf of the Borrower, and has caused this certificate to be delivered as of the date first set forth above.

CASA SYSTEMS, INC.

By: _____
Name:
Title:

Excess Cash Flow

(a) *the sum*, without duplication, of:

(i) Consolidated Net Income of the Borrower for such period

(ii) an amount equal to the amount of all non-cash charges (including depreciation and amortization) to the extent deducted in arriving at such Consolidated Net Income, but excluding any such non-cash charges representing an accrual or reserve for potential cash items in any future period and excluding amortization of a prepaid cash item that was paid in a prior period $_____

(iii) decreases in Consolidated Working Capital for such period (other than any such decreases arising from acquisitions or Dispositions by the Borrower and the Restricted Subsidiaries completed during such period or the application of purchase accounting) $_____

(iv) an amount equal to the aggregate net non-cash loss on Dispositions by the Borrower and the Restricted Subsidiaries during such period (other than Dispositions in the ordinary course of business) to the extent deducted in arriving at such Consolidated Net Income (other than to the extent such Disposition is subject to Section 2.05(b)(ii)) $_____

(v) the amount deducted as tax expense in determining Consolidated Net Income to the extent in excess of cash taxes paid or payable in respect of such periods $_____

(vi) cash receipts in respect of Swap Contracts during such fiscal year to the extent not otherwise included in arriving at such Consolidated Net Income $_____

(b) *over*, the sum, without duplication; of:

(i) an amount equal to the amount of all non-cash gains or credits included in arriving at such Consolidated Net Income (but excluding any non-cash gains or credit to the extent representing the reversal of an accrual or reserve described in clause (a)(ii) above) and cash charges, losses or expenses excluded by virtue of clauses (a) through (q) of the definition of "Consolidated Net Income" $_____

(ii) without duplication of amounts deducted pursuant to clause (xi) below in prior fiscal years, the amount of Capital Expenditures, Capitalized Software Expenditures or acquisitions of intellectual property accrued or made in cash during such period by the Borrower or the Restricted Subsidiaries to the extent not financed with long-term Indebtedness (other than revolving Indebtedness) $_____

(iii) the aggregate amount of all principal payments of Indebtedness of the Borrower and the Restricted Subsidiaries (including (A) the principal component of payments in respect of Capitalized Leases, (B) the amount of any repayment of Loans pursuant to Section 2.07, and (C) the amount of any mandatory prepayment of Loans pursuant to Section 2.05(b)(ii) to the extent required due to a Disposition or Casualty Event that resulted in an increase to such Consolidated Net Income and not in excess of the amount of such increase, but excluding (W) all other prepayments of Term Loans (other than those specified in preceding clauses (B) and (C)) and all voluntary prepayments of Refinancing Equivalent Debt and Incremental Equivalent Debt, (X) all prepayments of Revolving Credit Loans, (Y) all prepayments in respect of any other revolving credit facility and (Z) payments of Indebtedness constituting Indebtedness expressly subordinated to the Obligations, except in each case to the extent permitted to be paid pursuant to Section 7.13(a)) made during such period, in each case to the extent not financed with long-term Indebtedness (other than revolving Indebtedness) $_____

(iv) an amount equal to the aggregate net non-cash gain on Dispositions by the Borrower and the Restricted Subsidiaries during such period (other than Dispositions in the ordinary course of business) to the extent included in arriving at such Consolidated Net Income $_____

(v) increases in Consolidated Working Capital for such period (other than any such increases arising from acquisitions or Dispositions by the Borrower and the Restricted Subsidiaries completed during such period or the application of purchase accounting) $_____

(vi) cash payments by the Borrower and the Restricted Subsidiaries during such period in respect of long-term liabilities of the Borrower and the Restricted Subsidiaries (other than Indebtedness) to the extent such payments are not expensed during such period or are not deducted in calculating Consolidated Net Income $_____

(vii) without duplication of amounts deducted pursuant to clauses (viii) and (xi) below in prior fiscal years, the amount of Investments made in cash (in each case, other than Investments in Restricted Subsidiaries) pursuant to Sections 7.02(b), (f), (i), (j), (m), (n), (s), (u), (v), (bb), (dd), (ff) and (gg), and the amount of acquisitions made during such period to the extent that such Investments and acquisitions were not financed with long-term Indebtedness (other than revolving Indebtedness) and, to the extent applicable, not made in reliance on clause (b) of the definition of "Available Amount" $_____

(viii) the amount of Restricted Payments paid during such period pursuant to Sections 7.06(c), (f), (g), (h), (i), (k), (l), (o), (p) and (q) in each case to the extent such Restricted Payments were not financed with long-term Indebtedness (other than revolving Indebtedness) and, to the extent applicable, not made in reliance on clause (b) of the definition of "Available Amount" $_____

(ix) the aggregate amount of expenditures, fees and expenses actually made or paid by the Borrower and the Restricted Subsidiaries with long-term Indebtedness (other than revolving Indebtedness) during such period (including expenditures for the payment of financing fees) to the extent that such expenditures are not expensed (or exceed the amount that is expensed) during such period or are not deducted in calculating Consolidated Net Income $_____

(x) the aggregate amount of any premium, make-whole or penalty payments actually paid in cash by the Borrower and the Restricted Subsidiaries during such period that are made in connection with any prepayment of Indebtedness not prohibited under the Credit Agreement to the extent such payments are not expensed during such period or are not deducted in calculating Consolidated Net Income and such prepayments reduced Excess Cash Flow pursuant to clause (b)(iii) above or reduced the mandatory prepayment required by Section 2.05(b)(i) $_____

(xi) without duplication of amounts deducted from Excess Cash Flow in prior periods, at the option of the Borrower, the aggregate consideration required to be paid in cash by the Borrower or any of the Restricted Subsidiaries pursuant to binding contracts (the "**Contract Consideration**") entered into prior to or during such period or otherwise budgeted to be paid in cash, in either case, relating to tax expenses, interest payments, Investments, Restricted Payments, Permitted Acquisitions, Capital Expenditures, Capitalized Software Expenditures or acquisitions of intellectual property expected to be consummated or made during the period of four consecutive fiscal quarters of the Borrower following the end of such period; *provided* that, to the extent the aggregate amount of cash actually utilized to finance such tax expenses, interest payments, Investments, Restricted Payments, Permitted Acquisitions, Capital Expenditures, Capitalized Software Expenditures or acquisitions of intellectual property during such period of four consecutive fiscal quarters is less than the Contract Consideration or amount otherwise budgeted for, the amount of such shortfall shall be added to the calculation of Excess Cash Flow at the end of such period of four consecutive fiscal quarters $_____

(xii) the amount of cash taxes paid or tax reserves set aside or payable (without duplication) in such period, to the extent they exceed the amount of tax expense deducted in determining Consolidated Net Income for such period $_____

(xiii) cash expenditures in respect of Swap Contracts during such fiscal year to the extent not deducted in arriving at such Consolidated Net Income. $_____

Excess Cash Flow (the sum of clauses (a)(i) through (a)(vi) over the sum of clauses (b)(i) through (b)(xiii)) $_____

Net Cash Proceeds:

with respect to the Disposition of any asset by the Borrower or any of the Restricted Subsidiaries or any Casualty Event, the excess, if any, of:

(i) *the sum of:*

(A) cash and Cash Equivalents received in connection with such Disposition or Casualty Event (including any cash and Cash Equivalents received by way of deferred payment pursuant to, or by monetization of, a note receivable or otherwise, but only as and when so received and, with respect to any Casualty Event, any insurance proceeds or condemnation awards in respect of such Casualty Event actually received by or paid to or for the account of the Borrower or any of the Restricted Subsidiaries) $_____

(ii) *over* the sum of:

(A) the principal amount, premium or penalty, if any, interest and other amounts on any Indebtedness that is secured by a Lien on the asset subject to such Disposition or Casualty Event and required to be repaid in connection with such Disposition or Casualty Event (other than Indebtedness under the Loan Documents and Refinancing Equivalent Debt) $_____

(B) the out-of-pocket fees and expenses (including attorneys' fees, investment banking fees, survey costs, title insurance premiums, and related search and recording charges, transfer taxes, deed or mortgage recording taxes, other customary expenses and brokerage, consultant and other customary fees) actually incurred by the Borrower or such Restricted Subsidiary in connection with such Disposition or Casualty Event and restoration costs following a Casualty Event $_____

(C) taxes (including Restricted Payments in respect thereof pursuant to Section 7.06) paid or reasonably estimated to be payable in connection therewith (including taxes imposed on the distribution or repatriation of any such Net Cash Proceeds) $_____

(D) in the case of any Disposition or Casualty Event by a non-wholly owned Restricted Subsidiary, the pro-rata portion of the Net Cash Proceeds thereof (calculated without regard to this clause (D)) attributable to minority interests and not available for distribution to or for the account of the Borrower or a wholly owned Restricted Subsidiary as a result thereof $_____

(E) any reserve for adjustment in respect of (x) the sale price of such asset or assets established in accordance with GAAP and (y) any liabilities associated with such asset or assets and retained by the Borrower or any Restricted Subsidiary after such sale or other disposition thereof, including pension and other post-employment benefit liabilities and liabilities related to environmental matters or against any indemnification obligations associated with such transaction, it being understood that "Net Cash Proceeds" shall include the amount of any reversal (without the satisfaction of any applicable liabilities in cash in a corresponding amount) of any reserve described in this clause (E) $_____

Net Cash Proceeds (clause (i)(A) over the sum of clauses (ii)(A) through (E))[14] $_____

Portion of Net Cash Proceeds that has been invested or is intended to be reinvested in accordance with Section 2.05(b)(ii)(B) of the Credit Agreement $_____

14 No net cash proceeds calculated in accordance with the above realized in a single transaction or series of related transactions shall constitute Net Cash Proceeds unless such net cash proceeds shall exceed $5,000,000 and no such net cash proceeds shall constitute Net Cash Proceeds in any fiscal year until the aggregate amount of all such net cash proceeds in such fiscal year shall exceed $10,000,000 (and thereafter only net cash proceeds in excess of such amount shall constitute Net Cash Proceeds).

Total Net Leverage Ratio:[15]

(i) Consolidated Net Debt:

(a) Consolidated Total Debt of the Borrower and the Restricted Subsidiaries:

Consolidated Total Debt means, as of any date of determination, the aggregate principal amount of Indebtedness of the Borrower and the Restricted Subsidiaries outstanding on such date, determined on a consolidated basis in accordance with GAAP (but excluding the effects of any discounting of Indebtedness resulting from the application of recapitalization accounting or purchase accounting in connection with any Permitted Acquisition or any other Investment permitted under the Credit Agreement, acquisitions completed prior to the Closing Date or for any other purpose), consisting of Indebtedness for borrowed money, Capitalized Lease Obligations or obligations in respect of other purchase money indebtedness, unreimbursed obligations in respect of drawn letters of credit (subject to the proviso below), debt obligations evidenced by promissory notes or similar instruments and (without duplication) guarantees of the foregoing; *provided* that Consolidated Total Debt shall not include Indebtedness in respect of (i) unreimbursed obligations in respect of drawn letters of credit until two (2) Business Days after such amount is drawn (it being understood that any borrowing, whether automatic or otherwise, to fund such reimbursement shall be counted) and (ii) obligations under Swap Contracts $_____

(b) *Minus* the aggregate amount of cash and Cash Equivalents of the Borrower and the Restricted Subsidiaries as of such date that is not Restricted $_____

Consolidated Net Debt $_____

(ii) Consolidated EBITDA:

(a) Consolidated Net Income for such period:

15 For the purposes of Section 7.11 of the Credit Agreement, Total Net Leverage Ratio is only tested when the Outstanding Amount of any Revolving Credit Loans and L/C Obligations (other than with respect to (x) undrawn Letters of Credit in an amount not in excess of $5,000,000 and (y) Letters of Credit outstanding that have been Cash Collateralized in an amount not less than 103% of the stated amount in accordance with the requirements of Section 2.03(g) of the Credit Agreement) exceeds 25% of the aggregate Revolving Credit Commitments as of the last day of any Test Period.

(i) the aggregate of the Net Income of such Person and its Restricted Subsidiaries for such period on a consolidated basis and otherwise determined in accordance with GAAP; excluding, without duplication: $_____

(A) any net after-tax extraordinary, non-recurring or unusual gains or losses, charges or expenses $_____

(B) the cumulative effect of a change in accounting principles during such period, whether effected through a cumulative effect adjustment or a retroactive application, in each case in accordance with GAAP $_____

(C) effects of adjustments (including the effects of such adjustments pushed down to the Borrower and its Subsidiaries) in such Person's consolidated financial statements pursuant to GAAP (including in the property and equipment, software, goodwill, intangible assets, deferred revenue and debt line items thereof) resulting from the application of recapitalization accounting or purchase accounting, as the case may be, in relation to any consummated acquisition or the amortization or write-off of any amounts thereof (including any write-off of in process research and development), net of taxes $_____

(D) any net after-tax income (loss) from disposed, abandoned, transferred, closed or discontinued operations (excluding held for sale discontinued operations until actually disposed of) and any net after-tax gains or losses on disposal of disposed, abandoned, transferred, closed or discontinued operations $_____

(E) any net after-tax gains or losses (less all fees, expenses and charges relating thereto) attributable to asset dispositions or the sale or other disposition of any Equity Interests of any Person other than in the ordinary course of business, as determined in good faith by the Borrower $_____

(F) the Net Income for such period of any Person that is not a Subsidiary, or is an Unrestricted Subsidiary, or that is accounted for by the equity method of accounting; *provided* that the Borrower's or any Restricted Subsidiary's equity in the Net Income of such Person or Unrestricted Subsidiary shall be included in the Consolidated Net Income of the Borrower or such Restricted Subsidiary up to the aggregate amount of dividends or distributions or other payments that are actually paid in cash (or to the extent converted into cash) by such Person or Unrestricted Subsidiary to the Borrower or a Restricted Subsidiary in respect of such period (subject in the case of dividends, distributions or other payments made to a Restricted Subsidiary to the limitations contained in clause (G) below) $_____

(G) solely for the purpose of determining the Available Amount for application pursuant to Section 7.02(j), Section 7.06(c) and Section 7.13(a)(v), the Net Income for such period attributable to any Restricted Subsidiary (other than any Guarantor) to the extent that the declaration or payment of dividends or similar distributions by that Restricted Subsidiary of its Net Income is not at the date of determination permitted without any prior governmental approval (which has not been obtained) or, directly or indirectly, by the operation of the terms of its charter or any agreement, instrument, judgment, decree, order, statute, rule, or governmental regulation applicable to that Restricted Subsidiary or its equity holders, unless such restriction with respect to the payment of dividends or similar distributions has been legally waived; *provided* that Consolidated Net Income of the Borrower will be increased by the amount of dividends or other distributions or other payments actually paid in cash (or to the extent converted into cash) to the Borrower or a Restricted Subsidiary thereof in respect of such period, to the extent not already included therein $_____

(H) (i) any net unrealized gain or loss (after any offset) resulting in such period from obligations in respect of Swap Contracts and the application of Accounting Standards Codification 815 (Derivatives and Hedging) or any ineffectiveness recognized in earnings related to qualifying hedge transactions or the fair value of changes therein recognized in earnings for derivatives that do not qualify as hedge transactions, in each case, in respect of Swap Contracts, (ii) any net gain or loss resulting in such period from currency translation gains or losses related to currency re-measurements of Indebtedness (including the net loss or gain (A) resulting from Swap Contracts for currency exchange risk and (B) resulting from intercompany Indebtedness) and all other foreign currency translation gains or losses, and (iii) any net after-tax income (loss) for such period attributable to the early extinguishment or conversion of (A) Indebtedness, (B) obligations under any Swap Contracts or (C) other derivative instruments and all deferred financing costs written off or amortized and premiums paid or other expenses incurred directly in connection therewith $_____

(I) any impairment charge or asset write-off or write-down, including impairment charges or asset write-offs or write-downs related to goodwill, intangible assets, long-lived assets, investments in debt and equity securities or as a result of a change in law or regulation, in each case pursuant to GAAP, the amortization of intangibles arising pursuant to GAAP and the amortization of Capitalized Software Expenditures $_____

(J) any expenses, charges or losses that are covered by indemnification or other reimbursement provisions in connection with any Investment or Permitted Acquisition, acquisitions completed prior to the Closing Date or any sale, conveyance, transfer or other disposition of assets, in each case, permitted under the Credit Agreement or that are consummated prior to the Closing Date, to the extent actually reimbursed, or, so long as the Borrower has made a determination that a reasonable basis exists for indemnification or reimbursement and only to the extent that such amount is in fact indemnified or reimbursed within 365 days of such determination (with a deduction in the applicable future period for any amount so added back to the extent not so indemnified or reimbursed within such 365 days) $_____

(K) to the extent covered by insurance and actually reimbursed, or, so long as the Borrower has made a determination that a reasonable basis exists that such amount will in fact be reimbursed by the insurer within 365 days of the insurable event (with a deduction for any amount so added back to the extent not so reimbursed within such 365 days), expenses, charges or losses with respect to liability or casualty events or business interruption shall be excluded; *provided*, that any proceeds of such reimbursement when received shall be excluded to the extent the expense reimbursed was previously excluded pursuant to this clause (K) $_____

(L) any non-cash (for such period and all other periods) compensation charge or expense, including any such charge or expense arising from the grants of stock appreciation or similar rights, stock options, restricted stock or other rights or equity incentive programs $_____

(M) any income (loss) attributable to deferred compensation plans or trusts and any non-cash deemed finance charges in respect of any pension liabilities or other provisions or on the revaluation of any benefit plan obligation $_____

(N) proceeds from any business interruption insurance to the extent not already included in Consolidated Net Income and to the extent the related loss was deducted in the determination of Net Income $_____

(O) the amount of any expense to the extent a corresponding amount is received in cash by the Borrower and the Restricted Subsidiaries from a Person other than the Borrower or any Restricted Subsidiaries; *provided* such amount received has not been included in determining Consolidated Net Income, shall be excluded (it being understood that if the amounts received in cash under any such agreement in any period exceed the amount of expense in respect of such period, such excess amounts received may be carried forward and applied against expense in future periods) $_____

(P) any adjustments resulting from the application of Accounting Standards Codification Topic No. 460 (*Guarantees*), or any comparable regulation $_____

(Q) earn-out and contingent consideration obligations (including adjustments thereof and purchase price adjustments) incurred in connection with any Permitted Acquisition or other Investment permitted under the Credit Agreement and any acquisitions completed prior to the Closing Date $_____

(R) any expenses of any Permitted Parent paid with the proceeds of any Restricted Payment from the Borrower pursuant to Section 7.06(g)(i), Section 7.06(g)(v) or Section 7.06(g)(vi) (to the extent the proceeds of such Restricted Payment pay expenses of the Permitted Parent which if paid by the Borrower directly would reduce Consolidated Net Income or Consolidated EBITDA of the Borrower) $_____

(b) plus (without duplication, and as determined in accordance with GAAP to the extent applicable):

(i) (A) provision for taxes based on income or profits or capital, plus state, provincial, franchise, property or similar taxes and foreign withholding taxes and foreign unreimbursed value added taxes, of such Person for such period (including, in each case, penalties and interest related to such taxes or arising from tax examinations) deducted in computing Consolidated Net Income and (B) amounts paid to a Permitted Parent in respect of taxes in accordance with Section 7.06(g), solely to the extent such amounts were deducted in computing Consolidated Net Income, $_____

(ii) (A) total interest expense of such Person and, to the extent not reflected in such total interest expense, any losses on hedging obligations or other derivative instruments entered into for the purpose of hedging interest rate risk, and (B) bank fees and costs owed with respect to letters of credit, bankers acceptances and surety bonds, in each case under this clause (B), in connection with financing activities and, in each case under clauses (A) and (B), to the extent the same were deducted in computing Consolidated Net Income, $_____

(iii) Consolidated Depreciation and Amortization Expense of such Person for such period to the extent such depreciation and amortization expenses were deducted in computing Consolidated Net Income, $_____

(iv) any (A) Transaction Expenses and (B) fees, costs, expenses or charges incurred (I) in connection with (x) any issuance or offering of Equity Interests, Investment, acquisition (including any one-time costs incurred in connection with any Permitted Acquisition or any other Investment permitted under the Credit Agreement after the Closing Date), Disposition, recapitalization or the issuance, incurrence, redemption or repayment of Indebtedness (including, with respect to Indebtedness, a refinancing thereof), (y) any amendment, waiver, consent or modification to any documentation governing the terms of any transaction described in the immediately preceding subclause (x) or (z) any amendment, waiver, consent or modification to any Loan Document, in each case under subclauses (x), (y) and (z), whether or not such transaction or amendment, waiver, consent or modification is successful, and solely to the extent such transaction or amendment, waiver, consent or modification is permitted to be incurred, made or entered into in accordance with this Agreement or (II) to the extent reimbursable by third parties, pursuant to indemnification provisions, in each case, deducted in computing Consolidated Net Income, $_____

(v) any charges, losses or expenses related to signing, retention, relocation, recruiting or completion bonuses or recruiting costs, severance costs, transition costs, curtailments or modifications to pension and post-retirement employee benefit plans (including any settlement of pension liabilities), pre-opening, opening, closing and consolidation costs and expenses with respect to any facilities, facility start-up costs, costs and expenses relating to implementation of operational and reporting systems and technology initiatives, costs and expenses relating to any registration statement, or registered exchange offer in respect of any Indebtedness permitted under the Credit Agreement, costs incurred in connection with product and intellectual property development and new systems design, project start-up costs, integration and systems establishment costs, costs of strategic initiatives, business optimization expenses or costs (including costs and expenses relating to intellectual property restructurings) and cash restructuring charges or reserves, $_____

(vi) equity related expenses recorded in accordance with GAAP, solely to the extent such amounts were deducted in computing Consolidated Net Income, $_____

(vii) any other non-cash charges, expenses, losses or items, including any write offs or write downs, reducing such Consolidated Net Income for such period (*provided* that if any such non-cash charges represent an accrual or reserve for potential cash items in any future period, (1) the Borrower may determine not to add back such non-cash charge in the current period and (2) to the extent the Borrower does decide to add back such non-cash charge, the cash payment in respect thereof in such future period shall be subtracted from Consolidated EBITDA to such extent, and excluding amortization of a prepaid cash item that was paid in a prior period), $_____

(viii) the amount of any minority interest expense or non-controlling interest consisting of Subsidiary income attributable to minority equity interests of third parties in any non-wholly owned Subsidiary deducted in calculating Consolidated Net Income, $_____

(ix) **[reserved]**, $_____

(x) **[reserved]**, $_____

(xi) the amount of "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies related to any Specified Transaction, restructurings, cost savings initiatives and other initiatives, whether prior to or after the Closing Date (without duplication of any amounts added back pursuant to Section 1.08(c) in connection with a Specified Transaction) and projected by the Borrower in good faith to result from actions taken, committed to be taken or expected to be taken no later than eighteen (18) months after the end of such period (which "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies shall be calculated on a pro forma basis as though such "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies had been realized on the first day of the period for which Consolidated EBITDA is being determined), net of the amount of actual benefits realized during such period from such actions; *provided* that such "run rate" cost savings, operating expense reductions, restructuring charges and expenses and cost synergies are reasonably identifiable and factually supportable (in the good faith determination of the Borrower); *provided* further, that that the aggregate amount of the add-back pursuant to this clause (xi) for such period (other than amounts that would be permitted to be included in $_____

	pro forma financial statements prepared in accordance with Regulation S-X under the Securities Act) shall not exceed 25% of Consolidated EBITDA for such period (calculated before giving effect to such add-back),	
(xii)	any costs or expenses incurred by the Borrower or a Restricted Subsidiary pursuant to any management equity plan or stock option plan or any other management or employee benefit plan or agreement or any stock subscription or stockholders agreement, to the extent that such costs or expenses are funded with cash proceeds contributed to the capital of the Borrower or net cash proceeds of issuance of Equity Interests of the Borrower (other than Disqualified Equity Interests), in each case, solely to the extent that such cash proceeds are excluded from the calculation of the Available Amount,	$_____
(xiii)	Specified Legal Expenses,	
(xiv)	accruals and reserves that are established or adjusted (x) within 12 months after the Closing Date and that are so required to be established or adjusted in accordance with GAAP or (y) after the closing of any acquisition that are so required as a result of such acquisition in accordance with GAAP, or changes as a result of the adoption or modification of accounting policies, whether effected through a cumulative effect adjustment, restatement or a retroactive application,	$_____
	minus (without duplication, and as determined in accordance with GAAP to the extent applicable) any non-cash gains increasing Consolidated Net Income of such Person for such period, excluding any gains that represent the reversal of any accrual of, or cash reserve for, anticipated cash charges in any prior period (other than such cash charges that have been added back to Consolidated Net Income in calculating Consolidated EBITDA)	$_____
	Consolidated EBITDA	$_____
Consolidated Net Debt to Consolidated EBITDA		[ ]:1.00
	Covenant Requirement	No more than 5.00:1.00

EXHIBIT D-1
to the Credit Agreement

FORM OF TERM NOTE

$ [New York, New York]
[Date]

FOR VALUE RECEIVED, the undersigned (the "**Borrower**"), hereby promises to pay to [LENDER] or its registered assigns (the "**Lender**"), in lawful money of the United States of America in immediately available funds at the Administrative Agent's Office (such term, and each other capitalized term used but not defined herein, having the meaning assigned to it in the Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto) (i) on the dates set forth in the Credit Agreement, the principal amounts set forth in the Credit Agreement with respect to Term Loans made by the Lender to the Borrower pursuant to the Credit Agreement and (ii) on each Interest Payment Date, interest at the rate or rates per annum as provided in the Credit Agreement on the unpaid principal amount of all Term Loans made by the Lender to the Borrower pursuant to the Credit Agreement.

The Borrower promises to pay interest, on demand, on any overdue principal and, to the extent permitted by law, overdue interest from their due dates at the rate or rates provided in the Credit Agreement.

The Borrower hereby waives diligence, presentment, demand, protest and notice of any kind whatsoever. The non-exercise by the holder hereof of any of its rights hereunder in any particular instance shall not constitute a waiver thereof in that or any subsequent instance.

All Borrowings evidenced by this note and all payments and prepayments of the principal hereof and interest hereon and the respective dates thereof shall be endorsed by the holder hereof on the schedule attached hereto and made a part hereof or on a continuation thereof which shall be attached hereto and made a part hereof, or otherwise recorded by such holder in its internal records; *provided*, *however*, that the failure of the holder hereof to make such a notation or any error in such notation shall not affect the obligations of the Borrower under this note.

This note is one of the Term Notes referred to in the Credit Agreement that, among other things, contains provisions for the acceleration of the maturity hereof upon the happening of certain events, for optional and mandatory prepayment of the principal hereof prior to the maturity hereof and for the amendment or waiver of certain provisions of the Credit Agreement, all upon the terms and conditions therein specified. This note is also entitled to the benefits of the Guaranty and is secured by the Collateral.

THIS NOTE MAY NOT BE TRANSFERRED EXCEPT IN COMPLIANCE WITH THE TERMS OF THE CREDIT AGREEMENT.

THIS NOTE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK. THE BORROWER HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS NOTE (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY).

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the undersigned has caused this Term Note to be duly executed by its authorized officers as of the day and year first above written.

CASA SYSTEMS, INC.

By: _____

Name:

Title:

LOANS AND PAYMENTS

Date	Amount of Term Loan	Maturity Date	Payments of Principal/Interest	Principal Balance of Term Note	Name of Person Making this Notation

EXHIBIT D-2
to the Credit Agreement

FORM OF REVOLVING CREDIT NOTE

[New York, New York]
[Date]

FOR VALUE RECEIVED, the undersigned (the "**Borrower**") hereby promises to pay to [LENDER] or its registered assigns (the "**Lender**"), in immediately available funds at the Administrative Agent's Office (such term, and each other capitalized term used but not defined herein, having the meaning assigned to it in the Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, and each lender from time to time party thereto and the other agents and parties party thereto)(i) on the dates set forth in the Credit Agreement, the aggregate unpaid principal amount of all Revolving Credit Loans made by the Lender to the Borrower pursuant to the Credit Agreement and (ii) on each Interest Payment Date, interest at the rate or rates per annum as provided in the Credit Agreement on the unpaid principal amount of all Revolving Credit Loans made by the Lender to the Borrower pursuant to the Credit Agreement. All payments of principal and interest shall be made to the Administrative Agent for the account of the Lender in the currency in which the applicable Revolving Credit Loans were made in Same Day Funds at the Administrative Agent's Office for such currency.

The Borrower promises to pay interest, on demand, on any overdue principal and, to the extent permitted by law, overdue interest from their due dates at the rate or rates provided in the Credit Agreement.

The Borrower hereby waives diligence, presentment, demand, protest and notice of any kind whatsoever. The non-exercise by the holder hereof of any of its rights hereunder in any particular instance shall not constitute a waiver thereof in that or any subsequent instance.

All Borrowings evidenced by this note and all payments and prepayments of the principal hereof and interest hereon and the respective dates thereof shall be endorsed by the holder hereof on the schedule attached hereto and made a part hereof or on a continuation thereof which shall be attached hereto and made a part hereof, or otherwise recorded by such holder in its internal records; *provided, however,* that the failure of the holder hereof to make such a notation or any error in such notation shall not affect the obligations of the Borrower under this note.

This note is one of the Revolving Credit Notes referred to in the Credit Agreement that, among other things, contains provisions for the acceleration of the maturity hereof upon the happening of certain events, for optional and mandatory prepayment of the principal hereof prior to the maturity hereof and for the amendment or waiver of certain provisions of the Credit Agreement, all upon the terms and conditions therein specified. This note is also entitled to the benefits of the Guaranty and is secured by the Collateral.

THIS NOTE MAY NOT BE TRANSFERRED EXCEPT IN COMPLIANCE WITH THE TERMS OF THE CREDIT AGREEMENT.

THIS NOTE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK. THE BORROWER HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS NOTE (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY).

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the undersigned has caused this Revolving Credit Note to be duly executed by its authorized officer as of the day and year first above written.

CASA SYSTEMS, INC.

By: _____
Name:
Title:

[Signature Page to Revolving Credit Note]

LOANS AND PAYMENTS

Date	Amount of Revolving Credit Loan	Maturity Date	Payments of Principal/Interest	Principal Balance of Revolving Credit Note	Name of Person Making this Notation

EXHIBIT E-1
to the Credit Agreement

FORM OF ASSIGNMENT AND ASSUMPTION

This Assignment and Assumption (this "**Assignment and Assumption**") is dated as of the Assignment Effective Date set forth below and is entered into by and between [the] [each][1] Assignor identified in item 1 below ([the][each, an] "**Assignor**") and [the][each][2] Assignee identified in item 2 below ([the] [each, an] "**Assignee**"). [It is understood and agreed that the rights and obligations of [the Assignors][the Assignees][3] hereunder are several and not joint.][4] Capitalized terms used but not defined herein shall have the meanings given to them in the Credit Agreement identified below (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), receipt of a copy of which is hereby acknowledged by [the][each] Assignee. The Standard Terms and Conditions for Assignment and Assumption set forth in Annex 1 attached hereto (the "**Standard Terms and Conditions**") are hereby agreed to and incorporated herein by reference and made a part of this Assignment and Assumption as if set forth herein in full.

For an agreed consideration, [the][each] Assignor hereby irrevocably sells and assigns to [the Assignee] [the respective Assignees], and [the] [each] Assignee hereby irrevocably purchases and assumes from [the Assignor][the respective Assignors], subject to and in accordance with the Standard Terms and Conditions and the Credit Agreement, as of the Assignment Effective Date inserted by the Administrative Agent as contemplated below (i) all of [the Assignor's][the respective Assignors'] rights and obligations in [its capacity as a Lender][their respective capacities as Lenders] under the Credit Agreement and any other documents or instruments delivered pursuant thereto to the extent related to the amount and percentage interest identified below of all of such outstanding rights and obligations of [the Assignor][the respective Assignors] under the respective facilities identified below (including participations in L/C Obligations included in such facility) and (ii) to the extent permitted to be assigned under applicable law, all claims, suits, causes of action and any other right of [the Assignor (in its capacity as a Lender)] [the respective Assignors (in their respective capacities as Lenders)] against any Person, whether known or unknown, arising under or in connection with the Credit Agreement, any other documents or instruments delivered pursuant thereto or the loan transactions governed thereby or in any way based on or related to any of the foregoing, including, but not limited to, contract claims, tort claims, malpractice claims, statutory claims and all other claims at law or in equity related to the rights and obligations sold and assigned pursuant to clause (i) above (the rights and obligations sold and assigned by [the] [any] Assignor to [the] [any] Assignee pursuant to clauses (i) and (ii) above being referred to herein collectively as [the][an] "**Assigned Interest**"). Each such sale and assignment is without recourse to [the][any] Assignor and, except as expressly provided in this Assignment and Assumption, without representation or warranty by [the] [any] Assignor.

---

1 For bracketed language here and elsewhere in this form relating to the Assignor(s), if the assignment is from a single Assignor, choose the first bracketed language. If the assignment is from multiple Assignors, choose the second bracketed language.

2 For bracketed language here and elsewhere in this form relating to the Assignee(s), if the assignment is to a single Assignee, choose the first bracketed language. If the assignment is to multiple Assignees, choose the second bracketed language.

3 Select as appropriate.

4 Include bracketed language if there are either multiple Assignors or multiple Assignees.

1. Assignor[s]:

2. Assignee[s]:

[for each Assignee, indicate if [Affiliate] [Approved Fund] of [identify Lender]]

3. Affiliate Status:

a. Assignor(s):

Assignor[s][5]	Affiliated Lender[6]	Affiliated Debt Fund[7]
	Yes • No •	Yes • No •
	Yes • No •	Yes • No •

b. Assignee(s):

Assignee[s][8]	Affiliated Lender[9]	Affiliated Debt Fund[10]
	Yes • No •	Yes • No •
	Yes • No •	Yes • No •

5 List each Assignor.

6 For each Assignor that is assigning Term Loans, check the box in this column immediately to the right of such Assignor's name indicating whether or not such Assignor is, prior to giving effect to any assignment hereunder, an Affiliated Lender.

7 For each Assignor that is assigning Term Loans, check the box in this column immediately to the right of such Assignor's name indicating whether or not such Assignor is, prior to giving effect to any assignment hereunder, an Affiliated Debt Fund.

8 List each Assignee

9 For each Assignee that is being assigned Term Loans, check the box in his column immediately to the right of such Assignee's name indicating whether or not such Assignee is an Affiliated Lender or will, after giving effect to the assignment, become an Affiliated Lender.

10 For each Assignee that is being assigned Term Loans, check the box in his column immediately to the right of such Assignee's name indicating whether or not such Assignee is an Affiliated Debt Fund or will, after giving effect to the assignment, become an Affiliated Debt Fund.

[If any Assignee hereunder indicates above that it is an Affiliated Lender (or will become an Affiliated Lender after giving effect to any such purported assignment), such Assignee shall have delivered to the Administrative Agent an Affiliate Assignment Notice in the form of Exhibit E-2 to the Credit Agreement.]

4. Borrower: Casa Systems, Inc.

5. Administrative Agent: JPMorgan Chase Bank, N.A., including any successor thereto, as the administrative agent under the Credit Agreement

6. Credit Agreement: The Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**") by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto.

7. Assigned Interest:

Assignor[s][11]	Assignee[s][12]	Facility Assigned[13]	Aggregate Amount of Commitment / Loans for all Lenders[14]	Amount of Commitment /Loans Assigned	Percentage Assigned of Commitment /Loans[15]	CUSIP Number
			$	$	%	
			$	$	%	
			$	$	%	

[8. Trade Date: [ ], 20][16]

11 List each Assignor, as appropriate.

12 List each Assignee, as appropriate.

13 Fill in the appropriate terminology for the types of facilities under the Credit Agreement that are being assigned under this Assignment and Assumption (e.g. "Initial Term Loans," "Initial Term Commitment," "New Term Loans," "New Term Commitments," "Revolving Credit Loans," "Revolving Credit Commitments," "New Revolving Credit Commitments," "New Revolving Credit Loans," "Refinancing Term Loans," "Refinancing Revolving Credit Loans," "Refinancing Term Commitments," "Refinancing Revolving Credit Commitments," "Extended Term Loans," "Extended Revolving Credit Loans," "Extended Term Commitments," "Extended Revolving Credit Commitments," etc.).

14 Amounts in this column and in the column immediately to the right to be adjusted by the counterparties to take into account any payments or prepayments made between the Trade Date and the Assignment Effective Date.

15 Set forth, to at least 9 decimals, as a percentage of the Commitment/Loans of all Lenders thereunder.

16 To be completed if the Assignor and the Assignee intend that the minimum assignment amount is to be determined as of the Trade Date.

Assignment Effective Date: , 20[ ] [TO BE INSERTED BY THE ADMINISTRATIVE AGENT AND WHICH SHALL BE THE ASSIGNMENT EFFECTIVE DATE OF RECORDATION OF TRANSFER IN THE REGISTER THEREFOR.]

9. THE PARTIES HERETO ACKNOWLEDGE THAT ANY ASSIGNMENT TO ANY DISQUALIFIED INSTITUTION WITHOUT OBTAINING THE REQUIRED CONSENT OF THE BORROWER OR, TO THE EXTENT THE BORROWER'S CONSENT IS REQUIRED UNDER SECTION 10.07 OF THE CREDIT AGREEMENT, TO ANY OTHER PERSON, SHALL BE NULL AND VOID, AND, IN THE EVENT OF ANY SUCH ASSIGNMENT (AND ANY ASSIGNMENT TO ANY AFFILIATE OF ANY DISQUALIFIED INSTITUTION (OTHER THAN A BONA FIDE DEBT FUND)), THE BORROWER SHALL BE ENTITLED TO PURSUE THE REMEDIES DESCRIBED IN SECTION 10.07 OF THE CREDIT AGREEMENT.

[Remainder of page intentionally left blank/]

The terms set forth in this Assignment and Assumption are hereby agreed to:

ASSIGNOR

[NAME OF ASSIGNOR]

By: _____
Name:
Title:

ASSIGNEE

[NAME OF ASSIGNOR]

By: _____
Name:
Title:

[Consented to and][32] Accepted:

JPMORGAN CHASE BANK, N.A., as Administrative Agent

By: _____
Name:
Title:

By: _____
Name:
Title:

[Consented to

[ ], as a Principal L/C Issuer

By: _____
Name:
Title:][33]

32 To be added only if the consent of the Administrative Agent is required by the terms of the Credit Agreement.
33 To be added only if the consent of a Principal L/C Issuer is required by the terms of the Credit Agreement.

[Consented to

CASA SYSTEMS, INC., as the Borrower

By: _____
Name:
Title:

34 To be added only if the consent of the Borrower is required by the terms of the Credit Agreement.

STANDARD TERMS AND CONDITIONS

FOR ASSIGNMENT AND ASSUMPTION

1. Representations and Warranties.

1.1. Assignor. [The][Each] Assignor (a) represents and warrants that (i) it is the legal and beneficial owner of [the][[the relevant] Assigned Interest, (ii) [the][such] Assigned Interest is free and clear of any lien, encumbrance or other adverse claim and (iii) it has full power and authority, and has taken all action necessary, to execute and deliver this Assignment and Assumption and to consummate the transactions contemplated hereby and (b) assumes no responsibility with respect to (i) any statements, warranties or representations made in or in connection with the Credit Agreement or any other Loan Document, (ii) the execution, legality, validity, enforceability, genuineness, sufficiency or value of the Loan Documents or any collateral thereunder, (iii) the financial condition of the Borrower, any of its Subsidiaries or Affiliates or any other Person obligated in respect of any Loan Document or (iv) the performance or observance by the Borrower, any of its Subsidiaries or Affiliates or any other Person of any of their respective obligations under any Loan Document.

1.2. Assignee. [The] [Each] Assignee (a) represents and warrants that (i) it has full power and authority, and has taken all action necessary, to execute and deliver this Assignment and Assumption and to consummate the transactions contemplated hereby and to become a Lender under the Credit Agreement, (ii) it meets all the requirements to be an assignee under Section 10.07(b) (v) of the Credit Agreement (subject to such consents, if any, as may be required under Section 10.07(b)(iii) of the Credit Agreement), (iii) from and after the Assignment Effective Date referred to in this Assignment and Assumption, it shall be bound by the provisions of the Credit Agreement as a Lender thereunder and, to the extent of [the][the relevant] Assigned Interest, shall have the obligations of a Lender thereunder, (iv) it is sophisticated with respect to decisions to acquire assets of the type represented by [the] [such] Assigned Interest and either it, or the Person exercising discretion in making its decision to acquire [the][such] Assigned Interest, is experienced in acquiring assets of such type, (v) it has received a copy of the Credit Agreement, and has received or has been accorded the opportunity to receive copies of the most recent financial statements delivered pursuant to Section 6.01(a) or Section 6.01(b), as the case may be (or, for any assignment made prior to the date of the first delivery of any such financial statements, the confidential information memoranda used in connection with the primary syndication of the Facility), and (b) thereof, as applicable, and such other documents and information as it deems appropriate to make its own credit analysis and decision to enter into this Assignment and Assumption and to purchase [the] [such] Assigned Interest, (vi) it has, independently and without reliance upon the Administrative Agent or any other Lender and based on such documents and information as it has deemed appropriate, made its own credit analysis and decision to enter into this Assignment and Assumption and to purchase [the] [such] Assigned Interest, (vii) attached hereto is any documentation required to be delivered by it pursuant to the terms of the Credit Agreement, including but not limited to any documentation required pursuant to Section 3.01 of the Credit Agreement, duly completed and executed by [the] [such] Assignee [and] (viii) appoints

and authorizes the Administrative Agent to take such action as agent on its behalf and to exercise such powers under the Credit Agreement and the other Loan Documents as are delegated to or otherwise conferred upon the Administrative Agent, as the case may be, by the terms thereof, together with such powers as are reasonably incidental thereto [and (ix) [it does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information)][35]; and (b) agrees that (i) it will, independently and without reliance upon the Administrative Agent, [the][any] Assignor or any other Lender, and based on such documents and information as it shall deem appropriate at the time, continue to make its own credit decisions in taking or not taking action under the Loan Documents, and (ii) it will perform in accordance with their terms all of the obligations which by the terms of the Loan Documents are required to be performed by it as a Lender. [[The] [Each] Assignee cannot represent and warrant that it does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information)]][36].

2. Payments. From and after the Assignment Effective Date, the Administrative Agent shall make all payments in respect of [the][each] Assigned Interest (including payments of principal, interest, fees and other amounts) to [the][the relevant] Assignor for amounts which have accrued up to but excluding the Assignment Effective Date and to [the] [the relevant] Assignee for amounts which have accrued from and after the Assignment Effective Date.

3. General Provisions. This Assignment and Assumption shall be binding upon, and inure to the benefit of, the parties hereto and their respective successors and assigns. Each party to this Assignment and Assumption acknowledges and agrees by its execution hereof that in addition to the other exculpations contemplated by the Credit Agreement, the Administrative Agent shall not be liable for any losses, damages, penalties, claims, demands, actions, judgments, suits, costs, expenses or disbursements of any kind of nature whatsoever incurred or suffered by any Person (including any party hereto) in connection with compliance or non-compliance with Section 10.07(h)(iii) of the Credit Agreement, including any purported assignment exceeding the limitation set forth therein or any assignment's being deemed null and void thereunder. This Assignment and Assumption may be executed in any number of counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which together shall constitute one instrument. Delivery of an executed counterpart of a signature page of this Assignment and Assumption by telecopy or other electronic imaging means shall be effective as delivery of a manually executed counterpart of this Assignment and Assumption. This Assignment and Assumption shall be governed by, and construed in accordance with, the laws of the State of New York.

35 Include only if (a) required by Sections 10.07(h) or (m) in connection with assignments to an Affiliated Lender, the Borrower or the Borrower's Restricted Subsidiaries and (b) the assignee can make such representation.

36 Include only if (a) required by Sections 10.07(h) or (m) in connection with assignments to an Affiliated Lender, the Borrower or the Borrower's Restricted Subsidiaries and (b) the assignee cannot make the representation in clause (ix).

EXHIBIT E-2
to the Credit Agreement

FORM OF AFFILIATE ASSIGNMENT NOTICE

Date: , 20

To: JPMorgan Chase Bank, N.A., as
Administrative Agent
10 S Dearborn
Chicago, IL 60603
Attention: Ryan Bowman
Telephone: (312) 732-4754
Fax: (844)-560-5665
e-mail: Ryan.t.bowman@jpmorgan.com; jpm.agency.cri@jpmorgan.com

Ladies and Gentlemen:

Reference is made to that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto. Capitalized terms used but not otherwise defined herein shall have the meanings assigned to them in the Credit Agreement.

The undersigned (the "**Proposed Affiliate Assignee**") hereby gives you notice, pursuant to Section 10.07(h) of the Credit Agreement, that:

(a) it has entered into an agreement to purchase via assignment a portion of the Term Loans under the Credit Agreement,

(b) the assignor in the proposed assignment is [ ],

(c) immediately after giving effect to such assignment of the Term Loans (if accepted), the Proposed Affiliate Assignee will be an Affiliated Lender,

(d) the principal amount of Term Loans to be purchased by such Proposed Affiliate Assignee in the assignment contemplated hereby is: $,

(e) the aggregate principal amount of all Term Loans held by such Proposed Affiliate Assignee and each other Affiliated Lender after giving effect to the assignment hereunder (if accepted) is $[ ],

(f) after giving effect to the assignment hereunder (if accepted), the aggregate principal amount of all Term Loans held by such Proposed Affiliate Assignee and each other Affiliated Lender will not exceed 25% of the principal amount of all Term Loans at such time outstanding, in each case, after giving effect to any substantially simultaneous cancellation thereof, and

(g) the proposed effective date of the assignment contemplated hereby is [, 20].

[Signature Page Follows]

Very truly yours,

[EXACT LEGAL NAME OF PROPOSED AFFILIATE ASSIGNEE]

By: _____

Name
Title:
Phone Number:
Fax:
Email:
Date:

See Attached

GUARANTY

dated as of

[●], 201_,

among

CASA SYSTEMS, INC.,
as Borrower,

THE SUBSIDIARIES OF THE BORROWER
IDENTIFIED HEREIN

and

JPMORGAN CHASE BANK, N.A.,
as Administrative Agent

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This GUARANTY, dated as of [●], 201_, among CASA SYSTEMS, INC., a Delaware corporation (the "Borrower"), the Subsidiaries of the Borrower party hereto from time to time, and JPMORGAN CHASE BANK, N.A., as Administrative Agent and Collateral Agent on behalf of the Secured Parties.

Reference is made to the Credit Agreement, dated as of December [20], 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among the Borrower, each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto.

The Lenders have agreed to extend credit to the Borrower subject to the terms and conditions set forth in the Credit Agreement, the L/C Issuers have agreed to issue Letters of Credit for the account of the Borrower subject to the terms and conditions set forth in the Credit Agreement and the Hedge Banks have agreed to enter into and/or maintain one or more Secured Hedge Agreements on the terms and conditions set forth therein and the Cash Management Banks have agreed to provide and/or maintain Cash Management Services on the terms and conditions set forth in the applicable Secured Cash Management Agreements. The obligations of the Lenders to extend such credit, the L/C Issuers to issue Letters of Credit and the obligation of the Hedge Banks to enter into and/or maintain such Secured Hedge Agreements and the obligation of the Cash Management Banks to provide and/or maintain Cash Management Services are, in each case, conditioned upon, among other things, the execution and delivery of this Agreement by each Guarantor. The Borrower and the other Guarantors are affiliates of one another, are an integral part of a consolidated enterprise and will derive substantial direct and indirect benefits from (i) the extensions of credit to the Borrower pursuant to the Credit Agreement, (ii) the issuance of Letters of Credit by the L/C Issuers in accordance with the Credit Agreement, (iii) the entering into and/or maintaining by the Hedge Banks of Secured Hedge Agreements with the Borrower and/or one or more of its Restricted Subsidiaries and (iv) the providing and/or maintaining of Cash Management Services by the Cash Management Banks to the Borrower and/or one or more of its Restricted Subsidiaries, and are willing to execute and deliver this Agreement in order to induce the Lenders to extend such credit, the L/C Issuers to issue such Letter of Credit, the Hedge Banks to enter into and/or maintain such Secured Hedge Agreements and the Cash Management Banks to provide and/or maintain such Cash Management Services.

Accordingly, in consideration of the foregoing and other benefits accruing to each Guarantor, the receipt and sufficiency of which are hereby acknowledged, each Guarantor hereby covenants and agrees with each other Guarantor and the Administrative Agent for the benefit of the Secured Parties as follows:

ARTICLE I

Definitions

Section 1.01. Credit Agreement. (a) Capitalized terms used in this Agreement, including the preamble and introductory paragraphs hereto, and not otherwise defined herein have the meanings specified in the Credit Agreement.

(b) The rules of construction specified in Article I of the Credit Agreement also apply to this Agreement.

Section 1.02. Other Defined Terms.

As used in this Agreement, the following terms have the meanings specified below:

"Accommodation Payment" has the meaning assigned to such term in Article III.

"Agreement" means this Guaranty.

"Allocable Amount" has the meaning assigned to such term in Article III.

"Credit Agreement" has the meaning assigned to such term in the preliminary statement of this Agreement.

"Guaranteed Obligations" mean the "Obligations" as defined in the Credit Agreement (excluding, with respect to any Guarantor, any Excluded Swap Obligations of such Guarantor).

"Guarantor" means each of the Borrower (other than with respect to its direct Obligations as a primary obligor (as opposed to a guarantor) under the Loan Documents, Secured Hedge Agreements and Secured Cash Management Agreements), each Subsidiary of the Borrower party hereto and each other Person that becomes a party to this Agreement after the Closing Date pursuant to Section 4.14; provided that if any such Guarantor is released from its obligations hereunder as provided in Section 4.13, such Person shall cease to be a Guarantor hereunder effective upon such release.

"Guaranty Supplement" means an instrument substantially in the form of Exhibit I hereto.

"Qualified ECP Guarantor" means, in respect of any Swap Obligation, each Loan Party that has total assets exceeding $10,000,000 at the time the relevant Guarantee or grant of the relevant security interest becomes effective with respect to such Swap Obligation, or such other Loan Party that constitutes an "eligible contract participant" under the Commodity Exchange Act or any regulations promulgated thereunder and can cause another Person to qualify as an "eligible contract participant" at such time by entering into a keepwell under Section 1a(18)(A)(v)(II) of the Commodity Exchange Act.

"Secured Credit Document" shall mean each Loan Document, each Secured Hedge Agreement and each Secured Cash Management Agreement.

"UFCA" has the meaning assigned to such term in Article III.

"UFTA" has the meaning assigned to such term in Article III.

ARTICLE II

Guarantee

Section 2.01. Guarantee. Each Guarantor irrevocably, absolutely and unconditionally guarantees, jointly and severally with the other Guarantors, as a primary obligor and not merely as a surety, the due and punctual payment in full when due of the Guaranteed Obligations, in each case, whether such Guaranteed Obligations are now existing or hereafter incurred under, arising out of or in connection with any Secured Credit Document, and whether at maturity, by acceleration, demand or otherwise. Each of the Guarantors further agrees that the Guaranteed Obligations may be extended, increased, renewed, amended or modified, in whole or in part, without notice to, or further assent from such Guarantor, and that such Guarantor will remain bound upon its guarantee hereunder notwithstanding any such extension, increase, renewal, amendment or modification of any Guaranteed Obligation. Each of the Guarantors waives, to the fullest extent permitted under applicable law, presentment to, demand of payment from, and protest to, any Guarantor or any other Loan Party of any of the Guaranteed Obligations, and also waives, to the fullest extent permitted under applicable law, notice of acceptance of its guarantee and notice of protest for nonpayment.

Section 2.02. Guarantee of Payment. Each of the Guarantors further agrees that its guarantee hereunder constitutes a guarantee of payment and performance when due (whether or not any bankruptcy or similar proceeding shall have stayed the accrual of collection of any of the Guaranteed Obligations or operated as a discharge thereof) and not of collection, and, to the fullest extent permitted under applicable law, waives any right to require that any resort be had by the Administrative Agent or any other Secured Party to any security held for the payment of any of the Guaranteed Obligations, or to any balance of any deposit account or credit on the books of the Administrative Agent or any other Secured Party in favor of any Guarantor or any other Person. The obligations of each Guarantor hereunder are independent of the obligations of any other Guarantor or the Borrower and a separate action or actions may be brought and prosecuted against each Guarantor whether or not action is brought against any

other Guarantor, any other guarantor or the Borrower and whether or not any other Guarantor, any other guarantor or the Borrower is joined in any such action or actions. Any payment required to be made by a Guarantor hereunder may be required by the Administrative Agent or any other Secured Party on any number of occasions.

Section 2.03. No Limitations. (a) Except for termination or release of a Guarantor's obligations hereunder as expressly provided in Section 4.13, to the fullest extent permitted by applicable law, but without prejudice to Section 2.04, the obligations of each Guarantor hereunder shall not be subject to any reduction, limitation, impairment or termination for any reason, including any claim of waiver, release, surrender, alteration or compromise, and shall not be subject to any defense or set-off, counterclaim, recoupment or termination whatsoever by reason of the invalidity, illegality or unenforceability of the Guaranteed Obligations, or otherwise. Without limiting the generality of the foregoing, to the fullest extent permitted by applicable law and except for termination or release of a Guarantor's obligations hereunder in accordance with the terms of Section 4.13, the obligations of each Guarantor hereunder shall not be discharged, impaired or otherwise affected by (i) the failure of the Administrative Agent or any other Secured Party to assert any claim or demand or to enforce any right or remedy under the provisions of any Secured Credit Document or otherwise; (ii) any rescission, waiver, amendment or modification of, or any release from any of the terms or provisions of, any Secured Credit Document or any other agreement, including with respect to any other Guarantor under this Agreement; (iii) the release of any security held by the Collateral Agent or any other Secured Party for the Guaranteed Obligations; (iv) any default, failure or delay, willful or otherwise, in the performance of the Guaranteed Obligations; (v) the failure to perfect any security interest in, or the release of, any of the Collateral held by or on behalf of the Collateral Agent or any other Secured Party; (vi) any change in the corporate existence, structure or ownership of any other Loan Party, the lack of legal existence of the Borrower or any other Guarantor or legal obligation to discharge any of the Guaranteed Obligations by Borrower or any other Guarantor for any reason whatsoever, including, without limitation, in any insolvency, bankruptcy or reorganization of any Loan Party; (vii) the existence of any claim, set-off or other rights that any Guarantor may have at any time against the Borrower, the Administrative Agent, any other Secured Party or any other Person, whether in connection with the Credit Agreement, the other Loan Documents or any unrelated transaction (other than a defense of payment in full of all the Guaranteed Obligations (other than (x) obligations under Secured Hedge Agreements, (y) obligations under Secured Cash Management Agreements and (z) contingent indemnification obligations not yet accrued and payable) and the expiration or termination of all Letters of Credit (other than outstanding Letters of Credit that have been Cash Collateralized)); (viii) this Agreement having been determined (on whatsoever grounds) to be invalid, non-binding or unenforceable against any other Guarantor ab initio or at any time after the Closing Date; or (ix) any other act or omission that may or might in any manner or to any extent vary the risk of any Guarantor or otherwise operate as a defense to, or discharge of any Guarantor as a matter of law or equity (in each case, other than the payment in full of all the Guaranteed Obligations (other than (x) obligations under Secured Hedge Agreements, (y) obligations under Secured Cash Management Agreements and (z) contingent indemnification obligations not yet accrued and payable) and the expiration or termination of all Letters of Credit (other than outstanding Letters of Credit that have been Cash Collateralized). Each Guarantor expressly acknowledges that the applicable Secured Parties may take and hold security for the payment and performance of the Guaranteed Obligations, exchange, waive or release any or all such security (with or without consideration), enforce or apply such security and direct the order and manner of any sale thereof in their sole discretion or release or substitute any one or more other guarantors or obligors upon or in respect of the Guaranteed Obligations all without affecting the obligations of any Guarantor hereunder. Anything contained in this Agreement to the contrary notwithstanding, the obligations of each Guarantor under this Agreement shall be limited to an aggregate amount equal to the largest amount that would not render its obligations under this Agreement subject to avoidance as a fraudulent transfer or conveyance under Section 548 of the Bankruptcy Code of the United States or any comparable provisions of any similar federal or state law.

(b) To the fullest extent permitted by applicable law and except for termination or release of a Guarantor's obligations hereunder in accordance with the terms of Section 4.13, but without prejudice to Section 2.04, each Guarantor waives any defense based on or arising out of any defense of the Borrower or any other Guarantor or the unenforceability of the Guaranteed Obligations or any part thereof from any cause, or the cessation from any cause of the liability of the Borrower or any other Guarantor, other than the payment in full of all the Guaranteed Obligations (other than (x) obligations under Secured Hedge Agreements, (y) obligations under Secured Cash Management Agreements and (z) contingent indemnification obligations not yet accrued and payable) and the expiration or termination of all Letters of Credit (other than outstanding Letters of Credit that have been Cash Collateralized). The Administrative Agent and the other Secured Parties may in accordance with the terms of

the Collateral Documents, at their election, foreclose on any security held by one or more of them by one or more judicial or non-judicial sales, accept an assignment of any such security in lieu of foreclosure, compromise or adjust any part of the Guaranteed Obligations, make any other accommodation with the Borrower or any other Guarantor or exercise any other right or remedy available to them against the Borrower or any other Guarantor, without affecting or impairing in any way the liability of any Guarantor hereunder except to the extent the Guaranteed Obligations have been paid in full (other than (x) obligations under Secured Hedge Agreements, (y) obligations under Secured Cash Management Agreements and (z) contingent indemnification obligations not yet accrued and payable) and all Letters of Credit have expired or terminated (other than outstanding Letters of Credit that have been Cash Collateralized). To the fullest extent permitted by applicable law, each Guarantor waives any defense arising out of any such election even though such election operates, pursuant to applicable law, to impair or to extinguish any right of reimbursement or subrogation or other right or remedy of such Guarantor against the Borrower or any other Guarantor, as the case may be, or any security.

Section 2.04. Reinstatement. Notwithstanding anything to the contrary contained in this Agreement, each of the Guarantors agrees that (i) its guarantee hereunder shall continue to be effective or be automatically reinstated, as the case may be, if at any time payment, or any part thereof, of any Guaranteed Obligation is rescinded or must otherwise be restored by the Administrative Agent or any other Secured Party upon the bankruptcy or reorganization (or any analogous proceeding in any jurisdiction) of the Borrower or any other Guarantor or otherwise and (ii) the provisions of this Section 2.04 shall survive termination of this Agreement.

Section 2.05. Agreement To Pay; Subrogation. In furtherance of the foregoing and not in limitation of any other right that the Administrative Agent or any other Secured Party has at law or in equity against any Guarantor by virtue hereof, upon the failure of the Borrower or any other Guarantor to pay any Guaranteed Obligation when and as the same shall become due, whether at maturity, by acceleration, after notice of prepayment or otherwise, each Guarantor hereby promises to and will forthwith pay, or cause to be paid, to the Administrative Agent for distribution to the applicable Secured Parties the amount of such unpaid Guaranteed Obligation. Upon payment by any Guarantor of any sums to the Administrative Agent as provided above, all rights of such Guarantor against the Borrower or any other Guarantor arising as a result thereof by way of right of subrogation, contribution, reimbursement, indemnity or otherwise shall in all respects be subject to Article III.

Section 2.06. Information. Each Guarantor assumes all responsibility for being and keeping itself informed of the Borrower's and each other Guarantor's financial condition and assets, and of all other circumstances bearing upon the risk of nonpayment of the Guaranteed Obligations and the nature, scope and extent of the risks that such Guarantor assumes and incurs hereunder, and agrees that none of the Administrative Agent or the other Secured Parties will have any duty to advise such Guarantor of information known to it or any of them regarding such circumstances or risks.

ARTICLE III

Indemnity, Subrogation and Subordination

Upon payment by any Guarantor of any Guaranteed Obligations, all rights of such Guarantor against the Borrower or any other Guarantor arising as a result thereof by way of right of subrogation, contribution, reimbursement, indemnity or otherwise shall in all respects be subordinate and junior in right of payment to the prior payment in full of all the Guaranteed Obligations and the termination of all Commitments to any Loan Party under any Loan Document. If any amount shall erroneously be paid to the Borrower or any other Guarantor on account of (i) such subrogation, contribution, reimbursement, indemnity or similar right or (ii) any such indebtedness of the Borrower or any other Guarantor, such amount shall be held in trust for the benefit of the Secured Parties and shall promptly be paid to the Administrative Agent to be credited against the payment of the Guaranteed Obligations, whether matured or unmatured, in accordance with the terms of the Credit Agreement and the other Secured Credit Documents. Subject to the foregoing, to the extent that any Guarantor shall, under this Agreement, repay any of the Guaranteed Obligations (an "Accommodation Payment"), then the Guarantor making such Accommodation Payment shall be entitled to contribution and indemnification from, and be reimbursed by, each of the other Guarantors in an amount equal to a fraction of such Accommodation Payment, the numerator of which fraction is such other Guarantor's Allocable Amount and the denominator of which is the sum of the Allocable Amounts of all of the Guarantors; provided that such rights of contribution and indemnification shall be subordinated to the prior

payment in full of all of the Guaranteed Obligations. As of any date of determination, the "Allocable Amount" of each Guarantor shall be equal to the maximum amount of liability for Accommodation Payments which could be asserted against such Guarantor hereunder without (a) rendering such Guarantor "insolvent" within the meaning of Section 101(31) of the Bankruptcy Code of the United States, Section 2 of the Uniform Fraudulent Transfer Act ("UFTA") or Section 2 of the Uniform Fraudulent Conveyance Act ("UFCA"), (b) leaving such Guarantor with unreasonably small capital or assets, within the meaning of Section 548 of the Bankruptcy Code of the United States, Section 4 of the UFTA, or Section 5 of the UFCA, or (c) leaving such Guarantor unable to pay its debts as they become due within the meaning of Section 548 of the Bankruptcy Code of the United States or Section 4 of the UFTA, or Section 5 of the UFCA.

ARTICLE IV

Miscellaneous

Section 4.01. Notices. All communications and notices hereunder shall (except as otherwise expressly permitted herein) be in writing and given as provided in Section 10.02 of the Credit Agreement. All communications and notices hereunder to any Guarantor shall be given to it in care of the Borrower as provided in Section 10.02 of the Credit Agreement.

Section 4.02. Waivers; Amendment. (a) No failure or delay by the Administrative Agent, any L/C Issuer, any Lender or any other Secured Party in exercising any right, remedy, power or privilege hereunder or under any other Secured Credit Document shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, remedy, power or privilege or any abandonment or discontinuance of steps to enforce such a right, remedy, power or privilege, preclude any other or further exercise thereof, or the exercise of any other right, remedy, power or privilege. The rights, remedies, powers and privileges of the Secured Parties hereunder and under the other Secured Credit Documents are cumulative and are not exclusive of any rights, remedies, powers or privileges provided by law. No waiver of any provision of this Agreement or consent to any departure by any Loan Party therefrom shall in any event be effective unless the same shall be permitted by paragraph (b) of this Section 4.02, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. Without limiting the generality of the foregoing, the making of a Loan or the issuance of a Letter of Credit shall not be construed as a waiver of any Default, regardless of whether the Administrative Agent, any Lender or any L/C Issuer may have had notice or knowledge of such Default at the time. No notice or demand on any Loan Party in any case shall entitle any Loan Party to any other or further notice or demand in similar or other circumstances.

(b) Neither this Agreement nor any provision hereof may be waived, amended or modified except pursuant to an agreement or agreements in writing entered into by the Administrative Agent and the Loan Party or Loan Parties with respect to which such waiver, amendment or modification is to apply, subject to any consent required in accordance with Section 10.01 of the Credit Agreement.

Section 4.03. Administrative Agent's Fees and Expenses; Indemnification. The terms of Section 10.04 and Section 10.05 of the Credit Agreement with respect to costs and expenses, indemnification, payments and survival are incorporated herein by reference, *mutatis mutandis*, and the parties hereto agree to such terms (and for the avoidance of doubt, for purposes of this Agreement, such provisions extend to, without limitation, collection from, or other realization of or enforcement with respect to, the Guarantee provided herein).

Section 4.04. Successors and Assigns. Whenever in this Agreement any of the parties hereto is referred to, such reference shall be deemed to include the permitted successors and assigns of such party; and all covenants, promises and agreements by or on behalf of any Guarantor or the Administrative Agent that are contained in this Agreement shall bind and inure to the benefit of their respective permitted successors and assigns. Except as provided in Section 10.07 of the Credit Agreement, no Guarantor may assign any of its rights or obligations hereunder without the written consent of the Administrative Agent.

Section 4.05. Survival of Agreement. Without limitation of any provision of the Credit Agreement or Section 4.03 hereof, all covenants, agreements, indemnities, representations and warranties made by the Guarantors in the Loan Documents and in the certificates or other instruments delivered in connection with or pursuant to this Agreement or any other Loan Document shall be considered to have been relied upon by each Agent

and the Lenders and shall survive the execution and delivery of the Loan Documents and the making of any Loans and issuance of any Letters of Credit, regardless of any investigation made by any Agent or Lender or on its behalf and notwithstanding that the Administrative Agent, any L/C Issuer or any Lender may have had notice or knowledge of any Default at the time any credit is extended under any Loan Document, and shall continue in full force and effect until this Agreement is terminated as provided in Section 4.13 hereof, or with respect to any individual Guarantor until such Guarantor is otherwise released from its obligations under this Agreement in accordance with the terms hereof.

Section 4.06. Counterparts; Effectiveness; Several Agreement. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, .pdf or other electronic imaging means of an executed counterpart of a signature page to this Agreement shall be effective as delivery of an original executed counterpart of this Agreement. This Agreement shall become effective as to any Guarantor when a counterpart hereof executed on behalf of such Guarantor shall have been delivered to the Administrative Agent and a counterpart hereof shall have been executed on behalf of the Administrative Agent, and thereafter shall be binding upon such Guarantor and the Administrative Agent and their respective permitted successors and assigns. The Administrative Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, .pdf or other electronic imaging means. This Agreement shall be construed as a separate agreement with respect to each Guarantor and may be amended, restated, modified, supplemented, waived or released with respect to any Guarantor without the approval of any other Guarantor and without affecting the obligations of any other Guarantor hereunder.

Section 4.07. Severability. If any provision of this Agreement is held to be illegal, invalid or unenforceable, (a) the legality, validity and enforceability of the remaining provisions of this Agreement shall not be affected or impaired thereby and (b) the parties shall endeavor in good faith negotiations to replace the illegal, invalid or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the illegal, invalid or unenforceable provisions. The invalidity of a provision in a particular jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

Section 4.08. Right of Set-Off. In addition to any rights and remedies of the Lenders provided by Law, upon the occurrence and during the continuance of any Event of Default, each Lender and its Affiliates is authorized at any time and from time to time, after obtaining the prior written consent of the Administrative Agent, to the fullest extent permitted by applicable law, to set off and apply any and all deposits (general or special, time or demand, provisional or final, in whatever currency) at any time held and other obligations (in whatever currency) at any time owing by such Lender or any such Affiliate to or for the credit or the account of any Guarantor against any and all of the Guaranteed Obligations, irrespective of whether or not such Lender shall have made any demand under this Agreement and although such obligations of such Guarantor may be contingent or unmatured or denominated in a currency different from that of the applicable deposit or Indebtedness or are owed to a branch or office of such Lender different from the branch or office holding such deposit or obligated on such indebtedness; provided that in the event that any Defaulting Lender shall exercise any such right of setoff, (x) all amounts so set off shall be paid over immediately to the Administrative Agent for further application in accordance with the provisions of Section 2.19 of the Credit Agreement and, pending such payment, shall be segregated by such Defaulting Lender from its other funds and deemed held in trust for the benefit of the Administrative Agent and the Lenders, and (y) the Defaulting Lender shall provide promptly to the Administrative Agent a statement describing in reasonable detail the Guaranteed Obligations owing to such Defaulting Lender as to which it exercised such right of setoff. The rights of each Lender and its Affiliates under this Section are in addition to other rights and remedies (including other rights of set-off) that such Lender or its Affiliates may have. Each Lender agrees to notify the Borrower and the Administrative Agent promptly after any such set-off and application made by such Lender; *provided* that the failure to give such notice shall not affect the validity of such set-off and application.

Section 4.09. Governing Law; Jurisdiction; Consent to Service of Process. (a) This Agreement shall be governed by, and construed in accordance with, the law of the State of New York.

(b) EACH OF THE LOAN PARTIES AND THE ADMINISTRATIVE AGENT FOR ITSELF AND ON BEHALF OF THE SECURED PARTIES HEREBY IRREVOCABLY AND

UNCONDITIONALLY SUBMITS, FOR ITSELF AND ITS PROPERTY, TO THE EXCLUSIVE JURISDICTION OF THE COURTS OF THE STATE OF NEW YORK SITTING IN NEW YORK CITY IN THE BOROUGH OF MANHATTAN AND OF THE UNITED STATES DISTRICT COURT OF THE SOUTHERN DISTRICT OF NEW YORK, AND ANY APPELLATE COURT FROM ANY THEREOF, IN ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT, OR FOR RECOGNITION OR ENFORCEMENT OF ANY JUDGMENT, AND EACH OF THE PARTIES HERETO IRREVOCABLY AND UNCONDITIONALLY AGREES THAT ALL CLAIMS IN RESPECT OF ANY SUCH ACTION OR PROCEEDING MAY BE HEARD AND DETERMINED IN SUCH NEW YORK STATE COURT OR, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, IN SUCH FEDERAL COURT. EACH OF THE PARTIES HERETO AGREES THAT A FINAL JUDGMENT IN ANY SUCH ACTION OR PROCEEDING SHALL BE CONCLUSIVE AND MAY BE ENFORCED IN OTHER JURISDICTIONS BY SUIT ON THE JUDGMENT OR IN ANY OTHER MANNER PROVIDED BY LAW. EACH PARTY HERETO AGREES THAT THE AGENTS AND LENDERS RETAIN THE RIGHT TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY LAW OR TO BRING PROCEEDINGS AGAINST ANY LOAN PARTY IN THE COURTS OF ANY OTHER JURISDICTION IN CONNECTION WITH THE EXERCISE OF ANY RIGHTS UNDER ANY COLLATERAL DOCUMENT OR THE ENFORCEMENT OF ANY JUDGMENT.

(c) EACH OF THE LOAN PARTIES AND THE ADMINISTRATIVE AGENT FOR ITSELF AND ON BEHALF OF THE SECURED PARTIES HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF VENUE OF ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT IN ANY COURT REFERRED TO IN PARAGRAPH (B) OF THIS SECTION. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE DEFENSE OF AN INCONVENIENT FORUM TO THE MAINTENANCE OF SUCH ACTION OR PROCEEDING IN ANY SUCH COURT.

(d) EACH PARTY HERETO IRREVOCABLY CONSENTS TO SERVICE OF PROCESS IN THE MANNER PROVIDED FOR NOTICES IN SECTION 4.01. NOTHING IN THIS AGREEMENT WILL AFFECT THE RIGHT OF ANY PARTY HERETO TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY APPLICABLE LAW.

Section 4.10. WAIVER OF JURY TRIAL. EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH PARTY HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PERSON HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PERSON WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

Section 4.11. Headings. Article and Section headings and the Table of Contents used herein are for convenience of reference only, are not part of this Agreement and are not to affect the construction of, or to be taken into consideration in interpreting, this Agreement.

Section 4.12. Obligations Absolute. To the extent permitted by law, all rights of the Administrative Agent hereunder and all obligations of each Guarantor hereunder shall be absolute and unconditional irrespective of (a) any lack of validity or enforceability of the Credit Agreement, any other Loan Document, any other Secured Credit Document, any other agreement with respect to any of the Guaranteed Obligations or any other agreement or instrument relating to any of the foregoing, (b) any change in the time, manner or place of payment of, or in any other term of, all or any of the Guaranteed Obligations, or any other amendment or waiver of or any consent to any departure from the Credit Agreement, any other Loan Document, any other Secured Credit Document or any other agreement or instrument, (c) any release or amendment or waiver of or consent under or departure from

any guarantee guaranteeing all or any portion of the Guaranteed Obligations or (d) subject only to termination of a Guarantor's obligations hereunder in accordance with the terms of Section 4.13, any other circumstance that might otherwise constitute a defense available to, or a discharge of, any Guarantor in respect of the Guaranteed Obligations or this Agreement.

Section 4.13. Termination or Release. (a) This Agreement and the Guarantees made herein shall terminate with respect to all Guaranteed Obligations upon termination of the Aggregate Commitments, payment in full of all outstanding Guaranteed Obligations (other than (x) obligations under Secured Hedge Agreements, (y) obligations under Secured Cash Management Agreements and (z) contingent indemnification obligations not yet accrued and payable) and the expiration or termination of all Letters of Credit (other than outstanding Letters of Credit that have been Cash Collateralized).

(b) A Guarantor (other than the Borrower) shall automatically be released from its obligations hereunder in the circumstances set forth in Section 9.11(d) of the Credit Agreement.

(c) In connection with any termination or release pursuant to paragraph (a) or (b) above, the Administrative Agent shall promptly execute and deliver to any Guarantor, at such Guarantor's expense, all documents that such Guarantor shall reasonably request to evidence such termination or release and shall perform such other actions reasonably requested by such Guarantor to effect such release. Any execution and delivery of documents pursuant to this Section 4.13 shall be without recourse to or warranty by the Administrative Agent.

(d) At any time that the Borrower desires that the Administrative Agent take any of the actions described in the immediately preceding clause (c), it shall, upon request of the Administrative Agent, deliver to the Administrative Agent an officer's certificate certifying that the release of the respective Guarantor is permitted pursuant to paragraph (a) or (b) above. The Administrative Agent shall have no liability whatsoever to any Secured Party as a result of any release of any Guarantor by it as permitted (or which the Administrative Agent in good faith believes to be permitted) by this Section 4.13.

(e) Notwithstanding anything to the contrary set forth in this Agreement, each Cash Management Bank and each Hedge Bank by the acceptance of the benefits under this Agreement hereby acknowledge and agree that (i) the obligations of the Borrower or any Subsidiary under any Secured Hedge Agreement and any Secured Cash Management Agreement shall be guaranteed pursuant to this Agreement only to the extent that, and for so long as, the other Guaranteed Obligations are so guaranteed and (ii) any release of a Guarantor effected in the manner permitted by this Agreement shall not require the consent of any Hedge Bank or Cash Management Bank.

Section 4.14. Additional Restricted Subsidiaries. Pursuant to Section 6.11 of the Credit Agreement, certain Restricted Subsidiaries of the Loan Parties that were not in existence or not Restricted Subsidiaries on the date of the Credit Agreement are required to enter in this Agreement as Guarantors upon becoming a Restricted Subsidiary. In addition, certain Restricted Subsidiaries of the Loan Parties that are not required under the Credit Agreement to enter in this Agreement as Guarantors may elect to do so at their option. Upon execution and delivery by the Administrative Agent and a Restricted Subsidiary of a Guaranty Supplement, such Restricted Subsidiary shall become a Guarantor hereunder with the same force and effect as if originally named as a Guarantor herein. The execution and delivery of any such instrument shall not require the consent of any other Loan Party hereunder. The rights and obligations of each Loan Party hereunder shall remain in full force and effect notwithstanding the addition of any new Loan Party as a party to this Agreement.

Section 4.15. Recourse. This Agreement is made with full recourse to each Guarantor and pursuant to and upon all the covenants and agreements on the part of such Guarantor contained herein, in the Loan Documents and the other Secured Credit Documents and otherwise in writing in connection herewith or therewith. It is the desire and intent of each Guarantor and each applicable Secured Party that this Agreement shall be enforced against each Guarantor to the fullest extent permissible under applicable Law applied in each jurisdiction in which enforcement is sought.

Section 4.16. Keepwell. Each Qualified ECP Guarantor hereby jointly and severally, absolutely, unconditionally and irrevocably undertakes to provide such funds or other support as may be needed

from time to time by each other Loan Party to honor all of its obligations under this Agreement in respect of Swap Obligations (provided, however, that each Qualified ECP Guarantor shall only be liable under this Section 4.16 for the maximum amount of such liability that can be hereby incurred without rendering its obligations under this Section 4.16, or otherwise under this Agreement, voidable under applicable law relating to fraudulent conveyance or fraudulent transfer, and not for any greater amount). The obligations of each Qualified ECP Guarantor under this Section 4.16 shall remain in full force and effect until the termination of this Agreement or the release of such Guarantor in accordance with Section 4.13. Each Qualified ECP Guarantor intends that this Section 4.16 constitute, and this Section 4.16 shall be deemed to constitute, a "keepwell, support, or other agreement" for the benefit of each other Loan Party for all purposes of Section 1a(18)(A)(v)(II) of the Commodity Exchange Act.

*** * ***

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

CASA SYSTEMS, INC.

By: _____

Name:
Title:

[Signature Page to Guaranty]

[GUARANTORS]

By: _____
Name:
Title:

JPMORGAN CHASE BANK, N.A.,
as Administrative Agent

By: _____
Name:
Title:

[Signature Page to Guaranty]

EXHIBIT I to the
Guaranty

SUPPLEMENT NO. __, dated as of [_____], to the Guaranty, dated as of December **[•],** 2016 (the "Guaranty"), among CASA SYSTEMS, INC. (the "Borrower"), the Subsidiaries of the Borrower party thereto from time to time and JPMORGAN CHASE BANK, N.A., as Administrative Agent.

A. Reference is made to (i) the Credit Agreement, dated as of December **[•],** 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among the Borrower, each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto, (ii) each Secured Hedge Agreement (as defined in the Credit Agreement) and (iii) each Secured Cash Management Agreement (as defined in the Credit Agreement).

B. Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Credit Agreement and the Guaranty, as applicable.

C. The Guarantors have entered into the Guaranty in order to induce (x) the Lenders to make Loans and the L/C Issuers to issue Letters of Credit, (y) the Hedge Banks to enter into and/or maintain Secured Hedge Agreements and (z) the Cash Management Banks to provide Cash Management Services. Section 4.14 of the Guaranty provides that additional Restricted Subsidiaries of the Borrower may become Guarantors under the Guaranty by execution and delivery of an instrument in the form of this Supplement. The undersigned Restricted Subsidiary (the "New Subsidiary") is executing this Supplement in accordance with the requirements of the Credit Agreement to become a Guarantor under the Guaranty in order to, among other things, induce the Lenders to make additional Loans and the L/C Issuers to issue additional Letters of Credit and as consideration for Loans previously made and Letters of Credit previously issued.

Accordingly, the Administrative Agent and the New Subsidiary agree as follows:

Section 1. In accordance with Section 4.14 of the Guaranty, the New Subsidiary by its signature below becomes a Guarantor under the Guaranty with the same force and effect as if originally named therein as a Guarantor and the New Subsidiary hereby agrees to all the terms and provisions of the Guaranty applicable to it as a Guarantor thereunder. Each reference to a "Guarantor" in the Guaranty shall be deemed to include the New Subsidiary as if originally named therein as a Guarantor. The Guaranty is hereby incorporated herein by reference.

Section 2. The New Subsidiary represents and warrants to the Administrative Agent and the other Secured Parties that (i) it has the power and authority to enter into this Supplement and (ii) this Supplement has been duly authorized, executed and delivered by it and constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms, except as such enforceability may be limited by Debtor Relief Laws, general principles of equity and an implied covenant of good faith and fair dealing.

Section 3. This Supplement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Supplement shall become effective when the Administrative Agent shall have received a counterpart of this Supplement that bears the signature of the New Subsidiary and the Administrative Agent has executed a counterpart hereof. Delivery by telecopier or by electronic .pdf copy of an executed counterpart of a signature page to this Supplement shall be effective as delivery of an original executed counterpart of this Supplement. The Administrative Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, .pdf or other electronic imaging means.

Section 4. Except as expressly supplemented hereby, the Guaranty shall remain in full force and effect.

SECTION 5. THIS SUPPLEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

Section 6. If any provision of this Supplement is held to be illegal, invalid or unenforceable, the legality, validity and enforceability of the remaining provisions of this Supplement shall not be affected or impaired thereby. The invalidity of a provision in a particular jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

Section 7. All communications and notices hereunder shall be in writing and given as provided in Section 4.01 of the Guaranty.

Section 8. The New Subsidiary agrees to reimburse the Administrative Agent, on the same terms and to the same extent as provided for in Section 4.03 of the Guaranty, for its reasonable out-of-pocket costs and expenses in connection with this Supplement.

* * *

IN WITNESS WHEREOF, the New Subsidiary and the Administrative Agent have duly executed this Supplement to the Guaranty as of the day and year first above written.

[NAME OF NEW SUBSIDIARY]

By: _____
Name:
Title:

JPMORGAN CHASE BANK, N.A.,
as Administrative Agent

By: _____
Name:
Title:

See Attached

SECURITY AGREEMENT

dated as of

December 20, 2016

among

CASA SYSTEMS, INC.,

THE SUBSIDIARIES OF CASA SYSTEMS, INC.
IDENTIFIED HEREIN

and

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

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EXHIBITS

SECURITY AGREEMENT dated as of December 20, 2016, among CASA SYSTEMS, INC. (the "Borrower"), the Subsidiaries of the Borrower party hereto from time to time and JPMORGAN CHASE BANK, N.A., as Collateral Agent for the Secured Parties.

Reference is made to (i) the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among the Borrower, each Lender (as defined in the Credit Agreement) from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, and the other agents and parties party thereto, (ii) each Guaranty (as defined in the Credit Agreement), (iii) each Secured Hedge Agreement (as defined in the Credit Agreement) and (iv) each Secured Cash Management Agreement (as defined in the Credit Agreement).

The Lenders have agreed to extend credit to the Borrower subject to the terms and conditions set forth in the Credit Agreement, the Hedge Banks have agreed to enter into and/or maintain one or more Secured Hedge Agreements on the terms and conditions set forth therein and the Cash Management Banks have agreed to provide and/or maintain Cash Management Services on the terms and conditions set forth in the applicable Secured Cash Management Agreements The obligations of the Lenders to extend such credit, the obligation of the Hedge Banks to enter into and/or maintain such Secured Hedge Agreements and the obligation of the Cash Management Bank to provide and/or maintain such Cash Management Services are, in each case, conditioned upon, among other things, the execution and delivery of this Agreement by each Grantor. The Grantors are affiliates of one another, will derive substantial benefits from (i) the extensions of credit to the Borrower pursuant to the Credit Agreement, (ii) the entering into and/or maintaining by the Hedge Banks of Secured Hedge Agreements with the Borrower and/or one or more of the Restricted Subsidiaries and (iii) the providing and/or maintaining of Cash Management Services by the Cash Management Banks to the Borrower and/or one or more of its Restricted Subsidiaries, and are willing to execute and deliver this Agreement in order to induce the Lenders to extend such credit, the Hedge Banks to enter into and maintain such Secured Hedge Agreements and the Cash Management Banks to provide and/or maintain such Cash Management Services. Accordingly, the parties hereto agree as follows:

ARTICLE I

DEFINITIONS

Section 1.01. Credit Agreement. (a) Capitalized terms used in this Agreement, including the preamble and introductory paragraphs hereto, and not otherwise defined herein have the meanings specified in the Credit Agreement. All terms defined in the New York UCC (as defined herein) and not defined in this Agreement or in the Credit Agreement have the meanings specified therein; the term "instrument" shall have the meaning specified in Article 9 of the New York UCC.

(b) The rules of construction specified in Article I of the Credit Agreement also apply to this Agreement.

Section 1.02. Other Defined Terms. As used in this Agreement, the following terms have the meanings specified below:

"Account Debtor" means any Person who is or who may become obligated to any Grantor under, with respect to or on account of an Account.

"After-Acquired Intellectual Property" has the meaning assigned to such term in Section 4.02(d).

"Agreement" means this Security Agreement.

"Article 9 Collateral" has the meaning assigned to such term in Section 3.01(a).

"Bankruptcy Event of Default" means any Event of Default under Section 8.01(f) of the Credit Agreement.

"Collateral" means the Article 9 Collateral and the Pledged Collateral.

"Controlled" means, with respect to any Intellectual Property right, the possession (whether by ownership or license, other than pursuant to this Agreement) by a party of the right to grant to another party an interest as provided herein under such item or right without violating the terms of any agreement or other arrangements with any third party existing before or after the Closing Date.

"Copyright License" means any written agreement, now or hereafter in effect, (1) granting to any third party any right under an Owned Copyright or any Copyright that a Grantor otherwise has the right to grant a license under, or (2) granting to any Grantor any right under any Copyright now or hereafter owned by any third party, and all rights of such Grantor under any such agreement.

"Copyright Security Agreement" shall mean an agreement substantially in the form of Exhibit II hereto.

"Copyrights" means: (a) all copyright rights in any work subject to the copyright laws of the United States or any other country, whether the holder of such rights is an author, assignee, transferee or otherwise entitled to such rights, whether registered or unregistered and whether published or unpublished; (b) all registrations and applications for registration of any such copyright in the United States or any other country, including registrations, recordings, supplemental registrations and pending applications for registration in the United States Copyright Office, including those listed on Schedule 7(b) of the Perfection Certificate; and (c) all (i) rights and privileges arising under applicable Laws with respect to the use of such copyrights, (ii) reissues, renewals, continuations and extensions or restorations thereof and amendments thereto, (iii) income, fees, royalties, damages, claims and payments now or hereafter due and/or payable with respect thereto, including damages and payments for past, present or future infringements thereof, (iv) rights corresponding thereto throughout the world and (v) rights to sue for past, present or future infringements thereof.

"Credit Agreement" has the meaning assigned to such term in the preliminary statement of this Agreement.

"Domain Names" means all Internet domain names and associated URL addresses in or to which any Grantor now or hereafter has any right, title or interest.

"Excluded Assets" has the meaning assigned to such term in the Credit Agreement.

"General Intangibles" has the meaning provided in Article 9 of the New York UCC and shall in any event include all choses in action and causes of action and all other intangible personal property of every kind and nature now owned or hereafter acquired by any Grantor, as the case may be, including corporate or other business records, indemnification claims, contract rights (including rights under leases, whether entered into as lessor or lessee, Swap Contracts and other agreements), goodwill, registrations, franchises, tax refund claims and any letter of credit, guarantee, claim, security interest or other security held by or granted to any Grantor, as the case may be, to secure payment by an Account Debtor of any of the Accounts.

"Grantor" means each of the Borrower and each Guarantor listed on the signature pages hereto or that becomes a party hereto pursuant to Section 7.14.

"Intellectual Property" means all intellectual and similar property rights of every kind and nature, including inventions, designs, Patents, Copyrights, Licenses, Trademarks, trade secrets, confidential or proprietary technical and business information, know-how, show-how or other data or information, software, databases, all other proprietary information, including but not limited to Domain Names, and all embodiments or fixations thereof and related documentation, registrations, and all additions, improvements and accessions to, and books and records describing or used in connection with, any of the foregoing.

"Intellectual Property Collateral" means the Collateral consisting of Owned Intellectual Property.

"License" means any Patent License, Trademark License, Copyright License, or other license or sublicense agreement to which any Grantor is a party.

"New York UCC" means the Uniform Commercial Code as from time to time in effect in the State of New York.

"Owned Copyrights" means Copyrights now Controlled by, or that hereafter become Controlled by Grantor, whether by acquisition, assignment, or an exclusive license, including those listed on Schedule 7(b) of the Perfection Certificate.

"Owned Intellectual Property" means Intellectual Property now Controlled by, or that hereafter becomes Controlled by, any Grantor, whether by acquisition, assignment, or an exclusive license including, but not limited to, all Intellectual Property listed on Schedules 7(a) and (b) of the Perfection Certificate.

"Owned Patents" means Patents now Controlled by, or that hereafter become Controlled by, any Grantor whether by acquisition, assignment, or an exclusive license, including those listed on Schedule 7(a) of the Perfection Certificate.

"Owned Trademarks" means Trademarks now Controlled by, or that hereafter become Controlled by, any Grantor, whether by acquisition, assignment, or an exclusive license, including those listed on Schedule 7(a) of the Perfection Certificate.

"Patent License" means any written agreement, now or hereafter in effect, (1) granting to any third party any right arising under an Owned Patent or any Patent that a Grantor otherwise has the right to grant a license under, or (2) granting to any Grantor any right arising under a Patent now or hereafter owned by any third party; and all rights of any Grantor under any such agreement.

"Patent Security Agreement" shall mean an agreement substantially in the form of Exhibit III hereto.

"Patents" means: (a) all letters patent of the United States or the equivalent thereof in any other country, all registrations and recordings thereof, and all applications for letters patent of the United States or the equivalent thereof in any other country, including registrations, recordings and pending applications in the United States Patent and Trademark Office or any similar offices in any other country, including those listed on Schedule 7(a) of the Perfection Certificate; and (b) (i) rights and privileges arising under applicable Laws with respect to the use of any patents, (ii) inventions and improvements described and claimed therein, (iii) reissues, reexaminations, divisions, continuations, renewals, extensions and continuations-in-part thereof and amendments thereto, (iv) income, fees, royalties, damages, claims and payments now or hereafter due and/or payable thereunder and with respect thereto including damages and payments for past, present or future infringements thereof, (v) rights corresponding thereto throughout the world and (vi) rights to sue for past, present or future infringements thereof.

"Perfection Certificate" means: (a) with respect to each Grantor party to this Agreement on the Closing Date, the certificate attached hereto as Exhibit V-1 and (b) with respect to each Grantor that becomes a party to this Agreement after the Closing Date, a certificate substantially in the form of Exhibit V-2 hereto, in each case, completed and supplemented with the schedules and attachments contemplated thereby, and duly executed by a Responsible Officer of such Grantor; provided, however, if at any time there is more than one Perfection Certificate, the Grantors may combine all such certificates into one Perfection Certificate.

"Pledged Collateral" has the meaning assigned to such term in Section 2.01.

"Pledged Debt" has the meaning assigned to such term in Section 2.01.

"Pledged Equity" has the meaning assigned to such term in Section 2.01.

"Pledged Securities" means all Pledged Equity and Pledged Debt.

"Secured Obligations" means the "Obligations" as defined in the Credit Agreement; it being acknowledged and agreed that the term "Secured Obligations" as used herein shall include each extension of credit under the Credit Agreement and all obligations of the Borrower and/or its Restricted Subsidiaries under the Secured Hedge Agreements and the Secured Cash Management Agreements, in each case, whether outstanding on the date of this Agreement or extended from time to time after the date of this Agreement.

"Security Agreement Supplement" means an instrument substantially in the form of Exhibit I hereto.

"Security Interest" has the meaning assigned to such term in Section 3.01(a).

"Trademark License" means any written agreement, now or hereafter in effect, (1) granting to any third party any right to use any Owned Trademark or any Trademark that a Grantor otherwise has the right to grant a license under, or (2) granting to any Grantor any right to use any Trademark now or hereafter owned by any third party, and all rights of any Grantor under any such agreement (not including vendor or distribution agreements that allow incidental use of intellectual property rights in connection with the sale or distribution of such products or services).

"Trademark Security Agreement" shall mean an agreement substantially in the form of Exhibit IV hereto.

"Trademarks" means: (a) all trademarks, service marks, trade names, corporate names, company names, business names, fictitious business names, slogans, trade styles, trade dress, logos, other source or business identifiers, designs and General Intangibles of like nature, whether registered or unregistered, now existing or hereafter adopted, acquired or assigned, the goodwill of the business symbolized thereby or associated therewith, all registrations and recordings thereof, and all registration and recording applications filed in connection therewith, including registrations and registration applications in the United States Patent and Trademark Office or any similar offices in any State of the United States or any other country or any political subdivision thereof, and all extensions or renewals thereof, including those listed on Schedule 7(a) of the Perfection Certificate, but excluding any intent-to-use trademark application prior to the filing of a "Statement of Use" or "Amendment to Use" with respect thereto, to the extent, if any, that, and solely during the period, if any, in which the grant of a security interest therein would impair the validity of enforceability of such intent-to-use trademark application under applicable federal Law, together with (b) any and all (i) rights and privileges arising under applicable Laws with respect to the use of any trademarks, (ii) reissues, continuations, extensions and renewals thereof and amendments thereto, (iii) income, fees, royalties, damages and payments now and hereafter due and/or payable thereunder and with respect thereto, including damages, claims and payments for past, present or future infringements thereof, (iv) rights corresponding thereto throughout the world and (v) rights to sue for past, present and future infringements thereof.

ARTICLE II

PLEDGE OF SECURITIES

Section 2.01. Pledge. As security for the payment or performance, as the case may be, in full of the Secured Obligations, each Grantor hereby assigns and pledges to the Collateral Agent, for the benefit of the Secured Parties, and hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest in, all of such Grantor's right, title and interest in, to and under (whether now existing or hereafter acquired):

(a) all Equity Interests of each Subsidiary directly owned by such Grantor held by it and listed on Schedule 4 of the Perfection Certificate and any other Equity Interests of Subsidiaries directly owned in the future by such Grantor and the certificates, if any, representing all such Equity Interests (the "Pledged Equity"); provided that the Pledged Equity shall not include Excluded Assets;

(b) all debt obligations from time to time owed to such Grantor and the promissory notes and instruments evidencing Indebtedness for borrowed money owned by a Grantor and listed opposite the name of such Grantor on Schedule 5 of the Perfection Certificate, and any promissory notes and instruments evidencing Indebtedness for borrowed money obtained in the future by such Grantor (collectively, the "Pledged Debt") ; provided that the Pledged Debt shall not include Excluded Assets;

(c) subject to Section 2.06, all payments of principal or interest, dividends, cash, instruments and other property from time to time received, receivable or otherwise distributed in respect of, in exchange for or upon the conversion of, and all other Proceeds received in respect of, the securities referred to in clauses (a) and (b) above;

(d) subject to Section 2.06, all rights and privileges of such Grantor with respect to the securities and other property referred to in clauses (a), (b) and (c) above; and

(e) all Proceeds of, and Security Entitlements in, any of the foregoing (the items referred to in clauses (a) through (d) above being collectively referred to as the "Pledged Collateral"; provided that Pledged Collateral shall not include any Excluded Assets);

TO HAVE AND TO HOLD the Pledged Collateral, together with all right, title, interest, powers, privileges and preferences pertaining or incidental thereto, unto the Collateral Agent, for the benefit of the Secured Parties, forever; subject, however, to the terms, covenants and conditions hereinafter set forth.

Section 2.02. Delivery of the Pledged Collateral. (a) Each Grantor agrees on the Closing Date or, if acquired after the date hereof, within forty-five (45) days after receipt thereof by such Grantor (or such longer period as the Collateral Agent may agree in its reasonable discretion) to deliver or cause to be delivered to the Collateral Agent, for the benefit of the Secured Parties, any and all Pledged Securities (other than any uncertificated securities, but only for so long as such securities remain uncertificated) to the extent such Pledged Securities, in the case of promissory notes and instruments evidencing Indebtedness, are required to be delivered pursuant to paragraph (b) of this Section 2.02.

(b) Within forty-five (45) days after receipt by a Grantor (or such longer period as the Collateral Agent may agree in its reasonable discretion), each Grantor will cause any Indebtedness for borrowed money having an aggregate principal amount that is in excess of $1,000,000 owed to such Grantor by any Person (other than a Loan Party) to be evidenced by a duly executed promissory note that, if constituting Collateral, is pledged and delivered to the Collateral Agent, for the benefit of the Secured Parties, pursuant to the terms hereof.

(c) Upon delivery to the Collateral Agent, (i) any Pledged Securities shall be accompanied by undated stock or note powers, as applicable, duly executed in blank or other instruments of transfer reasonably satisfactory to the Collateral Agent and by such other instruments and documents as the Collateral Agent may reasonably request and (ii) all other property comprising part of the Pledged Collateral shall be accompanied by proper instruments of assignment (if appropriate) duly executed in blank by the applicable Grantor and such other instruments or documents as the Collateral Agent may reasonably request. Each delivery of Pledged Securities shall be accompanied by a schedule describing such Pledged Securities, which schedule shall be deemed to supplement Schedule 4 or 5 of the Perfection Certificate and made a part hereof; provided that failure to supplement any such schedule shall not affect the validity of such pledge of such Pledged Securities. Each schedule so delivered shall supplement any prior schedules so delivered.

Section 2.03. Representations, Warranties and Covenants. The Borrower represents, warrants and covenants, as to itself and the other Grantors, to the Collateral Agent, for the benefit of the Secured Parties, as and to the extent required by the terms of the Credit Agreement that:

(a) Schedules 4 and 5 of the Perfection Certificate (as such schedules are supplemented from time to time pursuant to Section 2.02(c)) correctly set forth, as of the later of the Closing Date and the date of the most recent supplement to the Perfection Certificate delivered pursuant to Section 2.02(c), the percentage of the issued and outstanding units of each class of the Equity Interests of the issuer thereof represented by the Pledged Equity and includes all Equity Interests required to be pledged and all Pledged Debt required to be pledged and delivered hereunder in order to satisfy the Collateral and Guarantee Requirement, in each case, subject to any Disposition made in compliance with the Credit Agreement;

(b) the Pledged Equity issued by a wholly-owned Restricted Subsidiary and Pledged Debt (solely with respect to Pledged Debt issued by a Person other than Borrower or a Subsidiary of Borrower, to the Borrower's knowledge) have been duly and validly authorized and issued by the issuers thereof and (i) in the case of Pledged Equity, are fully paid and non-assessable (to the extent such concepts exist under applicable Law) and (ii) in the case of Pledged Debt (solely with respect to Pledged Debt issued by a Person other than Borrower or a Subsidiary of Borrower, to the Borrower's knowledge), are legal, valid and binding obligations of the issuers thereof, subject to applicable Debtor Relief Laws, general principles of equity and an implied covenant of good faith and fair dealing;

(c) each of the Grantors (i) subject to any Dispositions made in compliance with the Credit Agreement, is and will continue to be the direct owner, beneficially and of record, of the Pledged Securities indicated on Schedules 4 and 5 of the Perfection Certificate as owned by such Grantors, (ii) holds the same free and clear of all Liens, other than (A) Liens created by the Collateral Documents and (B) other Liens not prohibited by Section 7.01 of the Credit Agreement and (iii) will make no further assignment, pledge, hypothecation or transfer of, or create or permit to exist any security interest in or other Lien on, the Pledged Securities, other than (A) Liens created by the Collateral Documents, (B) Liens not prohibited by Section 7.01 of the Credit Agreement and (C) other assignments, pledges, hypothecations or transfers made in compliance with the Credit Agreement;

(d) except for (i) restrictions and limitations imposed by the Loan Documents or securities laws generally or by Liens not prohibited by Section 7.01 of the Credit Agreement and (ii) customary restrictions, encumbrances and limitations in joint venture agreements and similar arrangements, the Pledged Securities are and will continue to be freely transferable and assignable, and none of the Pledged Securities are or will be subject to any option, right of first refusal, shareholders agreement, charter or by-law provisions or contractual restriction of any nature that would prohibit, impair, delay or otherwise affect in any manner material and adverse to the Secured Parties the pledge of such Pledged Securities hereunder, the sale or disposition thereof pursuant hereto or the exercise by the Collateral Agent of rights and remedies hereunder;

(e) each of the Grantors has the power and authority to pledge the Pledged Collateral pledged by it hereunder in the manner hereby done or contemplated;

(f) no consent or approval of any Governmental Authority, any securities exchange or any other Person was or is necessary to the validity of the pledge effected hereby (other than (i) filings and registrations necessary to perfect the Liens on the Collateral granted by the Grantors in favor of the Collateral Agent for the benefit of the Secured Parties or (ii) such as have been obtained and are in full force and effect) (except to the extent not required to be obtained, taken, given, or made or to be in full force and effect pursuant to the Collateral and Guarantee Requirement);

(g) by virtue of the execution and delivery by the Grantors of this Agreement, when any Pledged Securities are delivered to the Collateral Agent in the State of New York, the Collateral Agent will obtain a legal, valid and, to the extent governed by the New York UCC, first-priority perfected lien upon and security interest in such Pledged Securities as security for the payment and performance of the Secured Obligations, subject to any Lien not prohibited by and having the ranking permitted under Section 7.01 of the Credit Agreement; and

(h) the pledge effected hereby is effective to vest in the Collateral Agent, for the benefit of the Secured Parties, the rights of the Collateral Agent in the Pledged Collateral as set forth herein.

Notwithstanding anything to the contrary in this Agreement, to the extent any provision of this Agreement or the Credit Agreement excludes any assets from the scope of the Pledged Collateral, or from any requirement to take any action to perfect any security interest in favor of the Collateral Agent in the Pledged Collateral, the representations, warranties and covenants made by any relevant Grantor in this Agreement with respect to the creation, perfection or priority (as applicable) of the security interest granted in favor of the Collateral Agent (including, without limitation, this Section 2.03) shall be deemed not to apply to such excluded assets.

Section 2.04. Certification of Limited Liability Company and Limited Partnership Interests. Each Grantor acknowledges and agrees that, to the extent any interest in any limited liability company or limited

partnership controlled by any Grantor and pledged under Section 2.01 is a "security" within the meaning of Article 8 of the UCC and is governed by Article 8 of the UCC, such interest shall be represented by a certificate and such certificate shall be delivered to the Collateral Agent pursuant to Sections 2.02(a) and (c). Each Grantor further acknowledges and agrees that with respect to any interest in any limited liability company or limited partnership controlled on or after the date hereof by such Grantor and pledged hereunder that is not a "security" within the meaning of Article 8 of the UCC, such Grantor shall at no time elect to treat any such interest as a "security" within the meaning of Article 8 of the UCC, nor shall such interest be represented by a certificate, unless such election and such interest is thereafter represented by a certificate that is promptly delivered to the Collateral Agent pursuant to Sections 2.02(a) and (c).

Section 2.05. Registration in Nominee Name; Denominations. If an Event of Default shall have occurred and be continuing and the Collateral Agent shall have given the Borrower prior written notice of its intent to exercise such rights, (a) the Collateral Agent, on behalf of the Secured Parties, shall have the right (in its sole and absolute discretion) to hold the Pledged Securities in its own name as pledgee, the name of its nominee (as pledgee or as sub-agent) or the name of the applicable Grantor, endorsed or assigned in blank or in favor of the Collateral Agent and each Grantor will promptly give to the Collateral Agent copies of any notices or other written communications received by it with respect to Pledged Securities registered in the name of such Grantor and (b) the Collateral Agent shall have the right to exchange the certificates representing Pledged Securities for certificates of smaller or larger denominations for any purpose consistent with this Agreement and to the extent permitted by the documentation governing such Pledged Securities; provided that, notwithstanding the foregoing, if a Bankruptcy Event of Default shall have occurred and be continuing, the Collateral Agent shall not be required to give the notice referred to above in order to exercise the rights described above.

Section 2.06. Voting Rights; Dividends and Interest. (a) Unless and until an Event of Default shall have occurred and be continuing and the Collateral Agent shall have notified the Borrower in writing that the rights of the Grantors under this Section 2.06 are being suspended:

(i) Each Grantor shall be entitled to exercise any and all voting and/or other consensual rights and powers inuring to an owner of Pledged Securities or any part thereof for any purpose consistent with the terms of this Agreement, the Credit Agreement and the other Loan Documents.

(ii) The Collateral Agent shall promptly execute and deliver to each Grantor, or cause to be executed and delivered to such Grantor, all such proxies, powers of attorney and other instruments as such Grantor may reasonably request for the purpose of enabling such Grantor to exercise the voting and/or consensual rights and powers it is entitled to exercise pursuant to subparagraph (i) above.

(iii) Each Grantor shall be entitled to receive and retain any and all dividends, interest, principal and other distributions paid on or distributed in respect of the Pledged Securities, to the extent (and only to the extent) that such dividends, interest, principal and other distributions are permitted by, and otherwise paid or distributed in accordance with, the terms and conditions of the Credit Agreement, the other Loan Documents and applicable Laws; provided that any noncash dividends, interest, principal or other distributions that would constitute Pledged Equity or Pledged Debt, whether resulting from a subdivision, combination or reclassification of the outstanding Equity Interests of the issuer of any Pledged Securities or received in exchange for Pledged Securities or any part thereof, or in redemption thereof, or as a result of any merger, consolidation, acquisition or other exchange of assets to which such issuer may be a party or otherwise, shall be and become part of the Pledged Collateral, and, if received by any Grantor, shall not be commingled by such Grantor with any of its other funds or property but shall be held separate and apart therefrom, shall be held in trust for the benefit of the Collateral Agent and the Secured Parties and shall be promptly (and in any event within ten (10) Business Days or such longer period as the Collateral Agent may agree in its reasonable discretion) delivered to the Collateral Agent in the same form as so received (with any necessary endorsement reasonably requested by the Collateral Agent). So long as no Event of Default has occurred and is continuing, the Collateral Agent shall promptly deliver to each Grantor any Pledged Securities in its possession if requested to be delivered to the issuer thereof in connection with any exchange or redemption of such Pledged Securities in accordance with this Section 2.06(a)(iii).

(b) Upon the occurrence and during the continuance of an Event of Default, after the Collateral Agent shall have notified the Borrower of the suspension of the rights of the Grantors under

paragraph (a)(iii) of this Section 2.06, then all rights of any Grantor to dividends, interest, principal or other distributions that such Grantor is authorized to receive pursuant to paragraph (a)(iii) of this Section 2.06 shall cease, and all such rights shall thereupon become vested in the Collateral Agent, which shall have the sole and exclusive right and authority to receive and retain such dividends, interest, principal or other distributions. All dividends, interest, principal or other distributions received by any Grantor contrary to the provisions of this Section 2.06 shall be held in trust for the benefit of the Collateral Agent, shall be segregated from other property or funds of such Grantor and shall be promptly (and in any event within ten (10) Business Days or such longer period as the Collateral Agent may agree in its reasonable discretion) delivered to the Collateral Agent upon written demand in the same form as so received (with any necessary endorsement reasonably requested by the Collateral Agent). Any and all money and other property paid over to or received by the Collateral Agent pursuant to the provisions of this paragraph (b) shall be retained by the Collateral Agent in an account to be established by the Collateral Agent upon receipt of such money or other property and shall be applied in accordance with the provisions of Section 5.02. After all Events of Default have been cured or waived, the Collateral Agent shall promptly repay to each Grantor (without interest) all dividends, interest, principal or other distributions that such Grantor would otherwise be permitted to retain pursuant to the terms of paragraph (a)(iii) of this Section 2.06 in the absence of any such Event of Default and that remain in such account, and such Grantor's right to receive and retain any and all dividends, interest, principal and other distributions paid on or distributed in respect of the Pledged Securities pursuant to Section 2.06(a) shall be automatically reinstated.

(c) Upon the occurrence and during the continuance of an Event of Default, after the Collateral Agent shall have notified the Borrower of the suspension of the rights of the Grantors under paragraph (a)(i) of this Section 2.06, then all rights of any Grantor to exercise the voting and consensual rights and powers it is entitled to exercise pursuant to paragraph (a)(i) of this Section 2.06, and the obligations of the Collateral Agent under paragraph (a)(ii) of this Section 2.06, shall cease, and all such rights shall thereupon become vested in the Collateral Agent, which shall have the sole and exclusive right and authority to exercise such voting and consensual rights and powers; provided that, unless otherwise directed by the Required Lenders, the Collateral Agent shall have the right from time to time following and during the continuance of an Event of Default to permit the Grantors to exercise such rights at the discretion of the Collateral Agent. After all Events of Default have been cured or waived, each Grantor shall have the exclusive right to exercise the voting and/or consensual rights and powers that such Grantor would otherwise be entitled to exercise pursuant to the terms of paragraph (a)(i) above, and the obligations of the Collateral Agent under paragraph (a)(ii) of this Section 2.06 shall be automatically reinstated.

(d) Any notice given by the Collateral Agent to the Borrower suspending the rights of the Grantors under paragraph (a) of this Section 2.06(i) shall be given in writing five (5) Business Days in advance of any such suspension, (ii) may be given with respect to one or more of the Grantors at the same or different times and (iii) may suspend the rights of the Grantors under paragraph (a)(i) or paragraph (a)(iii) in part without suspending all such rights (as specified by the Collateral Agent in its sole and absolute discretion) and without waiving or otherwise affecting the Collateral Agent's rights to give additional notices from time to time suspending other rights so long as an Event of Default has occurred and is continuing. Notwithstanding anything to the contrary contained in Sections 2.06(a), (b) or (c), if a Bankruptcy Event of Default shall have occurred and be continuing, the Collateral Agent shall not be required to give any notice referred to in said Section in order to exercise any of its rights described in such Sections, and the suspension of the rights of each of the Grantors under each such Section shall be automatic upon the occurrence of such Bankruptcy Event of Default.

Section 2.07. Collateral Agent Not a Partner or Limited Liability Company Member. Nothing contained in this Agreement shall be construed to make the Collateral Agent or any other Secured Party liable as a member of any limited liability company or as a partner of any partnership and neither the Collateral Agent nor any other Secured Party by virtue of this Agreement or otherwise (except as referred to in the following sentence) shall have any of the duties, obligations or liabilities of a member of any limited liability company or as a partner in any partnership. The parties hereto expressly agree that, unless the Collateral Agent shall become the absolute owner of Pledged Equity consisting of a limited liability company interest or a partnership interest pursuant hereto, this Agreement shall not be construed as creating a partnership or joint venture among the Collateral Agent, any other Secured Party, any Grantor and/or any other Person.

ARTICLE III

SECURITY INTERESTS IN PERSONAL PROPERTY

Section 3.01. Security Interest. (a) As security for the payment or performance, as the case may be, in full of the Secured Obligations, each Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the "Security Interest") in, all of such Grantor's right, title or interest in or to any and all of the following assets and properties now owned or at any time hereafter acquired by such Grantor or in which such Grantor now has or at any time in the future may acquire any right, title or interest (collectively, the "Article 9 Collateral"):

(i) all Accounts;

(ii) all Chattel Paper;

(iii) all Documents;

(iv) all Equipment;

(v) all General Intangibles;

(vi) all Instruments;

(vii) all Inventory;

(viii) all Intellectual Property Collateral;

(ix) all Investment Property;

(x) all books and records pertaining to the Article 9 Collateral;

(xi) all Goods and Fixtures;

(xii) all Letter-of-Credit Rights;

(xiii) all Commercial Tort Claims described on Schedule 8 of the Perfection Certificate;

(xiv) all Money, cash, cash equivalents, Deposit Accounts and the Cash Collateral Account (and all cash, securities and other investments deposited therein);

(xv) all Supporting Obligations;

(xvi) all Security Entitlements in any or all of the foregoing; and

(xvii) to the extent not otherwise included, all Proceeds and products of any and all of the foregoing and all collateral security and guarantees given by any Person with respect to any of the foregoing;

provided that, notwithstanding anything to the contrary in this Agreement, Article 9 Collateral shall not include any, and no Security Interest shall be granted in any, Excluded Assets.

(b) Subject to Section 3.03(h), each Grantor hereby irrevocably authorizes the Collateral Agent for the benefit of the Secured Parties at any time and from time to time to file in any relevant jurisdiction any financing statements or continuation statements (including fixture filings) with respect to the Article 9 Collateral or any part thereof and amendments thereto that (i) indicate the Collateral as all assets or all

personal property of such Grantor or words of similar effect as being of an equal or lesser scope or with greater detail, and (ii) contain the information required by Article 9 of the UCC of each applicable jurisdiction for the filing of any financing statement, continuation statement or amendment, including (A) whether such Grantor is an organization, the type of organization and any organizational identification number (if any) issued to such Grantor and (B) in the case of a financing statement filed as a fixture filing, a sufficient description of the real property to which such Article 9 Collateral relates. Each Grantor agrees to provide such information to the Collateral Agent promptly upon reasonable request.

(c) The Security Interest is granted as security only and shall not subject the Collateral Agent or any other Secured Party to, or in any way alter or modify, any obligation or liability of any Grantor with respect to or arising out of the Article 9 Collateral.

(d) Each Grantor hereby further authorizes the Collateral Agent to file filings with the United States Patent and Trademark Office or United States Copyright Office (or any successor office), as applicable, including the Trademark Security Agreement, Copyright Security Agreement, and Patent Security Agreement or other documents as may be necessary or advisable for the purpose of perfecting, confirming, continuing, enforcing or protecting the Security Interest granted by such Grantor hereunder, without the signature of such Grantor, and naming such Grantor, as debtor, and the Collateral Agent, as secured party.

Section 3.02. Representations and Warranties. The Borrower represents and warrants, as to itself and the other Grantors, to the Collateral Agent, for the benefit of the Secured Parties, as and to the extent required by the Credit Agreement that:

(a) Subject to Liens not prohibited by Section 7.01 of the Credit Agreement, each Grantor has good and valid rights in and title to the Article 9 Collateral with respect to which it has purported to grant a Security Interest hereunder and has full power and authority to grant to the Collateral Agent the Security Interest in such Article 9 Collateral pursuant hereto and to execute, deliver and perform its obligations in accordance with the terms of this Agreement, without the consent or approval of any other Person other than any consent or approval that has been obtained.

(b) The Perfection Certificate has been duly executed and delivered to the Collateral Agent and the information set forth therein, including the exact legal name of each Grantor, is correct and complete in all material respects as of the Closing Date. The UCC financing statements (including fixture filings, as applicable) or other appropriate filings, recordings or registrations prepared by the Collateral Agent based upon the information provided to the Collateral Agent in the Perfection Certificate for filing in each governmental, municipal or other office specified in Schedule 3 of the Perfection Certificate (as supplemented from time to time or specified by notice from the applicable Grantor to the Collateral Agent after the Closing Date in the case of filings, recordings or registrations required by Section 6.11 of the Credit Agreement), are all the filings, recordings and registrations that are necessary to establish a legal, valid and perfected security interest in favor of the Collateral Agent (for the benefit of the Secured Parties) in respect of all Article 9 Collateral in which the Security Interest may be perfected by filing, recording or registration in the United States (or any political subdivision thereof), and no further or subsequent filing, refiling, recording, rerecording, registration or reregistration with respect to such Collateral is necessary in any such jurisdiction, except as provided under applicable Laws with respect to the filing of continuation statements and amendments. Each Grantor represents and warrants that, as of the Closing Date, fully executed agreements in the form of Exhibit II, Exhibit III and Exhibit IV hereof and containing a description of all Intellectual Property Collateral with respect to United States Patents and United States registered Trademarks (and Trademarks for which United States registration applications are pending) and United States registered Copyrights, in each case, including Licenses under which any such Grantor is an exclusive licensess, have been delivered to the Collateral Agent for recording by the United States Patent and Trademark Office and the United States Copyright Office pursuant to 35 U.S.C. § 261, 15 U.S.C. § 1060 or 17 U.S.C. § 205 and the regulations thereunder, as applicable.

(c) The Security Interest constitutes (i) a legal and valid security interest in all the Article 9 Collateral securing the payment and performance of the Secured Obligations, (ii) subject to the filings described in Section 3.02(b), a perfected security interest in all Article 9 Collateral in which a security interest may be perfected by filing, recording or registering a financing statement or analogous document in the United States (or

any political subdivision thereof) pursuant to the UCC and (iii) a security interest that shall be perfected in all Collateral in which a security interest may be perfected upon the receipt and recording of fully executed agreements in the form of Exhibit II, Exhibit III and Exhibit IV hereof with the United States Patent and Trademark Office and the United States Copyright Office, as applicable, within the three month period (commencing as of the date hereof) pursuant to 35 U.S.C. § 261 or 15 U.S.C. § 1060 or the one month period (commencing as of the date hereof) pursuant to 17 U.S.C. § 205. The Security Interest is and shall be prior to any other Lien on any of the Article 9 Collateral, other than any Lien that is not prohibited by and having the ranking permitted under Section 7.01 of the Credit Agreement.

(d) The Article 9 Collateral is owned by the Grantors free and clear of any Lien, except for Liens not prohibited by Section 7.01 of the Credit Agreement. None of the Grantors has filed or consented to the filing of (i) any financing statement or analogous document under the UCC or any other applicable Laws covering any Article 9 Collateral, (ii) any assignment in which any Grantor assigns any Article 9 Collateral or any security agreement or similar instrument covering any Article 9 Collateral with the United States Patent and Trademark Office or the United States Copyright Office, or (iii) any assignment in which any Grantor assigns any Article 9 Collateral or any security agreement or similar instrument covering any Article 9 Collateral with any foreign governmental, municipal or other office, which financing statement or analogous document, assignment, security agreement or similar instrument is still in effect, except, in each of clauses (i), (ii) and (iii) above, for Liens not prohibited by and having the ranking permitted under Section 7.01 of the Credit Agreement.

(e) All Commercial Tort Claims of each Grantor where the amount of the damages claimed by such Grantor equals or exceeds $1,000,000 in existence on the date of this Agreement (or on the date upon which such Grantor becomes a party to this Agreement) are described on Schedule 8 of the Perfection Certificate, as supplemented pursuant to Section 3.04(c).

Section 3.03. Covenants. (a) The Borrower agrees to promptly notify the Collateral Agent in writing of any change (i) in the legal name of any Grantor, (ii) in the identity or type of organization or corporate structure of any Grantor, (iii) in the jurisdiction of organization of any Grantor, (iv) in the organizational identification number of any Grantor (if any), but solely to the extent such organizational identification number is required to be set forth on financing statements under the applicable UCC or (v) the chief executive office of any Grantor and, upon request by the Collateral Agent, take all actions necessary to continue the perfection of the security interest created hereunder following any such change with the same priority as immediately prior to such change. The Borrower agrees promptly to provide the Collateral Agent after notification of any such change with certified Organization Documents reflecting any of the changes described in the first sentence of this paragraph.

(b) Subject to Section 3.03(h), each Grantor shall, at its own expense, upon the reasonable request of the Collateral Agent, take any and all commercially reasonable actions necessary to defend title to the Article 9 Collateral (including without limitation the Pledged Securities) against all Persons claiming an interest therein that is adverse (or otherwise prohibited by the Credit Agreement) to the interests hereunder of the Collateral Agent or any other Secured Party, except with respect to Article 9 Collateral that such Grantor determines in its reasonable business judgment is no longer necessary or beneficial to the conduct of the business and Liens not prohibited by Section 7.01 of the Credit Agreement, and to defend the Security Interest of the Collateral Agent in the Article 9 Collateral (including without limitation the Pledged Securities) and the priority thereof against any Lien prohibited by Section 7.01 of the Credit Agreement; provided that, nothing in this Agreement shall prevent any Grantor from discontinuing the operation or maintenance of any of its assets or properties if such discontinuance is permitted by the Credit Agreement.

(c) Each year, at the time of delivery of a Compliance Certificate pursuant to Section 6.02(a) of the Credit Agreement, in connection with the delivery of annual financial statements with respect to the preceding fiscal year pursuant to Section 6.01 of the Credit Agreement, the Borrower shall deliver to the Collateral Agent a certificate executed by a Responsible Officer of the Borrower setting forth the information required pursuant to Schedules 1(a), 1(c), 1(e), 1(f), 2(b), 7(a) and 7(b) of the Perfection Certificate or confirming that there has been no change in such information since the date of such certificate or the date of the most recent certificate delivered pursuant to this Section 3.03(c).

(d) Subject to Section 3.03(h) and any other express limitation in this Agreement, the Borrower agrees, on its own behalf and on behalf of each other Grantor, at its own expense, to execute, acknowledge, deliver and cause to be duly filed all such further instruments and documents and take all such actions as the Collateral Agent may from time to time reasonably request to better assure, preserve, protect and perfect the Security Interest and the rights and remedies created hereby, including the payment of any fees and Taxes required in connection with the execution and delivery of this Agreement, the granting of the Security Interest and the filing of any financing statements (including fixture filings) or other documents in connection herewith or therewith. If any amount payable under or in connection with any of the Article 9 Collateral (other than by a Loan Party) that exceeds $1,000,000 shall be or become evidenced by any promissory note or other instrument, such note or instrument shall be promptly (and in any event within forty-five (45) days of its acquisition or such longer period as the Collateral Agent may agree in its reasonable discretion) pledged and delivered to the Collateral Agent, for the benefit of the Secured Parties, duly endorsed in a manner reasonably satisfactory to the Collateral Agent.

(e) At its option, the Collateral Agent may discharge past due taxes, assessments, charges, fees, Liens, security interests or other encumbrances at any time levied or placed on the Article 9 Collateral and prohibited by Section 7.01 of the Credit Agreement, and may pay for the maintenance and preservation of the Article 9 Collateral to the extent any Grantor fails to do so as required by the Credit Agreement, this Agreement or any other Loan Document and within a reasonable period of time after the Collateral Agent has requested that it do so, and each Grantor jointly and severally agrees to reimburse the Collateral Agent within ten (10) Business Days after written demand for any reasonable payment made or any reasonable out-of-pocket and documented expense incurred by the Collateral Agent pursuant to the foregoing authorization; provided, however, the Grantors shall not be obligated to reimburse the Collateral Agent with respect to any Intellectual Property that any Grantor has failed to maintain or pursue, or otherwise allowed to lapse, terminate or be put into the public domain in accordance with Section 4.02(f). Nothing in this paragraph shall be interpreted as excusing any Grantor from the performance of, or imposing any obligation on the Collateral Agent or any Secured Party to cure or perform, any covenants or other promises of any Grantor with respect to taxes, assessments, charges, fees, Liens, security interests or other encumbrances and maintenance as set forth herein or in the other Loan Documents.

(f) If at any time any Grantor shall take a security interest in any property of an Account Debtor or any other Person the value of which exceeds $1,000,000 to secure payment and performance of an Account, such Grantor shall promptly assign such security interest to the Collateral Agent for the benefit of the applicable Secured Parties, unless any such security interest constitutes an Excluded Asset. Such assignment need not be filed of public record unless necessary to continue the perfected status of the security interest against creditors of and transferees from the Account Debtor or other Person granting the security interest.

(g) **[Reserved]**.

(h) Notwithstanding anything in any Loan Document to the contrary, none of the Grantors shall be required, nor is the Collateral Agent authorized: (i) to perfect the Security Interests granted by this Agreement (including Security Interests in investment property and fixtures) by any means other than by: (A) filings pursuant to the UCC in the office of the secretary of state (or similar central filing office) of the relevant State(s), and filings in the applicable real estate records with respect to any fixtures relating to Material Real Property, (B) filings in United States government offices with respect to Intellectual Property Collateral of any Grantor as expressly required elsewhere herein, (C) delivery to the Collateral Agent to be held in its possession of all Collateral consisting of certificated securities or instruments as expressly required elsewhere herein or (D) other methods expressly provided herein, (ii) to perfect the security interest granted hereunder in any Letter-of-Credit Rights other than pursuant to the filings referred to in clause (i)(A) above, (iii) to perfect the security interest granted hereunder in motor vehicles, aircraft and other assets subject to certificates of title, (iv) other than in respect of Pledged Collateral constituting certificated securities, to perfect the security interests hereunder through “control” (including for the avoidance of doubt, to enter into any deposit account control agreement, securities account control agreement or any other control agreement with respect to any deposit account, securities account or any other Collateral that requires perfection by “control” other than the Cash Collateral Account), (v) to complete any filings or other action with respect to the perfection of the security interests, including of any Intellectual Property, created hereby in any jurisdiction outside of the United States or any State thereof, (vi) with respect to any Collateral, to perfect by possession of promissory notes or any other instruments evidencing an amount not in excess of $1,000,000, (vii) to deliver any certificated securities except as expressly provided in Article II and (viii) to take any actions in any non-

U.S. jurisdiction or required by the laws of any non-U.S. jurisdiction to create any security interests in assets located or titled outside of the U.S. or to perfect any security interest in such assets, including any Intellectual Property registered in any non-U.S. jurisdiction (it being understood that there shall be no security agreements or pledge agreements governed under the laws of any non-U.S. jurisdiction).

Section 3.04. Other Actions. In order to further ensure the attachment, perfection and priority of, and the ability of the Collateral Agent to enforce, the Security Interest, each Grantor agrees, in each case at such Grantor's own expense, to take the following actions with respect to the following Article 9 Collateral:

(a) *Instruments*. If any Grantor shall at any time hold or acquire any Instruments constituting Collateral and evidencing an amount in excess of $1,000,000, such Grantor shall, within forty-five (45) days (or such longer period as the Collateral Agent may agree in its discretion), promptly endorse, assign and deliver the same to the Collateral Agent for the benefit of the Secured Parties, accompanied by such instruments of transfer or assignment duly executed in blank as the Collateral Agent may from time to time reasonably request.

(b) *Investment Property*. Except to the extent otherwise provided in Article II: (i) if any Grantor shall at any time hold or acquire any certificated securities constituting Collateral, such Grantor shall, within forty-five (45) days (or such longer period as the Collateral Agent may agree in its discretion), endorse, assign and deliver the same to the Collateral Agent for the benefit of the Secured Parties, accompanied by such instruments of transfer or assignment duly executed in blank as the Collateral Agent may from time to time reasonably request, (ii) if any securities constituting Collateral now or hereafter acquired by any Grantor are uncertificated and are issued to such Grantor or its nominee directly by the issuer thereof, upon the Collateral Agent's request following the occurrence and during the continuation of an Event of Default such Grantor shall promptly notify the Collateral Agent thereof and, at the Collateral Agent's reasonable request following the occurrence and during the continuation of an Event of Default, pursuant to an agreement in form and substance reasonably satisfactory to the Collateral Agent, either (A) cause the issuer to agree to comply with instructions from the Collateral Agent as to such securities, without further consent of any Grantor or such nominee, or (B) arrange for the Collateral Agent to become the registered owner of the securities, and (iii) if any securities constituting Collateral, whether certificated or uncertificated, or other investment property constituting Collateral are held by any Grantor or its nominee through a securities intermediary or commodity intermediary, upon the Collateral Agent's request following the occurrence and during the continuation of an Event of Default, such Grantor shall immediately notify the Collateral Agent thereof and at the Collateral Agent's request and option, pursuant to an agreement in form and substance reasonably satisfactory to the Collateral Agent shall either (A) cause such securities intermediary or (as the case may be) commodity intermediary to agree to comply with entitlement orders or other instructions from the Collateral Agent to such securities intermediary as to such security entitlements, or (as the case may be) to apply any value distributed on account of any commodity contract as directed by the Collateral Agent to such commodity intermediary, in each case without further consent of any Grantor or such nominee, or (B) in the case of financial assets or other Investment Property held through a securities intermediary, arrange for the Collateral Agent to become the entitlement holder with respect to such Investment Property, with the Grantor being permitted, only with the consent of the Collateral Agent, to exercise rights to withdraw or otherwise deal with such Investment Property. Notwithstanding the foregoing, the Collateral Agent agrees with each of the Grantors that the Collateral Agent shall not give any such entitlement orders or instructions or directions to any such issuer, securities intermediary or commodity intermediary, and shall not withhold its consent to the exercise of any withdrawal or dealing rights by any Grantor, unless an Event of Default has occurred and is continuing.

(c) *Commercial Tort Claims*. If any Grantor shall at any time after the date of this Agreement acquire a Commercial Tort Claim constituting Collateral where the amount of damages claimed equals or exceeds $1,000,000 and for which a complaint in a court of competent jurisdiction has been filed, such Grantor shall within forty-five (45) days (or such longer period as the Collateral Agent may agree in its reasonable discretion) notify the Collateral Agent thereof in a writing signed by such Grantor and provide supplements to Schedule 8 of the Perfection Certificate describing the details thereof and shall grant to the Collateral Agent a security interest therein and in the proceeds thereof, all upon the terms of this Agreement.

ARTICLE IV

CERTAIN PROVISIONS CONCERNING INTELLECTUAL PROPERTY COLLATERAL

Section 4.01. Grant of License to Use Intellectual Property.

Without limiting the provisions of Section 3.01 hereof or any other rights of the Collateral Agent as the holder of a Security Interest in any Intellectual Property Collateral, for the purpose of enabling the Collateral Agent to exercise rights and remedies under this Agreement at such time as the Collateral Agent shall be lawfully entitled to exercise such rights and remedies, each Grantor shall, upon request by the Collateral Agent, grant to the Collateral Agent an irrevocable, non-exclusive license (exercisable without payment of royalty or other compensation to the Grantors and exercisable only after the occurrence and during the continuation of an Event of Default) to use, license or sublicense any of the Intellectual Property Collateral now owned or hereafter acquired by such Grantor, and wherever the same may be located, and including in such license reasonable access to all media in which any of the licensed items may be recorded or stored and to all computer software and programs used for the compilation or printout thereof; provided, however, that any such license and any such license granted by the Collateral Agent to a third party shall include reasonable and customary terms and conditions necessary to preserve the existence, validity and value of the affected Intellectual Property Collateral, including provisions requiring the continuing confidential handling of trade secrets, requiring the use of appropriate notices and prohibiting the use of false notices, quality control and inurement provisions with regard to Trademarks, patent designation provisions with regard to Patents, copyright notices and restrictions on decompilation and reverse engineering of copyrighted software (it being understood and agreed that, without limiting any other rights and remedies of the Collateral Agent under this Agreement, any other Loan Document or applicable Law, nothing in the foregoing license grant shall be construed as granting the Collateral Agent rights in and to such Intellectual Property Collateral above and beyond (x) the rights to such Intellectual Property Collateral that each Grantor has reserved for itself and (y) in the case of Intellectual Property Collateral that is licensed to any such Grantor by a third party, the extent to which such Grantor has the right to grant a sublicense to such Intellectual Property Collateral hereunder).

The use of such license by the Collateral Agent may only be exercised, at the option of the Collateral Agent, during the continuation of an Event of Default; provided that any license, sublicense or other transaction entered into by the Collateral Agent in accordance herewith shall immediately terminate at such time as the Collateral Agent is no longer lawfully entitled to exercise its rights and remedies under this Agreement. Nothing in this Section 4.01 grants, or shall require a Grantor to grant, any license that is prohibited by applicable Law, or is prohibited by, or constitutes a breach or default under or results in the termination of any existing or future contract, license, agreement, instrument or other document evidencing, giving rise to or theretofore granted, with respect to such property or otherwise unreasonably prejudices the value thereof to the relevant Grantor. Without limiting the foregoing, and notwithstanding the existence of any Event of Default, any license rights granted under the Intellectual Property Collateral hereunder are and shall be subject to all other license rights, existing or future, that are or will be granted by any Grantor to a third party. In the event the license set forth in this Section 4.01 is exercised with regard to any Trademarks, then the following shall apply: (i) all goodwill arising from any licensed or sublicensed use of any Trademark shall inure to the benefit of the Grantor; (ii) the licensed or sublicensed Trademarks shall only be used in association with goods or services of a quality and nature consistent with the quality and reputation with which such Trademarks were associated when used by Grantor prior to the exercise of the license rights set forth herein; and (iii) at the Grantor's request and expense, licensees and sublicensees shall provide reasonable cooperation in any effort by the Grantor to maintain the registration or otherwise secure the ongoing validity and effectiveness of such licensed Trademarks, including, without limitation the actions and conduct described in Section 4.02 below.

Section 4.02. Protection of Collateral Agent's Security.

(a) Except to the extent permitted by Section 4.02(f) below, or to the extent that failure to act, either individually or in the aggregate, could not reasonably be expected to have a Material Adverse Effect, with respect to registration or pending application of each item of its Intellectual Property Collateral for which such Grantor has standing to do so, each Grantor agrees to take, at its expense, all reasonable steps, including, without limitation, in the U.S. Patent and Trademark Office, the U.S. Copyright Office and any other governmental authority located in the United States, to (i) maintain the validity and enforceability of any registered Intellectual

Property Collateral and maintain such Intellectual Property Collateral in full force and effect, and (ii) pursue the registration and maintenance of each Patent, Trademark, or Copyright registration or application, now or hereafter included in such Intellectual Property Collateral of such Grantor, including, without limitation, the payment of required fees and taxes, the filing of responses to office actions issued by the U.S. Patent and Trademark Office, the U.S. Copyright Office or other governmental authorities, the filing of applications for renewal or extension, the filing of affidavits under Sections 8 and 15 of the U.S. Trademark Act, the filing of divisional, continuation, continuation-in-part, reissue and renewal applications or extensions, the payment of maintenance fees and the participation in interference, reexamination, opposition, cancellation, infringement and misappropriation proceedings.

(b) Except to the extent permitted by Section 4.02(f) below, or to the extent that failure to act, either individually or in the aggregate, could not reasonably be expected to have a Material Adverse Effect, each Grantor shall take all reasonable steps to preserve and protect each item of its Intellectual Property Collateral, including, without limitation, maintaining the quality of any and all products or services used or provided in connection with any of the Trademarks, consistent with the quality of the products and services as of the date hereof, and taking reasonable steps necessary to ensure that all licensed users of any of the Trademarks abide by the applicable license's terms with respect to the standards of quality.

(c) Except to the extent permitted by Section 4.02(f) below, or to the extent that action or failure to act could not, either individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, no Grantor shall do or permit any act or knowingly omit to do any act whereby any of its Intellectual Property Collateral may lapse, be terminated, or become invalid or unenforceable or placed in the public domain.

(d) Each Grantor agrees that, should it obtain an ownership or other interest in any Intellectual Property Collateral after the Closing Date (the "After-Acquired Intellectual Property"), (i) the provisions of this Agreement shall automatically apply thereto, and (ii) any such After-Acquired Intellectual Property and, in the case of Trademarks, the goodwill symbolized thereby, shall automatically become part of the Intellectual Property Collateral subject to the terms and conditions of this Agreement with respect thereto.

(e) **[Reserved]**.

(f) Notwithstanding the foregoing provisions of this Section 4.02 or elsewhere in this Agreement, nothing in this Agreement shall prevent any Grantor from abandoning or discontinuing the use or maintenance of any of its Intellectual Property Collateral or placing in the public domain, or from failing to take action to enforce license agreements or pursue actions against infringers, if such Grantor determines in its reasonable business judgment that such abandonment, discontinuance, or failure to take action is desirable in the conduct of its business and Grantor shall not be required to take any action hereunder (including notice to the Collateral Agent of any such Intellectual Property Collateral or such action or inaction).

Section 4.03. After-Acquired Property. Promptly following delivery of the annual update described in Section 3.03(c), each Grantor shall sign and deliver to the Collateral Agent an appropriate Security Agreement Supplement and related grant of security interest with respect all of its applicable Owned Intellectual Property as of the last day of such period, to the extent that such Intellectual Property Collateral is not covered by any previous Security Agreement Supplement and related grant of security interests so signed and delivered by it. In each case, it will promptly cooperate as reasonably necessary to enable the Collateral Agent to make any necessary or reasonably desirable recordations with the United States Copyright Office or the United States Patent and Trademark Office, as appropriate.

ARTICLE V

REMEDIES

Section 5.01. Remedies Upon Default. Upon the occurrence and during the continuance of an Event of Default, it is agreed that the Collateral Agent shall have the right to exercise any and all rights afforded to a secured party with respect to the Secured Obligations, as applicable, under the UCC or other applicable Law, and

also may (i) require each Grantor to, and each Grantor agrees that it will at its expense and upon request of the Collateral Agent, promptly assemble all or part of the Collateral as directed by the Collateral Agent and make it available to the Collateral Agent at a place and time to be designated by the Collateral Agent that is reasonably convenient to both parties; (ii) occupy any premises owned or, to the extent lawful and permitted, leased by any of the Grantors where the Collateral or any part thereof is assembled or located for a reasonable period in order to effectuate its rights and remedies hereunder or under law, without obligation to such Grantor in respect of such occupation; provided that the Collateral Agent shall provide the applicable Grantor with notice thereof prior to or promptly after such occupancy; (iii) exercise any and all rights and remedies of any of the Grantors under or in connection with the Collateral, or otherwise in respect of the Collateral; provided that the Collateral Agent shall provide the applicable Grantor with notice thereof prior to or promptly after such exercise; (iv) withdraw any and all cash or other Collateral from the Cash Collateral Account and to apply such cash and other Collateral to the payment of any and all Secured Obligations in the manner provided in Section 5.02 of this Agreement; (v) subject to the mandatory requirements of applicable Laws and the notice requirements described below, sell or otherwise dispose of all or any part of the Collateral securing the Secured Obligations at a public or private sale or at any broker's board or on any securities exchange, for cash, upon credit or for future delivery as the Collateral Agent shall deem appropriate; and (vi) with respect to any Intellectual Property Collateral, on written demand, cause the Security Interest to become an assignment, transfer and conveyance of any of or all such Intellectual Property Collateral (provided that no such demand may be made unless an Event of Default has occurred and has continued for thirty (30) days) by the applicable Grantors to the Collateral Agent, or license or sublicense, whether general, special or otherwise, and whether on an exclusive or nonexclusive basis, any such Intellectual Property Collateral throughout the world on such terms and conditions and in such manner as the Collateral Agent shall determine; provided, however, that such terms shall be subject to the provisions of Section 4.01 of this Agreement. The Collateral Agent shall be authorized at any sale of securities (if it deems it advisable to do so) to restrict the prospective bidders or purchasers of such securities to Persons who will represent and agree that they are purchasing the Collateral for their own account for investment and not with a view to the distribution or sale thereof, and upon consummation of any such sale the Collateral Agent shall have the right to assign, transfer and deliver to the purchaser or purchasers thereof the Collateral so sold. Each such purchaser at any sale of Collateral shall hold the property sold absolutely, free from any claim or right on the part of any Grantor, and each Grantor hereby waives (to the extent permitted by applicable Law) all rights of redemption, stay and appraisal which such Grantor now has or may at any time in the future have under any rule of law or statute now existing or hereafter enacted.

The Collateral Agent shall give the applicable Grantors and the Borrower ten (10) days' prior written notice (which each Grantor agrees is reasonable notice within the meaning of Section 9-611 of the New York UCC or its equivalent in other jurisdictions) of the Collateral Agent's intention to make any sale of Collateral. Such notice, in the case of a public sale, shall state the time and place for such sale and, in the case of a sale at a broker's board or on a securities exchange, shall state the board or exchange at which such sale is to be made and the day on which the Collateral, or portion thereof, will first be offered for sale at such board or exchange. Any such public sale shall be held at such time or times within ordinary business hours and at such place or places as the Collateral Agent may fix and state in the notice (if any) of such sale. At any such sale, the Collateral, or portion thereof, to be sold may be sold in one lot as an entirety or in separate parcels, as the Collateral Agent may (in its sole and absolute discretion) determine. The Collateral Agent shall not be obligated to make any sale of any Collateral if it shall determine not to do so, regardless of the fact that notice of sale of such Collateral shall have been given. The Collateral Agent may, without notice or publication, adjourn any public or private sale or cause the same to be adjourned from time to time by announcement at the time and place fixed for sale, and such sale may, without further notice, be made at the time and place to which the same was so adjourned. In case any sale of all or any part of the Collateral is made on credit or for future delivery, the Collateral so sold may be retained by the Collateral Agent until the sale price is paid by the purchaser or purchasers thereof, but the Collateral Agent shall not incur any liability in case any such purchaser or purchasers shall fail to take up and pay for the Collateral so sold and, in case of any such failure, such Collateral may be sold again upon like notice. At any public (or, to the extent permitted by applicable Law, private) sale made pursuant to this Agreement, any Secured Party may bid for or purchase, free (to the extent permitted by applicable Law) from any right of redemption, stay, valuation or appraisal on the part of any Grantor (all said rights being also hereby waived and released to the extent permitted by applicable Law), the Collateral or any part thereof offered for sale and may make payment on account thereof by using any claim then due and payable to such Secured Party from any Grantor as a credit against the purchase price, and such Secured Party may, upon compliance with the terms of sale, hold, retain and dispose of such property without further accountability to any Grantor therefor. For purposes hereof, a written agreement to purchase the Collateral or any

portion thereof shall be treated as a sale thereof; the Collateral Agent shall be free to carry out such sale pursuant to such agreement and no Grantor shall be entitled to the return of the Collateral or any portion thereof subject thereto, notwithstanding the fact that after the Collateral Agent shall have entered into such an agreement all Events of Default shall have been remedied and the Secured Obligations paid in full (in which case the applicable Grantors shall be entitled to the proceeds of any such sale pursuant to Section 5.02 hereof). As an alternative to exercising the power of sale herein conferred upon it, the Collateral Agent may proceed by a suit or suits at law or in equity to foreclose this Agreement and to sell the Collateral or any portion thereof pursuant to a judgment or decree of a court or courts having competent jurisdiction or pursuant to a proceeding by a court appointed receiver. Any sale pursuant to the provisions of this Section 5.01 shall be deemed to conform to the commercially reasonable standards as provided in Section 9-610(b) of the New York UCC or its equivalent in other jurisdictions.

Section 5.02. Application of Proceeds. The Collateral Agent shall apply the proceeds of any collection or sale of Collateral, including any Collateral consisting of cash, in accordance with the provisions of Section 8.03 of the Credit Agreement. The Collateral Agent shall have absolute discretion as to the time of application of any such proceeds, moneys or balances in accordance with this Agreement. Upon any sale of Collateral by the Collateral Agent (including pursuant to a power of sale granted by statute or under a judicial proceeding), the receipt of the Collateral Agent or of the officer making the sale shall be a sufficient discharge to the purchaser or purchasers of the Collateral so sold and such purchaser or purchasers shall not be obligated to see to the application of any part of the purchase money paid over to the Collateral Agent or such officer or be answerable in any way for the misapplication thereof. It is understood and agreed that the Grantors shall remain jointly and severally liable to the extent of any deficiency between the amount of the proceeds of the Collateral and the aggregate amount of the Secured Obligations.

ARTICLE VI

[RESERVED]

ARTICLE VII

MISCELLANEOUS

Section 7.01. Notices. All communications and notices hereunder shall (except as otherwise expressly permitted herein) be in writing and given as provided in Section 10.02 of the Credit Agreement. All communications and notices hereunder to any Grantor (other than the Borrower) shall be given to it in care of the Borrower as provided in Section 10.02 of the Credit Agreement.

Section 7.02. Waivers; Amendment. (a) No failure or delay by the Collateral Agent, any L/C Issuer or any Lender in exercising any right, remedy, power or privilege hereunder or under any other Loan Document shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, remedy, power or privilege, or any abandonment or discontinuance of steps to enforce such a right, remedy, power or privilege, preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege. The rights, remedies, powers and privileges of the Collateral Agent, the L/C Issuers and the Lenders hereunder and under the other Loan Documents are cumulative and are not exclusive of any other rights or remedies that they would otherwise have. No waiver of any provision of this Agreement or consent to any departure by any Loan Party therefrom shall in any event be effective unless the same shall be permitted by paragraph (b) of this Section 7.02, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. Without limiting the generality of the foregoing, the making of a Loan or the issuance of a Letter of Credit shall not be construed as a waiver of any Default, regardless of whether the Collateral Agent, any Lender or any L/C Issuer may have had notice or knowledge of such Default at the time. No notice or demand on any Loan Party in any case shall entitle any Loan Party to any other or further notice or demand in similar or other circumstances.

(b) Neither this Agreement nor any provision hereof may be waived, amended or modified except pursuant to an agreement or agreements in writing entered into by the Collateral Agent and the Loan Party or Loan Parties with respect to which such waiver, amendment or modification is to apply, subject to any consent required in accordance with Section 10.01 of the Credit Agreement.

Section 7.03. Collateral Agent's Fees and Expenses; Indemnification. The terms of Section 10.04 and Section 10.05 of the Credit Agreement with respect to costs and expenses, indemnification, payments and survival are incorporated herein by reference, *mutatis mutandis*, and the parties hereto agree to such terms (and for the avoidance of doubt, for purposes of this Agreement, such provisions extend to, without limitation, the custody, preservation, use or operation of, or the sale of, collection from, or other realization of or enforcement with respect to, the Collateral).

Section 7.04. Successors and Assigns. Whenever in this Agreement any of the parties hereto is referred to, such reference shall be deemed to include the permitted successors and assigns of such party (including any successor or assignee of the Borrower, which successor or assignee shall execute and deliver a joinder to this Agreement in form reasonably satisfactory to the Collateral Agent upon the reasonable request of the Collateral Agent) and all covenants, promises and agreements by or on behalf of any Grantor or the Collateral Agent that are contained in this Agreement shall bind and inure to the benefit of their respective permitted successors and assigns.

Section 7.05. Survival of Agreement. Without limitation of any provision of the Credit Agreement or Section 7.03 hereof, all covenants, agreements, representations and warranties made by the Grantors in the Loan Documents and in the certificates or other instruments delivered in connection with or pursuant to this Agreement or any other Loan Document shall be considered to have been relied upon by each Agent and the Lenders and shall survive the execution and delivery of the Loan Documents and the making of any Loans and issuance of any Letters of Credit, regardless of any investigation made by any Agent or Lender or on its behalf and notwithstanding that the Collateral Agent, any L/C Issuer or any Lender may have had notice or knowledge of any Default at the time any credit is extended under any Loan Document, and shall continue in full force and effect until this Agreement is terminated as provided in Section 7.13 hereof, or with respect to any individual Grantor until such Grantor is otherwise released from its obligations under this Agreement in accordance with the terms hereof.

Section 7.06. Counterparts; Effectiveness; Several Agreement. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf", or ".tif" or other electronic imaging means of an executed counterpart of a signature page to this Agreement shall be effective as delivery of an original executed counterpart of this Agreement. This Agreement shall become effective as to any Grantor when a counterpart hereof executed on behalf of such Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon such Grantor and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means. This Agreement shall be construed as a separate agreement with respect to each Grantor and may be amended, restated, modified, supplemented, waived or released with respect to any Grantor without the approval of any other Grantor and without affecting the obligations of any other Grantor hereunder.

Section 7.07. Severability. If any provision of this Agreement is held to be illegal, invalid or unenforceable, the legality, validity and enforceability of the remaining provisions of this Agreement shall not be affected or impaired thereby. The invalidity of a provision in a particular jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction. The parties shall endeavor in good faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

Section 7.08. Right of Set-Off. In addition to any rights and remedies of the Lenders provided by Law, upon the occurrence and during the continuance of any Event of Default, each Lender and its Affiliates is authorized at any time and from time to time, after obtaining the prior written consent of the Collateral Agent, to the fullest extent permitted by applicable law, to set off and apply any and all deposits (general or special, time or demand, provisional or final, in whatever currency) at any time held and other obligations (in whatever currency) at any time owing by such Lender or any such Affiliate to or for the credit or the account of any Grantor against any and all of the Secured Obligations, irrespective of whether or not such Lender shall have made any demand under this Agreement and although such obligations of such Grantor may be contingent or unmatured or denominated in a

currency different from that of the applicable deposit or Indebtedness or are owed to a branch or office of such Lender different from the branch or office holding such deposit or obligated on such indebtedness; provided that in the event that any Defaulting Lender shall exercise any such right of setoff, (x) all amounts so set off shall be paid over immediately to the Collateral Agent for further application in accordance with the provisions of Section 2.19 of the Credit Agreement and, pending such payment, shall be segregated by such Defaulting Lender from its other funds and deemed held in trust for the benefit of the Collateral Agent and the Lenders, and (y) the Defaulting Lender shall provide promptly to the Collateral Agent a statement describing in reasonable detail the Secured Obligations owing to such Defaulting Lender as to which it exercised such right of setoff. The rights of each Lender and its Affiliates under this Section are in addition to other rights and remedies (including other rights of set-off) that such Lender or its Affiliates may have. Each Lender agrees to notify the Borrower and the Collateral Agent promptly after any such set-off and application made by such Lender; provided that the failure to give such notice shall not affect the validity of such set-off and application.

Section 7.09. Governing Law; Jurisdiction; Consent to Service of Process.

A. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

B. EACH OF THE LOAN PARTIES AND THE COLLATERAL AGENT FOR ITSELF AND ON BEHALF OF THE SECURED PARTIES HEREBY IRREVOCABLY AND UNCONDITIONALLY SUBMITS, FOR ITSELF AND ITS PROPERTY, TO THE EXCLUSIVE JURISDICTION OF THE COURTS OF THE STATE OF NEW YORK SITTING IN NEW YORK CITY IN THE BOROUGH OF MANHATTAN AND OF THE UNITED STATES DISTRICT COURT OF THE SOUTHERN DISTRICT OF NEW YORK, AND ANY APPELLATE COURT FROM ANY THEREOF, IN ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT, OR FOR RECOGNITION OR ENFORCEMENT OF ANY JUDGMENT, AND EACH OF THE PARTIES HERETO IRREVOCABLY AND UNCONDITIONALLY AGREES THAT ALL CLAIMS IN RESPECT OF ANY SUCH ACTION OR PROCEEDING MAY BE HEARD AND DETERMINED IN SUCH NEW YORK STATE COURT OR, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, IN SUCH FEDERAL COURT. EACH OF THE PARTIES HERETO AGREES THAT A FINAL JUDGMENT IN ANY SUCH ACTION OR PROCEEDING SHALL BE CONCLUSIVE AND MAY BE ENFORCED IN OTHER JURISDICTIONS BY SUIT ON THE JUDGMENT OR IN ANY OTHER MANNER PROVIDED BY LAW. EACH PARTY HERETO AGREES THAT THE AGENTS AND LENDERS RETAIN THE RIGHT TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY LAW OR TO BRING PROCEEDINGS AGAINST ANY LOAN PARTY IN THE COURTS OF ANY OTHER JURISDICTION IN CONNECTION WITH THE EXERCISE OF ANY RIGHTS UNDER ANY COLLATERAL DOCUMENT OR THE ENFORCEMENT OF ANY JUDGMENT.

C. EACH OF THE LOAN PARTIES AND THE COLLATERAL AGENT FOR ITSELF AND ON BEHALF OF THE SECURED PARTIES HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF VENUE OF ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT IN ANY COURT REFERRED TO IN PARAGRAPH (B) OF THIS SECTION. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE DEFENSE OF AN INCONVENIENT FORUM TO THE MAINTENANCE OF SUCH ACTION OR PROCEEDING IN ANY SUCH COURT.

D. EACH PARTY HERETO IRREVOCABLY CONSENTS TO SERVICE OF PROCESS IN THE MANNER PROVIDED FOR NOTICES IN SECTION 7.01. NOTHING IN THIS AGREEMENT WILL AFFECT THE RIGHT OF ANY PARTY HERETO TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY APPLICABLE LAW.

Section 7.10. WAIVER OF JURY TRIAL. EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH PARTY

HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PERSON HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PERSON WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

Section 7.11. Headings. Article and Section headings and the Table of Contents used herein are for convenience of reference only, are not part of this Agreement and are not to affect the construction of, or to be taken into consideration in interpreting, this Agreement.

Section 7.12. Security Interest Absolute. To the extent permitted by applicable Law, all rights of the Collateral Agent hereunder, the Security Interest, the grant of a security interest in the Collateral and all obligations of each Grantor hereunder shall be absolute and unconditional irrespective of (a) any lack of validity or enforceability of the Credit Agreement, any other Loan Document, the Secured Hedge Agreements, the Secured Cash Management Agreements or any other agreement or instrument relating to any of the foregoing, (b) any change in the time, manner or place of payment of, or in any other term of, all or any of the Secured Obligations, or any other amendment or waiver of or any consent to any departure from the Credit Agreement, any other Loan Document, the Secured Hedge Agreements, the Secured Cash Management Agreements or any other agreement or instrument, (c) any exchange, release or non-perfection of any Lien on other collateral, or any release or amendment or waiver of or consent under or departure from any guarantee, securing or guaranteeing all or any of the Secured Obligations or (d) subject only to termination of a Grantor's obligations hereunder in accordance with the terms of Section 7.13, but without prejudice to reinstatement rights under Section 2.04 of the Guaranty, any other circumstance that might otherwise constitute a defense available to, or a discharge of, any Grantor in respect of the Secured Obligations or this Agreement.

Section 7.13. Termination or Release. (a) This Agreement, the Security Interest and all other security interests granted hereby shall terminate with respect to all Secured Obligations upon termination of the Aggregate Commitments, payment in full of all outstanding Secured Obligations (other than (x) obligations under Secured Hedge Agreements, (y) obligations under Secured Cash Management Agreements and (z) contingent indemnification obligations not yet accrued and payable) and the expiration or termination of all Letters of Credit (other than outstanding Letters of Credit that have been Cash Collateralized).

(b) The Security Interest in any Collateral shall be automatically released in the circumstances set forth in Section 9.11(b) of the Credit Agreement or upon any release of the Lien on such Collateral in accordance with Section 9.11(c) of the Credit Agreement.

(c) A Grantor (other than the Borrower) shall automatically be released from its obligations hereunder and the Security Interest in the Collateral of such Grantor shall be automatically released in the circumstances set forth in Section 9.11(d) of the Credit Agreement.

(d) The Borrower shall automatically be released from its obligations hereunder and the Security Interest in the Collateral of the Borrower shall be automatically released upon delivery to the Collateral Agent of a joinder in the form contemplated by Section 7.04 of the Credit Agreement by any successor or assign of the Borrower.

(e) In connection with any termination or release pursuant to paragraph (a), (b), (c) or (d), the Collateral Agent shall promptly execute and deliver to any Grantor, at such Grantor's expense, all documents (including relevant certificates, securities and other instruments) that such Grantor shall reasonably request to evidence such termination or release and shall perform such other actions reasonably requested by such Grantor to effect such release, including delivery of certificates, securities and instruments. Any execution and delivery of documents pursuant to this Section 7.13 shall be without recourse to or warranty by the Collateral Agent.

(f) At any time that the respective Grantor desires that the Collateral Agent take any of the actions described in the immediately preceding paragraph (e), it shall, upon request of the Collateral Agent, deliver to the Collateral Agent an officer's certificate certifying that the release of the respective Collateral is

permitted pursuant to paragraph (a), (b), (c) or (d). The Collateral Agent shall have no liability whatsoever to any Secured Party as the result of any release of Collateral by it as permitted (or which the Collateral Agent in good faith believes to be permitted) by this Section 7.13.

(g) Notwithstanding anything to the contrary set forth in this Agreement, each Cash Management Bank and each Hedge Bank by the acceptance of the benefits under this Agreement hereby acknowledge and agree that (i) the obligations of the Borrower or any Subsidiary under any Secured Hedge Agreement and the Cash Management Obligations shall be secured pursuant to this Agreement only to the extent that, and for so long as, the other Secured Obligations are so secured and (ii) any release of Collateral effected in the manner permitted by this Agreement shall not require the consent of any Hedge Bank or Cash Management Bank.

Section 7.14. Additional Restricted Subsidiaries. Pursuant to Section 6.11 of the Credit Agreement, certain Restricted Subsidiaries of the Loan Parties that were not in existence or not Restricted Subsidiaries on the date of the Credit Agreement are required to enter in this Agreement as Grantors upon becoming Restricted Subsidiaries. In addition, certain Restricted Subsidiaries of the Loan Parties that are not required under the Credit Agreement to enter in this Agreement as Grantors may elect to do so at their option. Upon execution and delivery by the Collateral Agent and a Restricted Subsidiary of a Security Agreement Supplement, such Restricted Subsidiary shall become a Grantor hereunder with the same force and effect as if originally named as a Grantor herein. The execution and delivery of any such instrument shall not require the consent of any other Grantor hereunder. The rights and obligations of each Grantor hereunder shall remain in full force and effect notwithstanding the addition of any new Grantor as a party to this Agreement.

Section 7.15. Collateral Agent Appointed Attorney-in-Fact. Each Grantor hereby appoints the Collateral Agent the true and lawful attorney-in-fact of such Grantor for the purpose of carrying out the provisions of this Agreement and taking any action and executing any instrument that the Collateral Agent may deem necessary or advisable to accomplish the purposes hereof at any time after and during the continuance of an Event of Default, which appointment is irrevocable and coupled with an interest. Without limiting the generality of the foregoing, the Collateral Agent shall have the right, upon the occurrence and during the continuance of an Event of Default and (unless a Bankruptcy Event of Default has occurred and is continuing, in which case no such notice shall be required) upon and after delivery of notice by the Collateral Agent to the Borrower of its intent to exercise such rights, subject in each case to Section 5.01 of this Agreement, with full power of substitution either in the Collateral Agent's name or in the name of such Grantor (a) to receive, endorse, assign and/or deliver any and all notes, acceptances, checks, drafts, money orders or other evidences of payment relating to the Collateral or any part thereof; (b) to demand, collect, receive payment of, give receipt for and give discharges and releases of all or any of the Collateral; (c) to sign the name of any Grantor on any invoice or bill of lading relating to any of the Collateral; (d) to send verifications of Accounts to any Account Debtor; (e) to commence and prosecute any and all suits, actions or proceedings at law or in equity in any court of competent jurisdiction to collect or otherwise realize on all or any of the Collateral or to enforce any rights in respect of any Collateral; (f) to settle, compromise, compound, adjust or defend any actions, suits or proceedings relating to all or any of the Collateral; (g) to notify, or to require any Grantor to notify, Account Debtors to make payment directly to the Collateral Agent or the Cash Collateral Account and adjust, settle or compromise the amount of payment of any Account; and (h) to use, sell, assign, transfer, pledge, make any agreement with respect to or otherwise deal with all or any of the Collateral, and to do all other acts and things necessary to carry out the purposes of this Agreement, as fully and completely as though the Collateral Agent were the absolute owner of the Collateral for all purposes; provided that nothing herein contained shall be construed as requiring or obligating the Collateral Agent to make any commitment or to make any inquiry as to the nature or sufficiency of any payment received by the Collateral Agent, or to present or file any claim or notice, or to take any action with respect to the Collateral or any part thereof or the moneys due or to become due in respect thereof or any property covered thereby. The Collateral Agent and the other Secured Parties shall be accountable only for amounts actually received as a result of the exercise of the powers granted to them herein, and neither they nor their officers, directors, employees or agents shall be responsible to any Grantor for any act or failure to act hereunder, except for their own gross negligence, bad faith or willful misconduct or that of any of their Affiliates, directors, officers, employees, counsel, agents or attorneys-in-fact.

Section 7.16. General Authority of the Collateral Agent. By acceptance of the benefits of this Agreement and any other Collateral Documents, each Secured Party (whether or not a signatory hereto) shall be deemed irrevocably (a) to consent to the appointment of the Collateral Agent as its agent hereunder and under such

other Collateral Documents, (b) to confirm that the Collateral Agent shall have the authority to act as the exclusive agent of such Secured Party for the enforcement of any provisions of this Agreement and such other Collateral Documents against any Grantor, the exercise of remedies hereunder or thereunder and the giving or withholding of any consent or approval hereunder or thereunder relating to any Collateral or any Grantor's obligations with respect thereto, (c) to agree that it shall not take any action to enforce any provisions of this Agreement or any other Collateral Document against any Grantor, to exercise any remedy hereunder or thereunder or to give any consents or approvals hereunder or thereunder and (d) to agree to be bound by the terms of this Agreement and any other Collateral Documents.

Section 7.17. Collateral Agent's Duties. To the extent permitted by law, the Collateral Agent's sole duty with respect to the custody, safekeeping and physical preservation of the Collateral in its possession, under Section 9-207 of the New York UCC or otherwise, shall be to deal with it in the same manner as the Collateral Agent deals with similar property for its own account. None of the Collateral Agent, any other Secured Party or any of their respective officers, directors, employees or agents shall be liable for failure to demand, collect or realize upon any of the Collateral or for any delay in doing so or shall be under any obligation to sell or otherwise dispose of any Collateral upon the request of any Grantor or any other Person or to take any other action whatsoever with regard to the Collateral or any part thereof. The powers conferred on the Collateral Agent and the other Secured Parties hereunder are solely to protect the Collateral Agent's and the other Secured Parties' interests in the Collateral and shall not impose any duty upon the Collateral Agent or any other Secured Party to exercise any such powers. The Collateral Agent and the other Secured Parties shall be accountable only for amounts that they actually receive as a result of the exercise of such powers, and neither they nor any of their officers, directors, employees or agents shall be responsible to any Grantor for any act or failure to act hereunder, except for their own gross negligence, bad faith or willful misconduct or that of their Affiliates, directors, officers, employees, counsel, agents or attorneys-in-fact.

Section 7.18. Mortgages. In the event that any of the Collateral hereunder is also subject to a valid and enforceable Lien under the terms of a Mortgage and the terms thereof are inconsistent with the terms of this Agreement, then with respect to such Collateral, the terms of such Mortgage shall control in the case of Fixtures and real estate leases, letting and licenses of, and contracts and agreements relating to the lease of, real property, and the terms of this Agreement shall control in the case of all other Collateral.

Section 7.19. Recourse; Limited Obligations. This Agreement is made with full recourse to each Grantor and pursuant to and upon all the warranties, representations, covenants and agreements on the part of such Grantor contained herein, in the Loan Documents, the Secured Hedge Agreements, the Secured Cash Management Agreements and otherwise in writing in connection herewith or therewith. It is the desire and intent of each Grantor and the Secured Parties that this Agreement shall be enforced against each Grantor to the fullest extent permissible under the applicable Laws applied in each jurisdiction in which enforcement is sought. Notwithstanding anything to the contrary contained herein, and in furtherance of the foregoing, it is noted that the obligations of each Grantor that is a Guarantor have been limited as expressly provided in the Guaranty and are limited hereunder as and to the same extent provided therein.

*** * ***

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

CASA SYSTEMS, INC.

By: _____
Name:
Title:

[GRANTORS]

By: _____
Name:
Title:

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

By: _____
Name:
Title:

[Signature Page to Security Agreement]

Exhibit I to
the Security Agreement

SUPPLEMENT NO. dated as of **[●]**, to the Security Agreement dated as of December **[●]**, 2016, among CASA SYSTEMS, INC. (the "Borrower"), the Subsidiaries of the Borrower identified therein and JPMORGAN CHASE BANK, N.A., as Collateral Agent.

A. Reference is made to (i) the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among the Borrower, each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto, (ii) the Guaranty (as defined in the Credit Agreement), (iii) each Secured Hedge Agreement (as defined in the Credit Agreement) and (vi) each Secured Cash Management Agreement (as defined in the Credit agreement).

B. Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Credit Agreement and the Security Agreement, as applicable.

C. The Grantors have entered into the Security Agreement in order to induce (x) the Lenders to make Loans and the L/C Issuers to issue Letters of Credit, (y) the Hedge Banks to enter into and/or maintain Secured Hedge Agreements and (z) the Cash Management Banks to provide Cash Management Services. Section 7.14 of the Security Agreement provides that additional Restricted Subsidiaries of the Borrower may become Grantors under the Security Agreement by execution and delivery of an instrument substantially in the form of this Supplement. The undersigned Restricted Subsidiary (the "New Subsidiary") is executing this Supplement in accordance with the Credit Agreement to become a Grantor under the Security Agreement in order to induce the Lenders to make additional Loans and the L/C Issuers to issue additional Letters of Credit and as consideration for Loans previously made and Letters of Credit previously issued.

Accordingly, the Collateral Agent and the New Subsidiary agree as follows:

Section 1. In accordance with Section 7.14 of the Security Agreement, the New Subsidiary by its signature below becomes a Grantor under the Security Agreement with the same force and effect as if originally named therein as a Grantor and the New Subsidiary hereby (a) agrees to all the terms and provisions of the Security Agreement applicable to it as a Grantor thereunder and (b) represents and warrants that the representations and warranties made by it as a Grantor thereunder are true and correct in all material respects (except that any representation and warranty that is qualified as to "materiality" or "Material Adverse Effect" shall be true and correct in all respects) on and as of the date hereof; provided that, to the extent that such representations and warranties specifically refer to an earlier date, they shall be true and correct in all material respects (except that any representation and warranty that is qualified as to "materiality" or "Material Adverse Effect" shall be true and correct in all respects) as of such earlier date. In furtherance of the foregoing, the New Subsidiary, as security for the payment and performance in full of the Secured Obligations does hereby create and grant to the Collateral Agent, its successors and assigns, for the benefit of the Secured Parties, their successors and assigns, a security interest in and lien on all of the New Subsidiary's right, title and interest in and to the Collateral (as defined in the Security Agreement) of the New Subsidiary. Each reference to a "Grantor" in the Security Agreement shall be deemed to include the New Subsidiary as if originally named therein as a Grantor. The Security Agreement is hereby incorporated herein by reference.

Section 2. The New Subsidiary represents and warrants to the Collateral Agent and the other Secured Parties that (i) it has the power and authority to enter into this Supplement and (ii) this Supplement has been duly authorized, executed and delivered by it and constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms, except as such enforceability may be limited by Debtor Relief Laws, general principles of equity and an implied covenant of good faith and fair dealing.

Section 3. This Supplement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf" or ".tif" or other electronic imaging means of an executed counterpart of a

signature page to this Supplement shall be effective as delivery of an original executed counterpart of this Supplement. This Supplement shall become effective as to any New Subsidiary when a counterpart hereof executed on behalf of such New Subsidiary shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon such New Subsidiary and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means.

Section 4. The New Subsidiary hereby represents and warrants that a Perfection Certificate as to the New Subsidiary has been duly executed and delivered to the Collateral Agent and the information set forth therein, including the legal name of the New Subsidiary, its jurisdiction of formation and the location of its chief executive office, is correct in all material respects as of the date hereof.

Section 5. Except as expressly supplemented hereby, the Security Agreement shall remain in full force and effect.

Section 6**. THIS SUPPLEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK**.

Section 7. If any provision of this Supplement is held to be illegal, invalid or unenforceable, the legality, validity and enforceability of the remaining provisions of this Supplement shall not be affected or impaired thereby. The invalidity of a provision in a particular jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

Section 8. All communications and notices hereunder shall be in writing and given as provided in Section 7.01 of the Security Agreement.

Section 9. The New Subsidiary agrees to reimburse the Collateral Agent, on the same terms and to the same extent as provided for in section 7.03 of the Security Agreement, for its reasonable out-of-pocket expenses in connection with this Supplement.

* * *

IN WITNESS WHEREOF, the New Subsidiary and the Collateral Agent have duly executed this Supplement to the Security Agreement as of the day and year first above written.

[NAME OF NEW SUBSIDIARY]

By: _____
Name:
Title:

JPMORGAN CHASE BANK, N.A., as Collateral Agent

By: _____
Name:
Title:

Exhibit II to
the Security Agreement

[FORM OF]

COPYRIGHT SECURITY AGREEMENT

COPYRIGHT SECURITY AGREEMENT, dated as of [ ], 20[ ], made by [ ], a [ ] (the "Grantor"), in favor of JPMORGAN CHASE BANK, N.A., as Collateral Agent (as defined in the Credit Agreement referred to below).

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto.

WHEREAS, the Grantor is party to a Security Agreement, dated as of December **[●]**, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Security Agreement"), in favor of the Collateral Agent pursuant to which the Grantor is required to execute and deliver this Copyright Security Agreement;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and to induce the Lenders to extend credit under the Credit Agreement, the Grantor hereby agrees with the Collateral Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, capitalized terms used herein and not defined have the meaning given to them in the Security Agreement, or if not defined therein, in the Credit Agreement.

SECTION 2. Grant of Security Interest in Copyrights. As security for the payment or performance, as the case may be, in full of the Secured Obligations, the Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the "Security Interest") in, all of such Grantor's right, title or interest in or to any and all of the Owned Copyrights, including those listed on Schedule I hereto, and all Proceeds and products of any and all of the foregoing and all collateral security and guarantees given by any person with respect to the Owned Copyrights, now owned or at any time hereafter acquired by the Grantor or in which the Grantor now has or at any time in the future may acquire any right, title or interest.

SECTION 3. Security Agreement. The Security Interest granted pursuant to this Copyright Security Agreement is granted in conjunction with the security interest granted to the Collateral Agent pursuant to the Security Agreement, and the Collateral Agent and the Grantor hereby acknowledge and affirm that the rights and remedies of the Collateral Agent with respect to the Security Interest in the Owned Copyrights made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Copyright Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. Counterparts. This Copyright Security Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf", ".tif" or other electronic imaging means of an executed counterpart of a signature page to this Copyright Security Agreement shall be effective as delivery of an original executed counterpart of this Copyright Security Agreement. This Copyright Security Agreement shall become effective as to the Grantor when a counterpart hereof executed on behalf of the Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon the Grantor and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means.

SECTION 5. Recordation. The Grantor authorizes and requests that the Register of Copyrights and any other applicable government officer record this Agreement.

SECTION 6. Governing Law. This Copyright Security Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

[signature page follows]

IN WITNESS WHEREOF, the Grantor has caused this Copyright Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

[ ],
as Grantor

By: _____
Name:
Title:

Accepted and Agreed:

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

By: _____
Name:
Title:

SCHEDULE I
to
COPYRIGHT SECURITY AGREEMENT
COPYRIGHT REGISTRATIONS AND COPYRIGHT APPLICATIONS

UNITED STATES COPYRIGHTS:

UNITED STATES COPYRIGHTS:

U.S. Copyright Registrations

Title	Author	Reg. No.	Date Registered

Pending U.S. Copyright Applications for Registration

Title	Author	Date Submitted

Exclusive Copyright Licenses

Exhibit III to
the Security Agreement

[FORM OF]

PATENT SECURITY AGREEMENT

PATENT SECURITY AGREEMENT, dated as of [ ], 20[ ], made by [ ], a [ ] (the "Grantor"), in favor of JPMORGAN CHASE BANK, N.A., as Collateral Agent (as defined in the Credit Agreement referred to below).

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto.

WHEREAS, the Grantor is party to a Security Agreement, dated as of December **[●]**, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Security Agreement"), in favor of the Collateral Agent pursuant to which the Grantor is required to execute and deliver this Patent Security Agreement;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and to induce the Lenders to extend credit under the Credit Agreement, the Grantor hereby agrees with the Collateral Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, capitalized terms used herein and not defined have the meaning given to them in the Security Agreement, or if not defined therein, in the Credit Agreement.

SECTION 2. Grant of Security Interest in Patents. As security for the payment or performance, as the case may be, in full of the Secured Obligations, the Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the "Security Interest") in, all of such Grantor's right, title or interest in or to any and all of the Owned Patents, including those listed on Schedule I hereto, and all Proceeds and products of any and all of the foregoing and all collateral security and guarantees given by any person with respect to the Owned Patents, now owned or at any time hereafter acquired by the Grantor or in which the Grantor now has or at any time in the future may acquire any right, title or interest.

SECTION 3. Security Agreement. The Security Interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interest granted to the Collateral Agent pursuant to the Security Agreement, and the Collateral Agent and the Grantor hereby acknowledge and affirm that the rights and remedies of the Collateral Agent with respect to the Security Interest in the Owned Patents made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. Counterparts. This Patent Security Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf", ".tif" or other electronic imaging means of an executed counterpart of a signature page to this Patent Security Agreement shall be effective as delivery of an original executed counterpart of this Patent Security Agreement. This Patent Security Agreement shall become effective as to the Grantor when a counterpart hereof executed on behalf of the Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon the Grantor and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means.

SECTION 5. Recordation. The Grantor authorizes and requests that the Commissioner for Patents and any other applicable government officer record this Agreement.

SECTION 6. Governing Law. This Patent Security Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

[signature page follows]

IN WITNESS WHEREOF, the Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

[ ],
as Grantor

By: _____
Name:
Title:

Accepted and Agreed:

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

By: _____
Name:
Title:

SCHEDULE I
to
PATENT SECURITY AGREEMENT
PATENT REGISTRATIONS AND PATENT APPLICATIONS

UNITED STATES PATENTS:

U.S. Patent Registrations

Owner	Title	Patent No.	Issue Date

U.S. Patent Applications

Owner	Title	App. No.	Filing Date

Exclusive Patent Licenses

Exhibit IV to
the Security Agreement

[FORM OF]

TRADEMARK SECURITY AGREEMENT

TRADEMARK SECURITY AGREEMENT, dated as of [ ], 20[ ], made by [ ], a [ ] (the "Grantor"), in favor of JPMORGAN CHASE BANK, N.A., as Collateral Agent (as defined in the Credit Agreement referred to below).

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto.

WHEREAS, the Grantor is party to a Security Agreement, dated as of December **[●]**, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Security Agreement"), in favor of the Collateral Agent pursuant to which the Grantor is required to execute and deliver this Trademark Security Agreement;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and to induce the Lenders to extend credit under the Credit Agreement, the Grantor hereby agrees with the Collateral Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, capitalized terms used herein and not defined have the meaning given to them in the Security Agreement, or if not defined therein, in the Credit Agreement.

SECTION 2. Grant of Security Interest in Trademarks. As security for the payment or performance, as the case may be, in full of the Secured Obligations, the Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the "Security Interest") in, all of such Grantor's right, title or interest in or to any and all of the Owned Trademarks, including those listed on Schedule I hereto, and all Proceeds and products of any and all of the foregoing and all collateral security and guarantees given by any person with respect to the Owned Trademarks, now owned or at any time hereafter acquired by the Grantor or in which the Grantor now has or at any time in the future may acquire any right, title or interest.

SECTION 3. Security Agreement. The Security Interest granted pursuant to this Trademark Security Agreement is granted in conjunction with the security interest granted to the Collateral Agent pursuant to the Security Agreement, and the Collateral Agent and the Grantor hereby acknowledge and affirm that the rights and remedies of the Collateral Agent with respect to the Security Interest in the Owned Trademark made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Trademark Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. Counterparts. This Trademark Security Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf", ".tif" or other electronic imaging means of an executed counterpart of a signature page to this Trademark Security Agreement shall be effective as delivery of an original executed counterpart of this Trademark Security Agreement. This Trademark Security Agreement shall become effective as to the Grantor when a counterpart hereof executed on behalf of the Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon the Grantor and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means.

SECTION 5. Recordation. The Grantor authorizes and requests that the Commissioner for Trademarks and any other applicable government officer record this Agreement.

SECTION 6. Governing Law. This Trademark Security Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

[signature page follows]

IN WITNESS WHEREOF, the Grantor has caused this Trademark Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

[ ],
as Grantor

By: _____
Name:
Title:

Accepted and Agreed:

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

By: _____
Name:
Title:

SCHEDULE I
to
TRADEMARK SECURITY AGREEMENT
TRADEMARK REGISTRATIONS AND TRADEMARK APPLICATIONS

UNITED STATES TRADEMARKS:

U.S. Trademark Registrations

Owner	Mark	Reg. No.	Reg. Date

U.S. Trademark Applications

Owner	Mark	App. No.	App. Date

Exclusive Trademark Licenses

CLOSING DATE PERFECTION CERTIFICATE

[See attached]

CLOSING DATE PERFECTION CERTIFICATE

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., a Delaware corporation (the "Borrower"), the Lenders (as defined in the Credit Agreement) from time to time party thereto, JPMorgan Chase Bank, N.A., as administrative agent (in such capacity, the "Administrative Agent"), Collateral Agent and an L/C Issuer, and the other agents and parties party thereto. Capitalized terms used but not defined herein have the meanings assigned in the Credit Agreement or the Security Agreement referred to therein, as applicable.

The undersigned, a Responsible Officer of the Borrower, in his/her capacity as an officer of the Borrower and not in his/her individual capacity, hereby certifies to the Administrative Agent and each other Secured Party as follows:

1. Names. (a) The exact legal name of each Loan Party, as such name appears in its respective certificate or articles of incorporation or formation, is as follows:

Loan Party
Casa Systems, Inc.

(b) Set forth below is each other legal name each Loan Party has had in the past five years, together with the date of the relevant change:

None.

(c) Except as set forth in Schedule 1 hereto, to the Borrower's knowledge, no Loan Party has changed its identity or corporate structure within the past five years. Changes in identity or corporate structure would include mergers, consolidations and acquisitions, as well as any change in the form, nature or jurisdiction of organization. If any such change has occurred, include in Schedule 1 the information required by Sections 1 and 2 of this certificate as to each acquiree or constituent party to a merger or consolidation to the extent such information is available to the Borrower.

(d) To the Borrower's knowledge, the following is a list of all other names (including trade names or similar appellations) used by each Loan Party or any of its divisions or other business units in connection with the conduct of its business or the ownership of its properties at any time during the past five years:

1. The Borrower and each subsidiary collectively use the name "Casa Systems" for branding and marketing purposes.

(e) Set forth below is the Organizational Identification Number, if any, issued by the jurisdiction of formation of each Loan Party that is a registered organization:

Loan Party	Organizational Identification Number
Casa Systems, Inc.	3630717

(f) Set forth below is the Federal Taxpayer Identification Number, if any, of each Loan Party:

Loan Party	Federal Taxpayer Identification Number
Casa Systems, Inc.	75-3108867

2. Current Locations. (a) The chief executive office of each Loan Party is located at the address set forth opposite its name below:

Loan Party	Mailing Address	County	State
Casa Systems, Inc.	100 Old River Road Andover, MA 01810	Essex County	MA

(b) The jurisdiction of formation of each Loan Party that is a registered organization is set forth opposite its name below:

Loan Party	Jurisdiction
Casa Systems, Inc.	Delaware

(c) Set forth below is a list of all Material Real Property owned by each Loan Party:

None.

3. Schedule of Filings. Attached hereto as Schedule 3 is a schedule setting forth the proper UCC filing office in the jurisdiction in which each Loan Party is located and, to the extent any of the Collateral is comprised of fixtures attached to Material Real Property, in the proper local jurisdiction, in each case as set forth with respect to such Loan Party in Section 2 hereof.

4. Stock Ownership and other Equity Interests. Attached hereto as Schedule 4 is a true and correct list of all the issued and outstanding Equity Interests of each Subsidiary and the record and beneficial owners of such Equity Interests.

5. Debt Instruments. Attached hereto as Schedule 5 is a true and correct list of all promissory notes and other evidence of Indebtedness held by the Borrower and each other Loan Party having a principal amount in excess of $1,000,000 that are required to be pledged under the Security Agreement, including all intercompany notes between Loan Parties.

6. Mortgage Filings. Attached hereto as Schedule 6 is a schedule setting forth, with respect to each Material Real Property, (a) the exact name of the Person that owns such property as such name appears in its certificate of incorporation or other organizational document, (b) if different from the name identified pursuant to clause (a), the exact name of the current mortgagor/grantor of such property reflected in the records of the filing office for such property identified pursuant to the following clause and (c) the filing office in which a Mortgage with respect to such property must be filed or recorded in order for the Collateral Agent to obtain a perfected security interest therein.

7. Intellectual Property. (a) Attached hereto as Schedule 7(a) as prepared for filing with the United States Patent and Trademark Office is a schedule setting forth all of each Loan Party's: (i) Patents and Patent Applications, including the name of the registered owner, type, registration or application number and the expiration date (if already registered) of each Patent and Patent Application owned by any Loan Party; and (ii) Trademarks and Trademark Applications, including the name of the registered owner, the registration or application number and the expiration date (if already registered) of each Trademark and Trademark Application owned by any Loan Party.

(b) Attached hereto as Schedule 7(b) as prepared for filing with the United States Copyright Office is a schedule setting forth all of each Loan Party's Copyrights and Copyright Applications, including the name of the registered owner, title, the registration number or application number and the publication year (if already registered) of each Copyright and Copyright Application owned by any Loan Party.

8. Commercial Tort Claims. Set forth as Schedule 8 is a schedule setting forth all commercial tort claims equal to or in excess of $1,000,000 held by any Loan Party, including a brief description thereof.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, the undersigned has duly executed this certificate on the date first set forth above.

CASA SYSTEMS, INC.

By: _____

Name: Jerry Guo
Title: President & CEO

[Signature Page to Perfection Certificate]

SCHEDULE 1
TO PERFECTION CERTIFICATE

Changes in Corporate Identity/Structure

None.

SCHEDULE 3
TO PERFECTION CERTIFICATE

Schedule of Filings

Loan Party	Filing Office
Casa Systems, Inc.	Delaware Secretary of State

SCHEDULE 4
TO PERFECTION CERTIFICATE

Stock Ownership and other Equity Interests

Issuer	Jurisdiction of Organization	Owner of Outstanding Equity Interests	Percentage of Outstanding Equity Interests Held, Directly or Indirectly, by the Owner	% of Total Issued Interests Pledged
Casa Systems Securities Corporation*	Massachusetts	Casa Systems, Inc.	100%	100%
Casa Properties LLC*	Delaware	Casa Systems, Inc.	100%	100%
Guangzhou Casa Communications Ltd.*	People's Republic of China	Casa Systems, Inc.	100%	65%
Casa Systems B.V.*	Netherlands	Casa Systems, Inc.	100%	65%
Casa Systems Canada Ltd.*	Canada	Casa Systems, Inc.	100%	65%
Casa Systems SAS*	France	Casa Systems, Inc.	100%	65%
Casa Communications Ltd.	Ireland	Casa Systems B.V.	100%	0%

* Issued Equity Interest being pledged as of the Closing Date in accordance with the Collateral and Guarantee Requirement.

Debt Instruments

None.

SCHEDULE 6
TO PERFECTION CERTIFICATE

Mortgage Filings

None.

SCHEDULE 7(a)
TO PERFECTION CERTIFICATE

Intellectual Property – Patents and Trademarks

UNITED STATES PATENTS AND APPLICATIONS:

Registrations:

Patent No./ Publication No./ Application No.	Issue Date/ Pub. Date/ App. Date	Title	Current Owner	Status
8885781 13670000	11-NOV-2014 06-NOV-2012	SYSTEM AND METHOD FOR DETECTING BURST NOISE DURING QUADRATURE AMPLITUDE MODULATION COMMUNICATIONS	CASA SYSTEMS, INC.	ISSUED
8670481 13445258	11-MAR-2014 12-APR-2012	System and method for dynamic profile management in cable modem systems	CASA SYSTEMS, INC.	ISSUED
8565266 13526284	22-OCT-2013 18-JUN-2012	Intelligent node for improving signal quality in a cable modem network	CASA SYSTEMS, INC.	ISSUED
8306166 13351699	06-NOV-2012 17-JAN-2012	System and Method for Detecting Burst Noise During Quadrature Amplitude Modulation Communications	CASA SYSTEMS, INC.	ISSUED

Applications:

None.

UNITED STATES TRADEMARKS AND APPLICATIONS:

Mark	**App. No./ App. Date**	**Reg. No./ Reg. Date**	**Current Owner**	**Status**
CASA SYSTEMS	**App** 85467744 **App** 08-NOV-2011	**Reg** 4167895 **Reg** 03-JUL-2012	CASA SYSTEMS, INC.	Registered

SCHEDULE 7(b)
TO PERFECTION CERTIFICATE

Intellectual Property – Copyrights

UNITED STATES COPYRIGHTS AND APPLICATIONS:

None.

SCHEDULE 8
TO PERFECTION CERTIFICATE

Commercial Tort Claims

None.

FORM OF PERFECTION CERTIFICATE

[See attached]

Exhibit V-2 to
the Security Agreement

FORM OF PERFECTION CERTIFICATE

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., a Delaware corporation (the "Borrower"), the Lenders (as defined in the Credit Agreement) from time to time party thereto, JPMorgan Chase Bank, N.A., as administrative agent (in such capacity, the "Administrative Agent"), Collateral Agent and an L/C Issuer, and the other agents and parties party thereto. Capitalized terms used but not defined herein have the meanings assigned in the Credit Agreement or the Security Agreement referred to therein, as applicable.

The undersigned, a Responsible Officer of the Borrower, in his/her capacity as an officer of the Borrower and not in his/her individual capacity, hereby certifies to the Administrative Agent and each other Secured Party as follows:

1. Names. (a) The exact legal name of each Loan Party, as such name appears in its respective certificate or articles of incorporation or formation, is as follows:

Loan Party

(b) Set forth below is each other legal name each Loan Party has had in the past five years, together with the date of the relevant change:

Loan Party	Prior Name	Date of Change

(c) Except as set forth in Schedule 1 hereto, to the Borrower's knowledge, no Loan Party has changed its identity or corporate structure within the past five years. Changes in identity or corporate structure would include mergers, consolidations and acquisitions, as well as any change in the form, nature or jurisdiction of organization. If any such change has occurred, include in Schedule 1 the information required by Sections 1 and 2 of this certificate as to each acquiree or constituent party to a merger or consolidation to the extent such information is available to the Borrower.

(d) To the Borrower's knowledge, the following is a list of all other names (including trade names or similar appellations) used by each Loan Party or any of its divisions or other business units in connection with the conduct of its business or the ownership of its properties at any time during the past five years:

(e) Set forth below is the Organizational Identification Number, if any, issued by the jurisdiction of formation of each Loan Party that is a registered organization:

Loan Party	**Organizational Identification Number**

(f) Set forth below is the Federal Taxpayer Identification Number, if any, of each Loan Party:

Loan Party	**Federal Taxpayer Identification Number**

2. Current Locations. (a) The chief executive office of each Loan Party is located at the address set forth opposite its name below:

Loan Party	Mailing Address	County	State

(b) The jurisdiction of formation of each Loan Party that is a registered organization is set forth opposite its name below:

Loan Party	Jurisdiction

(c) Set forth below is a list of all Material Real Property owned by each Loan Party:

3. Schedule of Filings. Attached hereto as Schedule 3 is a schedule setting forth the proper UCC filing office in the jurisdiction in which each Loan Party is located and, to the extent any of the Collateral is comprised of fixtures attached to Material Real Property, in the proper local jurisdiction, in each case as set forth with respect to such Loan Party in Section 2 hereof.

4. Stock Ownership and other Equity Interests. Attached hereto as Schedule 4 is a true and correct list of all the issued and outstanding Equity Interests of the Borrower and each Subsidiary and the record and beneficial owners of such Equity Interests.

5. Debt Instruments. Attached hereto as Schedule 5 is a true and correct list of all promissory notes and other evidence of Indebtedness held by the Borrower and each other Loan Party having a principal amount in excess of $5,000,000 that are required to be pledged under the Security Agreement, including all intercompany notes between Loan Parties.

6. Mortgage Filings. Attached hereto as Schedule 6 is a schedule setting forth, with respect to each Material Real Property, (a) the exact name of the Person that owns such property as such name appears in its certificate of incorporation or other organizational document, (b) if different from the name identified pursuant to clause (a), the exact name of the current mortgagor/grantor of such property reflected in the records of the filing office for such property identified pursuant to the following clause and (c) the filing office in which a Mortgage with respect to such property must be filed or recorded in order for the Collateral Agent to obtain a perfected security interest therein.

7. Intellectual Property. (a) Attached hereto as Schedule 7(a) as prepared for filing with the United States Patent and Trademark Office is a schedule setting forth all of each Loan Party's: (i) Patents and Patent Applications, including the name of the registered owner, type, registration or application number and the expiration date (if already registered) of each Patent and Patent Application owned by any Loan Party; and (ii) Trademarks and Trademark Applications, including the name of the registered owner, the registration or application number and the expiration date (if already registered) of each Trademark and Trademark Application owned by any Loan Party.

(b) Attached hereto as Schedule 7(b) as prepared for filing with the United States Copyright Office is a schedule setting forth all of each Loan Party's Copyrights and Copyright Applications, including the name of the registered owner, title, the registration number or application number and the publication year (if already registered) of each Copyright and Copyright Application owned by any Loan Party.

8. Commercial Tort Claims. Set forth as Schedule 8 is a schedule setting forth all commercial tort claims equal to or in excess of $5,000,000 held by any Loan Party, including a brief description thereof.

IN WITNESS WHEREOF, the undersigned has duly executed this certificate on the date first set forth above.

CASA SYSTEMS, INC.

By: _____

Name:
Title:

SCHEDULE 1
TO PERFECTION CERTIFICATE

Changes in Corporate Identity/Structure

Loan Party	Action	Date of Action	Jurisdiction of Incorporation or Organization	Pre-Conversion/Pre-Merger Names

SCHEDULE 3
TO PERFECTION CERTIFICATE

Schedule of Filings

Loan Party	Filing Office

SCHEDULE 4
TO PERFECTION CERTIFICATE

Stock Ownership and other Equity Interests

Issuer	Jurisdiction of Organization	Owner of Outstanding Equity Interests	Percentage of Outstanding Equity Interests Held, Directly or Indirectly, by the Owner	% of Total Issued Interests Pledged

SCHEDULE 5
TO PERFECTION CERTIFICATE

Debt Instruments

SCHEDULE 6
TO PERFECTION CERTIFICATE

Mortgage Filings

SCHEDULE 7(a)
TO PERFECTION CERTIFICATE

Intellectual Property – Patents and Trademarks

UNITED STATES PATENTS AND APPLICATIONS:

Registrations:

Owner	Registration Number	Description

Applications:

Owner	Application Number	Description

UNITED STATES TRADEMARKS AND APPLICATIONS:

Owner	Registration/Application Number	Trademark	Registration/Application Date	Expiration Date

SCHEDULE 7(b)
TO PERFECTION CERTIFICATE

Intellectual Property – Copyrights

UNITED STATES COPYRIGHTS AND APPLICATIONS:

Owner	Title	Registration/Application Number	Registration/Application Date	Publication Year

SCHEDULE 8
TO PERFECTION CERTIFICATE

Commercial Tort Claims

Exhibit H-1
to the Credit Agreement

FORM OF NON-BANK CERTIFICATE
(For Foreign Lenders That Are Not Partnerships or Pass-Thru Entities For U.S. Federal Income Tax Purposes)

Reference is made to that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto. Capitalized terms used but not otherwise defined herein shall have the meanings assigned to them in the Credit Agreement. [ ] (the "**Foreign Lender**") is providing this certificate pursuant to Section 3.01(c)(i) of the Credit Agreement.

The Foreign Lender hereby represents and warrants that:

1. The Foreign Lender is the sole record and beneficial owner of the Loans (as well as any Notes evidencing such Loans) in respect of which it is providing this certificate.

2. The Foreign Lender is not a "bank" for purposes of Section 881(c)(3)(A) of the Internal Revenue Code of 1986, as amended (the "**Code**").

3. The Foreign Lender is not a 10-percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code.

4. The Foreign Lender is not a controlled foreign corporation within the meaning of Section 881(c)(3)(C) of the Code related to the Borrower within the meaning of Section 864(d)(4) of the Code.

5. No payments in connection with any Loan Document are effectively connected with the Foreign Lender's conduct of a U.S. trade or business.

The Foreign Lender has furnished the Borrower and the Administrative Agent with a certificate of its non-U.S. person status on IRS Form W-8BEN or W-8BEN-E (as applicable). By executing this certificate, the Foreign Lender agrees that (1) if the information provided on this certificate changes, the Foreign Lender shall promptly so inform the Borrower and the Administrative Agent in writing and (2) the Foreign Lender shall furnish the Borrower and the Administrative Agent a properly completed and currently effective certificate in either the calendar year in which payment is to be made by the Borrower or the Administrative Agent to the Foreign Lender, or in either of the two calendar years preceding each such payment.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned has duly executed this certificate on the day of , 20 .

[NAME OF FOREIGN LENDER]

By: _____

Name:

Title:

Exhibit H-2
to the Credit Agreement

FORM OF NON-BANK CERTIFICATE
(For Foreign Participants That Are Not Partnerships or Pass-Thru Entities For U.S. Federal Income Tax Purposes)

Reference is made to that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto. Capitalized terms used but not otherwise defined herein shall have the meanings assigned to them in the Credit Agreement. The undersignedis providing this certificate pursuant to Section 3.01(c)(i) of the Credit Agreement.

The undersigned hereby represents and warrants that:

1. It is the sole record and beneficial owner of the participation in respect of which it is providing this certificate.

2. It is not a "bank" for purposes of Section 881(c)(3)(A) of the Internal Revenue Code of 1986, as amended (the "**Code**").

3. It is not a 10-percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code.

4. It is not a controlled foreign corporation within the meaning of Section 881(c)(3)(C) of the Code related to the Borrower within the meaning of Section 864(d)(4) of the Code.

5. No payments in connection with any Loan Document are effectively connected with its conduct of a U.S. trade or business.

The undersigned has furnished its participating Lender with a certificate of its non-U.S. person status on IRS Form W-8BEN or W-8BEN-E (as applicable). By executing this certificate, the undersigned agrees that (1) if the information provided on this certificate changes, the undersigned shall promptly such Lender in writing and (2) the undersigned shall have at all times furnished such Lender with a properly completed and currently effective certificate in either the calendar year in which payment is to be made to the undersigned, or in either of the two calendar years preceding each such payment.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned has duly executed this certificate on the day of , 20 .

[NAME OF PARTICIPANT]

By: _____

Name:
Title:

EXHIBIT H-3
to the Credit Agreement

FORM OF NON-BANK CERTIFICATE
(For Foreign Participants That Are Partnerships or Pass-Thru Entities For U.S. Federal Income Tax Purposes)

Reference is made to that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto. Capitalized terms used but not otherwise defined herein shall have the meanings assigned to them in the Credit Agreement. The undersigned is providing this certificate pursuant to Section 3.01(c)(i) of the Credit Agreement.

The undersigned hereby represents and warrants that:

1. It is the sole record owner of the Loans (as well as any Notes evidencing such Loans) in respect of which it is providing this certificate.

2. Its partners/members are the sole beneficial owners of the Loans (as well as any Notes evidencing such Loans).

3. Neither the undersigned nor any of its partners/members claiming the benefit of the portfolio interest exemption is a "bank" for purposes of Section 881(c)(3)(A) of the Internal Revenue Code of 1986, as amended (the "**Code**").

4. None of the undersigned's partners/members claiming the benefit of the portfolio interest exemption is a 10-percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code.

5. None of the undersigned's partners/members claiming the benefit of the portfolio interest exemption is a controlled foreign corporation within the meaning of Section 881(c)(3)(C) of the Code related to the Borrower within the meaning of Section 864(d)(4) of the Code.

6. No payments in connection with any Loan Document are effectively connected with the undersigned's or its partners/members' conduct of a U.S. trade or business.

The undersigned has furnished its participating Lender with IRS Form W- 8IMY accompanied by one of the following forms from each of its partners/members claiming the portfolio interest exemption: (i) an IRS Form W-8BEN or W-8BEN-E (as applicable) or (ii) an IRS Form W-8IMY accompanied by an IRS Form W-8BEN or W-8BEN-E (as applicable) from each of such partner's/member's beneficial owners that is claiming the portfolio interest exemption. By executing this certificate, the undersigned agrees that (1) if the information provided on this certificate changes, the undersigned shall promptly inform such Lender in writing and (2) the undersigned shall have at all times furnished such Lender with a properly completed and currently effective certificate in either the calendar year in which each payment is to be made to the undersigned, or in either of the two calendar years preceding each such payment.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned has duly executed this certificate on the day of , 20 .

[NAME OF PARTICIPANT]

By: _____

Name:
Title:

EXHIBIT H-4
to the Credit Agreement

FORM OF NON-BANK CERTIFICATE
(For Foreign Lenders That Are Partnerships or Pass-Thru Entities For U.S. Federal Income Tax Purposes)

Reference is made to that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto. Capitalized terms used but not otherwise defined herein shall have the meanings assigned to them in the Credit Agreement. (the "**Foreign Lender**") is providing this certificate pursuant to Section 3.01(c)(i) of the Credit Agreement.

The Foreign Lender hereby represents and warrants that:

1. The Foreign Lender is the sole record owner of the Loans (as well as any Notes evidencing such Loans) in respect of which it is providing this certificate.

2. The Foreign Lender's partners/members are the sole beneficial owners of the Loans (as well as any Notes evidencing such Loans).

3. Neither the Foreign Lender nor any of its partners/members claiming the benefit of the portfolio interest exemption is a "bank" for purposes of Section 881(c)(3)(A) of the Internal Revenue Code of 1986, as amended (the "**Code**").

4. None of the Foreign Lender's partners/members claiming the benefit of the portfolio interest exemption is a 10-percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code.

5. None of the Foreign Lender's partners/members claiming the benefit of the portfolio interest exemption is a controlled foreign corporation within the meaning of Section 881(c)(3)(C) of the Code related to the Borrower within the meaning of Section 864(d)(4) of the Code.

6. No payments in connection with any Loan Document are effectively connected with the Foreign Lender's or its partners/members' conduct of a U.S. trade or business.

The Foreign Lender has furnished the Administrative Agent and the Borrower with IRS Form W- 8IMY accompanied by one of the following forms from each of its partners/members claiming the portfolio interest exemption: (i) an IRS Form W-8BEN or W-8BEN-E (as applicable) or (ii) an IRS Form W-8IMY accompanied by an IRS Form W-8BEN or W-8BEN-E (as applicable) from each of such partner's/member's beneficial owners that is claiming the portfolio interest exemption. By executing this certificate, the Foreign Lender agrees that (1) if the information provided on this certificate changes, the Foreign Lender shall promptly so inform the

Borrower and the Administrative Agent in writing and (2) the Foreign Lender shall have at all times furnished the Borrower and the Administrative Agent with a properly completed and currently effective certificate in either the calendar year in which each payment is to be made to the Foreign Lender, or in either of the two calendar years preceding each such payment.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned has duly executed this certificate on the day of , 20 .

[NAME OF FOREIGN LENDER]

By: _____

Name:
Title:

EXHIBIT I
to the Credit Agreement

INTERCOMPANY NOTE

New York, New York
[●], 2016

FOR VALUE RECEIVED, each of the undersigned, to the extent a borrower from time to time with respect to any loan or advance (a "**Loan**") from any other entity listed on the signature page hereto (each, in such capacity, a "**Payor**"), hereby promises to pay to such other entity listed below (each, in such capacity, a "**Payee**") or its registered assigns, at the time specified on the Schedule attached hereto with respect to such Loan (or if there is no such Schedule, on demand or as otherwise agreed by such Payor and Payee), in Dollars, Euros or such other currency as agreed to by such Payor and such Payee in immediately available funds, at such location as such Payee shall from time to time designate, the unpaid principal amount of all Loans and advances constituting Indebtedness made by such Payee to such Payor. Each Payor promises also to pay interest, if any, on the unpaid principal amount of all such Loans in like money at said location from the date of such loans and advances until paid at such rate per annum as shall be reflected on the Schedule or as otherwise agreed upon from time to time by such Payor and such Payee. The terms and conditions of one or more Loans and advances constituting Indebtedness may (but are not required to) be set forth on the Schedule attached to this note (as amended, amended and restated, supplemented or otherwise modified from time to time, the "**Note**") to memorialize the agreement of the Payor and Payee with respect to such Loan(s), in which case the terms and conditions specified in the Schedule shall govern as between the Payor and Payee unless otherwise agreed in writing between them; *provided*, that such terms and conditions may not be inconsistent with the provisions of this Note.

This Note is the Intercompany Note referred to in the Credit Agreement, dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "**Credit Agreement**"), among Casa Systems, Inc., a Delaware corporation (the "**Borrower**"), the Lenders from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent (in such capacity, the "**Administrative Agent**"), Collateral Agent and an L/C Issuer and the other agents and parties party thereto. Unless otherwise specified, capitalized terms used but not defined herein shall have the meanings assigned to such terms in the Credit Agreement. Each Payee hereby acknowledges and agrees that the Administrative Agent and the Collateral Agent may exercise all rights provided in the Credit Agreement and the Collateral Documents with respect to this Note. This Note shall be pledged by each Payee that is a Loan Party to the Administrative Agent, for the benefit of the Secured Parties, pursuant to the Collateral Documents as collateral security for the full and prompt payment when due of, and the performance of, such Payee's Obligations.

Anything in this Note to the contrary notwithstanding, the indebtedness evidenced by this Note owed by any Payor that is a Loan Party to any Payee that is not a Loan Party (any such Payor and Payee with respect to any such indebtedness, an "**Affected Payor**" or "**Affected Payee**", as relevant) shall, in each case, be subordinate and junior in right of payment, to the extent and in the

manner hereinafter set forth, to all Obligations, including, without limitation, where applicable, under such Affected Payor's guarantee of the Guaranteed Obligations under (and as defined) in the Guaranty (such Obligations and other indebtedness and obligations in connection with any renewal, refunding, restructuring or refinancing thereof, including interest thereon accruing after the commencement of any proceedings referred to in clause (i) below at the rate provided for in the respective documentation for such Obligations, whether or not such interest is an allowed claim in such proceeding, being hereinafter collectively referred to as "**Senior Indebtedness**"):

In the event of any insolvency or bankruptcy proceedings, and any receivership, liquidation, reorganization or other similar proceedings in connection therewith, relative to any Affected Payor or to its creditors, as such, or to its property, and in the event of any proceedings for voluntary liquidation, dissolution or other winding up of such Affected Payor, whether or not involving insolvency or bankruptcy, then (x) the holders of Senior Indebtedness shall be Paid in Full before any Affected Payee is entitled to receive (whether directly or indirectly), or make any demands for, any payment on account of this Note and (y) until the holders of Senior Indebtedness are Paid in Full, any payment or distribution to which such Affected Payee would otherwise be entitled (other than (A) equity securities or (B) debt securities of such Affected Payor that are subordinated, to at least the same extent as this Note, to the payment of all Senior Indebtedness then outstanding (such securities hereinafter referred to as "**Restructured Debt Securities**")) in respect of this Note shall be made to the holders of Senior Indebtedness;

(x) if any Event of Default under Sections 8.01(a) or 8.01(f) of the Credit Agreement occurs and is continuing with respect to any Senior Indebtedness and (y) the Administrative Agent delivers notice to the Borrower instructing the Borrower that the Administrative Agent is thereby exercising its rights pursuant to this clause (ii) (provided that no such notice shall be required to be given in the case of any Event of Default arising under Section 8.01(f) of the Credit Agreement), then no payment or distribution of any kind or character (other than payments and distributions with regard to Restructured Debt Securities) shall be made by or on behalf of the Affected Payor or any other Person on its behalf, and no payment or distribution of any kind or character shall be received by or on behalf of the Affected Payee or any other Person on its behalf, with respect to this Note;

if any payment or distribution of any kind or character, whether in cash, securities or other property (other than Restructured Debt Securities) in respect of this Note shall (despite these subordination provisions) be received by any Affected Payee in violation of clause (i) or (ii) above before all Senior Indebtedness shall have been Paid in Full, such payment or distribution shall be held in trust for the benefit of, and shall be paid over or delivered to, the holders of Senior Indebtedness (or their representatives), ratably according to the respective aggregate amounts remaining unpaid thereon, to the extent necessary for all Senior Indebtedness of the relevant Affected Payor to be Paid in Full; and

each Affected Payor agrees to file all claims against each relevant Affected Payee in any bankruptcy or other proceeding in which the filing of claims is required by law in respect of any Senior Indebtedness and the Administrative Agent shall be entitled to all of such Affected Payor' s rights thereunder. If for any reason an Affected Payor fails to file such claim at least ten (10) days prior to the last date on which such claim should be filed,

such Affected Payor hereby irrevocably appoints the Administrative Agent as its true and lawful attorney-in-fact and the Administrative Agent is hereby authorized to act as attorney-in-fact in such Affected Payor's name to file such claim or, in the Administrative Agent's discretion, to assign such claim to and cause proof of claim to be filed in the name of the Administrative Agent or its nominee. In all such cases, whether in administration, bankruptcy or otherwise, the person or persons authorized to pay such claim shall pay to the Administrative Agent the full amount payable on the claim in the proceeding, and, to the full extent necessary for that purpose, each Affected Payor hereby assigns to the Administrative Agent all of such Affected Payor's rights to any payments or distributions to which such Affected Payor otherwise would be entitled. If the amount so paid is greater than such Affected Payor's liability hereunder, the Administrative Agent shall pay the excess amount to the party entitled thereto under applicable law. In addition, upon the occurrence and during the continuance of an Event of Default, each Affected Payor hereby irrevocably appoints the Administrative Agent as its attorney-in-fact to exercise all of such Affected Payor's voting rights in connection with any bankruptcy proceeding or any plan for the reorganization of each relevant Affected Payee.

For purposes of this Note, "**Paid in Full**" means that the holders of Senior Indebtedness shall be paid in full in cash in respect of all amounts constituting Senior Indebtedness (other than Obligations under Secured Hedge Agreements, Obligations under Secured Cash Management Agreements or contingent indemnification obligations not yet accrued and payable) and no Letter of Credit shall remain outstanding (other than outstanding Letters of Credit that have been Cash Collateralized).

To the fullest extent permitted by law, no present or future holder of Senior Indebtedness shall be prejudiced in its right to enforce the subordination of this Note by any act or failure to act on the part of any Affected Payor or by any act or failure to act on the part of such holder or any trustee or agent for such holder. Each Affected Payee and each Affected Payor hereby agrees that the subordination of this Note is for the benefit of the Collateral Agent and the other Secured Parties, the Collateral Agent and the other Secured Parties are obligees under this Note to the same extent as if their names were written herein as such and the Administrative Agent and/or the Collateral Agent may, on behalf of itself and the other Secured Parties, proceed to enforce the subordination provisions herein.

Subject to all Senior Indebtedness being Paid in Full, each Affected Payee shall be subrogated to the rights of the holders of Senior Indebtedness to receive payments or distributions of assets of the respective Affected Payor applicable to the Senior Indebtedness until all amounts owing on the Note shall be paid in full, and for the purpose of such subrogation no payments or distributions to the holders of the Senior Indebtedness by or on behalf of an Affected Payor or by or on behalf of the holder of the Note which otherwise would have been made to the holder of the Note shall, as between such Affected Payor, its creditors other than the holders of Senior Indebtedness, and the holder of the Note, be deemed to be payment by such Affected Payor to or on account of the Senior Indebtedness.

The holders of the Senior Indebtedness may, without in any way affecting the obligations of any Affected Payee with respect thereto, at any time or from time to time and in their absolute discretion, change the manner, place or terms of payment of, change or extend the time of payment

of, or renew or alter, any Senior Indebtedness, or amend, modify or supplement any agreement or instrument governing or evidencing such Senior Indebtedness or any other document referred to therein, or exercise or refrain from exercising any other of their rights under the Senior Indebtedness including, without limitation, the waiver of default thereunder and the release of any collateral securing such Senior Indebtedness, all without notice to or assent from any Affected Payee.

If, at any time, all or part of any payment with respect to Senior Indebtedness theretofore made (whether by any other Loan Party or any other Person or enforcement of any right of setoff or otherwise) is rescinded or must otherwise be returned by the holders of Senior Indebtedness for any reason whatsoever (including, without limitation, the insolvency, bankruptcy or reorganization of any other Loan Party or such other Persons), the subordination provisions set forth herein shall continue to be effective or be reinstated, as the case may be, all as though such payment had not been made.

The indebtedness evidenced by this Note owed by any Payor (other than an Affected Payor) shall not be subordinated to, and shall rank *pari passu* in right of payment with, any other obligation of such Payor (except as otherwise agreed between such Payor and Payee).

Nothing contained in the subordination provisions set forth above is intended to or will impair, as between each Payor and each Payee, the obligations of such Payor, which are absolute and unconditional, to pay to such Payee the principal of and interest, if any, on this Note as and when due and payable in accordance with its terms, or is intended to or will affect the relative rights of such Payee and other creditors of such Payor other than the holders of Senior Indebtedness.

Each Payee is hereby authorized (but not required) to record all loans and advances made by it to any Payor (all of which shall be evidenced by this Note), and all repayments or prepayments thereof, in its books and records, such books and records constituting *prima facie* evidence of the accuracy of the information contained therein. For the avoidance of doubt, this Note shall not in any way replace, or affect the principal amount of, any intercompany loan outstanding between any Payor and any Payee prior to the execution hereof, and to the extent permitted by applicable law, from and after the date hereof, each such intercompany loan shall be deemed to incorporate the terms set forth in this Note to the extent applicable and shall be deemed to be evidenced by this Note together with any documents and instruments executed prior to the date hereof in connection with such intercompany Indebtedness.

Each Payor hereby waives presentment, demand, protest or notice of any kind in connection with this Note. All payments under this Note shall be made without offset, counterclaim or deduction of any kind.

It is understood that this Note shall evidence only Indebtedness and not amounts owing in respect of accounts payable incurred in connection with goods sold or services rendered in the ordinary course of business and not in connection with the borrowing of money.

This Note shall be binding upon each Payor and its successors and permitted assigns, and the terms and provisions of this Note shall inure to the benefit of each Payee and its successors and permitted assigns, including subsequent holders hereof.

From time to time after the date hereof, and as may be reflected on the Schedule, any successor to any Payee or Payor hereunder and additional Subsidiaries of Borrower may become parties hereto (as Payor and/or Payee, as the case may be) by executing a counterpart signature page to this Note, which shall automatically be incorporated into this Note (each successor and additional Subsidiary, an "**Additional Party**"). Upon delivery of such counterpart signature page to the Payees, notice of which is hereby waived by the other Payors and Payees, each Additional Party shall be a Payor and/or a Payee, as the case may be, and shall be as fully a party hereto as if such Additional Party were an original signatory hereof. Each Payor expressly agrees that its obligations arising hereunder shall not be affected or diminished by the addition or release of any other Payor or Payee hereunder. This Note shall be fully effective as to any Payor or Payee that is or becomes a party hereto regardless of whether any other Person becomes or fails to become or ceases to be a Payor or Payee hereunder.

Indebtedness governed by this Note shall be maintained in "registered form" within the meaning of Section 163(f) of the Internal Revenue Code of 1986, as amended. No transfer of this Note shall be effective until entered in a register (the "**Register**").

THIS NOTE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

* * *

CASA SYSTEMS, INC., as Payee and Payor

By: _____

Name:

Title:

Exhibit J
to the Credit Agreement

FORM OF DISCOUNT RANGE PREPAYMENT NOTICE

Date: , 20

To: JPMorgan Chase Bank, N.A., as Auction Agent

Ladies and Gentlemen:

This Discount Range Prepayment Notice is delivered to you pursuant to Section 2.05(a)(iv)(C) of that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto (collectively, the "**Lenders**" and individually, a "**Lender**") and the other agents and parties party thereto. Capitalized terms used herein and not otherwise defined herein shall have the meaning ascribed to such terms in the Credit Agreement.

Pursuant to Section 2.05(a)(iv)(C) of the Credit Agreement, the Borrower Party hereby requests that [each Lender] [each Lender of the [●, 20●][37] tranche[s] of the **[ ]**[38] Class of Term Loans] submit a Discount Range Prepayment Offer. Any Discounted Loan Prepayment made in connection with this solicitation shall be subject to the following terms:

1. This Borrower Solicitation of Discount Range Prepayment Offers is extended at the sole discretion of the Borrower Party to [each Lender] [each Lender of the [●, 20●][39] tranche[s] of the **[ ]**[40] Class of Term Loans].

2. The maximum aggregate principal amount of the Discounted Loan Prepayment that will be made in connection with this solicitation is [$[●] of Term Loans]

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37 List multiple tranches if applicable.

38 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

39 List multiple tranches if applicable.

40 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

[$[●] of the [●, 20●][41] tranche[(s)] of the **[ ]**[42] Class of Term Loans] (the "**Discount Range Prepayment Amount**")[43].

3. The Borrower Party is willing to make Discount Loan Prepayments at a percentage discount to par value greater than or equal to [[●]% but less than or equal to [●]% in respect of the Term Loans] [[●]% but less than or equal to [●]% in respect of the [●, 20●][44] tranche[(s)] of the **[ ]**[45] Class of Term Loans] (the "**Discount Range**").

To make an offer in connection with this solicitation, you are required to deliver to the Auction Agent a Discount Range Prepayment Offer by no later than 5:00 p.m., New York City time, on the date that is the third Business Day following the date of delivery of this notice (which date may so be extended for a period not exceeding three (3) Business Days upon notice by the Borrower Party to, and with the consent of, the Auction Agent) pursuant to Section 2.05(a)(iv)(C) of the Credit Agreement.

The Borrower Party hereby represents and warrants to the Auction Agent and [the Lenders] [each Lender of the [●, 20●][46] tranche[s] of the **[ ]**[47] Class of Term Loans] as follows:

1. The Borrower Party will not use proceeds of loans under the Revolving Credit Facility to fund this Discounted Loan Prepayment.

2. [At least ten (10) Business Days have passed since the consummation of the most recent Discounted Loan Prepayment as a result of a prepayment made by a Borrower Party on the applicable Discounted Prepayment Effective Date.] [At least three (3) Business Days have passed since the date the Borrower Party was notified that no Lender was willing to accept any prepayment of any Term Loan at the Specified Discount, within the Discount Range or at any discount to par value, as applicable, or in the case of Borrower Solicitation of Discounted Prepayment Offers, the date of any Borrower Party's election not to accept any Solicited Discounted Prepayment Offers made by a Lender.][48]

3. [The Borrower Party does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such

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41 List multiple tranches if applicable.

42 List applicable Class(es) of Term Loans (*e.g.*, Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

43 Minimum of $5.0 million and whole increments of $1.0 million in excess thereof.

44 List multiple tranches if applicable.

45 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

46 List multiple tranches if applicable.

47 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

49 Insert applicable representation.

information)] [The Borrower Party cannot represent that it does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information).][49]

The Borrower Party acknowledges that the Auction Agent and the relevant Lenders are relying on the truth and accuracy of the foregoing representations and warranties in connection with any Discount Range Prepayment Offer made in response to this Discount Range Prepayment Notice and the acceptance of any prepayment made in connection with this Discount Range Prepayment Notice.

The Borrower Party requests that the Auction Agent promptly notify each Lender party to the Credit Agreement of this Discount Range Prepayment Notice.

[REMAINDER OF THE PAGE INTENTIONALLY LEFT BLANK]

49 Insert applicable representation.

IN WITNESS WHEREOF, the undersigned has executed this Discount Range Prepayment Notice as of the date first above written.

[NAME OF APPLICABLE BORROWER PARTY]

By: _____
Name:
Title:

Enclosure: Form of Discount Range Prepayment Offer

EXHIBIT K
to the Credit Agreement

FORM OF DISCOUNT RANGE PREPAYMENT OFFER

Date: , 20

1) To: JPMorgan Chase Bank, N.A., as Auction Agent

2) Ladies and Gentlemen:

Reference is made to (a) that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent and an L/C Issuer, each lender from time to time party thereto and the other agents and parties party thereto, and (b) that certain Discount Range Prepayment Notice, dated [ ], 20[ ], from the applicable Borrower Party (the "**Discount Range Prepayment Notice**"). Capitalized terms used herein and not otherwise defined herein shall have the meaning ascribed to such terms in the Discount Range Prepayment Notice or, to the extent not defined therein, in the Credit Agreement.

The undersigned Lender hereby gives you irrevocable notice, pursuant to Section 2.05(a)(iv)(C) of the Credit Agreement, that it is hereby offering to accept a Discounted Loan Prepayment on the following terms:

1. This Discount Range Prepayment Offer is available only for prepayment on [the Term Loans] [the [●, 20●][50] tranche[s] of the [ ][51] Class of Term Loans] held by the undersigned.

2. The maximum aggregate principal amount of the Discounted Loan Prepayment that may be made in connection with this offer shall not exceed (the "**Submitted amount**"):

[Term Loans - $[●]]

50 List multiple tranches if applicable.

51 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

[[●, 20●][52] tranche[s] of the [ ][53] Class of Term Loans - $[●]]

3. The percentage discount to par value at which such Discounted Loan Prepayment may be made is [[●]% in respect of the Term Loans] [[●]% in respect of the [●, 20●][54] tranche[(s)] of the [ ][55] Class of Term Loans] (the "Submitted Discount").

3) The undersigned Lender hereby expressly and irrevocably consents and agrees to a prepayment of its [Term Loans] [[●, 20●][56] tranche[s] of the [ ][57] Class of Term Loans] indicated above pursuant to Section 2.05(a)(iv)(C) of the Credit Agreement at a price equal to the Applicable Discount and in an aggregate outstanding amount not to exceed the Submitted Amount, as such amount may be reduced in accordance with the Discount Range Proration, if any, and as otherwise determined in accordance with and subject to the requirements of the Credit Agreement.

[REMAINDER OF THE PAGE INTENTIONALLY LEFT BLANK]

52 List multiple tranches if applicable.

53 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

54 List multiple tranches if applicable.

55 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

56 List multiple trances if possible.

57 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

IN WITNESS WHEREOF, the undersigned has executed this Discount Range Prepayment Offer as of the date first above written.

[NAME OF LENDER]

By: _____
Name:
Title:

EXHIBIT L
to the Credit Agreement

FORM OF SOLICITED DISCOUNTED PREPAYMENT NOTICE

Date: , 20

To: JPMorgan Chase Bank, N.A., as Auction Agent

Ladies and Gentlemen:

This Solicited Discounted Prepayment Notice is delivered to you pursuant to Section 2.05(a)(iv)(D) of that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent and an L/C Issuer, and each lender from time to time party thereto (collectively, the "**Lenders**" and individually, a "**Lender**") and the other agents and parties party thereto. Capitalized terms used herein and not otherwise defined herein shall have the meaning ascribed to such terms in the Credit Agreement.

Pursuant to Section 2.05(a)(iv)(D) of the Credit Agreement, the Borrower Party hereby requests that [each Lender] [each Lender of the [●, 20●][58] tranche[s] of the [ ][59] Class of Term Loans] submit a Solicited Discounted Prepayment Offer. Any Discounted Loan Prepayment made in connection with this solicitation shall be subject to the following terms:

1. This Borrower Solicitation of Discounted Prepayment Offer is extended at the sole discretion of the Borrower Party to [each Lender] [each Lender of the [●, 20●][60] tranche[s] of the [ ][61] Class of Term Loans].

2. The maximum aggregate amount of the Discounted Loan Prepayment that will be made in connection with this solicitation is (the "**Solicited Discounted Prepayment Amount**"):[62]

[Term Loans - $[●]]

58 List multiple tranches if applicable.
59 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).
60 List multiple tranches if applicable.
61 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).
62 Minimum of $5.0 million and whole increments of $1.0 million in excess thereof.

[[●, 20●][63] tranche[s] of the [ ][64] Class of Term Loans - $[●]]

To make an offer in connection with this solicitation, you are required to deliver to the Auction Agent a Solicited Discounted Prepayment Offer by no later than 5:00 p.m., New York City time on the date that is the third Business Day following delivery of this notice (which date may be extended for a period not exceeding three (3) Business Days upon notice by the Borrower Party to, and with the consent of, the Auction Agent) pursuant to Section 2.05(a)(iv)(D) of the Credit Agreement.

The Borrower Party requests that the Auction Agent promptly notify each Lender party to the Credit Agreement of this Solicited Discounted Prepayment Notice.

[REMAINDER OF THE PAGE INTENTIONALLY LEFT BLANK]

63 List multiple tranches if applicable.

64 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

IN WITNESS WHEREOF, the undersigned has executed this Solicited Discounted Prepayment Notice as of the date first above written.

[NAME OF APPLICABLE BORROWER PARTY]

By: _____
Name:
Title:

Enclosure: Form of Solicited Discounted Prepayment Offer

EXHIBIT M
to the Credit Agreement

FORM OF SOLICITED DISCOUNTED PREPAYMENT OFFER

Date: , 20

To: JPMorgan Chase Bank, N.A., as Action Agent

Ladies and Gentlemen:

Reference is made to (a) that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent and an L/C Issuer, each lender from time to time party thereto, and (b) that certain Solicited Discounted Prepayment Notice, dated [ ], 20[ ] from the applicable Borrower Party (the "**Solicited Discounted Prepayment Notice**") and the other agents and parties party thereto. Capitalized terms used herein and not otherwise defined herein shall have the meaning ascribed to such terms in the Solicited Discounted Prepayment Notice or, to the extent not defined therein, in the Credit Agreement.

To accept the offer set forth herein, you must submit an Acceptance and Prepayment Notice by no later than 5:00 p.m. New York City time on the third Business Day following your receipt of this notice (which date may be extended for a period not exceeding three (3) Business Days upon notice by the Borrower Party to, and with the consent of, the Auction Agent).

The undersigned Lender hereby gives you irrevocable notice, pursuant to Section 2.05(a)(iv)(D) of the Credit Agreement, that it is hereby offering to accept a Discounted Loan Prepayment on the following terms:

1. This Solicited Discounted Prepayment Offer is available only for prepayment on the [Term Loans][[●, 20●][65] tranche[s] of the [ ][66] Class of Term Loans] held by the undersigned.

65 List multiple tranches if applicable.

66 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

2. The maximum aggregate principal amount of the Discounted Loan Prepayment that may be made in connection with this offer shall not exceed (the "**Offered Amount**"):

[Term Loans - $[●]]

[[●, 20●][67] tranche[s] of the [ ][68] Class of Term Loans - $[●]]

3. The percentage discount to par value at which such Discounted Loan Prepayment may be made is [[●]% in respect of the Term Loans] [[●]% in respect of the [●, 20●][69] tranche[s] of the [ ][70] Class of Term Loans] (the "**Offered Discount**").

The undersigned Lender hereby expressly and irrevocably consents and agrees to a prepayment of its [Term Loans] [[●, 20●][71] tranche[s] of the [ ][72] Class of Term Loans] pursuant to Section 2.05(a)(iv)(D) of the Credit Agreement at a price equal to the Acceptable Discount and in an aggregate outstanding amount not to exceed such Lender's Offered Amount as such amount may be reduced in accordance with the Solicited Discount Proration, if any, and as otherwise determined in accordance with and subject to the requirements of the Credit Agreement.

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67 List multiple tranches if applicable.

68 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

69 List multiple tranches if applicable.

70 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

71 List of multiple tranches if applicable.

72 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

IN WITNESS WHEREOF, the undersigned has executed this Solicited Discounted Prepayment Offer as of the date first above written.

[NAME OF LENDER]

By: _____

Name:
Title:

EXHIBIT N
to the Credit Agreement

FORM OF SPECIFIED DISCOUNT PREPAYMENT NOTICE

Date: , 20

To: JPMorgan Chase Bank, N.A., as Auction Agent

Ladies and Gentlemen:

This Specified Discount Prepayment Notice is delivered to you pursuant to Section 2.05(a)(iv)(B) of that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto (collectively, the "**Lenders**" and individually, a "**Lender**") and the other agents and parties party thereto. Capitalized terms used herein and not otherwise defined herein shall have the meaning ascribed to such terms in the Credit Agreement.

Pursuant to Section 2.05(a)(iv)(B) of the Credit Agreement, the Borrower Party hereby offers to make a Discounted Loan Prepayment [to each Lender] [to each Lender of the [●, 20●][73] tranche[s] of the [ ][74] Class of Term Loans] on the following terms:

1. This Borrower Offer of Specified Discount Prepayment is available only [to each Lender] [to each Lender of the [●, 20●][75] tranche[s] of the [ ][76] Class of Term Loans].

2. The aggregate principal amount of the Discounted Loan Prepayment that will be made in connection with this offer shall not exceed [$[●] of Term Loans] [$[●] of the [●, 20][77] tranche[(s)] of the [ ][78] Class of Term Loans] (the "**Specified Discount Prepayment Amount**").[79]

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73 List multiple tranches if applicable.

74 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

75 List multiple tranches if applicable.

76 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

77 List multiple tranches if applicable.

78 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

79 Minimum of $5.0 million and whole increments of $1.0 million in excess thereof.

3. The percentage discount to par value at which such Discounted Loan Prepayment will be made is [[●]% in respect of the Term Loans] [[●]% in respect of the [●, 20●][80] tranche[(s)] of the [ ][81] Class of Term Loans] (the "**Specified Discount**").

To accept this offer, you are required to submit to the Auction Agent a Specified Discount Prepayment Response by no later than 5:00 p.m., New York City time, on the date that is the third Business Day following the date of delivery of this notice (which date may be extended for a period not exceeding three (3) Business Days upon notice by the Borrower Party to, and with the consent of, the Auction Agent) pursuant to Section 2.05(a)(iv)(B) of the Credit Agreement.

The Borrower Party hereby represents and warrants to the Auction Agent and [the Lenders][each Lender of the [●, 20●][82] tranche[s] of the [ ][83] Class of Term Loans] as follows:

1. The Borrower Party will not use proceeds of loans under the Revolving Credit Facility to fund this Discounted Loan Prepayment.

2. [At least ten (10) Business Days have passed since the consummation of the most recent Discounted Loan Prepayment as a result of a prepayment made by a Borrower Party on the applicable Discounted Prepayment Effective Date.] [At least three (3) Business Days have passed since the date the Borrower was notified that no Lender was willing to accept any prepayment of any Term Loan at the Specified Discount, within the Discount Range or at any discount to par value, as applicable, or in the case of Borrower Solicitation of Discounted Prepayment Offers, the date of any Borrower Party's election not to accept any Solicited Discounted Prepayment Offers made by a Lender.][84]

3. [The Borrower Party does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information)] [The Borrower Party cannot represent that it does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information).][85]

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80 List multiple tranches if applicable.

81 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

82 List multiple tranches if applicable.

83 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

84 Insert applicable representation.

85 Insert applicable representation.

The Borrower Party acknowledges that the Auction Agent and the relevant Lenders are relying on the truth and accuracy of the foregoing representations and warranties in connection with their decision whether or not to accept the offer set forth in this Specified Discount Prepayment Notice and the acceptance of any prepayment made in connection with this Specified Discount Prepayment Notice.

The Borrower Party requests that the Auction Agent promptly notify each Lender party to the Credit Agreement of this Specified Discount Prepayment Notice.

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IN WITNESS WHEREOF, the undersigned has executed this Specified Discount Prepayment Notice as of the date first above written.

[NAME OF APPLICABLE BORROWER PARTY]

By: _____

Name:

Title:

Enclosure: Form of Specified Discount Prepayment Response

EXHIBIT O
to the Credit Agreement

FORM OF SPECIFIED DISCOUNT PREPAYMENT RESPONSE

Date: , 20

To: JPMorgan Chase Bank, N.A., as Auction Agent

Ladies and Gentlemen:

Reference is made to (a) that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent and an L/C Issuer, each lender from time to time party thereto (collectively, the "**Lenders**" and individually, a "**Lender**") and the other agents and parties party thereto, and (b) that certain Specified Discount Prepayment Notice, dated [ ], 20[ ], from the applicable Borrower Party (the "**Specified Discount Prepayment Notice**"). Capitalized terms used herein and not otherwise defined herein shall have the meaning ascribed to such terms in the Specified Discount Prepayment Notice or, to the extent not defined therein, in the Credit Agreement.

The undersigned Lender hereby gives you irrevocable notice, pursuant to Section 2.05(a)(iv)(B) of the Credit Agreement, that it is willing to accept a prepayment of the following [Term Loans] [[●,20●][86] tranche[s] of the [ ][87] Class of Term Loans - $[●]] held by such Lender at the Specified Discount in an aggregate outstanding amount as follows:

[Term Loans - $[●]]

[[●, 20●][88] tranche[s] of the [ ][89] Class of Term Loans - $[●]]

The undersigned Lender hereby expressly and irrevocably consents and agrees to a prepayment of its [Term Loans][[●, 20●][90] tranche[s] the [ ][91] Class of Term Loans] pursuant

86 List multiple tranches if applicable.
87 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).
88 List multiple tranches if applicable.
89 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).
90 List multiple tranches if applicable.
91 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

to Section 2.05(a)(iv)(B) of the Credit Agreement at a price equal to the [applicable] Specified Discount in the aggregate outstanding amount not to exceed the amount set forth above, as such amount may be reduced in accordance with the Specified Discount Proration, and as otherwise determined in accordance with and subject to the requirements of the Credit Agreement.

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IN WITNESS WHEREOF, the undersigned has executed this Specified Discount Prepayment Notice as of the date first above written.

[NAME OF LENDER]

By: _____
Name:
Title:

EXHIBIT P
to the Credit Agreement

FORM OF ACCEPTANCE AND PREPAYMENT NOTICE

Date: , 20

To: JPMorgan Chase Bank, N.A., as Auction Agent

Ladies and Gentlemen:

This Acceptance and Prepayment Notice is delivered to you pursuant to (a) Section 2.05(a)(iv)(D) of that certain Credit Agreement, dated as of December 20, 2016 (as amended, extended, supplemented, amended and restated or otherwise modified from time to time, the "**Credit Agreement**"), by and among Casa Systems, Inc., as the Borrower, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, each lender from time to time party thereto (collectively, the "**Lenders**" and individually, a "**Lender**") and the other agents and parties party thereto, and (b) that certain Solicited Discounted Prepayment Notice, dated [ ], 20[ ], from the applicable Borrower Party (the "**Solicited Discounted Prepayment Notice**"). Capitalized terms used herein and not otherwise defined herein shall have the meaning ascribed to such terms in the Credit Agreement.

Pursuant to Section 2.05(a)(iv)(D) of the Credit Agreement, the Borrower Party hereby irrevocably notifies you that it accepts offers delivered in response to the Solicited Discounted Prepayment Notice having an Offered Discount equal to or greater than [[●]% in respect of the Term Loans] [[●]% in respect of the [●, 20●][92] tranche[(s)] of the [ ][93] Class of Term Loans] (the "**Acceptable Discount**") in an aggregate amount not to exceed the Solicited Discounted Prepayment Amount.

The Borrower Party expressly agrees that this Acceptance and Prepayment Notice shall be irrevocable and is subject to the provisions of Section 2.05(a)(iv)(D) of the Credit Agreement.

The Borrower Party hereby represents and warrants to the Auction Agent and [the Lenders] [each Lender of the [●, 20●][94] tranche[s] of the [ ][95] Class of Term Loans] as follows:

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92 List multiple tranches if applicable.

93 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

94 List multiple tranches if applicable.

95 List applicable Class(es) of Term Loans (e.g., Initial Term Loans, New Term Loans, Refinancing Term Loans, Extended Term Loans or Replacement Term Loans).

1. The Borrower Party will not use proceeds of loans under the Revolving Credit Facility to fund this Discounted Loan Prepayment.

2. [At least ten (10) Business Days have passed since the consummation of the most recent Discounted Loan Prepayment as a result of a prepayment made by a Borrower Party on the applicable Discounted Prepayment Effective Date.] [At least three (3) Business Days have passed since the date the Borrower Party was notified that no Lender was willing to accept any prepayment of any Term Loan at the Specified Discount, within the Discount Range or at any discount to par value, as applicable, or in the case of Borrower Solicitation of Discounted Prepayment Offers, the date of any Borrower Party's election not to accept any Solicited Discounted Prepayment Offers made by a Lender.][96]

3. [The Borrower Party does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information)] [The Borrower Party cannot represent that it does not possess material non-public information with respect to the Borrower and its Subsidiaries or the securities of any of them that has not been disclosed to the Lenders generally (other than Lenders who elect not to receive such information).][97]

The Borrower Party acknowledges that the Auction Agent and the relevant Lenders are relying on the truth and accuracy of the foregoing representations and warranties in connection with the acceptance of any prepayment made in connection with a Solicited Discounted Prepayment Offer.

The Borrower Party requests that the Auction Agent promptly notify each Lender party to the Credit Agreement of this Acceptance and Prepayment Notice.

[REMAINDER OF THE PAGE INTENTIONALLY LEFT BLANK]

96 Insert applicable representation.
97 Insert applicable representation.

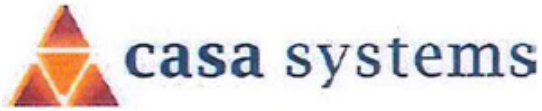
IN WITNESS WHEREOF, the undersigned has executed this Specified Discount Prepayment Notice as of the date first above written.

[NAME OF APPLICABLE BORROWER PARTY]

By: _____

Name:

Title:



100 Old River Road, Unit 100
Andover, MA 01810 USA
Phone: 978-688-6706 Fax: (978) 688-6584
Web: http://casa-systems.com

February 1, 2017

To the Lenders party to the Credit Agreement
referred to below
and JPMorgan Chase Bank, N.A.,
as Administrative Agent

Re: Casa Systems, Inc. – Credit Agreement

Ladies and Gentlemen:

Reference is made hereby to that certain Credit Agreement dated as of December 20, 2016 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement") by and among Casa Systems, Inc., a Delaware corporation (the "Borrower"), JPMorgan Chase Bank, N.A., as administrative agent (in such capacity, together with its affiliates, including any successor thereto, the "Administrative Agent"), and each lender from time to time party thereto (collectively, the "Lenders" and individually, a "Lender"). Capitalized terms that are used but not otherwise defined herein shall have the respective meanings assigned thereto under the Credit Agreement.

In accordance with Section 7.06(r) of the Credit Agreement, the Borrower is entitled to pay the Dividend (up to $300,000,000) on or prior to February 3, 2017 (the "Initial Date"). Prior to the date hereof, the Borrower has paid $200,000,000 of the Dividend. Please be advised that that the Borrower has requested that the Administrative Agent consent to the extension of the Initial Date to April 15, 2017 (the "Extended Date"), as the Borrower has informed the Administrative Agent that it anticipates paying the remaining $100,000,000 of the Dividend on or prior to the Extended Date. Accordingly, pursuant to Section 7.06(r) of the Credit Agreement, the Administrative Agent has agreed to permit the payment of such amount on or prior to the Extended Date.

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Very truly yours,

CASA SYSTEMS, INC., as the Borrower

By: /s/ Gary Hall
Name: Gary Hall
Title: CFO

100 Old River Road, Unit 100
Andover, MA 01810 USA
Phone: 978-688-6706 Fax: (978) 688-6584
Web: hctp:Jlcasa-systems.com

April 14, 2017

To the Lenders party to the Credit Agreement
referred to below
and JPMorgan Chase Bank, N.A.,
as Administrative Agent

Re: Casa Systems, Inc. – Credit Agreement

Ladies and Gentlemen:

Reference is made hereby to that certain Credit Agreement dated as of December 20, 2016 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement") by and among Casa Systems, Inc., a Delaware corporation (the "Borrower"), JPMorgan Chase Bank, N.A., as administrative agent (in such capacity, together with its affiliates, including any successor thereto, the "Administrative Agent"), and each lender from time to time party thereto (collectively, the "Lenders" and individually, a "Lender"). Capitalized terms that are used but not otherwise defined herein shall have the respective meanings assigned thereto under the Credit Agreement.

In accordance with Section 7.06(r) of the Credit Agreement, the Borrower is entitled to pay the Dividend (up to $300,000,000) on or prior to February 3, 2017 (the "Initial Date"). Prior to the date hereof, the Borrower has paid $200,000,000 of the Dividend. The Administrative Agent has previously consented to an extension of that Initial Date to April 15, 2017 (the "First Extended Date"). Please be advised that that the Borrower has requested that the Administrative Agent consent to the further extension of the Initial Date to May 15, 2017 (the "Second Extended Date"), as the Borrower has informed the Administrative Agent that it anticipates paying the remaining $100,000,000 of the Dividend on or prior to the Second Extended Date. Accordingly, pursuant to Section 7.06(r) of the Credit Agreement, the Administrative Agent has agreed to permit the payment of such amount on or prior to the Second Extended Date.

[Remainder of page intentionally left blank]

Very truly yours,

CASA SYSTEMS, INC., as the Borrower

By: /s/ Gary Hall
Name: Gary Hall
Title: Chief Financial Officer

Exhibit 10.22

SECURITY AGREEMENT

dated as of

December 20, 2016

among

CASA SYSTEMS, INC.,

THE SUBSIDIARIES OF CASA SYSTEMS, INC.
IDENTIFIED HEREIN

and

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

Table of Contents

EXHIBITS

SECURITY AGREEMENT dated as of December 20, 2016, among CASA SYSTEMS, INC. (the "Borrower"), the Subsidiaries of the Borrower party hereto from time to time and JPMORGAN CHASE BANK, N.A., as Collateral Agent for the Secured Parties.

Reference is made to (i) the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among the Borrower, each Lender (as defined in the Credit Agreement) from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer, and the other agents and parties party thereto, (ii) each Guaranty (as defined in the Credit Agreement), (iii) each Secured Hedge Agreement (as defined in the Credit Agreement) and (iv) each Secured Cash Management Agreement (as defined in the Credit Agreement).

The Lenders have agreed to extend credit to the Borrower subject to the terms and conditions set forth in the Credit Agreement, the Hedge Banks have agreed to enter into and/or maintain one or more Secured Hedge Agreements on the terms and conditions set forth therein and the Cash Management Banks have agreed to provide and/or maintain Cash Management Services on the terms and conditions set forth in the applicable Secured Cash Management Agreements The obligations of the Lenders to extend such credit, the obligation of the Hedge Banks to enter into and/or maintain such Secured Hedge Agreements and the obligation of the Cash Management Bank to provide and/or maintain such Cash Management Services are, in each case, conditioned upon, among other things, the execution and delivery of this Agreement by each Grantor. The Grantors are affiliates of one another, will derive substantial benefits from (i) the extensions of credit to the Borrower pursuant to the Credit Agreement, (ii) the entering into and/or maintaining by the Hedge Banks of Secured Hedge Agreements with the Borrower and/or one or more of the Restricted Subsidiaries and (iii) the providing and/or maintaining of Cash Management Services by the Cash Management Banks to the Borrower and/or one or more of its Restricted Subsidiaries, and are willing to execute and deliver this Agreement in order to induce the Lenders to extend such credit, the Hedge Banks to enter into and maintain such Secured Hedge Agreements and the Cash Management Banks to provide and/or maintain such Cash Management Services. Accordingly, the parties hereto agree as follows:

ARTICLE I

DEFINITIONS

Section 1.01. Credit Agreement. (a) Capitalized terms used in this Agreement, including the preamble and introductory paragraphs hereto, and not otherwise defined herein have the meanings specified in the Credit Agreement. All terms defined in the New York UCC (as defined herein) and not defined in this Agreement or in the Credit Agreement have the meanings specified therein; the term "instrument" shall have the meaning specified in Article 9 of the New York UCC.

(b) The rules of construction specified in Article I of the Credit Agreement also apply to this Agreement.

Section 1.02. Other Defined Terms. As used in this Agreement, the following terms have the meanings specified below:

"Account Debtor" means any Person who is or who may become obligated to any Grantor under, with respect to or on account of an Account.

"After-Acquired Intellectual Property" has the meaning assigned to such term in Section 4.02(d).

"Agreement" means this Security Agreement.

"Article 9 Collateral" has the meaning assigned to such term in Section 3.01(a).

"Bankruptcy Event of Default" means any Event of Default under Section 8.01(f) of the Credit Agreement.

"Collateral" means the Article 9 Collateral and the Pledged Collateral.

"Controlled" means, with respect to any Intellectual Property right, the possession (whether by ownership or license, other than pursuant to this Agreement) by a party of the right to grant to another party an interest as provided herein under such item or right without violating the terms of any agreement or other arrangements with any third party existing before or after the Closing Date.

"Copyright License" means any written agreement, now or hereafter in effect, (1) granting to any third party any right under an Owned Copyright or any Copyright that a Grantor otherwise has the right to grant a license under, or (2) granting to any Grantor any right under any Copyright now or hereafter owned by any third party, and all rights of such Grantor under any such agreement.

"Copyright Security Agreement" shall mean an agreement substantially in the form of Exhibit II hereto.

"Copyrights" means: (a) all copyright rights in any work subject to the copyright laws of the United States or any other country, whether the holder of such rights is an author, assignee, transferee or otherwise entitled to such rights, whether registered or unregistered and whether published or unpublished; (b) all registrations and applications for registration of any such copyright in the United States or any other country, including registrations, recordings, supplemental registrations and pending applications for registration in the United States Copyright Office, including those listed on Schedule 7(b) of the Perfection Certificate; and (c) all (i) rights and privileges arising under applicable Laws with respect to the use of such copyrights, (ii) reissues, renewals, continuations and extensions or restorations thereof and amendments thereto, (iii) income, fees, royalties, damages, claims and payments now or hereafter due and/or payable with respect thereto, including damages and payments for past, present or future infringements thereof, (iv) rights corresponding thereto throughout the world and (v) rights to sue for past, present or future infringements thereof.

"Credit Agreement" has the meaning assigned to such term in the preliminary statement of this Agreement.

"Domain Names" means all Internet domain names and associated URL addresses in or to which any Grantor now or hereafter has any right, title or interest.

"Excluded Assets" has the meaning assigned to such term in the Credit Agreement.

"General Intangibles" has the meaning provided in Article 9 of the New York UCC and shall in any event include all choses in action and causes of action and all other intangible personal property of every kind and nature now owned or hereafter acquired by any Grantor, as the case may be, including corporate or other business records, indemnification claims, contract rights (including rights under leases, whether entered into as lessor or lessee, Swap Contracts and other agreements), goodwill, registrations, franchises, tax refund claims and any letter of credit, guarantee, claim, security interest or other security held by or granted to any Grantor, as the case may be, to secure payment by an Account Debtor of any of the Accounts.

"Grantor" means each of the Borrower and each Guarantor listed on the signature pages hereto or that becomes a party hereto pursuant to Section 7.14.

"Intellectual Property" means all intellectual and similar property rights of every kind and nature, including inventions, designs, Patents, Copyrights, Licenses, Trademarks, trade secrets, confidential or proprietary technical and business information, know-how, show-how or other data or information, software, databases, all other proprietary information, including but not limited to Domain Names, and all embodiments or fixations thereof and related documentation, registrations, and all additions, improvements and accessions to, and books and records describing or used in connection with, any of the foregoing.

"Intellectual Property Collateral" means the Collateral consisting of Owned Intellectual Property.

"License" means any Patent License, Trademark License, Copyright License, or other license or sublicense agreement to which any Grantor is a party.

"New York UCC" means the Uniform Commercial Code as from time to time in effect in the State of New York.

"Owned Copyrights" means Copyrights now Controlled by, or that hereafter become Controlled by Grantor, whether by acquisition, assignment, or an exclusive license, including those listed on Schedule 7(b) of the Perfection Certificate.

"Owned Intellectual Property" means Intellectual Property now Controlled by, or that hereafter becomes Controlled by, any Grantor, whether by acquisition, assignment, or an exclusive license including, but not limited to, all Intellectual Property listed on Schedules 7(a) and (b) of the Perfection Certificate.

"Owned Patents" means Patents now Controlled by, or that hereafter become Controlled by, any Grantor whether by acquisition, assignment, or an exclusive license, including those listed on Schedule 7(a) of the Perfection Certificate.

"Owned Trademarks" means Trademarks now Controlled by, or that hereafter become Controlled by, any Grantor, whether by acquisition, assignment, or an exclusive license, including those listed on Schedule 7(a) of the Perfection Certificate.

"Patent License" means any written agreement, now or hereafter in effect, (1) granting to any third party any right arising under an Owned Patent or any Patent that a Grantor otherwise has the right to grant a license under, or (2) granting to any Grantor any right arising under a Patent now or hereafter owned by any third party; and all rights of any Grantor under any such agreement.

"Patent Security Agreement" shall mean an agreement substantially in the form of Exhibit III hereto.

"Patents" means: (a) all letters patent of the United States or the equivalent thereof in any other country, all registrations and recordings thereof, and all applications for letters patent of the United States or the equivalent thereof in any other country, including registrations, recordings and pending applications in the United States Patent and Trademark Office or any similar offices in any other country, including those listed on Schedule 7(a) of the Perfection Certificate; and (b) (i) rights and privileges arising under applicable Laws with respect to the use of any patents, (ii) inventions and improvements described and claimed therein, (iii) reissues, reexaminations, divisions, continuations, renewals, extensions and continuations-in-part thereof and amendments thereto, (iv) income, fees, royalties, damages, claims and payments now or hereafter due and/or payable thereunder and with respect thereto including damages and payments for past, present or future infringements thereof, (v) rights corresponding thereto throughout the world and (vi) rights to sue for past, present or future infringements thereof.

"Perfection Certificate" means: (a) with respect to each Grantor party to this Agreement on the Closing Date, the certificate attached hereto as Exhibit V-1 and (b) with respect to each Grantor that becomes a party to this Agreement after the Closing Date, a certificate substantially in the form of Exhibit V-2 hereto, in each case, completed and supplemented with the schedules and attachments contemplated thereby, and duly executed by a Responsible Officer of such Grantor; provided, however, if at any time there is more than one Perfection Certificate, the Grantors may combine all such certificates into one Perfection Certificate.

"Pledged Collateral" has the meaning assigned to such term in Section 2.01.

"Pledged Debt" has the meaning assigned to such term in Section 2.01.

"Pledged Equity" has the meaning assigned to such term in Section 2.01.

"Pledged Securities" means all Pledged Equity and Pledged Debt.

"Secured Obligations" means the "Obligations" as defined in the Credit Agreement; it being acknowledged and agreed that the term "Secured Obligations" as used herein shall include each extension of credit under the Credit Agreement and all obligations of the Borrower and/or its Restricted Subsidiaries under the Secured Hedge Agreements and the Secured Cash Management Agreements, in each case, whether outstanding on the date of this Agreement or extended from time to time after the date of this Agreement.

"Security Agreement Supplement" means an instrument substantially in the form of Exhibit I hereto.

"Security Interest" has the meaning assigned to such term in Section 3.01(a).

"Trademark License" means any written agreement, now or hereafter in effect, (1) granting to any third party any right to use any Owned Trademark or any Trademark that a Grantor otherwise has the right to grant a license under, or (2) granting to any Grantor any right to use any Trademark now or hereafter owned by any third party, and all rights of any Grantor under any such agreement (not including vendor or distribution agreements that allow incidental use of intellectual property rights in connection with the sale or distribution of such products or services).

"Trademark Security Agreement" shall mean an agreement substantially in the form of Exhibit IV hereto.

"Trademarks" means: (a) all trademarks, service marks, trade names, corporate names, company names, business names, fictitious business names, slogans, trade styles, trade dress, logos, other source or business identifiers, designs and General Intangibles of like nature, whether registered or unregistered, now existing or hereafter adopted, acquired or assigned, the goodwill of the business symbolized thereby or associated therewith, all registrations and recordings thereof, and all registration and recording applications filed in connection therewith, including registrations and registration applications in the United States Patent and Trademark Office or any similar offices in any State of the United States or any other country or any political subdivision thereof, and all extensions or renewals thereof, including those listed on Schedule 7(a) of the Perfection Certificate, but excluding any intent-to-use trademark application prior to the filing of a "Statement of Use" or "Amendment to Use" with respect thereto, to the extent, if any, that, and solely during the period, if any, in which the grant of a security interest therein would impair the validity of enforceability of such intent-to-use trademark application under applicable federal Law, together with (b) any and all (i) rights and privileges arising under applicable Laws with respect to the use of any trademarks, (ii) reissues, continuations, extensions and renewals thereof and amendments thereto, (iii) income, fees, royalties, damages and payments now and hereafter due and/or payable thereunder and with respect thereto, including damages, claims and payments for past, present or future infringements thereof, (iv) rights corresponding thereto throughout the world and (v) rights to sue for past, present and future infringements thereof.

ARTICLE II

PLEDGE OF SECURITIES

Section 2.01. Pledge. As security for the payment or performance, as the case may be, in full of the Secured Obligations, each Grantor hereby assigns and pledges to the Collateral Agent, for the benefit of the Secured Parties, and hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest in, all of such Grantor's right, title and interest in, to and under (whether now existing or hereafter acquired):

(a) all Equity Interests of each Subsidiary directly owned by such Grantor held by it and listed on Schedule 4 of the Perfection Certificate and any other Equity Interests of Subsidiaries directly owned in the future by such Grantor and the certificates, if any, representing all such Equity Interests (the "Pledged Equity"); provided that the Pledged Equity shall not include Excluded Assets;

(b) all debt obligations from time to time owed to such Grantor and the promissory notes and instruments evidencing Indebtedness for borrowed money owned by a Grantor and listed opposite the name of such Grantor on Schedule 5 of the Perfection Certificate, and any promissory notes and instruments evidencing Indebtedness for borrowed money obtained in the future by such Grantor (collectively, the "Pledged Debt") ; provided that the Pledged Debt shall not include Excluded Assets;

(c) subject to Section 2.06, all payments of principal or interest, dividends, cash, instruments and other property from time to time received, receivable or otherwise distributed in respect of, in exchange for or upon the conversion of, and all other Proceeds received in respect of, the securities referred to in clauses (a) and (b) above;

(d) subject to Section 2.06, all rights and privileges of such Grantor with respect to the securities and other property referred to in clauses (a), (b) and (c) above; and

(e) all Proceeds of, and Security Entitlements in, any of the foregoing (the items referred to in clauses (a) through (d) above being collectively referred to as the "Pledged Collateral"; provided that Pledged Collateral shall not include any Excluded Assets);

TO HAVE AND TO HOLD the Pledged Collateral, together with all right, title, interest, powers, privileges and preferences pertaining or incidental thereto, unto the Collateral Agent, for the benefit of the Secured Parties, forever; subject, however, to the terms, covenants and conditions hereinafter set forth.

Section 2.02. Delivery of the Pledged Collateral. (a) Each Grantor agrees on the Closing Date or, if acquired after the date hereof, within forty-five (45) days after receipt thereof by such Grantor (or such longer period as the Collateral Agent may agree in its reasonable discretion) to deliver or cause to be delivered to the Collateral Agent, for the benefit of the Secured Parties, any and all Pledged Securities (other than any uncertificated securities, but only for so long as such securities remain uncertificated) to the extent such Pledged Securities, in the case of promissory notes and instruments evidencing Indebtedness, are required to be delivered pursuant to paragraph (b) of this Section 2.02.

(b) Within forty-five (45) days after receipt by a Grantor (or such longer period as the Collateral Agent may agree in its reasonable discretion), each Grantor will cause any Indebtedness for borrowed money having an aggregate principal amount that is in excess of $1,000,000 owed to such Grantor by any Person (other than a Loan Party) to be evidenced by a duly executed promissory note that, if constituting Collateral, is pledged and delivered to the Collateral Agent, for the benefit of the Secured Parties, pursuant to the terms hereof.

(c) Upon delivery to the Collateral Agent, (i) any Pledged Securities shall be accompanied by undated stock or note powers, as applicable, duly executed in blank or other instruments of transfer reasonably satisfactory to the Collateral Agent and by such other instruments and documents as the Collateral Agent may reasonably request and (ii) all other property comprising part of the Pledged Collateral shall be accompanied by proper instruments of assignment (if appropriate) duly executed in blank by the applicable Grantor and such other instruments or documents as the Collateral Agent may reasonably request. Each delivery of Pledged Securities shall be accompanied by a schedule describing such Pledged Securities, which schedule shall be deemed to supplement Schedule 4 or 5 of the Perfection Certificate and made a part hereof; provided that failure to supplement any such schedule shall not affect the validity of such pledge of such Pledged Securities. Each schedule so delivered shall supplement any prior schedules so delivered.

Section 2.03. Representations, Warranties and Covenants. The Borrower represents, warrants and covenants, as to itself and the other Grantors, to the Collateral Agent, for the benefit of the Secured Parties, as and to the extent required by the terms of the Credit Agreement that:

(a) Schedules 4 and 5 of the Perfection Certificate (as such schedules are supplemented from time to time pursuant to Section 2.02(c)) correctly set forth, as of the later of the Closing Date and the date of the most recent supplement to the Perfection Certificate delivered pursuant to Section 2.02(c), the percentage of the issued and outstanding units of each class of the Equity Interests of the issuer thereof represented by the Pledged Equity and includes all Equity Interests required to be pledged and all Pledged Debt required to be pledged and delivered hereunder in order to satisfy the Collateral and Guarantee Requirement, in each case, subject to any Disposition made in compliance with the Credit Agreement;

(b) the Pledged Equity issued by a wholly-owned Restricted Subsidiary and Pledged Debt (solely with respect to Pledged Debt issued by a Person other than Borrower or a Subsidiary of Borrower, to the Borrower's knowledge) have been duly and validly authorized and issued by the issuers thereof and (i) in the case of Pledged Equity, are fully paid and non-assessable (to the extent such concepts exist under applicable Law) and (ii) in the case of Pledged Debt (solely with respect to Pledged Debt issued by a Person other than Borrower or a Subsidiary of Borrower, to the Borrower's knowledge), are legal, valid and binding obligations of the issuers thereof, subject to applicable Debtor Relief Laws, general principles of equity and an implied covenant of good faith and fair dealing;

(c) each of the Grantors (i) subject to any Dispositions made in compliance with the Credit Agreement, is and will continue to be the direct owner, beneficially and of record, of the Pledged Securities indicated on Schedules 4 and 5 of the Perfection Certificate as owned by such Grantors, (ii) holds the same free and clear of all Liens, other than (A) Liens created by the Collateral Documents and (B) other Liens not prohibited by Section 7.01 of the Credit Agreement and (iii) will make no further assignment, pledge, hypothecation or transfer of, or create or permit to exist any security interest in or other Lien on, the Pledged Securities, other than (A) Liens created by the Collateral Documents, (B) Liens not prohibited by Section 7.01 of the Credit Agreement and (C) other assignments, pledges, hypothecations or transfers made in compliance with the Credit Agreement;

(d) except for (i) restrictions and limitations imposed by the Loan Documents or securities laws generally or by Liens not prohibited by Section 7.01 of the Credit Agreement and (ii) customary restrictions, encumbrances and limitations in joint venture agreements and similar arrangements, the Pledged Securities are and will continue to be freely transferable and assignable, and none of the Pledged Securities are or will be subject to any option, right of first refusal, shareholders agreement, charter or by-law provisions or contractual restriction of any nature that would prohibit, impair, delay or otherwise affect in any manner material and adverse to the Secured Parties the pledge of such Pledged Securities hereunder, the sale or disposition thereof pursuant hereto or the exercise by the Collateral Agent of rights and remedies hereunder;

(e) each of the Grantors has the power and authority to pledge the Pledged Collateral pledged by it hereunder in the manner hereby done or contemplated;

(f) no consent or approval of any Governmental Authority, any securities exchange or any other Person was or is necessary to the validity of the pledge effected hereby (other than (i) filings and registrations necessary to perfect the Liens on the Collateral granted by the Grantors in favor of the Collateral Agent for the benefit of the Secured Parties or (ii) such as have been obtained and are in full force and effect) (except to the extent not required to be obtained, taken, given, or made or to be in full force and effect pursuant to the Collateral and Guarantee Requirement);

(g) by virtue of the execution and delivery by the Grantors of this Agreement, when any Pledged Securities are delivered to the Collateral Agent in the State of New York, the Collateral Agent will obtain a legal, valid and, to the extent governed by the New York UCC, first-priority perfected lien upon and security interest in such Pledged Securities as security for the payment and performance of the Secured Obligations, subject to any Lien not prohibited by and having the ranking permitted under Section 7.01 of the Credit Agreement; and

(h) the pledge effected hereby is effective to vest in the Collateral Agent, for the benefit of the Secured Parties, the rights of the Collateral Agent in the Pledged Collateral as set forth herein.

Notwithstanding anything to the contrary in this Agreement, to the extent any provision of this Agreement or the Credit Agreement excludes any assets from the scope of the Pledged Collateral, or from any requirement to take any action to perfect any security interest in favor of the Collateral Agent in the Pledged Collateral, the representations, warranties and covenants made by any relevant Grantor in this Agreement with respect to the creation, perfection or priority (as applicable) of the security interest granted in favor of the Collateral Agent (including, without limitation, this Section 2.03) shall be deemed not to apply to such excluded assets.

Section 2.04. Certification of Limited Liability Company and Limited Partnership Interests. Each Grantor acknowledges and agrees that, to the extent any interest in any limited liability company or limited partnership controlled by any Grantor and pledged under Section 2.01 is a "security" within the meaning of Article 8 of the UCC and is governed by Article 8 of the UCC, such interest shall be represented by a certificate and such certificate shall be delivered to the Collateral Agent pursuant to Sections 2.02(a) and (c). Each Grantor further acknowledges and agrees that with respect to any interest in any limited liability company or limited partnership controlled on or after the date hereof by such Grantor and pledged hereunder that is not a "security" within the meaning of Article 8 of the UCC, such Grantor shall at no time elect to treat any such interest as a "security" within the meaning of Article 8 of the UCC, nor shall such interest be represented by a certificate, unless such election and such interest is thereafter represented by a certificate that is promptly delivered to the Collateral Agent pursuant to Sections 2.02(a) and (c).

Section 2.05. Registration in Nominee Name; Denominations. If an Event of Default shall have occurred and be continuing and the Collateral Agent shall have given the Borrower prior written notice of its intent to exercise such rights, (a) the Collateral Agent, on behalf of the Secured Parties, shall have the right (in its sole and absolute discretion) to hold the Pledged Securities in its own name as pledgee, the name of its nominee (as pledgee or as sub-agent) or the name of the applicable Grantor, endorsed or assigned in blank or in favor of the Collateral Agent and each Grantor will promptly give to the Collateral Agent copies of any notices or other written communications received by it with respect to Pledged Securities registered in the name of such Grantor and (b) the Collateral Agent shall have the right to exchange the certificates representing Pledged Securities for certificates of smaller or larger denominations for any purpose consistent with this Agreement and to the extent permitted by the documentation governing such Pledged Securities; provided that, notwithstanding the foregoing, if a Bankruptcy Event of Default shall have occurred and be continuing, the Collateral Agent shall not be required to give the notice referred to above in order to exercise the rights described above.

Section 2.06. Voting Rights; Dividends and Interest. (a) Unless and until an Event of Default shall have occurred and be continuing and the Collateral Agent shall have notified the Borrower in writing that the rights of the Grantors under this Section 2.06 are being suspended:

(i) Each Grantor shall be entitled to exercise any and all voting and/or other consensual rights and powers inuring to an owner of Pledged Securities or any part thereof for any purpose consistent with the terms of this Agreement, the Credit Agreement and the other Loan Documents.

(ii) The Collateral Agent shall promptly execute and deliver to each Grantor, or cause to be executed and delivered to such Grantor, all such proxies, powers of attorney and other instruments as such Grantor may reasonably request for the purpose of enabling such Grantor to exercise the voting and/or consensual rights and powers it is entitled to exercise pursuant to subparagraph (i) above.

(iii) Each Grantor shall be entitled to receive and retain any and all dividends, interest, principal and other distributions paid on or distributed in respect of the Pledged Securities, to the extent (and only to the extent) that such dividends, interest, principal and other distributions are permitted by, and otherwise paid or distributed in accordance with, the terms and conditions of the Credit Agreement, the other Loan Documents and applicable Laws; provided that any noncash dividends, interest, principal or other distributions that would constitute Pledged Equity or Pledged Debt, whether resulting from a subdivision, combination or reclassification of the outstanding Equity Interests of the issuer of any Pledged Securities or received in exchange for Pledged Securities or any part thereof, or in redemption thereof, or as a result of any merger, consolidation, acquisition or other exchange of assets to which such issuer may be a party or otherwise, shall be and become part of the Pledged Collateral, and, if received by any Grantor, shall not be commingled by such Grantor with any of its other funds or property but shall be held separate and apart therefrom, shall be held in trust for the benefit of the Collateral Agent and the Secured Parties and shall be promptly (and in any event within ten (10) Business Days or such longer period as the Collateral Agent may agree in its reasonable discretion) delivered to the Collateral Agent in the same form as so received (with any necessary endorsement reasonably requested by the Collateral Agent). So long as no Event of Default has occurred and is continuing, the Collateral Agent shall promptly deliver to each Grantor any Pledged Securities in its possession if requested to be delivered to the issuer thereof in connection with any exchange or redemption of such Pledged Securities in accordance with this Section 2.06(a)(iii).

(b) Upon the occurrence and during the continuance of an Event of Default, after the Collateral Agent shall have notified the Borrower of the suspension of the rights of the Grantors under paragraph (a)(iii) of this Section 2.06, then all rights of any Grantor to dividends, interest, principal or other distributions that such Grantor is authorized to receive pursuant to paragraph (a)(iii) of this Section 2.06 shall cease, and all such rights shall thereupon become vested in the Collateral Agent, which shall have the sole and exclusive right and authority to receive and retain such dividends, interest, principal or other distributions. All dividends, interest, principal or other distributions received by any Grantor contrary to the provisions of this Section 2.06 shall be held in trust for the benefit of the Collateral Agent, shall be segregated from other property or funds of such Grantor and shall be promptly (and in any event within ten (10) Business Days or such longer period as the Collateral Agent may agree in its reasonable discretion) delivered to the Collateral Agent upon written demand in the same form as so received (with any necessary endorsement reasonably requested by the Collateral Agent). Any and all money and other property paid over to or received by the Collateral Agent pursuant to the provisions of this paragraph (b) shall be retained by the Collateral Agent in an account to be established by the Collateral Agent upon receipt of such money or other property and shall be applied in accordance with the provisions of Section 5.02. After all Events of Default have been cured or waived, the Collateral Agent shall promptly repay to each Grantor (without interest) all dividends, interest, principal or other distributions that such Grantor would otherwise be permitted to retain pursuant to the terms of paragraph (a)(iii) of this Section 2.06 in the absence of any such Event of Default and that remain in such account, and such Grantor's right to receive and retain any and all dividends, interest, principal and other distributions paid on or distributed in respect of the Pledged Securities pursuant to Section 2.06(a) shall be automatically reinstated.

(c) Upon the occurrence and during the continuance of an Event of Default, after the Collateral Agent shall have notified the Borrower of the suspension of the rights of the Grantors under paragraph (a)(i) of this Section 2.06, then all rights of any Grantor to exercise the voting and consensual rights and powers it is entitled to exercise pursuant to paragraph (a)(i) of this Section 2.06, and the obligations of the Collateral Agent under paragraph (a)(ii) of this Section 2.06, shall cease, and all such rights shall thereupon become vested in the Collateral Agent, which shall have the sole and exclusive right and authority to exercise such voting and consensual rights and powers; provided that, unless otherwise directed by the Required Lenders, the Collateral Agent shall have the right from time to time following and during the continuance of an Event of Default to permit the Grantors to exercise such rights at the discretion of the Collateral Agent. After all Events of Default have been cured or waived, each Grantor shall have the exclusive right to exercise the voting and/or consensual rights and powers that such Grantor would otherwise be entitled to exercise pursuant to the terms of paragraph (a)(i) above, and the obligations of the Collateral Agent under paragraph (a)(ii) of this Section 2.06 shall be automatically reinstated.

(d) Any notice given by the Collateral Agent to the Borrower suspending the rights of the Grantors under paragraph (a) of this Section 2.06(i) shall be given in writing five (5) Business Days in advance of any such suspension, (ii) may be given with respect to one or more of the Grantors at the same or different times and (iii) may suspend the rights of the Grantors under paragraph (a)(i) or paragraph (a)(iii) in part without suspending all such rights (as specified by the Collateral Agent in its sole and absolute discretion) and without waiving or otherwise affecting the Collateral Agent's rights to give additional notices from time to time suspending other rights so long as an Event of Default has occurred and is continuing. Notwithstanding anything to the contrary contained in Sections 2.06(a), (b) or (c), if a Bankruptcy Event of Default shall have occurred and be continuing, the Collateral Agent shall not be required to give any notice referred to in said Section in order to exercise any of its rights described in such Sections, and the suspension of the rights of each of the Grantors under each such Section shall be automatic upon the occurrence of such Bankruptcy Event of Default.

Section 2.07. Collateral Agent Not a Partner or Limited Liability Company Member. Nothing contained in this Agreement shall be construed to make the Collateral Agent or any other Secured Party liable as a member of any limited liability company or as a partner of any partnership and neither the Collateral Agent nor any other Secured Party by virtue of this Agreement or otherwise (except as referred to in the following sentence) shall have any of the duties, obligations or liabilities of a member of any limited liability company or as a partner in any partnership. The parties hereto expressly agree that, unless the Collateral Agent shall become the absolute owner of Pledged Equity consisting of a limited liability company interest or a partnership interest pursuant hereto, this Agreement shall not be construed as creating a partnership or joint venture among the Collateral Agent, any other Secured Party, any Grantor and/or any other Person.

ARTICLE III

SECURITY INTERESTS IN PERSONAL PROPERTY

Section 3.01. Security Interest. (a) As security for the payment or performance, as the case may be, in full of the Secured Obligations, each Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the "Security Interest") in, all of such Grantor's right, title or interest in or to any and all of the following assets and properties now owned or at any time hereafter acquired by such Grantor or in which such Grantor now has or at any time in the future may acquire any right, title or interest (collectively, the "Article 9 Collateral"):

(i) all Accounts;

(ii) all Chattel Paper;

(iii) all Documents;

(iv) all Equipment;

(v) all General Intangibles;

(vi) all Instruments;

(vii) all Inventory;

(viii) all Intellectual Property Collateral;

(ix) all Investment Property;

(x) all books and records pertaining to the Article 9 Collateral; (xi) all Goods and Fixtures;

(xii) all Letter-of-Credit Rights;

(xiii) all Commercial Tort Claims described on Schedule 8 of the Perfection Certificate;

(xiv) all Money, cash, cash equivalents, Deposit Accounts and the Cash Collateral Account (and all cash, securities and other investments deposited therein);

(xv) all Supporting Obligations;

(xvi) all Security Entitlements in any or all of the foregoing; and

(xvii) to the extent not otherwise included, all Proceeds and products of any and all of the foregoing and all collateral security and guarantees given by any Person with respect to any of the foregoing;

provided that, notwithstanding anything to the contrary in this Agreement, Article 9 Collateral shall not include any, and no Security Interest shall be granted in any, Excluded Assets.

(b) Subject to Section 3.03(h), each Grantor hereby irrevocably authorizes the Collateral Agent for the benefit of the Secured Parties at any time and from time to time to file in any relevant jurisdiction any financing statements or continuation statements (including fixture filings) with respect to the Article 9 Collateral or any part thereof and amendments thereto that (i) indicate the Collateral as all assets or all

personal property of such Grantor or words of similar effect as being of an equal or lesser scope or with greater detail, and (ii) contain the information required by Article 9 of the UCC of each applicable jurisdiction for the filing of any financing statement, continuation statement or amendment, including (A) whether such Grantor is an organization, the type of organization and any organizational identification number (if any) issued to such Grantor and (B) in the case of a financing statement filed as a fixture filing, a sufficient description of the real property to which such Article 9 Collateral relates. Each Grantor agrees to provide such information to the Collateral Agent promptly upon reasonable request.

(c) The Security Interest is granted as security only and shall not subject the Collateral Agent or any other Secured Party to, or in any way alter or modify, any obligation or liability of any Grantor with respect to or arising out of the Article 9 Collateral.

(d) Each Grantor hereby further authorizes the Collateral Agent to file filings with the United States Patent and Trademark Office or United States Copyright Office (or any successor office), as applicable, including the Trademark Security Agreement, Copyright Security Agreement, and Patent Security Agreement or other documents as may be necessary or advisable for the purpose of perfecting, confirming, continuing, enforcing or protecting the Security Interest granted by such Grantor hereunder, without the signature of such Grantor, and naming such Grantor, as debtor, and the Collateral Agent, as secured party.

Section 3.02. Representations and Warranties. The Borrower represents and warrants, as to itself and the other Grantors, to the Collateral Agent, for the benefit of the Secured Parties, as and to the extent required by the Credit Agreement that:

(a) Subject to Liens not prohibited by Section 7.01 of the Credit Agreement, each Grantor has good and valid rights in and title to the Article 9 Collateral with respect to which it has purported to grant a Security Interest hereunder and has full power and authority to grant to the Collateral Agent the Security Interest in such Article 9 Collateral pursuant hereto and to execute, deliver and perform its obligations in accordance with the terms of this Agreement, without the consent or approval of any other Person other than any consent or approval that has been obtained.

(b) The Perfection Certificate has been duly executed and delivered to the Collateral Agent and the information set forth therein, including the exact legal name of each Grantor, is correct and complete in all material respects as of the Closing Date. The UCC financing statements (including fixture filings, as applicable) or other appropriate filings, recordings or registrations prepared by the Collateral Agent based upon the information provided to the Collateral Agent in the Perfection Certificate for filing in each governmental, municipal or other office specified in Schedule 3 of the Perfection Certificate (as supplemented from time to time or specified by notice from the applicable Grantor to the Collateral Agent after the Closing Date in the case of filings, recordings or registrations required by Section 6.11 of the Credit Agreement), are all the filings, recordings and registrations that are necessary to establish a legal, valid and perfected security interest in favor of the Collateral Agent (for the benefit of the Secured Parties) in respect of all Article 9 Collateral in which the Security Interest may be perfected by filing, recording or registration in the United States (or any political subdivision thereof), and no further or subsequent filing, refiling, recording, rerecording, registration or reregistration with respect to such Collateral is necessary in any such jurisdiction, except as provided under applicable Laws with respect to the filing of continuation statements and amendments. Each Grantor represents and warrants that, as of the Closing Date, fully executed agreements in the form of Exhibit II, Exhibit III and Exhibit IV hereof and containing a description of all Intellectual Property Collateral with respect to United States Patents and United States registered Trademarks (and Trademarks for which United States registration applications are pending) and United States registered Copyrights, in each case, including Licenses under which any such Grantor is an exclusive licensess, have been delivered to the Collateral Agent for recording by the United States Patent and Trademark Office and the United States Copyright Office pursuant to 35 U.S.C. § 261, 15 U.S.C. § 1060 or 17 U.S.C. § 205 and the regulations thereunder, as applicable.

(c) The Security Interest constitutes (i) a legal and valid security interest in all the Article 9 Collateral securing the payment and performance of the Secured Obligations, (ii) subject to the filings described in Section 3.02(b), a perfected security interest in all Article 9 Collateral in which a security interest may be perfected by filing, recording or registering a financing statement or analogous document in the United States (or

any political subdivision thereof) pursuant to the UCC and (iii) a security interest that shall be perfected in all Collateral in which a security interest may be perfected upon the receipt and recording of fully executed agreements in the form of Exhibit II, Exhibit III and Exhibit IV hereof with the United States Patent and Trademark Office and the United States Copyright Office, as applicable, within the three month period (commencing as of the date hereof) pursuant to 35 U.S.C. § 261 or 15 U.S.C. § 1060 or the one month period (commencing as of the date hereof) pursuant to 17 U.S.C. § 205. The Security Interest is and shall be prior to any other Lien on any of the Article 9 Collateral, other than any Lien that is not prohibited by and having the ranking permitted under Section 7.01 of the Credit Agreement.

(d) The Article 9 Collateral is owned by the Grantors free and clear of any Lien, except for Liens not prohibited by Section 7.01 of the Credit Agreement. None of the Grantors has filed or consented to the filing of (i) any financing statement or analogous document under the UCC or any other applicable Laws covering any Article 9 Collateral, (ii) any assignment in which any Grantor assigns any Article 9 Collateral or any security agreement or similar instrument covering any Article 9 Collateral with the United States Patent and Trademark Office or the United States Copyright Office, or (iii) any assignment in which any Grantor assigns any Article 9 Collateral or any security agreement or similar instrument covering any Article 9 Collateral with any foreign governmental, municipal or other office, which financing statement or analogous document, assignment, security agreement or similar instrument is still in effect, except, in each of clauses (i), (ii) and (iii) above, for Liens not prohibited by and having the ranking permitted under Section 7.01 of the Credit Agreement.

(e) All Commercial Tort Claims of each Grantor where the amount of the damages claimed by such Grantor equals or exceeds $1,000,000 in existence on the date of this Agreement (or on the date upon which such Grantor becomes a party to this Agreement) are described on Schedule 8 of the Perfection Certificate, as supplemented pursuant to Section 3.04(c).

Section 3.03. Covenants. (a) The Borrower agrees to promptly notify the Collateral Agent in writing of any change (i) in the legal name of any Grantor, (ii) in the identity or type of organization or corporate structure of any Grantor, (iii) in the jurisdiction of organization of any Grantor, (iv) in the organizational identification number of any Grantor (if any), but solely to the extent such organizational identification number is required to be set forth on financing statements under the applicable UCC or (v) the chief executive office of any Grantor and, upon request by the Collateral Agent, take all actions necessary to continue the perfection of the security interest created hereunder following any such change with the same priority as immediately prior to such change. The Borrower agrees promptly to provide the Collateral Agent after notification of any such change with certified Organization Documents reflecting any of the changes described in the first sentence of this paragraph.

(b) Subject to Section 3.03(h), each Grantor shall, at its own expense, upon the reasonable request of the Collateral Agent, take any and all commercially reasonable actions necessary to defend title to the Article 9 Collateral (including without limitation the Pledged Securities) against all Persons claiming an interest therein that is adverse (or otherwise prohibited by the Credit Agreement) to the interests hereunder of the Collateral Agent or any other Secured Party, except with respect to Article 9 Collateral that such Grantor determines in its reasonable business judgment is no longer necessary or beneficial to the conduct of the business and Liens not prohibited by Section 7.01 of the Credit Agreement, and to defend the Security Interest of the Collateral Agent in the Article 9 Collateral (including without limitation the Pledged Securities) and the priority thereof against any Lien prohibited by Section 7.01 of the Credit Agreement; provided that, nothing in this Agreement shall prevent any Grantor from discontinuing the operation or maintenance of any of its assets or properties if such discontinuance is permitted by the Credit Agreement.

(c) Each year, at the time of delivery of a Compliance Certificate pursuant to Section 6.02(a) of the Credit Agreement, in connection with the delivery of annual financial statements with respect to the preceding fiscal year pursuant to Section 6.01 of the Credit Agreement, the Borrower shall deliver to the Collateral Agent a certificate executed by a Responsible Officer of the Borrower setting forth the information required pursuant to Schedules 1(a), 1(c), 1(e), 1(f), 2(b), 7(a) and 7(b) of the Perfection Certificate or confirming that there has been no change in such information since the date of such certificate or the date of the most recent certificate delivered pursuant to this Section 3.03(c).

(d) Subject to Section 3.03(h) and any other express limitation in this Agreement, the Borrower agrees, on its own behalf and on behalf of each other Grantor, at its own expense, to execute, acknowledge, deliver and cause to be duly filed all such further instruments and documents and take all such actions as the Collateral Agent may from time to time reasonably request to better assure, preserve, protect and perfect the Security Interest and the rights and remedies created hereby, including the payment of any fees and Taxes required in connection with the execution and delivery of this Agreement, the granting of the Security Interest and the filing of any financing statements (including fixture filings) or other documents in connection herewith or therewith. If any amount payable under or in connection with any of the Article 9 Collateral (other than by a Loan Party) that exceeds $1,000,000 shall be or become evidenced by any promissory note or other instrument, such note or instrument shall be promptly (and in any event within forty-five (45) days of its acquisition or such longer period as the Collateral Agent may agree in its reasonable discretion) pledged and delivered to the Collateral Agent, for the benefit of the Secured Parties, duly endorsed in a manner reasonably satisfactory to the Collateral Agent.

(e) At its option, the Collateral Agent may discharge past due taxes, assessments, charges, fees, Liens, security interests or other encumbrances at any time levied or placed on the Article 9 Collateral and prohibited by Section 7.01 of the Credit Agreement, and may pay for the maintenance and preservation of the Article 9 Collateral to the extent any Grantor fails to do so as required by the Credit Agreement, this Agreement or any other Loan Document and within a reasonable period of time after the Collateral Agent has requested that it do so, and each Grantor jointly and severally agrees to reimburse the Collateral Agent within ten (10) Business Days after written demand for any reasonable payment made or any reasonable out-of-pocket and documented expense incurred by the Collateral Agent pursuant to the foregoing authorization; provided, however, the Grantors shall not be obligated to reimburse the Collateral Agent with respect to any Intellectual Property that any Grantor has failed to maintain or pursue, or otherwise allowed to lapse, terminate or be put into the public domain in accordance with Section 4.02(f). Nothing in this paragraph shall be interpreted as excusing any Grantor from the performance of, or imposing any obligation on the Collateral Agent or any Secured Party to cure or perform, any covenants or other promises of any Grantor with respect to taxes, assessments, charges, fees, Liens, security interests or other encumbrances and maintenance as set forth herein or in the other Loan Documents.

(f) If at any time any Grantor shall take a security interest in any property of an Account Debtor or any other Person the value of which exceeds $1,000,000 to secure payment and performance of an Account, such Grantor shall promptly assign such security interest to the Collateral Agent for the benefit of the applicable Secured Parties, unless any such security interest constitutes an Excluded Asset. Such assignment need not be filed of public record unless necessary to continue the perfected status of the security interest against creditors of and transferees from the Account Debtor or other Person granting the security interest.

(g) **[Reserved]**.

(h) Notwithstanding anything in any Loan Document to the contrary, none of the Grantors shall be required, nor is the Collateral Agent authorized: (i) to perfect the Security Interests granted by this Agreement (including Security Interests in investment property and fixtures) by any means other than by: (A) filings pursuant to the UCC in the office of the secretary of state (or similar central filing office) of the relevant State(s), and filings in the applicable real estate records with respect to any fixtures relating to Material Real Property, (B) filings in United States government offices with respect to Intellectual Property Collateral of any Grantor as expressly required elsewhere herein, (C) delivery to the Collateral Agent to be held in its possession of all Collateral consisting of certificated securities or instruments as expressly required elsewhere herein or (D) other methods expressly provided herein, (ii) to perfect the security interest granted hereunder in any Letter-of-Credit Rights other than pursuant to the filings referred to in clause (i)(A) above, (iii) to perfect the security interest granted hereunder in motor vehicles, aircraft and other assets subject to certificates of title, (iv) other than in respect of Pledged Collateral constituting certificated securities, to perfect the security interests hereunder through “control” (including for the avoidance of doubt, to enter into any deposit account control agreement, securities account control agreement or any other control agreement with respect to any deposit account, securities account or any other Collateral that requires perfection by “control” other than the Cash Collateral Account), (v) to complete any filings or other action with respect to the perfection of the security interests, including of any Intellectual Property, created hereby in any jurisdiction outside of the United States or any State thereof, (vi) with respect to any Collateral, to perfect by possession of promissory notes or any other instruments evidencing an amount not in excess of $1,000,000, (vii) to deliver any certificated securities except as expressly provided in Article II and (viii) to take any actions in any non-U.S. jurisdiction or required by the laws of any non-

U.S. jurisdiction to create any security interests in assets located or titled outside of the U.S. or to perfect any security interest in such assets, including any Intellectual Property registered in any non-U.S. jurisdiction (it being understood that there shall be no security agreements or pledge agreements governed under the laws of any non-U.S. jurisdiction).

Section 3.04. Other Actions. In order to further ensure the attachment, perfection and priority of, and the ability of the Collateral Agent to enforce, the Security Interest, each Grantor agrees, in each case at such Grantor's own expense, to take the following actions with respect to the following Article 9 Collateral:

(a) *Instruments*. If any Grantor shall at any time hold or acquire any Instruments constituting Collateral and evidencing an amount in excess of $1,000,000, such Grantor shall, within forty-five (45) days (or such longer period as the Collateral Agent may agree in its discretion), promptly endorse, assign and deliver the same to the Collateral Agent for the benefit of the Secured Parties, accompanied by such instruments of transfer or assignment duly executed in blank as the Collateral Agent may from time to time reasonably request.

(b) *Investment Property*. Except to the extent otherwise provided in Article II: (i) if any Grantor shall at any time hold or acquire any certificated securities constituting Collateral, such Grantor shall, within forty-five (45) days (or such longer period as the Collateral Agent may agree in its discretion), endorse, assign and deliver the same to the Collateral Agent for the benefit of the Secured Parties, accompanied by such instruments of transfer or assignment duly executed in blank as the Collateral Agent may from time to time reasonably request, (ii) if any securities constituting Collateral now or hereafter acquired by any Grantor are uncertificated and are issued to such Grantor or its nominee directly by the issuer thereof, upon the Collateral Agent's request following the occurrence and during the continuation of an Event of Default such Grantor shall promptly notify the Collateral Agent thereof and, at the Collateral Agent's reasonable request following the occurrence and during the continuation of an Event of Default, pursuant to an agreement in form and substance reasonably satisfactory to the Collateral Agent, either (A) cause the issuer to agree to comply with instructions from the Collateral Agent as to such securities, without further consent of any Grantor or such nominee, or (B) arrange for the Collateral Agent to become the registered owner of the securities, and (iii) if any securities constituting Collateral, whether certificated or uncertificated, or other investment property constituting Collateral are held by any Grantor or its nominee through a securities intermediary or commodity intermediary, upon the Collateral Agent's request following the occurrence and during the continuation of an Event of Default, such Grantor shall immediately notify the Collateral Agent thereof and at the Collateral Agent's request and option, pursuant to an agreement in form and substance reasonably satisfactory to the Collateral Agent shall either (A) cause such securities intermediary or (as the case may be) commodity intermediary to agree to comply with entitlement orders or other instructions from the Collateral Agent to such securities intermediary as to such security entitlements, or (as the case may be) to apply any value distributed on account of any commodity contract as directed by the Collateral Agent to such commodity intermediary, in each case without further consent of any Grantor or such nominee, or (B) in the case of financial assets or other Investment Property held through a securities intermediary, arrange for the Collateral Agent to become the entitlement holder with respect to such Investment Property, with the Grantor being permitted, only with the consent of the Collateral Agent, to exercise rights to withdraw or otherwise deal with such Investment Property. Notwithstanding the foregoing, the Collateral Agent agrees with each of the Grantors that the Collateral Agent shall not give any such entitlement orders or instructions or directions to any such issuer, securities intermediary or commodity intermediary, and shall not withhold its consent to the exercise of any withdrawal or dealing rights by any Grantor, unless an Event of Default has occurred and is continuing.

(c) *Commercial Tort Claims*. If any Grantor shall at any time after the date of this Agreement acquire a Commercial Tort Claim constituting Collateral where the amount of damages claimed equals or exceeds $1,000,000 and for which a complaint in a court of competent jurisdiction has been filed, such Grantor shall within forty-five (45) days (or such longer period as the Collateral Agent may agree in its reasonable discretion) notify the Collateral Agent thereof in a writing signed by such Grantor and provide supplements to Schedule 8 of the Perfection Certificate describing the details thereof and shall grant to the Collateral Agent a security interest therein and in the proceeds thereof, all upon the terms of this Agreement.

ARTICLE IV

CERTAIN PROVISIONS CONCERNING INTELLECTUAL PROPERTY COLLATERAL

Section 4.01. Grant of License to Use Intellectual Property.

Without limiting the provisions of Section 3.01 hereof or any other rights of the Collateral Agent as the holder of a Security Interest in any Intellectual Property Collateral, for the purpose of enabling the Collateral Agent to exercise rights and remedies under this Agreement at such time as the Collateral Agent shall be lawfully entitled to exercise such rights and remedies, each Grantor shall, upon request by the Collateral Agent, grant to the Collateral Agent an irrevocable, non-exclusive license (exercisable without payment of royalty or other compensation to the Grantors and exercisable only after the occurrence and during the continuation of an Event of Default) to use, license or sublicense any of the Intellectual Property Collateral now owned or hereafter acquired by such Grantor, and wherever the same may be located, and including in such license reasonable access to all media in which any of the licensed items may be recorded or stored and to all computer software and programs used for the compilation or printout thereof; provided, however, that any such license and any such license granted by the Collateral Agent to a third party shall include reasonable and customary terms and conditions necessary to preserve the existence, validity and value of the affected Intellectual Property Collateral, including provisions requiring the continuing confidential handling of trade secrets, requiring the use of appropriate notices and prohibiting the use of false notices, quality control and inurement provisions with regard to Trademarks, patent designation provisions with regard to Patents, copyright notices and restrictions on decompilation and reverse engineering of copyrighted software (it being understood and agreed that, without limiting any other rights and remedies of the Collateral Agent under this Agreement, any other Loan Document or applicable Law, nothing in the foregoing license grant shall be construed as granting the Collateral Agent rights in and to such Intellectual Property Collateral above and beyond (x) the rights to such Intellectual Property Collateral that each Grantor has reserved for itself and (y) in the case of Intellectual Property Collateral that is licensed to any such Grantor by a third party, the extent to which such Grantor has the right to grant a sublicense to such Intellectual Property Collateral hereunder).

The use of such license by the Collateral Agent may only be exercised, at the option of the Collateral Agent, during the continuation of an Event of Default; provided that any license, sublicense or other transaction entered into by the Collateral Agent in accordance herewith shall immediately terminate at such time as the Collateral Agent is no longer lawfully entitled to exercise its rights and remedies under this Agreement. Nothing in this Section 4.01 grants, or shall require a Grantor to grant, any license that is prohibited by applicable Law, or is prohibited by, or constitutes a breach or default under or results in the termination of any existing or future contract, license, agreement, instrument or other document evidencing, giving rise to or theretofore granted, with respect to such property or otherwise unreasonably prejudices the value thereof to the relevant Grantor. Without limiting the foregoing, and notwithstanding the existence of any Event of Default, any license rights granted under the Intellectual Property Collateral hereunder are and shall be subject to all other license rights, existing or future, that are or will be granted by any Grantor to a third party. In the event the license set forth in this Section 4.01 is exercised with regard to any Trademarks, then the following shall apply: (i) all goodwill arising from any licensed or sublicensed use of any Trademark shall inure to the benefit of the Grantor; (ii) the licensed or sublicensed Trademarks shall only be used in association with goods or services of a quality and nature consistent with the quality and reputation with which such Trademarks were associated when used by Grantor prior to the exercise of the license rights set forth herein; and (iii) at the Grantor's request and expense, licensees and sublicensees shall provide reasonable cooperation in any effort by the Grantor to maintain the registration or otherwise secure the ongoing validity and effectiveness of such licensed Trademarks, including, without limitation the actions and conduct described in Section 4.02 below.

Section 4.02. Protection of Collateral Agent's Security.

(a) Except to the extent permitted by Section 4.02(f) below, or to the extent that failure to act, either individually or in the aggregate, could not reasonably be expected to have a Material Adverse Effect, with respect to registration or pending application of each item of its Intellectual Property Collateral for which such Grantor has standing to do so, each Grantor agrees to take, at its expense, all reasonable steps, including, without limitation, in the U.S. Patent and Trademark Office, the U.S. Copyright Office and any other governmental authority located in the United States, to (i) maintain the validity and enforceability of any registered Intellectual

Property Collateral and maintain such Intellectual Property Collateral in full force and effect, and (ii) pursue the registration and maintenance of each Patent, Trademark, or Copyright registration or application, now or hereafter included in such Intellectual Property Collateral of such Grantor, including, without limitation, the payment of required fees and taxes, the filing of responses to office actions issued by the U.S. Patent and Trademark Office, the U.S. Copyright Office or other governmental authorities, the filing of applications for renewal or extension, the filing of affidavits under Sections 8 and 15 of the U.S. Trademark Act, the filing of divisional, continuation, continuation-in-part, reissue and renewal applications or extensions, the payment of maintenance fees and the participation in interference, reexamination, opposition, cancellation, infringement and misappropriation proceedings.

(b) Except to the extent permitted by Section 4.02(f) below, or to the extent that failure to act, either individually or in the aggregate, could not reasonably be expected to have a Material Adverse Effect, each Grantor shall take all reasonable steps to preserve and protect each item of its Intellectual Property Collateral, including, without limitation, maintaining the quality of any and all products or services used or provided in connection with any of the Trademarks, consistent with the quality of the products and services as of the date hereof, and taking reasonable steps necessary to ensure that all licensed users of any of the Trademarks abide by the applicable license's terms with respect to the standards of quality.

(c) Except to the extent permitted by Section 4.02(f) below, or to the extent that action or failure to act could not, either individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, no Grantor shall do or permit any act or knowingly omit to do any act whereby any of its Intellectual Property Collateral may lapse, be terminated, or become invalid or unenforceable or placed in the public domain.

(d) Each Grantor agrees that, should it obtain an ownership or other interest in any Intellectual Property Collateral after the Closing Date (the "After-Acquired Intellectual Property"), (i) the provisions of this Agreement shall automatically apply thereto, and (ii) any such After-Acquired Intellectual Property and, in the case of Trademarks, the goodwill symbolized thereby, shall automatically become part of the Intellectual Property Collateral subject to the terms and conditions of this Agreement with respect thereto.

(e) **[Reserved]**.

(f) Notwithstanding the foregoing provisions of this Section 4.02 or elsewhere in this Agreement, nothing in this Agreement shall prevent any Grantor from abandoning or discontinuing the use or maintenance of any of its Intellectual Property Collateral or placing in the public domain, or from failing to take action to enforce license agreements or pursue actions against infringers, if such Grantor determines in its reasonable business judgment that such abandonment, discontinuance, or failure to take action is desirable in the conduct of its business and Grantor shall not be required to take any action hereunder (including notice to the Collateral Agent of any such Intellectual Property Collateral or such action or inaction).

Section 4.03. After-Acquired Property. Promptly following delivery of the annual update described in Section 3.03(c), each Grantor shall sign and deliver to the Collateral Agent an appropriate Security Agreement Supplement and related grant of security interest with respect all of its applicable Owned Intellectual Property as of the last day of such period, to the extent that such Intellectual Property Collateral is not covered by any previous Security Agreement Supplement and related grant of security interests so signed and delivered by it. In each case, it will promptly cooperate as reasonably necessary to enable the Collateral Agent to make any necessary or reasonably desirable recordations with the United States Copyright Office or the United States Patent and Trademark Office, as appropriate.

ARTICLE V

REMEDIES

Section 5.01. Remedies Upon Default. Upon the occurrence and during the continuance of an Event of Default, it is agreed that the Collateral Agent shall have the right to exercise any and all rights afforded to a secured party with respect to the Secured Obligations, as applicable, under the UCC or other applicable Law, and

also may (i) require each Grantor to, and each Grantor agrees that it will at its expense and upon request of the Collateral Agent, promptly assemble all or part of the Collateral as directed by the Collateral Agent and make it available to the Collateral Agent at a place and time to be designated by the Collateral Agent that is reasonably convenient to both parties; (ii) occupy any premises owned or, to the extent lawful and permitted, leased by any of the Grantors where the Collateral or any part thereof is assembled or located for a reasonable period in order to effectuate its rights and remedies hereunder or under law, without obligation to such Grantor in respect of such occupation; provided that the Collateral Agent shall provide the applicable Grantor with notice thereof prior to or promptly after such occupancy; (iii) exercise any and all rights and remedies of any of the Grantors under or in connection with the Collateral, or otherwise in respect of the Collateral; provided that the Collateral Agent shall provide the applicable Grantor with notice thereof prior to or promptly after such exercise; (iv) withdraw any and all cash or other Collateral from the Cash Collateral Account and to apply such cash and other Collateral to the payment of any and all Secured Obligations in the manner provided in Section 5.02 of this Agreement; (v) subject to the mandatory requirements of applicable Laws and the notice requirements described below, sell or otherwise dispose of all or any part of the Collateral securing the Secured Obligations at a public or private sale or at any broker's board or on any securities exchange, for cash, upon credit or for future delivery as the Collateral Agent shall deem appropriate; and (vi) with respect to any Intellectual Property Collateral, on written demand, cause the Security Interest to become an assignment, transfer and conveyance of any of or all such Intellectual Property Collateral (provided that no such demand may be made unless an Event of Default has occurred and has continued for thirty (30) days) by the applicable Grantors to the Collateral Agent, or license or sublicense, whether general, special or otherwise, and whether on an exclusive or nonexclusive basis, any such Intellectual Property Collateral throughout the world on such terms and conditions and in such manner as the Collateral Agent shall determine; provided, however, that such terms shall be subject to the provisions of Section 4.01 of this Agreement. The Collateral Agent shall be authorized at any sale of securities (if it deems it advisable to do so) to restrict the prospective bidders or purchasers of such securities to Persons who will represent and agree that they are purchasing the Collateral for their own account for investment and not with a view to the distribution or sale thereof, and upon consummation of any such sale the Collateral Agent shall have the right to assign, transfer and deliver to the purchaser or purchasers thereof the Collateral so sold. Each such purchaser at any sale of Collateral shall hold the property sold absolutely, free from any claim or right on the part of any Grantor, and each Grantor hereby waives (to the extent permitted by applicable Law) all rights of redemption, stay and appraisal which such Grantor now has or may at any time in the future have under any rule of law or statute now existing or hereafter enacted.

The Collateral Agent shall give the applicable Grantors and the Borrower ten (10) days' prior written notice (which each Grantor agrees is reasonable notice within the meaning of Section 9-611 of the New York UCC or its equivalent in other jurisdictions) of the Collateral Agent's intention to make any sale of Collateral. Such notice, in the case of a public sale, shall state the time and place for such sale and, in the case of a sale at a broker's board or on a securities exchange, shall state the board or exchange at which such sale is to be made and the day on which the Collateral, or portion thereof, will first be offered for sale at such board or exchange. Any such public sale shall be held at such time or times within ordinary business hours and at such place or places as the Collateral Agent may fix and state in the notice (if any) of such sale. At any such sale, the Collateral, or portion thereof, to be sold may be sold in one lot as an entirety or in separate parcels, as the Collateral Agent may (in its sole and absolute discretion) determine. The Collateral Agent shall not be obligated to make any sale of any Collateral if it shall determine not to do so, regardless of the fact that notice of sale of such Collateral shall have been given. The Collateral Agent may, without notice or publication, adjourn any public or private sale or cause the same to be adjourned from time to time by announcement at the time and place fixed for sale, and such sale may, without further notice, be made at the time and place to which the same was so adjourned. In case any sale of all or any part of the Collateral is made on credit or for future delivery, the Collateral so sold may be retained by the Collateral Agent until the sale price is paid by the purchaser or purchasers thereof, but the Collateral Agent shall not incur any liability in case any such purchaser or purchasers shall fail to take up and pay for the Collateral so sold and, in case of any such failure, such Collateral may be sold again upon like notice. At any public (or, to the extent permitted by applicable Law, private) sale made pursuant to this Agreement, any Secured Party may bid for or purchase, free (to the extent permitted by applicable Law) from any right of redemption, stay, valuation or appraisal on the part of any Grantor (all said rights being also hereby waived and released to the extent permitted by applicable Law), the Collateral or any part thereof offered for sale and may make payment on account thereof by using any claim then due and payable to such Secured Party from any Grantor as a credit against the purchase price, and such Secured Party may, upon compliance with the terms of sale, hold, retain and dispose of such property without further accountability to any Grantor therefor. For purposes hereof, a written agreement to purchase the Collateral or any

portion thereof shall be treated as a sale thereof; the Collateral Agent shall be free to carry out such sale pursuant to such agreement and no Grantor shall be entitled to the return of the Collateral or any portion thereof subject thereto, notwithstanding the fact that after the Collateral Agent shall have entered into such an agreement all Events of Default shall have been remedied and the Secured Obligations paid in full (in which case the applicable Grantors shall be entitled to the proceeds of any such sale pursuant to Section 5.02 hereof). As an alternative to exercising the power of sale herein conferred upon it, the Collateral Agent may proceed by a suit or suits at law or in equity to foreclose this Agreement and to sell the Collateral or any portion thereof pursuant to a judgment or decree of a court or courts having competent jurisdiction or pursuant to a proceeding by a court appointed receiver. Any sale pursuant to the provisions of this Section 5.01 shall be deemed to conform to the commercially reasonable standards as provided in Section 9-610(b) of the New York UCC or its equivalent in other jurisdictions.

Section 5.02. Application of Proceeds. The Collateral Agent shall apply the proceeds of any collection or sale of Collateral, including any Collateral consisting of cash, in accordance with the provisions of Section 8.03 of the Credit Agreement. The Collateral Agent shall have absolute discretion as to the time of application of any such proceeds, moneys or balances in accordance with this Agreement. Upon any sale of Collateral by the Collateral Agent (including pursuant to a power of sale granted by statute or under a judicial proceeding), the receipt of the Collateral Agent or of the officer making the sale shall be a sufficient discharge to the purchaser or purchasers of the Collateral so sold and such purchaser or purchasers shall not be obligated to see to the application of any part of the purchase money paid over to the Collateral Agent or such officer or be answerable in any way for the misapplication thereof. It is understood and agreed that the Grantors shall remain jointly and severally liable to the extent of any deficiency between the amount of the proceeds of the Collateral and the aggregate amount of the Secured Obligations.

ARTICLE VI

[RESERVED]

ARTICLE VII

MISCELLANEOUS

Section 7.01. Notices. All communications and notices hereunder shall (except as otherwise expressly permitted herein) be in writing and given as provided in Section 10.02 of the Credit Agreement. All communications and notices hereunder to any Grantor (other than the Borrower) shall be given to it in care of the Borrower as provided in Section 10.02 of the Credit Agreement.

Section 7.02. Waivers; Amendment. (a) No failure or delay by the Collateral Agent, any L/C Issuer or any Lender in exercising any right, remedy, power or privilege hereunder or under any other Loan Document shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, remedy, power or privilege, or any abandonment or discontinuance of steps to enforce such a right, remedy, power or privilege, preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege. The rights, remedies, powers and privileges of the Collateral Agent, the L/C Issuers and the Lenders hereunder and under the other Loan Documents are cumulative and are not exclusive of any other rights or remedies that they would otherwise have. No waiver of any provision of this Agreement or consent to any departure by any Loan Party therefrom shall in any event be effective unless the same shall be permitted by paragraph (b) of this Section 7.02, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. Without limiting the generality of the foregoing, the making of a Loan or the issuance of a Letter of Credit shall not be construed as a waiver of any Default, regardless of whether the Collateral Agent, any Lender or any L/C Issuer may have had notice or knowledge of such Default at the time. No notice or demand on any Loan Party in any case shall entitle any Loan Party to any other or further notice or demand in similar or other circumstances.

(b) Neither this Agreement nor any provision hereof may be waived, amended or modified except pursuant to an agreement or agreements in writing entered into by the Collateral Agent and the Loan Party or Loan Parties with respect to which such waiver, amendment or modification is to apply, subject to any consent required in accordance with Section 10.01 of the Credit Agreement.

Section 7.03. Collateral Agent's Fees and Expenses; Indemnification. The terms of Section 10.04 and Section 10.05 of the Credit Agreement with respect to costs and expenses, indemnification, payments and survival are incorporated herein by reference, *mutatis mutandis*, and the parties hereto agree to such terms (and for the avoidance of doubt, for purposes of this Agreement, such provisions extend to, without limitation, the custody, preservation, use or operation of, or the sale of, collection from, or other realization of or enforcement with respect to, the Collateral).

Section 7.04. Successors and Assigns. Whenever in this Agreement any of the parties hereto is referred to, such reference shall be deemed to include the permitted successors and assigns of such party (including any successor or assignee of the Borrower, which successor or assignee shall execute and deliver a joinder to this Agreement in form reasonably satisfactory to the Collateral Agent upon the reasonable request of the Collateral Agent) and all covenants, promises and agreements by or on behalf of any Grantor or the Collateral Agent that are contained in this Agreement shall bind and inure to the benefit of their respective permitted successors and assigns.

Section 7.05. Survival of Agreement. Without limitation of any provision of the Credit Agreement or Section 7.03 hereof, all covenants, agreements, representations and warranties made by the Grantors in the Loan Documents and in the certificates or other instruments delivered in connection with or pursuant to this Agreement or any other Loan Document shall be considered to have been relied upon by each Agent and the Lenders and shall survive the execution and delivery of the Loan Documents and the making of any Loans and issuance of any Letters of Credit, regardless of any investigation made by any Agent or Lender or on its behalf and notwithstanding that the Collateral Agent, any L/C Issuer or any Lender may have had notice or knowledge of any Default at the time any credit is extended under any Loan Document, and shall continue in full force and effect until this Agreement is terminated as provided in Section 7.13 hereof, or with respect to any individual Grantor until such Grantor is otherwise released from its obligations under this Agreement in accordance with the terms hereof.

Section 7.06. Counterparts; Effectiveness; Several Agreement. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf", or ".tif" or other electronic imaging means of an executed counterpart of a signature page to this Agreement shall be effective as delivery of an original executed counterpart of this Agreement. This Agreement shall become effective as to any Grantor when a counterpart hereof executed on behalf of such Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon such Grantor and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means. This Agreement shall be construed as a separate agreement with respect to each Grantor and may be amended, restated, modified, supplemented, waived or released with respect to any Grantor without the approval of any other Grantor and without affecting the obligations of any other Grantor hereunder.

Section 7.07. Severability. If any provision of this Agreement is held to be illegal, invalid or unenforceable, the legality, validity and enforceability of the remaining provisions of this Agreement shall not be affected or impaired thereby. The invalidity of a provision in a particular jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction. The parties shall endeavor in good faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

Section 7.08. Right of Set-Off. In addition to any rights and remedies of the Lenders provided by Law, upon the occurrence and during the continuance of any Event of Default, each Lender and its Affiliates is authorized at any time and from time to time, after obtaining the prior written consent of the Collateral Agent, to the fullest extent permitted by applicable law, to set off and apply any and all deposits (general or special, time or demand, provisional or final, in whatever currency) at any time held and other obligations (in whatever currency) at any time owing by such Lender or any such Affiliate to or for the credit or the account of any Grantor against any and all of the Secured Obligations, irrespective of whether or not such Lender shall have made any demand under this Agreement and although such obligations of such Grantor may be contingent or unmatured or denominated in a

currency different from that of the applicable deposit or Indebtedness or are owed to a branch or office of such Lender different from the branch or office holding such deposit or obligated on such indebtedness; provided that in the event that any Defaulting Lender shall exercise any such right of setoff, (x) all amounts so set off shall be paid over immediately to the Collateral Agent for further application in accordance with the provisions of Section 2.19 of the Credit Agreement and, pending such payment, shall be segregated by such Defaulting Lender from its other funds and deemed held in trust for the benefit of the Collateral Agent and the Lenders, and (y) the Defaulting Lender shall provide promptly to the Collateral Agent a statement describing in reasonable detail the Secured Obligations owing to such Defaulting Lender as to which it exercised such right of setoff. The rights of each Lender and its Affiliates under this Section are in addition to other rights and remedies (including other rights of set-off) that such Lender or its Affiliates may have. Each Lender agrees to notify the Borrower and the Collateral Agent promptly after any such set-off and application made by such Lender; provided that the failure to give such notice shall not affect the validity of such set-off and application.

Section 7.09. Governing Law; Jurisdiction; Consent to Service of Process.

A. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

B. EACH OF THE LOAN PARTIES AND THE COLLATERAL AGENT FOR ITSELF AND ON BEHALF OF THE SECURED PARTIES HEREBY IRREVOCABLY AND UNCONDITIONALLY SUBMITS, FOR ITSELF AND ITS PROPERTY, TO THE EXCLUSIVE JURISDICTION OF THE COURTS OF THE STATE OF NEW YORK SITTING IN NEW YORK CITY IN THE BOROUGH OF MANHATTAN AND OF THE UNITED STATES DISTRICT COURT OF THE SOUTHERN DISTRICT OF NEW YORK, AND ANY APPELLATE COURT FROM ANY THEREOF, IN ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT, OR FOR RECOGNITION OR ENFORCEMENT OF ANY JUDGMENT, AND EACH OF THE PARTIES HERETO IRREVOCABLY AND UNCONDITIONALLY AGREES THAT ALL CLAIMS IN RESPECT OF ANY SUCH ACTION OR PROCEEDING MAY BE HEARD AND DETERMINED IN SUCH NEW YORK STATE COURT OR, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, IN SUCH FEDERAL COURT. EACH OF THE PARTIES HERETO AGREES THAT A FINAL JUDGMENT IN ANY SUCH ACTION OR PROCEEDING SHALL BE CONCLUSIVE AND MAY BE ENFORCED IN OTHER JURISDICTIONS BY SUIT ON THE JUDGMENT OR IN ANY OTHER MANNER PROVIDED BY LAW. EACH PARTY HERETO AGREES THAT THE AGENTS AND LENDERS RETAIN THE RIGHT TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY LAW OR TO BRING PROCEEDINGS AGAINST ANY LOAN PARTY IN THE COURTS OF ANY OTHER JURISDICTION IN CONNECTION WITH THE EXERCISE OF ANY RIGHTS UNDER ANY COLLATERAL DOCUMENT OR THE ENFORCEMENT OF ANY JUDGMENT.

C. EACH OF THE LOAN PARTIES AND THE COLLATERAL AGENT FOR ITSELF AND ON BEHALF OF THE SECURED PARTIES HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF VENUE OF ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT IN ANY COURT REFERRED TO IN PARAGRAPH (B) OF THIS SECTION. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE DEFENSE OF AN INCONVENIENT FORUM TO THE MAINTENANCE OF SUCH ACTION OR PROCEEDING IN ANY SUCH COURT.

D. EACH PARTY HERETO IRREVOCABLY CONSENTS TO SERVICE OF PROCESS IN THE MANNER PROVIDED FOR NOTICES IN SECTION 7.01. NOTHING IN THIS AGREEMENT WILL AFFECT THE RIGHT OF ANY PARTY HERETO TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY APPLICABLE LAW.

Section 7.10. WAIVER OF JURY TRIAL. EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH PARTY

HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PERSON HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PERSON WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

Section 7.11. Headings. Article and Section headings and the Table of Contents used herein are for convenience of reference only, are not part of this Agreement and are not to affect the construction of, or to be taken into consideration in interpreting, this Agreement.

Section 7.12. Security Interest Absolute. To the extent permitted by applicable Law, all rights of the Collateral Agent hereunder, the Security Interest, the grant of a security interest in the Collateral and all obligations of each Grantor hereunder shall be absolute and unconditional irrespective of (a) any lack of validity or enforceability of the Credit Agreement, any other Loan Document, the Secured Hedge Agreements, the Secured Cash Management Agreements or any other agreement or instrument relating to any of the foregoing, (b) any change in the time, manner or place of payment of, or in any other term of, all or any of the Secured Obligations, or any other amendment or waiver of or any consent to any departure from the Credit Agreement, any other Loan Document, the Secured Hedge Agreements, the Secured Cash Management Agreements or any other agreement or instrument, (c) any exchange, release or non-perfection of any Lien on other collateral, or any release or amendment or waiver of or consent under or departure from any guarantee, securing or guaranteeing all or any of the Secured Obligations or (d) subject only to termination of a Grantor's obligations hereunder in accordance with the terms of Section 7.13, but without prejudice to reinstatement rights under Section 2.04 of the Guaranty, any other circumstance that might otherwise constitute a defense available to, or a discharge of, any Grantor in respect of the Secured Obligations or this Agreement.

Section 7.13. Termination or Release. (a) This Agreement, the Security Interest and all other security interests granted hereby shall terminate with respect to all Secured Obligations upon termination of the Aggregate Commitments, payment in full of all outstanding Secured Obligations (other than (x) obligations under Secured Hedge Agreements, (y) obligations under Secured Cash Management Agreements and (z) contingent indemnification obligations not yet accrued and payable) and the expiration or termination of all Letters of Credit (other than outstanding Letters of Credit that have been Cash Collateralized).

(b) The Security Interest in any Collateral shall be automatically released in the circumstances set forth in Section 9.11(b) of the Credit Agreement or upon any release of the Lien on such Collateral in accordance with Section 9.11(c) of the Credit Agreement.

(c) A Grantor (other than the Borrower) shall automatically be released from its obligations hereunder and the Security Interest in the Collateral of such Grantor shall be automatically released in the circumstances set forth in Section 9.11(d) of the Credit Agreement.

(d) The Borrower shall automatically be released from its obligations hereunder and the Security Interest in the Collateral of the Borrower shall be automatically released upon delivery to the Collateral Agent of a joinder in the form contemplated by Section 7.04 of the Credit Agreement by any successor or assign of the Borrower.

(e) In connection with any termination or release pursuant to paragraph (a), (b), (c) or (d), the Collateral Agent shall promptly execute and deliver to any Grantor, at such Grantor's expense, all documents (including relevant certificates, securities and other instruments) that such Grantor shall reasonably request to evidence such termination or release and shall perform such other actions reasonably requested by such Grantor to effect such release, including delivery of certificates, securities and instruments. Any execution and delivery of documents pursuant to this Section 7.13 shall be without recourse to or warranty by the Collateral Agent.

(f) At any time that the respective Grantor desires that the Collateral Agent take any of the actions described in the immediately preceding paragraph (e), it shall, upon request of the Collateral Agent, deliver to the Collateral Agent an officer's certificate certifying that the release of the respective Collateral is

permitted pursuant to paragraph (a), (b), (c) or (d). The Collateral Agent shall have no liability whatsoever to any Secured Party as the result of any release of Collateral by it as permitted (or which the Collateral Agent in good faith believes to be permitted) by this Section 7.13.

(g) Notwithstanding anything to the contrary set forth in this Agreement, each Cash Management Bank and each Hedge Bank by the acceptance of the benefits under this Agreement hereby acknowledge and agree that (i) the obligations of the Borrower or any Subsidiary under any Secured Hedge Agreement and the Cash Management Obligations shall be secured pursuant to this Agreement only to the extent that, and for so long as, the other Secured Obligations are so secured and (ii) any release of Collateral effected in the manner permitted by this Agreement shall not require the consent of any Hedge Bank or Cash Management Bank.

Section 7.14. Additional Restricted Subsidiaries. Pursuant to Section 6.11 of the Credit Agreement, certain Restricted Subsidiaries of the Loan Parties that were not in existence or not Restricted Subsidiaries on the date of the Credit Agreement are required to enter in this Agreement as Grantors upon becoming Restricted Subsidiaries. In addition, certain Restricted Subsidiaries of the Loan Parties that are not required under the Credit Agreement to enter in this Agreement as Grantors may elect to do so at their option. Upon execution and delivery by the Collateral Agent and a Restricted Subsidiary of a Security Agreement Supplement, such Restricted Subsidiary shall become a Grantor hereunder with the same force and effect as if originally named as a Grantor herein. The execution and delivery of any such instrument shall not require the consent of any other Grantor hereunder. The rights and obligations of each Grantor hereunder shall remain in full force and effect notwithstanding the addition of any new Grantor as a party to this Agreement.

Section 7.15. Collateral Agent Appointed Attorney-in-Fact. Each Grantor hereby appoints the Collateral Agent the true and lawful attorney-in-fact of such Grantor for the purpose of carrying out the provisions of this Agreement and taking any action and executing any instrument that the Collateral Agent may deem necessary or advisable to accomplish the purposes hereof at any time after and during the continuance of an Event of Default, which appointment is irrevocable and coupled with an interest. Without limiting the generality of the foregoing, the Collateral Agent shall have the right, upon the occurrence and during the continuance of an Event of Default and (unless a Bankruptcy Event of Default has occurred and is continuing, in which case no such notice shall be required) upon and after delivery of notice by the Collateral Agent to the Borrower of its intent to exercise such rights, subject in each case to Section 5.01 of this Agreement, with full power of substitution either in the Collateral Agent's name or in the name of such Grantor (a) to receive, endorse, assign and/or deliver any and all notes, acceptances, checks, drafts, money orders or other evidences of payment relating to the Collateral or any part thereof; (b) to demand, collect, receive payment of, give receipt for and give discharges and releases of all or any of the Collateral; (c) to sign the name of any Grantor on any invoice or bill of lading relating to any of the Collateral; (d) to send verifications of Accounts to any Account Debtor; (e) to commence and prosecute any and all suits, actions or proceedings at law or in equity in any court of competent jurisdiction to collect or otherwise realize on all or any of the Collateral or to enforce any rights in respect of any Collateral; (f) to settle, compromise, compound, adjust or defend any actions, suits or proceedings relating to all or any of the Collateral; (g) to notify, or to require any Grantor to notify, Account Debtors to make payment directly to the Collateral Agent or the Cash Collateral Account and adjust, settle or compromise the amount of payment of any Account; and (h) to use, sell, assign, transfer, pledge, make any agreement with respect to or otherwise deal with all or any of the Collateral, and to do all other acts and things necessary to carry out the purposes of this Agreement, as fully and completely as though the Collateral Agent were the absolute owner of the Collateral for all purposes; provided that nothing herein contained shall be construed as requiring or obligating the Collateral Agent to make any commitment or to make any inquiry as to the nature or sufficiency of any payment received by the Collateral Agent, or to present or file any claim or notice, or to take any action with respect to the Collateral or any part thereof or the moneys due or to become due in respect thereof or any property covered thereby. The Collateral Agent and the other Secured Parties shall be accountable only for amounts actually received as a result of the exercise of the powers granted to them herein, and neither they nor their officers, directors, employees or agents shall be responsible to any Grantor for any act or failure to act hereunder, except for their own gross negligence, bad faith or willful misconduct or that of any of their Affiliates, directors, officers, employees, counsel, agents or attorneys-in-fact.

Section 7.16. General Authority of the Collateral Agent. By acceptance of the benefits of this Agreement and any other Collateral Documents, each Secured Party (whether or not a signatory hereto) shall be deemed irrevocably (a) to consent to the appointment of the Collateral Agent as its agent hereunder and under such

other Collateral Documents, (b) to confirm that the Collateral Agent shall have the authority to act as the exclusive agent of such Secured Party for the enforcement of any provisions of this Agreement and such other Collateral Documents against any Grantor, the exercise of remedies hereunder or thereunder and the giving or withholding of any consent or approval hereunder or thereunder relating to any Collateral or any Grantor's obligations with respect thereto, (c) to agree that it shall not take any action to enforce any provisions of this Agreement or any other Collateral Document against any Grantor, to exercise any remedy hereunder or thereunder or to give any consents or approvals hereunder or thereunder and (d) to agree to be bound by the terms of this Agreement and any other Collateral Documents.

Section 7.17. Collateral Agent's Duties. To the extent permitted by law, the Collateral Agent's sole duty with respect to the custody, safekeeping and physical preservation of the Collateral in its possession, under Section 9-207 of the New York UCC or otherwise, shall be to deal with it in the same manner as the Collateral Agent deals with similar property for its own account. None of the Collateral Agent, any other Secured Party or any of their respective officers, directors, employees or agents shall be liable for failure to demand, collect or realize upon any of the Collateral or for any delay in doing so or shall be under any obligation to sell or otherwise dispose of any Collateral upon the request of any Grantor or any other Person or to take any other action whatsoever with regard to the Collateral or any part thereof. The powers conferred on the Collateral Agent and the other Secured Parties hereunder are solely to protect the Collateral Agent's and the other Secured Parties' interests in the Collateral and shall not impose any duty upon the Collateral Agent or any other Secured Party to exercise any such powers. The Collateral Agent and the other Secured Parties shall be accountable only for amounts that they actually receive as a result of the exercise of such powers, and neither they nor any of their officers, directors, employees or agents shall be responsible to any Grantor for any act or failure to act hereunder, except for their own gross negligence, bad faith or willful misconduct or that of their Affiliates, directors, officers, employees, counsel, agents or attorneys-in-fact.

Section 7.18. Mortgages. In the event that any of the Collateral hereunder is also subject to a valid and enforceable Lien under the terms of a Mortgage and the terms thereof are inconsistent with the terms of this Agreement, then with respect to such Collateral, the terms of such Mortgage shall control in the case of Fixtures and real estate leases, letting and licenses of, and contracts and agreements relating to the lease of, real property, and the terms of this Agreement shall control in the case of all other Collateral.

Section 7.19. Recourse; Limited Obligations. This Agreement is made with full recourse to each Grantor and pursuant to and upon all the warranties, representations, covenants and agreements on the part of such Grantor contained herein, in the Loan Documents, the Secured Hedge Agreements, the Secured Cash Management Agreements and otherwise in writing in connection herewith or therewith. It is the desire and intent of each Grantor and the Secured Parties that this Agreement shall be enforced against each Grantor to the fullest extent permissible under the applicable Laws applied in each jurisdiction in which enforcement is sought. Notwithstanding anything to the contrary contained herein, and in furtherance of the foregoing, it is noted that the obligations of each Grantor that is a Guarantor have been limited as expressly provided in the Guaranty and are limited hereunder as and to the same extent provided therein.

* * *

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Name: Jerry Guo
Title: President & CEO

[Signature Page to Security Agreement]

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

By: /s/ Justin Kelley
Name: Justin Kelley
Title: Executive Director

[Signature Page to Security Agreement]

Exhibit I to
the Security Agreement

SUPPLEMENT NO. __ dated as of **[●]**, to the Security Agreement dated as of December **[●]**, 2016, among CASA SYSTEMS, INC. (the "Borrower"), the Subsidiaries of the Borrower identified therein and JPMORGAN CHASE BANK, N.A., as Collateral Agent.

A. Reference is made to (i) the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among the Borrower, each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto, (ii) the Guaranty (as defined in the Credit Agreement), (iii) each Secured Hedge Agreement (as defined in the Credit Agreement) and (vi) each Secured Cash Management Agreement (as defined in the Credit agreement).

B. Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Credit Agreement and the Security Agreement, as applicable.

C. The Grantors have entered into the Security Agreement in order to induce (x) the Lenders to make Loans and the L/C Issuers to issue Letters of Credit, (y) the Hedge Banks to enter into and/or maintain Secured Hedge Agreements and (z) the Cash Management Banks to provide Cash Management Services. Section 7.14 of the Security Agreement provides that additional Restricted Subsidiaries of the Borrower may become Grantors under the Security Agreement by execution and delivery of an instrument substantially in the form of this Supplement. The undersigned Restricted Subsidiary (the "New Subsidiary") is executing this Supplement in accordance with the Credit Agreement to become a Grantor under the Security Agreement in order to induce the Lenders to make additional Loans and the L/C Issuers to issue additional Letters of Credit and as consideration for Loans previously made and Letters of Credit previously issued.

Accordingly, the Collateral Agent and the New Subsidiary agree as follows:

Section 1. In accordance with Section 7.14 of the Security Agreement, the New Subsidiary by its signature below becomes a Grantor under the Security Agreement with the same force and effect as if originally named therein as a Grantor and the New Subsidiary hereby (a) agrees to all the terms and provisions of the Security Agreement applicable to it as a Grantor thereunder and (b) represents and warrants that the representations and warranties made by it as a Grantor thereunder are true and correct in all material respects (except that any representation and warranty that is qualified as to "materiality" or "Material Adverse Effect" shall be true and correct in all respects) on and as of the date hereof; provided that, to the extent that such representations and warranties specifically refer to an earlier date, they shall be true and correct in all material respects (except that any representation and warranty that is qualified as to "materiality" or "Material Adverse Effect" shall be true and correct in all respects) as of such earlier date. In furtherance of the foregoing, the New Subsidiary, as security for the payment and performance in full of the Secured Obligations does hereby create and grant to the Collateral Agent, its successors and assigns, for the benefit of the Secured Parties, their successors and assigns, a security interest in and lien on all of the New Subsidiary's right, title and interest in and to the Collateral (as defined in the Security Agreement) of the New Subsidiary. Each reference to a "Grantor" in the Security Agreement shall be deemed to include the New Subsidiary as if originally named therein as a Grantor. The Security Agreement is hereby incorporated herein by reference.

Section 2. The New Subsidiary represents and warrants to the Collateral Agent and the other Secured Parties that (i) it has the power and authority to enter into this Supplement and (ii) this Supplement has been duly authorized, executed and delivered by it and constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms, except as such enforceability may be limited by Debtor Relief Laws, general principles of equity and an implied covenant of good faith and fair dealing.

Section 3. This Supplement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf" or ".tif" or other electronic imaging means of an executed counterpart of a

signature page to this Supplement shall be effective as delivery of an original executed counterpart of this Supplement. This Supplement shall become effective as to any New Subsidiary when a counterpart hereof executed on behalf of such New Subsidiary shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon such New Subsidiary and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means.

Section 4. The New Subsidiary hereby represents and warrants that a Perfection Certificate as to the New Subsidiary has been duly executed and delivered to the Collateral Agent and the information set forth therein, including the legal name of the New Subsidiary, its jurisdiction of formation and the location of its chief executive office, is correct in all material respects as of the date hereof.

Section 5. Except as expressly supplemented hereby, the Security Agreement shall remain in full force and effect.

Section 6. **THIS SUPPLEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.**

Section 7. If any provision of this Supplement is held to be illegal, invalid or unenforceable, the legality, validity and enforceability of the remaining provisions of this Supplement shall not be affected or impaired thereby. The invalidity of a provision in a particular jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

Section 8. All communications and notices hereunder shall be in writing and given as provided in Section 7.01 of the Security Agreement.

Section 9. The New Subsidiary agrees to reimburse the Collateral Agent, on the same terms and to the same extent as provided for in section 7.03 of the Security Agreement, for its reasonable out-of-pocket expenses in connection with this Supplement.

* * *

IN WITNESS WHEREOF, the New Subsidiary and the Collateral Agent have duly executed this Supplement to the Security Agreement as of the day and year first above written.

[NAME OF NEW SUBSIDIARY]

By: _____
Name:
Title:

JPMORGAN CHASE BANK, N.A., as Collateral Agent

By: _____
Name:
Title:

Exhibit II to
the Security Agreement

[FORM OF]

COPYRIGHT SECURITY AGREEMENT

COPYRIGHT SECURITY AGREEMENT, dated as of [_____ ____], 20[__], made by [_____], a [_____] (the "Grantor"), in favor of JPMORGAN CHASE BANK, N.A., as Collateral Agent (as defined in the Credit Agreement referred to below).

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto.

WHEREAS, the Grantor is party to a Security Agreement, dated as of December **[●]**, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Security Agreement"), in favor of the Collateral Agent pursuant to which the Grantor is required to execute and deliver this Copyright Security Agreement;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and to induce the Lenders to extend credit under the Credit Agreement, the Grantor hereby agrees with the Collateral Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, capitalized terms used herein and not defined have the meaning given to them in the Security Agreement, or if not defined therein, in the Credit Agreement.

SECTION 2. Grant of Security Interest in Copyrights. As security for the payment or performance, as the case may be, in full of the Secured Obligations, the Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the "Security Interest") in, all of such Grantor's right, title or interest in or to any and all of the Owned Copyrights, including those listed on Schedule I hereto, and all Proceeds and products of any and all of the foregoing and all collateral security and guarantees given by any person with respect to the Owned Copyrights, now owned or at any time hereafter acquired by the Grantor or in which the Grantor now has or at any time in the future may acquire any right, title or interest.

SECTION 3. Security Agreement. The Security Interest granted pursuant to this Copyright Security Agreement is granted in conjunction with the security interest granted to the Collateral Agent pursuant to the Security Agreement, and the Collateral Agent and the Grantor hereby acknowledge and affirm that the rights and remedies of the Collateral Agent with respect to the Security Interest in the Owned Copyrights made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Copyright Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. Counterparts. This Copyright Security Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf", ".tif" or other electronic imaging means of an executed counterpart of a signature page to this Copyright Security Agreement shall be effective as delivery of an original executed counterpart of this Copyright Security Agreement. This Copyright Security Agreement shall become effective as to the Grantor when a counterpart hereof executed on behalf of the Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon the Grantor and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means.

SECTION 5. Recordation. The Grantor authorizes and requests that the Register of Copyrights and any other applicable government officer record this Agreement.

SECTION 6. Governing Law. This Copyright Security Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

[signature page follows]

IN WITNESS WHEREOF, the Grantor has caused this Copyright Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

[_____],
as Grantor

By: _____
Name:
Title:

Accepted and Agreed:

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

By: _____
Name:
Title:

SCHEDULE I
to
COPYRIGHT SECURITY AGREEMENT
COPYRIGHT REGISTRATIONS AND COPYRIGHT APPLICATIONS

UNITED STATES COPYRIGHTS:

UNITED STATES COPYRIGHTS:

U.S. Copyright Registrations

Title	Author	Reg. No.	Date Registered

Pending U.S. Copyright Applications for Registration

Title	Author	Date Submitted

Exclusive Copyright Licenses

Exhibit III to
the Security Agreement

[FORM OF]

PATENT SECURITY AGREEMENT

PATENT SECURITY AGREEMENT, dated as of [_____ ____], 20[__], made by [_____], a [_____] (the "Grantor"), in favor of JPMORGAN CHASE BANK, N.A., as Collateral Agent (as defined in the Credit Agreement referred to below).

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto.

WHEREAS, the Grantor is party to a Security Agreement, dated as of December **[●]**, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Security Agreement"), in favor of the Collateral Agent pursuant to which the Grantor is required to execute and deliver this Patent Security Agreement;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and to induce the Lenders to extend credit under the Credit Agreement, the Grantor hereby agrees with the Collateral Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, capitalized terms used herein and not defined have the meaning given to them in the Security Agreement, or if not defined therein, in the Credit Agreement.

SECTION 2. Grant of Security Interest in Patents. As security for the payment or performance, as the case may be, in full of the Secured Obligations, the Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the "Security Interest") in, all of such Grantor's right, title or interest in or to any and all of the Owned Patents, including those listed on Schedule I hereto, and all Proceeds and products of any and all of the foregoing and all collateral security and guarantees given by any person with respect to the Owned Patents, now owned or at any time hereafter acquired by the Grantor or in which the Grantor now has or at any time in the future may acquire any right, title or interest.

SECTION 3. Security Agreement. The Security Interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interest granted to the Collateral Agent pursuant to the Security Agreement, and the Collateral Agent and the Grantor hereby acknowledge and affirm that the rights and remedies of the Collateral Agent with respect to the Security Interest in the Owned Patents made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. Counterparts. This Patent Security Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf", ".tif" or other electronic imaging means of an executed counterpart of a signature page to this Patent Security Agreement shall be effective as delivery of an original executed counterpart of this Patent Security Agreement. This Patent Security Agreement shall become effective as to the Grantor when a counterpart hereof executed on behalf of the Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon the Grantor and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means.

SECTION 5. Recordation. The Grantor authorizes and requests that the Commissioner for Patents and any other applicable government officer record this Agreement.

SECTION 6. Governing Law. This Patent Security Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

[signature page follows]

IN WITNESS WHEREOF, the Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

[_____],
as Grantor

By: _____
Name:
Title:

Accepted and Agreed:

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

By: _____
Name:
Title:

SCHEDULE I
to
PATENT SECURITY AGREEMENT
PATENT REGISTRATIONS AND PATENT APPLICATIONS

UNITED STATES PATENTS:

U.S. Patent Registrations

Owner	Title	Patent No.	Issue Date

U.S. Patent Applications

Owner	Title	App. No.	Filing Date

Exclusive Patent Licenses

Exhibit IV to
the Security Agreement

[FORM OF]

TRADEMARK SECURITY AGREEMENT

TRADEMARK SECURITY AGREEMENT, dated as of [_____ ____], 20[__], made by [_____], a [_____] (the "Grantor"), in favor of JPMORGAN CHASE BANK, N.A., as Collateral Agent (as defined in the Credit Agreement referred to below).

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., each Lender from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Collateral Agent and an L/C Issuer and the other agents and parties party thereto.

WHEREAS, the Grantor is party to a Security Agreement, dated as of December **[●]**, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Security Agreement"), in favor of the Collateral Agent pursuant to which the Grantor is required to execute and deliver this Trademark Security Agreement;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and to induce the Lenders to extend credit under the Credit Agreement, the Grantor hereby agrees with the Collateral Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, capitalized terms used herein and not defined have the meaning given to them in the Security Agreement, or if not defined therein, in the Credit Agreement.

SECTION 2. Grant of Security Interest in Trademarks. As security for the payment or performance, as the case may be, in full of the Secured Obligations, the Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the "Security Interest") in, all of such Grantor's right, title or interest in or to any and all of the Owned Trademarks, including those listed on Schedule I hereto, and all Proceeds and products of any and all of the foregoing and all collateral security and guarantees given by any person with respect to the Owned Trademarks, now owned or at any time hereafter acquired by the Grantor or in which the Grantor now has or at any time in the future may acquire any right, title or interest.

SECTION 3. Security Agreement. The Security Interest granted pursuant to this Trademark Security Agreement is granted in conjunction with the security interest granted to the Collateral Agent pursuant to the Security Agreement, and the Collateral Agent and the Grantor hereby acknowledge and affirm that the rights and remedies of the Collateral Agent with respect to the Security Interest in the Owned Trademark made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Trademark Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. Counterparts. This Trademark Security Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery by telecopier, ".pdf", ".tif" or other electronic imaging means of an executed counterpart of a signature page to this Trademark Security Agreement shall be effective as delivery of an original executed counterpart of this Trademark Security Agreement. This Trademark Security Agreement shall become effective as to the Grantor when a counterpart hereof executed on behalf of the Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon the Grantor and the Collateral Agent and their respective permitted successors and assigns. The Collateral Agent may also require that any such documents and signatures delivered by telecopier, .pdf or other electronic imaging means be confirmed by a manually signed original thereof; provided that the failure to request or deliver the same shall not limit the effectiveness of any document or signature delivered by telecopier, ".pdf", ".tif" or other electronic imaging means.

SECTION 5. Recordation. The Grantor authorizes and requests that the Commissioner for Trademarks and any other applicable government officer record this Agreement.

SECTION 6. Governing Law. This Trademark Security Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

[signature page follows]

IN WITNESS WHEREOF, the Grantor has caused this Trademark Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

[_____],
as Grantor

By: _____
Name:
Title:

Accepted and Agreed:

JPMORGAN CHASE BANK, N.A.,
as Collateral Agent

By: _____
Name:
Title:

SCHEDULE I
to
TRADEMARK SECURITY AGREEMENT
TRADEMARK REGISTRATIONS AND TRADEMARK APPLICATIONS

UNITED STATES TRADEMARKS:

U.S. Trademark Registrations

Owner	Mark	Reg. No.	Reg. Date

U.S. Trademark Applications

Owner	Mark	App. No.	App. Date

Exclusive Trademark Licenses

CLOSING DATE PERFECTION CERTIFICATE

[See attached]

CLOSING DATE PERFECTION CERTIFICATE

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., a Delaware corporation (the "Borrower"), the Lenders (as defined in the Credit Agreement) from time to time party thereto, JPMorgan Chase Bank, N.A., as administrative agent (in such capacity, the "Administrative Agent"), Collateral Agent and an L/C Issuer, and the other agents and parties party thereto. Capitalized terms used but not defined herein have the meanings assigned in the Credit Agreement or the Security Agreement referred to therein, as applicable.

The undersigned, a Responsible Officer of the Borrower, in his/her capacity as an officer of the Borrower and not in his/her individual capacity, hereby certifies to the Administrative Agent and each other Secured Party as follows:

1. Names. (a) The exact legal name of each Loan Party, as such name appears in its respective certificate or articles of incorporation or formation, is as follows:

Loan Party
Casa Systems, Inc.

(b) Set forth below is each other legal name each Loan Party has had in the past five years, together with the date of the relevant change:

None.

(c) Except as set forth in Schedule 1 hereto, to the Borrower's knowledge, no Loan Party has changed its identity or corporate structure within the past five years. Changes in identity or corporate structure would include mergers, consolidations and acquisitions, as well as any change in the form, nature or jurisdiction of organization. If any such change has occurred, include in Schedule 1 the information required by Sections 1 and 2 of this certificate as to each acquiree or constituent party to a merger or consolidation to the extent such information is available to the Borrower.

(d) To the Borrower's knowledge, the following is a list of all other names (including trade names or similar appellations) used by each Loan Party or any of its divisions or other business units in connection with the conduct of its business or the ownership of its properties at any time during the past five years:

1. The Borrower and each subsidiary collectively use the name "Casa Systems" for branding and marketing purposes.

(e) Set forth below is the Organizational Identification Number, if any, issued by the jurisdiction of formation of each Loan Party that is a registered organization:

Loan Party	Organizational Identification Number
Casa Systems, Inc.	3630717

(f) Set forth below is the Federal Taxpayer Identification Number, if any, of each Loan Party:

Loan Party	Federal Taxpayer Identification Number
Casa Systems, Inc.	75-3108867

2. Current Locations. (a) The chief executive office of each Loan Party is located at the address set forth opposite its name below:

Loan Party	Mailing Address	County	State
Casa Systems, Inc.	100 Old River Road Andover, MA 01810	Essex County	MA

(b) The jurisdiction of formation of each Loan Party that is a registered organization is set forth opposite its name below:

Loan Party	Jurisdiction
Casa Systems, Inc.	Delaware

(c) Set forth below is a list of all Material Real Property owned by each Loan Party:

None.

3. Schedule of Filings. Attached hereto as Schedule 3 is a schedule setting forth the proper UCC filing office in the jurisdiction in which each Loan Party is located and, to the extent any of the Collateral is comprised of fixtures attached to Material Real Property, in the proper local jurisdiction, in each case as set forth with respect to such Loan Party in Section 2 hereof.

4. Stock Ownership and other Equity Interests. Attached hereto as Schedule 4 is a true and correct list of all the issued and outstanding Equity Interests of each Subsidiary and the record and beneficial owners of such Equity Interests.

5. Debt Instruments. Attached hereto as Schedule 5 is a true and correct list of all promissory notes and other evidence of Indebtedness held by the Borrower and each other Loan Party having a principal amount in excess of $1,000,000 that are required to be pledged under the Security Agreement, including all intercompany notes between Loan Parties.

6. Mortgage Filings. Attached hereto as Schedule 6 is a schedule setting forth, with respect to each Material Real Property, (a) the exact name of the Person that owns such property as such name appears in its certificate of incorporation or other organizational document, (b) if different from the name identified pursuant to clause (a), the exact name of the current mortgagor/grantor of such property reflected in the records of the filing office for such property identified pursuant to the following clause and (c) the filing office in which a Mortgage with respect to such property must be filed or recorded in order for the Collateral Agent to obtain a perfected security interest therein.

7. Intellectual Property. (a) Attached hereto as Schedule 7(a) as prepared for filing with the United States Patent and Trademark Office is a schedule setting forth all of each Loan Party's: (i) Patents and Patent Applications, including the name of the registered owner, type, registration or application number and the expiration date (if already registered) of each Patent and Patent Application owned by any Loan Party; and (ii) Trademarks and Trademark Applications, including the name of the registered owner, the registration or application number and the expiration date (if already registered) of each Trademark and Trademark Application owned by any Loan Party.

(b) Attached hereto as Schedule 7(b) as prepared for filing with the United States Copyright Office is a schedule setting forth all of each Loan Party's Copyrights and Copyright Applications, including the name of the registered owner, title, the registration number or application number and the publication year (if already registered) of each Copyright and Copyright Application owned by any Loan Party.

8. Commercial Tort Claims. Set forth as Schedule 8 is a schedule setting forth all commercial tort claims equal to or in excess of $1,000,000 held by any Loan Party, including a brief description thereof.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, the undersigned has duly executed this certificate on the date first set forth above.

CASA SYSTEMS, INC.

By: _____
Name: Jerry Guo
Title: President & CEO

[Signature Page to Perfection Certificate]

SCHEDULE 1
TO PERFECTION CERTIFICATE

Changes in Corporate Identity/Structure

None.

SCHEDULE 3
TO PERFECTION CERTIFICATE

Schedule of Filings

Loan Party	Filing Office
Casa Systems, Inc.	Delaware Secretary of State

SCHEDULE 4
TO PERFECTION CERTIFICATE

Stock Ownership and other Equity Interests

Issuer	Jurisdiction of Organization	Owner of Outstanding Equity Interests	Percentage of Outstanding Equity Interests Held, Directly or Indirectly, by the Owner	% of Total Issued Interests Pledged
Casa Systems Securities Corporation*	Massachusetts	Casa Systems, Inc.	100%	100%
Casa Properties LLC*	Delaware	Casa Systems, Inc.	100%	100%
Guangzhou Casa Communications Ltd.*	People's Republic of China	Casa Systems, Inc.	100%	65%
Casa Systems B.V.*	Netherlands	Casa Systems, Inc.	100%	65%
Casa Systems Canada Ltd.*	Canada	Casa Systems, Inc.	100%	65%
Casa Systems SAS*	France	Casa Systems, Inc.	100%	65%
Casa Communications Ltd.	Ireland	Casa Systems B.V.	100%	0%

* Issued Equity Interest being pledged as of the Closing Date in accordance with the Collateral and Guarantee Requirement.

SCHEDULE 5
TO PERFECTION CERTIFICATE

Debt Instruments

None.

SCHEDULE 6
TO PERFECTION CERTIFICATE

Mortgage Filings

None.

SCHEDULE 7(a)
TO PERFECTION CERTIFICATE

Intellectual Property – Patents and Trademarks

UNITED STATES PATENTS AND APPLICATIONS:

Registrations:

Patent No./ Publication No./ Application No.	Issue Date/ Pub. Date/ App. Date	Title	Current Owner	Status
8885781 13670000	11-NOV-2014 06-NOV-2012	SYSTEM AND METHOD FOR DETECTING BURST NOISE DURING QUADRATURE AMPLITUDE MODULATION COMMUNICATIONS	CASA SYSTEMS, INC.	ISSUED
8670481 13445258	11-MAR- 2014 12-APR-2012	System and method for dynamic profile management in cable modem systems	CASA SYSTEMS, INC.	ISSUED
8565266 13526284	22-OCT-2013 18-JUN-2012	Intelligent node for improving signal quality in a cable modem network	CASA SYSTEMS, INC.	ISSUED
8306166 13351699	06-NOV-2012 17-JAN-2012	System and Method for Detecting Burst Noise During Quadrature Amplitude Modulation Communications	CASA SYSTEMS, INC.	ISSUED

Applications:

None.

UNITED STATES TRADEMARKS AND APPLICATIONS:

Mark	**App. No./ App. Date**	**Reg. No./ Reg. Date**	**Current Owner**	**Status**
CASA SYSTEMS	**App** 85467744 **App** 08-NOV-2011	**Reg** 4167895 **Reg** 03-JUL-2012	CASA SYSTEMS, INC.	Registered

SCHEDULE 7(b)
TO PERFECTION CERTIFICATE

Intellectual Property – Copyrights

UNITED STATES COPYRIGHTS AND APPLICATIONS:

None.

SCHEDULE 8
TO PERFECTION CERTIFICATE

Commercial Tort Claims

None.

FORM OF PERFECTION CERTIFICATE

[See attached]

Exhibit V-2 to
the Security Agreement

FORM OF PERFECTION CERTIFICATE

Reference is made to the Credit Agreement dated as of December 20, 2016 (as amended, restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Casa Systems, Inc., a Delaware corporation (the "Borrower"), the Lenders (as defined in the Credit Agreement) from time to time party thereto, JPMorgan Chase Bank, N.A., as administrative agent (in such capacity, the "Administrative Agent"), Collateral Agent and an L/C Issuer, and the other agents and parties party thereto. Capitalized terms used but not defined herein have the meanings assigned in the Credit Agreement or the Security Agreement referred to therein, as applicable.

The undersigned, a Responsible Officer of the Borrower, in his/her capacity as an officer of the Borrower and not in his/her individual capacity, hereby certifies to the Administrative Agent and each other Secured Party as follows:

1. Names. (a) The exact legal name of each Loan Party, as such name appears in its respective certificate or articles of incorporation or formation, is as follows:

Loan Party

(b) Set forth below is each other legal name each Loan Party has had in the past five years, together with the date of the relevant change:

Loan Party	**Prior Name**	**Date of Change**

(c) Except as set forth in Schedule 1 hereto, to the Borrower's knowledge, no Loan Party has changed its identity or corporate structure within the past five years. Changes in identity or corporate structure would include mergers, consolidations and acquisitions, as well as any change in the form, nature or jurisdiction of organization. If any such change has occurred, include in Schedule 1 the information required by Sections 1 and 2 of this certificate as to each acquiree or constituent party to a merger or consolidation to the extent such information is available to the Borrower.

(d) To the Borrower's knowledge, the following is a list of all other names (including trade names or similar appellations) used by each Loan Party or any of its divisions or other business units in connection with the conduct of its business or the ownership of its properties at any time during the past five years:

(e) Set forth below is the Organizational Identification Number, if any, issued by the jurisdiction of formation of each Loan Party that is a registered organization:

Loan Party	Organizational Identification Number

(f) Set forth below is the Federal Taxpayer Identification Number, if any, of each Loan Party:

Loan Party	Federal Taxpayer Identification Number

2. Current Locations. (a) The chief executive office of each Loan Party is located at the address set forth opposite its name below:

Loan Party	Mailing Address	County	State

(b) The jurisdiction of formation of each Loan Party that is a registered organization is set forth opposite its name below:

Loan Party	Jurisdiction

(c) Set forth below is a list of all Material Real Property owned by each Loan Party:

3. Schedule of Filings. Attached hereto as Schedule 3 is a schedule setting forth the proper UCC filing office in the jurisdiction in which each Loan Party is located and, to the extent any of the Collateral is comprised of fixtures attached to Material Real Property, in the proper local jurisdiction, in each case as set forth with respect to such Loan Party in Section 2 hereof.

4. Stock Ownership and other Equity Interests. Attached hereto as Schedule 4 is a true and correct list of all the issued and outstanding Equity Interests of the Borrower and each Subsidiary and the record and beneficial owners of such Equity Interests.

5. Debt Instruments. Attached hereto as Schedule 5 is a true and correct list of all promissory notes and other evidence of Indebtedness held by the Borrower and each other Loan Party having a principal amount in excess of $5,000,000 that are required to be pledged under the Security Agreement, including all intercompany notes between Loan Parties.

6. Mortgage Filings. Attached hereto as Schedule 6 is a schedule setting forth, with respect to each Material Real Property, (a) the exact name of the Person that owns such property as such name appears in its certificate of incorporation or other organizational document, (b) if different from the name identified pursuant to clause (a), the exact name of the current mortgagor/grantor of such property reflected in the records of the filing office for such property identified pursuant to the following clause and (c) the filing office in which a Mortgage with respect to such property must be filed or recorded in order for the Collateral Agent to obtain a perfected security interest therein.

7. Intellectual Property. (a) Attached hereto as Schedule 7(a) as prepared for filing with the United States Patent and Trademark Office is a schedule setting forth all of each Loan Party's: (i) Patents and Patent Applications, including the name of the registered owner, type, registration or application number and the expiration date (if already registered) of each Patent and Patent Application owned by any Loan Party; and (ii) Trademarks and Trademark Applications, including the name of the registered owner, the registration or application number and the expiration date (if already registered) of each Trademark and Trademark Application owned by any Loan Party.

(b) Attached hereto as Schedule 7(b) as prepared for filing with the United States Copyright Office is a schedule setting forth all of each Loan Party's Copyrights and Copyright Applications, including the name of the registered owner, title, the registration number or application number and the publication year (if already registered) of each Copyright and Copyright Application owned by any Loan Party.

8. Commercial Tort Claims. Set forth as Schedule 8 is a schedule setting forth all commercial tort claims equal to or in excess of $5,000,000 held by any Loan Party, including a brief description thereof.

IN WITNESS WHEREOF, the undersigned has duly executed this certificate on the date first set forth above.

CASA SYSTEMS, INC.

By: _____

Name:
Title:

SCHEDULE 1
TO PERFECTION CERTIFICATE

Changes in Corporate Identity/Structure

Loan Party	Action	Date of Action	Jurisdiction of Incorporation or Organization	Pre-Conversion/Pre-Merger Names

SCHEDULE 3
TO PERFECTION CERTIFICATE

Schedule of Filings

Loan Party	Filing Office

SCHEDULE 4
TO PERFECTION CERTIFICATE

Stock Ownership and other Equity Interests

Issuer	Jurisdiction of Organization	Owner of Outstanding Equity Interests	Percentage of Outstanding Equity Interests Held, Directly or Indirectly, by the Owner	% of Total Issued Interests Pledged

SCHEDULE 5
TO PERFECTION CERTIFICATE

Debt Instruments

SCHEDULE 6
TO PERFECTION CERTIFICATE

Mortgage Filings

SCHEDULE 7(a)
TO PERFECTION CERTIFICATE

Intellectual Property – Patents and Trademarks

UNITED STATES PATENTS AND APPLICATIONS:

Registrations:

Owner	Registration Number	Description

Applications:

Owner	Application Number	Description

UNITED STATES TRADEMARKS AND APPLICATIONS:

Owner	Registration/Application Number	Trademark	Registration/Application Date	Expiration Date

SCHEDULE 7(b)
TO PERFECTION CERTIFICATE

Intellectual Property – Copyrights

UNITED STATES COPYRIGHTS AND APPLICATIONS:

Owner	Title	Registration/Application Number	Registration/Application Date	Publication Year

SCHEDULE 8
TO PERFECTION CERTIFICATE

Commercial Tort Claims

Exhibit 10.23

Confidential Materials omitted and filed separately with the
Securities and Exchange Commission. Double asterisks denote omissions

EXECUTION COPY

C O N F I D E N T I A L

MASTER PURCHASE AGREEMENT

BETWEEN

TIME WARNER CABLE ENTERPRISES LLC

AND

CASA SYSTEMS, INC.

DATED: OCTOBER 31, 2013

MASTER PURCHASE AGREEMENT

This Master Purchase Agreement is entered into as of October 31, 2013 ("Effective Date"), by and between Time Warner Cable Enterprises LLC ("TWC"), and Casa Systems, Inc. ("Seller") (each a "Party," and together the "Parties").

RECITAL

TWC and its Affiliates (as defined below) desire to purchase and obtain from Seller, and Seller is willing to sell and provide, certain Cable Modem Termination System ("CMTS") equipment and other cable edge devices and related services, all as more specifically set forth in this Agreement.

AGREEMENT

In consideration of the agreements, representations, warranties and covenants contained in this Agreement, the Parties, intending to be legally bound, agree as follows:

1. DEFINITIONS AND RULES OF CONSTRUCTION

1.1 Definitions. The capitalized terms used in this Agreement shall have the following meanings:

"Acceptance" shall have the meaning set forth in Section 3.1.

"Affected Model" shall have the meaning set forth in Section 6.6.

"Affiliate" means any of the following: (a) Time Warner Cable Inc. ("TWCI"), Time Warner NY Cable LLC ("TWC NY"), Time Warner Entertainment-Advance/Newhouse Partnership ("TWEAN") or any of their respective successors in interest (collectively, and together with TWC, the "TWC Companies"); (b) BHN; (c) any other corporation, partnership, joint venture, trust, joint stock company or other entity as to which any one or more of TWC, TWCI, TWC NY, TWEAN or BHN owns or controls at least twenty-five percent (25%) of the voting securities of such entity; (d) any division of any TWC Company or BHN operating one or more cable systems in a particular geographic area; (e) any entity that is managed in whole or in significant part by any TWC Company or BHN or through managers designated by any TWC Company or BHN. TWC and BHN also shall be entitled to propose as Affiliates, for approval by Seller (which approval shall not be unreasonably withheld, provided that Seller's standard credit qualifications are met), other entities in which it or its Affiliates have ownership or management interests that would not otherwise meet this definition.

"Agreement" means this Master Purchase Agreement, including all of the Exhibits attached hereto.

"Alternative Device" shall have the meaning set forth in Section 6.6.

"AQL" shall have the meaning set forth in Sub-Section 7.5.1.

"AQL Acceptance" shall have the meaning set forth in Sub-Section 7.5.3.

"Article" means all of the text contained under a caption or reference heading preceded by a whole number (e.g., 10., 11., etc.) and contains all Sections preceded by such whole number (e.g., 10.1, 10.2 etc.).

"BHN" means Bright House Networks, LLC, a Delaware limited liability company. BHN is a TWC Affiliate, but is not a TWC Responsible Affiliate.

"BHN Responsible Affiliate" means those Affiliates whose business and affairs are managed by BHN, as opposed to TWC Responsible Affiliates.

"Business Day" means Monday through Friday, except for holidays observed by TWC and/or Seller.

"CableLabs" means Cable Television Laboratories, Inc., or its successor or replacement.

"Claim" shall have the meaning set forth in Section 14.1.

"Commercially Available" means available for purchase and deployment by Purchasers and has received approval for sale to TWC systems.

"Control" (including its correlative terms "Controlled by" and "under common Control with") means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of an entity, whether through the ownership of voting securities, by contract, management agreement or otherwise.

"Coverage Period" shall have the meaning set forth in Section 8.13.

"Defect" or "Defective" means (a) any material defect in the design, materials or workmanship of the Equipment, (b) any failure of any Equipment to substantially perform in accordance with, or any adverse material deviation from, the Specifications, including any characteristic of such Equipment that results in a material breach of any of the representations and warranties with respect to the Equipment set forth in this Agreement, or (c) any failure of any Equipment to be in substantial compliance with DOCSIS and PacketCable standards, as further specified as follows:

"Critical Defects" means Defects that might reasonably be expected to endanger life or be a hazard to health, including Defects that might reasonably be expected to give an electrical shock, or Defects that might reasonably be expected to create a fire hazard.

"Major Defects" means Defects that cause the Equipment to be functionally inoperative, materially unusable, or unable to meet in all material respects Specifications relating to performance.

"Minor Defects" means Defects that do not reduce the reliability or usability of the Equipment.

"Delivery" shall have the meaning set forth in Section 7.1.

"DOCSIS" means the Data Over Cable Service Interface Specifications, as published from time to time by CableLabs.

"Download or Downloading" means the remote transfer of files, data or information from one device to another device.

"End of Life" shall have the meaning set forth in Section 3.3.

"Enhancements" means, collectively, Minor Enhancements and Major Enhancements.

"Equipment" means the CMTS devices and any other Software or equipment (including the equipment and Software described in Exhibit A – Equipment and Specifications) provided by Seller under this Agreement.

"Equipment Performance Data" shall have the meaning set forth in Section 8.15.

"Equivalent Price" means a price calculated at any point in time by adjusting (either upward or downward, as appropriate) the actual invoiced price of the Affected Models for differences between the Affected Model and the applicable Alternative Device with respect to the following sales terms: the duration of the warranty period; the scope of warranty services provided during the warranty period; the volume of equipment and software actually purchased or licensed; and any material differences in features and functionality of the equipment and software provided.

"Excessive Failure" shall have the meaning set forth in Sub-Section 8.7.1.

"Extended Warranty Contract" shall have the meaning set forth in Section 8.4

"Extended Warranty Period" shall have the meaning set forth in Section 8.4

"Extreme Failure" shall have the meaning set forth in Sub-Section 8.7.2.

"Failure" means a failure of an item of Equipment to perform in accordance with its Specifications as a result of a Defect.

"FCC" means the Federal Communications Commission or any successor thereto or replacement entity thereof.

"Field Failure" means a Failure of Equipment that has been deployed for commercial use, including any Surge Failure.

"FOB" means free-on-board, in accordance with Incoterms 2000.

"Force Majeure" means conditions or occurrences that are beyond the reasonable control of the Party experiencing such condition or occurrence, such as the following: acts of God or of the public enemy; severe weather conditions beyond those to which the Equipment may foreseeably be subject (which shall not include Surge Failures); earthquakes; fires; floods;

epidemics or quarantines; freight embargoes; reasonable delays in transportation; any future Law or change in current Law or other acts of a Governmental Authority; war; civil strife; insurrection; or riot.

"Governmental Authority" means (a) the United States of America, any state, commonwealth, territory, or possession thereof, and any political subdivision or quasi-governmental authority of any of the same, including courts, tribunals, departments, panels, commissions (including the FCC), boards, bureaus and agencies, in each case having jurisdiction over the applicable Party, and (b) any foreign (as to the United States of America) sovereign entity, including nations, states, republics, kingdoms, commonwealths, provinces, territories or possessions thereof, and any political subdivision or quasi-governmental authority of any of the same, including courts, tribunals, departments, panels, commissions, boards, bureaus and agencies, in each case having jurisdiction over the applicable Party.

"Indemnified Party" shall have the meaning set forth in Sub-Section 15.2.

"Indemnifying Party" shall have the meaning set forth in Sub-Section 15.2.

"Initial Term" shall have the meaning set forth in Section 20.1.

"Initial Warranty Period" shall have the meaning set forth in Section 8.3.

"IP Rights" means patents, copyrights, trademarks, trade secrets, mask works, know-how and other intellectual property or proprietary rights.

"Late Delivery Occurrence" shall have the meaning set forth in Section 5.5.

"Law" means any applicable law, statute, ordinance, code, rule, regulation, order, judgment, decree, standard, requirement or procedure enacted, adopted, applied, enforced or followed by any Governmental Authority.

"Lead Time Requirement" means, with respect to a requested shipment date listed by a Purchaser in a Purchase Order, a date that is at least [**] days after the date of a Purchaser's Purchase Order.

"Liabilities" shall have the meaning set forth in Section 14.1.

"Major Enhancement" means any (a) new or significantly enhanced functionality compared to the previous issuance of Software; and/or (b) major improvements in the performance characteristics of Software above and beyond that which is defined in the Specifications therefor.

"Major Repair" means repairs that require the use of soldering equipment, including soldering replacement of such items as integrated circuits, resistors, capacitors, surface mounted technology devices and connectors.

"Minor Enhancement" means any (a) enhancements to existing features present in the previous issuance of Software; and/or (b) minor additions to or enhancements of functionality

compared to the previous issuance of Software and/or (c) the addition of features to meet the Specifications for Software; and/or (d) minor improvements in the performance characteristics of Software above and beyond that which is defined in the Specifications therefor. For the avoidance of doubt, the failure of the Software to contain features required by the Specifications for such Software shall constitute a Defect (unless such failure is immaterial).

"Minor Repair" means repairs or replacements that do not require the use of soldering equipment, including such repairs to the following items: circuit board assemblies, socketed integrated circuits, connectors, cosmetic parts, mechanical parts, and fuses.

"Non-Warranty Defect" shall have the meaning set forth in Sub-Section 8.6.

"PacketCable" means the PacketCable Specifications, as published from time to time by CableLabs.

"Person" means any individual or entity.

"Prices" or "Pricing" means the prices for Equipment and Services as set forth in this Agreement and on Exhibit B – Prices.

"Pricing Factors" shall have the meaning set forth in Section 6.5.

"Proprietary Information" shall have the meaning set forth in Section 22.1.

"Purchase Order" means a document issued by a Purchaser pursuant to Section 5.1, requesting that Seller sell and deliver Equipment and/or Services in accordance with this Agreement.

"Purchaser" and "Purchasers" means TWC and any Affiliates which issue any Purchase Order as permitted by this Agreement.

"Qualified" means an item of Equipment that complies with the version of DOCSIS or PacketCable, as applicable, specified in the Specifications and/or Documentation for such Product.

"Related Party" means any parent, affiliate, subsidiary, officer, or employee of TWC, a Purchaser, or Seller, as the case may be and as the context requires.

"Renewal Term" shall have the meaning set forth in Section 20.1.

"Replacement Grace Period" shall have the meaning set forth in Sub-Section 8.5.3.

"RMA" shall have the meaning set forth in Sub-Section 7.5.4.

"Section" means the text contained within an Article that is preceded by a reference to the Article number and paragraph number (e.g., 10.1, 10.2, etc.) and contains all Sub-Sections preceded by such Section number (e.g., 10.1.1, 10.1.2, etc.).

"Security" means the devices and mechanisms within the Equipment designed to protect Purchasers' Systems and services from unauthorized access.

"Security Compromise" means the existence of a condition within the Equipment or Software that allows a defeat of Security, other than devices and mechanisms mandated by the version of DOCSIS or PacketCable under which Equipment was Qualified.

"Services" means the installation, training, support, warranty, maintenance, repair, and all other services to be provided by Seller to Purchasers under this Agreement.

"Software" means the software programs and firmware, including third-party software programs and firmware, to be provided by Seller pursuant to this Agreement (including the software described in Exhibit B – Equipment and Specifications), including all Minor Enhancements and Major Enhancements provided by Seller under this Agreement, and further including, in each case, all modifications, releases and enhancements thereto.

"Specifications" means (i) DOCSIS, (ii) PacketCable, and (iii) all electrical, functional, physical, component performance, system performance, compatibility, design characteristics, features, operational and technical criteria or other requirements of the Equipment (a) set forth on Exhibit A – Equipment and Specifications, including without limitation compliance with the industry standards and obtaining the industry certifications listed in Exhibit A – Equipment and Specifications, and (b) set forth as requirements in representations or warranties or applicable covenants in this Agreement. The term "Specifications" shall be automatically amended from time to time to reflect any changes thereto mutually agreed upon by Seller and TWC in writing in connection with any Equipment modification made pursuant to Section 3.2 of this Agreement.

"Subscriber" means any customer to whom a Purchaser has agreed or offered to provide services for the distribution or transmission of information or programming in digital format.

"Sub-Section" means the text contained within a sub-paragraph of a Section preceded by a reference to the Article number, followed by the paragraph number, followed by the sub-paragraph number (e.g., 10.1.1, 10.1.2, etc.).

"Support Services" shall have the meaning set forth in Article 10.

"Surge Failure" means a Failure of an item of Equipment due to a power surge or fluctuation (excluding direct lightning strikes) in an amount or magnitude below the surge limitations of the Equipment set forth in the Specifications.

"System" means the system owned or operated by a Purchaser through which the Purchaser provides services to Subscribers.

"System Data" shall have the meaning set forth in Section 8.15.

"Term" shall have the meaning set forth in Section 20.1.

"Traps" means any software routines or hardware components designed by Seller or a third-party software vendor to permit unauthorized access, to disable or erase software, hardware or data, or to perform any other such actions that will have the effect of materially impeding the normal and expected operation of the Software.

"TWC Related Entity" shall have the meaning set forth in Section 14.6.1.

"TWC Responsible Affiliate" means those TWC Affiliates whose business and affairs are managed by TWC, as opposed to BHN and BHN Responsible Affiliates.

"TWC Vendor" shall have the meaning set forth in Section 14.6.2.

"Virus" means a set of computer instructions that are designed to contaminate the Software, permit unauthorized access, consume computer resources, or modify, destroy, record or transmit data or programming without the intent or permission of the user.

"Warranty Period" shall mean, with respect to a particular item of Equipment, the period during which the Initial Warranty Period and/or an Extended Warranty Period is in effect.

1.2 Defined Terms. For all purposes of this Agreement, except as otherwise expressly provided or unless the context otherwise requires: (a) the terms defined herein include the plural as well as the singular and vice-versa; (b) words importing gender include all genders; (c) any reference to an "Exhibit", a "Schedule", an "Attachment", an "Article", a "Section" or a "Sub-Section" refers to an Exhibit, a Schedule, an Attachment, an Article, a Section or a Sub-Section, as the case may be, of this Agreement; (d) the Exhibits or Attachments hereto form part of this Agreement; (e) all references to this Agreement and the words "herein", "hereof", "hereto" and "hereunder" and other words of similar import refer to this Agreement as a whole and not to any particular Exhibit, Schedule, Attachment, Article, Section, Sub-Section or other subdivision; and (f) the words "including," "included" and "includes" means inclusion without limitation.

2. DELIVERABLES SCHEDULE

Seller, at Seller's sole cost and expense, shall deliver to TWC Equipment that complies with the Specifications, commencing as of the Effective Date or, if later, as of the delivery dates set forth in Exhibit A – Equipment and Specifications. Seller shall promptly correct all Defects discovered during the qualification process described in Section 3.1.

3. QUALIFICATION; MODIFICATIONS

3.1 Qualification of Equipment. Any model of Equipment that Seller desires to make available to Purchasers under this Agreement must be submitted to TWC for qualification pursuant to TWC's qualification process, as it may be amended from time to time and provided to Seller (the "TWC Qualification Process"). Seller shall not sell any model of Equipment to a Purchaser other than to TWC itself prior to the model successfully completing the TWC Qualification Process, which successful completion must be confirmed by TWC and shall be deemed "Acceptance" for purposes of this Agreement.

3.2 Modifications Required or Contemplated by Law. Seller shall provide TWC with notice of any pending or effective change in any Law that would result or has resulted in any Equipment previously delivered or any Equipment to be delivered under this Agreement to fail to

comply with any Law. Such notice shall be provided by Seller as soon as practicable, and in any event within not more than [**] days after Seller becomes aware of such change in Law. As soon as practicable, but in no event later than [**] days from Seller becoming aware of any such change in Law, Seller shall provide to TWC a written proposal setting forth (a) an analysis of changes required or contemplated by such Laws that may be made to Equipment that has not been shipped, and if required or contemplated by such Laws, that has been shipped, in order to cause the Equipment to so comply, (b) an itemization of the costs that would be incurred by Seller in connection with implementing the required or contemplated changes, and (c) the time required to effect such changes.

3.2.1 Costs and Procedures for Changes. Seller's costs and charges for effecting required or contemplated changes pursuant to Section 3.2 above shall be reasonable in relation to the effort and expense involved. TWC may, at its option, accept or reject Seller's proposal(s). If TWC accepts Seller's proposal, Seller shall effect the changes in the Equipment in accordance with the proposal, the Specifications for the Equipment shall be amended as appropriate and such modifications and changes to the Equipment shall be subject to all applicable provisions of this Agreement. If either TWC or Seller elects not to implement a change required by Law, then the other Party shall have the right to terminate this Agreement (either in its entirety or as to additional Equipment purchases only) by delivering written notice to the other Party no later than [**] days after receipt of Seller's proposal. Such termination shall be effective as of the later of (a) the date such written notice of termination is given, and (b) the date on which the change required by Law becomes effective.

3.2.2 Acceptance Testing of Modified Equipment. With respect to any modifications to the Equipment made by Seller pursuant to Section 3.2.1, the provisions of Section 3.1 shall apply to such Equipment as so modified.

3.3 End of Life. During the term of this Agreement, Seller may, at its sole discretion, develop improvements to the Equipment including those that are designed to mitigate obsolete components or improve manufacturability of the Equipment. So long as such improvements do not (a) effect any change in Specifications or the form, fit or functionality of the Equipment or cause the Equipment to fail to comply with Specifications, (b) constitute Enhancements to the Equipment which are covered by Support Services, or (c) cause any adverse effect on TWC's or any Purchaser's System operations or otherwise cause TWC or any Purchaser to incur any additional expense, Seller may cease to manufacture the then-current version of a model of the Equipment ("End of Life"), provided that Seller first gives TWC at least [**] months' prior written notice of its intent to End of Life the then-current version of the Equipment (except in such cases where the ability to provide such [**] months' prior written notice is not within Seller's control). Following an End of Life, Seller shall make the improved version of the Equipment available for purchase by Purchasers under the same terms and conditions that were applicable to the prior version of the Equipment, except that Seller may adjust the Pricing for the improved version of the Equipment. In such case, the increase in Pricing must be commercially reasonable and must reasonably reflect the value of the improved version of the Equipment. Notwithstanding anything herein to the contrary, Seller agrees that Seller shall not End of Life any item of Equipment prior to [**] years following the Effective Date of this Agreement or, in the case of Equipment which is added to Exhibit A – Equipment and Specifications after the Effective Date of this Agreement, prior to [**] years from the date such Equipment is added to

Exhibit A – Equipment and Specifications. In the event that Seller determines to End of Life a version of the Equipment, Seller shall continue to offer support and maintenance for such End of Life version, on the same terms and conditions set forth within this Agreement.

3.4 Lab Equipment. The lab equipment provided by Seller to TWC, currently located in [**], shall remain on loan with TWC solely for lab use and testing purposes, [**], until such time as TWC, in its sole discretion, chooses to terminate each such arrangement. Effective as of the Effective Date, (i) such Equipment shall be deemed to have been provided by Seller pursuant to this Agreement and shall be subject to the terms and conditions of this Agreement, including without limitation the indemnity set forth in Section 14.1, and (ii) that certain Evaluation Agreement between the Parties dated as of April 18, 2012 shall be terminated.

4. NO EXCLUSIVITY

Seller shall not have an exclusive privilege to sell or otherwise provide Purchasers equipment and services comparable to the Equipment and Services, and Purchasers may contract with other manufacturers and suppliers for the procurement of equipment and services comparable to the Equipment and Services. Similarly, Seller may contract and/or do business with other companies for the sale of Equipment and Services.

5. PURCHASE ORDERS

5.1 Forecast; Issuance of Purchase Orders. On a monthly basis, TWC will provide to Seller a non-binding rolling [**]-day forecast (each, a "Forecast"), which shall identify the Purchasers' Equipment requirements for each calendar month during the period of the Forecast, setting forth the Equipment model, quantity and expected configuration; provided, however, that TWC in its sole discretion may cause BHN to issue a separate forecast for Equipment requirements of BHN and the BHN Responsible Affiliates. Purchasers may from time to time issue Purchase Orders to Seller for Equipment and/or Services (except that a Purchase Order need not be issued for in-warranty repair Services).

5.2 Contents; No Substitutions. Purchase Orders shall include the following: the identity of the Purchaser; the identity of the Equipment or Service being purchased; the quantity of Equipment and/or Services to be purchased; the Price of the Equipment or Service being purchased; and the requested shipment date for ordered Equipment. Purchase Orders shall not be required to contain delivery destination or carrier instructions, but the delivery destination and carrier instructions shall be provided by the applicable Purchaser to Seller not later than [**] days prior to the requested shipment date. In no event may Seller ship a different model of Equipment to a Purchaser in substitution of the model actually ordered by such Purchaser without such Purchaser's prior written consent.

5.3 Effect of Agreement. The terms of this Agreement shall be deemed incorporated into and made a part of each Purchase Order and amendment thereto. Any terms appearing in any Purchase Orders, any acknowledgment or acceptance of a Purchase Order, or in any invoice, that differ from or are in addition to the terms of this Agreement shall be void.

5.4 Acknowledgment of Purchase Orders. Seller may reject a Purchase Order that complies with Section 5.2 of this Agreement only if (a) the requested Equipment shipment date

does not meet the Lead Time Requirement; (b) Seller determines that it is not likely to be able to ship the ordered Equipment in the quantities ordered by the requested shipment date under circumstances where Purchasers have requested Equipment shipments consisting of more than [**] populated chassis in a single calendar month (in which case Seller may reject a portion of such Purchase Order but only to the extent the quantities ordered for the calendar month exceed the greater of (1) [**] populated chassis, and (2) the corresponding quantities that were forecast by TWC in the first forecast that includes the applicable month; or (c) the Purchase Order is otherwise inconsistent with the terms of this Agreement. Seller shall accept or reject in writing all Purchase Orders within [**] Business Days of receipt of any Purchase Order or amendment thereto. Seller shall be deemed to have accepted Purchase Orders that it has not rejected in writing within such [**] Business Day period. Any rejection of a Purchase Order must set forth the reasons for such rejection in reasonable detail, and any failure of Seller to do so shall be deemed an acceptance of such Purchase Order by Seller hereunder. Any rejection of a Purchase Order under clause (a) or (b) above must offer an alternative shipment date to the applicable Purchaser. Seller shall provide TWC with a monthly summary of all Purchase Order acknowledgments and rejections issued to Purchasers. The Parties shall use reasonable efforts to develop and use an electronic data interchange for purposes of exchanging information in accordance with the preceding sentence. Seller shall meet all shipment commitments calling for delivery within [**] days after the expiration of this Agreement.

5.5 Cancellation of Purchase Orders By Purchaser. A Purchaser may terminate a Purchase Order issued by such Purchaser, in whole or in part, and without any liability to Seller for items not yet delivered, (a) at any time up to the date that is [**] days prior to the requested shipping date and (b) if, other than because of a Force Majeure event for which Seller's performance is excused under Section 18.1.1, Seller fails to ship the Equipment set forth in such Purchase Order within [**] days after the shipment date set forth in the applicable Purchase Order or any alternate shipment date that has been mutually agreed upon by Seller and such Purchaser subsequent to the submission of such Purchase Order (other than as a result of a Purchaser-requested delay) (a "Late Delivery Occurrence"). After termination of a Purchase Order pursuant to this Section 5.5, neither the individual Purchaser nor TWC shall be liable for the cost of Equipment ordered and not yet delivered by Seller under such terminated Purchase Order.

5.6 Deferred Shipment. Each Purchaser shall be entitled to defer shipment and delivery of any Equipment for a period of up to [**] days by notifying Seller no later than [**] days prior to the scheduled date of shipment, in which event Seller shall defer shipment and store such Equipment for such period at no cost to such Purchaser. Upon request from a Purchaser, Seller shall use commercially reasonable efforts to defer shipment and delivery of any Equipment for a period of up to an additional [**] days at no cost to such Purchaser, provided that Seller shall not be required to make such additional deferral to the extent Seller will incur material storage or other costs related to such deferral, unless Purchaser agrees to reimburse Seller for the amount of such costs.

5.7 Account Team. During the Term, Seller shall specify and provide an account team to assist TWC with general questions regarding the purchase and delivery of Equipment and with the administration of this Agreement and Purchase Orders placed hereunder. Seller shall notify TWC of any changes to the individuals specified and assigned to TWC's account team.

6. PRICES; SHIPPING; PAYMENT; PRICE ADJUSTMENTS

6.1 Prices. Except as otherwise provided in this Agreement, Prices for Equipment and Services during the Term shall be as set forth on Exhibit B – Prices. All purchases by TWC and all other Purchasers shall be aggregated for purposes of determining: (a) the level of volume discount that shall apply to any Equipment purchases, if applicable, and (b) any other requirements or incentives based upon the volume or amount of Equipment purchases, if any.

6.2 Taxes; Shipping and Other Charges.

6.2.1 All Prices for Equipment or Services are exclusive of any local, state or federal tax, levy, tariff, sales tax, or fees required by law or any regulatory authority or which are assessable against such Equipment or Services by any U.S. Government Authority, all of which shall be payable by Purchaser to the extent that Purchaser has a direct legal obligation to the tax authority for such tax. To the extent Seller is required to pay any such tax, Seller shall separately itemize such amounts on the invoice and Purchaser shall pay such amounts as provided herein. Purchaser shall timely provide resale certificates, direct pay permit or other exemption documentation to Seller that comply with the requirements of any applicable state taxation laws; provided, however, that if Purchaser fails to deliver such certificates, Seller's sole remedy shall be to invoice Purchaser for any applicable sales tax in accordance with the previous sentence. Such resale certificates, direct pay permits or other exemption documentation shall be issued in the legal name of the Purchaser to whom Seller has sold the Equipment covered thereby and shall include the correct states to which such Equipment will be shipped by Seller. Purchaser shall not have any obligation to pay any tax which is not directly imposed on Purchaser, including without limitation, income, franchise, property and gross receipts taxes imposed on Seller's net income, net worth, property or revenue. Without limiting the generality of the foregoing, Seller accepts any and all withholdings that Purchaser may be obligated to make, pursuant to Laws, from payments to Seller under this Agreement. In addition, Seller shall be responsible for any taxes, duties, fees, charges, import costs or other costs charged or assessed by any foreign (as to the United States) Governmental Authority or associated with importing the Equipment into the United States.

6.2.2 All Prices for Equipment are [**]. Prices include all charges for packaging and crating the Equipment for shipment. Seller shall be responsible for the cost of loading and shipment to the specified destination using standard ground freight and a carrier selected by Seller. Seller shall ship the Equipment in accordance with Purchaser's shipment instructions specified in each Purchase Order or otherwise provided to Seller. Seller shall at all times be responsible for obtaining any relevant export/import licenses and regulatory approvals for the sale or importation of Equipment into the United States.

6.3 Invoices; Partial Shipments. Seller may issue invoices for Equipment on or after the date of Delivery to a Purchaser. Either Party may request a partial shipment, which request may be approved or disapproved by the other Party in advance, and if such partial shipment is approved and made, Seller shall be permitted to invoice the Purchaser for the partial shipment. Any requests for a partial shipment by Purchaser that would defer shipment and delivery of any Equipment shall comply with Section 5.6. Invoices for Services may be issued on or after the completion of such Services, except for invoices for Extended Warranty Contracts, which shall be issued prior to the commencement of such Extended Warranty Contracts.

6.4 Payment. Purchasers shall pay the purchase Price for Equipment and Services ordered hereunder within [**] days after the date of Seller's invoice, which invoice shall not be issued by Seller prior to the date of Delivery of the particular Equipment or [**] days prior to the commencement of any Extended Warranty Contracts and purchases of Support Services, as applicable. Seller shall provide Purchasers with reasonable supporting documentation concerning any disputed invoices within [**] days after Purchaser provides notification of the dispute to Seller. Such Purchaser shall pay Seller for such invoice within [**] days following the resolution of any such dispute. Nothing in this Section shall be construed as a basis for withholding payment of any portion of an invoice that is not disputed in good faith. Payment of an invoice shall not be considered AQL Acceptance of Equipment.

6.5 [**].

6.6 Competitive Pricing. [**].

7. TITLE, ASSUMPTION OF RISK AND DELIVERY ERRORS

7.1 Title and Risk of Loss or Damage. Seller shall convey good title, free from any lien, claim or encumbrance, to all tangible hardware items of the Equipment shipped by Seller under this Agreement. "Delivery" shall occur upon delivery of the Equipment to the Purchaser. Title to tangible hardware of the Equipment shall pass at the time of Delivery. Any loss or damage to Equipment prior to Delivery shall be at Seller's risk. The Party discovering such loss or damage shall promptly notify the other Party.

7.2 Late Delivery.

7.2.1 Liquidated Damages. If a Late Delivery Occurrence (as defined in Section 5.5, taking into account any relevant grace period and carve-outs) occurs with respect to any Equipment ordered by a Purchaser pursuant to any Purchase Order that Seller has accepted, then Seller shall pay to the applicable Purchaser, as liquidated damages, for each such unit of Equipment, an amount equal to [**], as defined in the applicable Purchase Order, per week (or portion thereof on a pro-rata basis) of delay, but not to exceed aggregate liquidated damages equal to [**]. The provisions of this Section 7.2.1 shall only apply to the extent the Equipment included in the applicable Purchase Order was included in the first Forecast provided by TWC as set forth in Section 5.1 of this Agreement that includes the month in question. For example, assume that on [**] TWC provides a forecast that calls for the purchase of [**] units of Equipment during [**]. Assume further than on [**], TWC provides a forecast that increases the units of Equipment to be purchased during [**] to [**] units and that TWC places a Purchase Order for the purchase of [**] units of Equipment with a requested Delivery date in [**]. Should there be a Late Delivery Occurrence for the entirety of the Delivery to be made in [**], Seller would only be responsible for late delivery payments under this Section for the [**] units of Equipment that were specified in the first monthly Forecast that included [**]. This Section 7.2.1 shall not apply to quantities in excess of [**] units of Equipment per month during the first [**] days after the Effective Date.

7.2.2 Order of Delivery. For purposes of determining the amount of liquidated damages for late delivery to be made by Seller hereunder, all Equipment shall be deemed to be delivered in the order of their respective requested shipment dates as set forth in the Purchase Orders, regardless of the Purchaser to whom or the destination to which the Equipment is shipped. Accordingly, Equipment with the earliest requested shipment date as set forth in the Purchase Orders must be delivered (or will be deemed delivered for purposes of calculating liquidated damages for Late Delivery Occurrences) prior to Equipment with a later requested shipment date.

7.2.3 Termination. This Section sets forth the Purchasers' sole remedy with respect to Equipment that is the subject of a Late Delivery Occurrence but which are ultimately Delivered to and accepted by Purchasers. Notwithstanding the foregoing, nothing in this Section shall affect a Purchaser's right to terminate any Purchase Order pursuant to Section 5.5 if there is a Late Delivery Occurrence in which case Seller shall pay only the liquidated damages for the Late Delivery Occurrence which have accrued through the date of such termination. Each Purchaser shall have the right to pursue any other remedies available to it at law or in equity with respect to Equipment with a requested shipment date after the date of such termination.

7.3 Complete Units. Where this Agreement calls for shipment of units of an item of Equipment, it shall be deemed to mean complete Equipment units that are inclusive of all components. For example, Equipment purchased by Purchasers under this Agreement may not be operational unless Seller has also supplied certain other Equipment components. Failure by Seller to properly deliver on a timely basis all components necessary for the operation of the ordered Equipment (other than where such failure is the fault of TWC or Purchasers), shall be deemed to be a failure to deliver the ordered Equipment for purposes of this Article until such time as such Equipment and related components have been properly delivered. Such failure shall apply, for any Purchaser, only to that quantity of Equipment units as to which the failure to deliver necessary related components has occurred.

7.4 Quality Assurance. As soon as reasonably possible following the Effective Date, Seller shall establish and maintain a program of quality assurance procedures as required to produce Equipment with performance and reliability characteristics as good as or better than those specified in this Agreement. Such program shall be considered Proprietary Information under Section 22.1 hereof, subject to TWC's review, and shall include, with respect to Equipment:

(a) Periodic random testing of Equipment to monitor and ensure production quality. TWC may participate in such periodic testing for compliance with the Specifications.

(b) Test procedures and inspection methods aimed at maintaining low rates for the shipment of Defective Equipment.

(c) Records of all tests and inspections of the Equipment conducted by or at the request of Seller pursuant to this Section 7.4 and detailed records of the results of all such tests and inspections (e.g., any certifications obtained for the Equipment, and results of all parametric tests). Seller shall make its records of the results of tests and inspections available to TWC upon TWC's request.

(d) Procedures for qualifying Seller's vendors and/or subcontractors.

(e) Configuration control aimed at providing continuity in form, fit, and function of the Equipment, and traceability relative to changes in design, materials, and manufacturing processes.

(f) An Engineering Change Notice ("ECN") control system with (1) all ECNs for each item of Equipment subsequent to the first production of such Equipment with reasonably sufficient information to describe the nature of the change and (2) a matrix showing the compatibility or lack of compatibility of any item of Equipment with all other Equipment and with any third party hardware and software in the operating environment for the Equipment that exists immediately prior to the change.

(g) Electrostatic discharge and surge protection plans.

(h) Dry runs of repair processes and tracking procedures.

(i) A method for collecting and documenting Failure data and action taken to repair Equipment returned for repair, in or out of warranty, as a result of a Defect. Seller shall provide TWC with [**] written reports concerning such Failure, return and repair data and actions that Seller takes. TWC may conduct its own tests from time to time, and if TWC determines that there are variances from the Specifications, Seller shall perform verification tests to confirm TWC's test results.

(j) Methods for bench testing Equipment returned for repair and classification into failure categories.

(k) Seller's key staffing and facilities during design, development and initial production to insure program continuity and quality.

7.5 Inspection and Acceptance of Equipment.

7.5.1 Development of AQL Testing Procedures. Within a reasonable time after execution of this Agreement, but in any event prior to commencement of volume manufacture of any item of Equipment, Seller shall (a) develop a list of test equipment and standard test procedures that Seller shall use for acceptance quality level ("AQL") testing and (b) upon request, supply such list to TWC.

7.5.2 Factory Testing by Seller. Seller shall conduct AQL testing on each shipment of Equipment before delivery to a Purchaser, and may conduct such testing upon representative samples to determine whether any Equipment is Defective. Seller shall replace, prior to shipment, each item of Equipment that fails AQL testing. Seller shall keep, for a period of [**] following the conduct of the applicable AQL test, and make available to each Purchaser upon such Purchaser's request, a complete record of the AQL tests performed and a detailed record of the results thereof. A representative of each Purchaser may, upon such Purchaser's

request and expense, witness Seller's AQL tests, but a Purchasers' witnessing of, or failure to witness, such tests shall not be deemed to be either acceptance of, or grounds for refusal to accept, any item of Equipment.

7.5.3 Purchaser AQL Testing. Each Purchaser may perform its own AQL testing upon Equipment delivered to such Purchaser, and shall advise Seller of Defects upon completion of such AQL testing. "AQL Acceptance" of Equipment shall take place on the earlier of (1) a Purchaser's acceptance of such Equipment in accordance with this Sub-Section or (2) a Purchaser's failure to reject such Equipment in accordance with this Sub-Section within [**] days after Purchaser's receipt thereof. Equipment that is returned to Seller shall be exempt from the provisions of Sub-Section 7.2.1 so long as Seller ships replacement Equipment to Purchaser within the time frame required by Sub-Section 7.5.4.

7.5.4 Return of Defective Equipment. Purchaser's return of Defective Equipment shall be directed to the location in the continental United States designated by Seller. Unless Seller either determines (which determination is supported to TWC's reasonable satisfaction) that such Equipment is not Defective Equipment or repairs such Defective Equipment in place such that such Equipment is no longer Defective Equipment, Seller shall provide Purchaser with a return materials authorization ("RMA") prior to the return of such Defective Equipment. Following receipt of the Defective Equipment by Seller, Seller shall repair or replace and ship Equipment to Purchaser within [**] Business Days. Unless Seller requests shipment by a designated carrier and pays such carrier directly, inbound shipping charges shall be prepaid by Purchaser and shall be reimbursed by Seller. Seller shall be responsible for outbound shipping charges.

7.6 Safety Stock. Seller, at its sole expense and risk, shall maintain a minimum inventory of each model of Equipment offered by Seller pursuant to this Agreement in stock and available for shipment to Purchasers equal to the Monthly Inventory Quantity. The term "Monthly Inventory Quantity" means, with respect to each model of Equipment purchased by Purchaser pursuant to this Agreement, the greater of [**].

8. WARRANTIES

8.1 Title. Seller, for itself and its subcontractors, hereby represents and warrants to Purchasers under this Agreement as follows:

(a) Seller has the full right to fulfill its obligations and grant licenses and rights granted herein.

(b) To Seller's knowledge as of the Effective Date, the Equipment, and a Purchaser's normal use and operation thereof, and the Services do not infringe any third party's IP Rights.

(c) To Seller's knowledge as of the Effective Date, there are no claims or threatened claims asserting that the Equipment, or a Purchaser's use thereof, or Services infringe or violate any third party's IP Rights.

(d) As of the Effective Date, Seller is not aware, to its knowledge, of any facts upon which a colorable Claim for infringement of a third party's IP Rights relating to the Equipment could be based.

(e) Seller has not previously granted and shall not grant any rights in the Equipment to any third party that conflict with the rights granted herein to a Purchaser.

8.2 Performance Warranties. Seller hereby represents, warrants and covenants to Purchasers under this Agreement that:

(a) All Equipment shall: (1) conform to and function in conformance with the Specifications therefor; (2) be free from Defects in materials and workmanship, and (3) be Qualified at the time of Delivery to Purchasers. All Equipment shipped in fulfillment of a Purchase Order placed by a Purchaser shall be new, unless otherwise requested by Purchaser.

(b) All Services shall be performed in a good and workmanlike manner, in accordance with commercially reasonable standards, and in conformance with the Specifications therefor, if any.

8.3 Initial Warranty Period. The warranties set forth in Sub-Sections 8.2(a) and (b) shall apply for the period beginning on the date of Delivery of the Equipment, or completion and acceptance of Services, as the case may be, and shall extend for a period of [**] months thereafter (the "Initial Warranty Period"); provided, however, that the Initial Warranty Period for any repaired or replacement Equipment shall commence on the date of receipt of such Equipment and shall end upon the expiration of the remaining Initial Warranty Period for the Equipment replaced thereby.

8.4 Extended Warranty Contract. Purchasers may purchase an extended warranty contract from Seller or Seller's authorized third party provider ("Extended Warranty Contract") which shall extend the warranty period for the hardware portion of an item of Equipment for a period of [**] (the "Extended Warranty Period") by issuing a Purchase Order to Seller or, at Seller's option, an authorized third party provider designated by Seller in writing, prior to the expiration of the Initial Warranty Period or the Extended Warranty Period then in effect. The Price of the Extended Warranty Contract shall be as set forth in Exhibit B – Prices. Notwithstanding anything herein to the contrary, Seller shall remain ultimately responsible to the Purchasers for the performance of all obligations that are to be performed for the benefit of Purchasers during the Warranty Period, including without limitation the payment of any liquidated damages pursuant to this Article 8, notwithstanding the fact that warranty services are provided by, or that the Extended Warranty Contract has been issued by, Seller's authorized third party provider. Notwithstanding anything herein to the contrary, the Extended Warranty Period shall apply only with respect to the hardware portion of the Equipment to which the Extended Warranty Contract applies, and not to any Software within such Equipment. The Software within the Equipment shall be eligible for coverage under Support Services as described in Section 10.2. If a Purchaser wishes to purchase an Extended Warranty Contract for a particular item of Equipment, the Purchaser must also arrange for the Software within such item of Equipment to be covered by Support Services during the Extended Warranty Period. For clarity, a Purchaser need not purchase an Extended Warranty Contract for a particular item of Equipment

in order for the Software within such Equipment to be eligible for and receive coverage under the Support Services. Notwithstanding anything herein to the contrary, Seller may decline to offer an Extended Warranty Period and/or Support Services with respect to any model of Equipment [**] years after such model of Equipment has reached End of Life; provided, however, that Seller shall honor the remaining term of any Extended Warranty Periods and Support Services agreements that are in effect as of the date that is [**] years after the End of Life for such model becomes effective.

8.5 Warranty Repair or Replacement.

8.5.1 Repair and Replacement. Subject to Section 8.6, Purchasers may, after notifying Seller orally or in writing (which may include by e-mail) of a Defect within the Warranty Period and, unless Seller either determines (which determination is supported to TWC's reasonable satisfaction) that such Defect does not exist or repairs such Defect in place, return to Seller, with a valid RMA which shall be provided by Seller in writing (which may include by e-mail), Equipment not conforming to the warranties set forth in this Article. Such written notice shall if reasonably possible specify the Defect with reasonable particularity so as to enable Seller to perform troubleshooting and inspection to identify the cause of the Defect. In the case of a defective module, card or component within an item of Equipment, Purchasers may (and upon Seller's request shall) return only the defective module, card or component, which module, card or component shall be treated in the same manner as the Equipment for purposes of this Article 8. Seller shall, at Seller's expense, either repair, or at Seller's option, replace, the returned Defective Equipment with Equipment that complies with the Specifications. Seller shall use commercially reasonable efforts to deliver such repaired or replacement Equipment to the applicable Purchaser within [**] Business Days after the Defective item arrives at Seller's (or its designated third party servicer's) repair facility located in the continental United States. Unless Seller requests shipment by a designated carrier and pays such carrier directly, [**]. Seller shall be responsible for outbound shipping charges. Title to returned items that are replaced shall pass to Seller upon Seller's receipt, and title to replacement items shall pass to Purchasers upon Purchasers' receipt. Seller shall provide TWC, on a [**] basis, with data on repairs and replacements conducted by Seller on Equipment purchased under this Agreement. In addition, Seller shall establish a process to identify and report to Purchasers items of Equipment that are returned more than [**] times for Defects within the Warranty Period. Replacement Equipment provided to Purchasers hereunder may be new Equipment or repaired or refurbished Equipment with performance equivalent to new Equipment; provided, however, no Equipment provided by Seller to Purchasers hereunder shall have been returned to Seller more than [**] times for Defects of any nature.

8.5.2 Services. Purchasers shall have the right to give notice to Seller within the Warranty Period of any Services not conforming to the warranties set forth in this Article and to require that Seller, at Seller's expense, take such actions as are required to cause such Services to conform. Seller shall take such actions and bring the Services into conformity with the warranties set forth in this Article within [**] days of receipt of Purchaser's notice of nonconformity.

8.5.3 Liquidated Damages. If Seller fails to repair or replace a module, card, component or item of Equipment, as required by Sub-Section 8.5.1 within the time period

specified therein plus an additional [**] Business Days' grace period (the "Replacement Grace Period"), Seller shall pay to the Purchaser that returned such module, card, component or Equipment for repair or replacement (i) [**] of such module, card, component or Equipment, plus, if applicable, (ii) [**] of any other module, card or component of the unit of Equipment from which the defective module, card, component was removed, if such other module, card or other component is unable to function in accordance with its Specifications due to the removal of the defective module, card or component (collectively, the modules, cards or components or the unit of Equipment referenced in clauses (i) and (ii) are referred to hereinafter as the "Non-Functioning Equipment"), as liquidated damages, for each day after the Replacement Grace Period through and including the date on which Purchaser receives the repaired or replacement module, card, component or Equipment, but not to exceed aggregate liquidated damages equal to [**] of the Non-Functioning Equipment with respect to any single return of any single module, card, component or item of Equipment. Payments to be made pursuant to this Sub-Section shall be the sole and exclusive remedy of Purchasers with respect to Seller's late repair or replacement of returned module, card, component or Equipment. Notwithstanding the foregoing, nothing in this Sub-Section shall affect a Purchaser's right to terminate this Agreement pursuant to Section 20.2.1, and TWC and each Purchaser shall retain the right to pursue any other rights and remedies available under this Agreement or by operation of Law with respect to such termination.

8.5.4 Multiple Returns. Other than instances where "no failure" is found by Seller, if any module, card, component or item of Equipment is returned to Seller three times for Defects (whether or not the same or different Defects) within the Warranty Period, Seller shall not have the option of repairing and returning such item of Equipment to such Purchaser (as provided under Section 8.5.1) and, instead, must provide Purchaser with replacement Equipment that complies with the Specifications and take title to the returned item.

8.6 Non-Warranty Defects. The warranties set forth in this Article shall not apply where (a) any Defect results from misuse, negligence, accident, unauthorized modification, installation other than in accordance with written guidelines to be provided by Seller, improper operation, maintenance, repair, transport, handling, storage or other similar occurrence (in each case after the passing of title to the applicable Purchaser and in each case by a party other than Seller or its authorized agents), (b) the original identification markings on the Equipment have been defaced, altered, or removed by a party other than Seller or its authorized agents, (c) there is physical damage or failure due to abuse, tampering, accident, exposure to the elements or other treatment beyond the reasonable limits of normal use for the Equipment, (d) improper testing or installation of the Equipment (in each case by a party other than Seller or its authorized agents), (e) a Force Majeure Event, or (f) any software downloaded onto the Equipment (other than any Software supplied or approved by Seller) (any of the foregoing, a "Non-Warranty Defect"). If any Equipment returned by a Purchaser for repair or replacement contains a Non-Warranty Defect, then Seller shall contact Purchaser to obtain Purchaser's direction either for return of the Equipment without repair or for repair of the Equipment at the rates specified in Exhibit B – Prices. The Purchaser shall bear the expense and risk of returning such Equipment units to itself. Seller shall use the same method of shipment for such Equipment units as was used by the Purchaser to initially deliver the units to Seller.

8.7 Additional Remedy for Excessive Failures and Extreme Failures.

8.7.1 Additional Remedy for Excessive Failures. If, for any Purchaser, during any calendar year, the Field Failure rate for any single model or item of any module, card, component or Equipment that is within the Warranty Period at the time of the Field Failure exceeds [**] but is less than or equal to [**] (an "Excessive Failure"), then Seller shall pay such Purchaser, as liquidated damages, an amount equal to (i) [**] of any such unit of such module, card, component or Equipment that experienced a Field Failure in such calendar year, plus, if applicable, (ii) [**] of any other module, card or component of the unit of Equipment from which the defective module, card or component was removed, if such other module, card or component is unable to function in accordance with its Specifications due to the removal of the defective module, card or component. After receipt of notice from TWC or the applicable Purchaser requesting payment, Seller shall calculate the amount of any such payments following the conclusion of each calendar year and pay to the applicable Purchasers such amounts within [**] days thereafter.

8.7.2 Additional Remedy for Extreme Failures. If, for any Purchaser, during any calendar year, the Field Failure rate for any single model or item of any module, card, component or Equipment that is within the Warranty Period at the time of the Field Failure exceeds [**] (an "Extreme Failure"), then Seller shall pay such Purchaser, as liquidated damages, an amount equal to (i) [**] of any such unit of such module, card, component or Equipment that experienced a Field Failure in such calendar year, plus, if applicable, (ii) [**] of any other module, card or component of the unit of Equipment from which the defective module, card or component was removed, if such module, card or other component is unable to function in accordance with its Specifications due to the removal of the defective module, card or component. For clarity, if, for any Purchaser, during any calendar year, the Field Failure rate for any model or item of installed Equipment that is still in the Initial Warranty Period exceeds [**], the Purchaser shall be entitled to the remedy set forth under this Section 8.7.2, but the Purchaser shall not also be entitled to the remedy under Section 8.7.1. After receipt of notice from TWC or the applicable Purchaser requesting payment, Seller shall calculate the amount of any such payments following the conclusion of each calendar year and pay to the applicable Purchasers such amounts within [**] days thereafter.

8.7.3 Minimum Deployment. Notwithstanding anything herein to the contrary, this Section 8.7 shall not take effect for a given module, card, component or Equipment until such time as TWC and the Purchasers have installed and in placed in operation not less than [**] separate cards (including channel and all other cards within the Equipment).

8.7.4 Remedies. Payments to be made pursuant to this Section 8.7 shall be the sole and exclusive remedy of Purchasers with respect to Excessive Failures and Extreme Failures. Notwithstanding the foregoing, nothing in this Sub-Section shall affect a Purchaser's right (i) to require Seller to timely repair or replace Defective Equipment, including Defective Equipment that is the subject of an Excessive Failure or Extreme Failure, in accordance with Section 8.5 and to otherwise comply with the terms and conditions of this Agreement and Exhibit E – Support Services Addendum that apply with respect to the Defect, and/or (ii) to terminate this Agreement pursuant to Section 20.2.1 if there has been a material breach, and TWC and each Purchaser shall retain the right to pursue any other rights and remedies available under this Agreement or by operation of Law with respect to such termination.

8.8 Calculation of Failure Rates. For purposes of determining the Failure rates as required pursuant to this Article, the number of units of the modules, cards, components or Equipment within the Warranty Period during the period under consideration shall be the average of the number of such units of the modules, cards, components or Equipment as of the first day of each month in the applicable calendar year.

8.9 Adjustments for Failure Conditions. If there is a Failure or other Failure condition requiring remedy as set forth in Section 8.7, then in addition to any other remedies set forth herein, Seller shall ship to the affected Purchaser, at such Purchaser's request, spare Equipment (or modules, cards or components in the case of Failures of modules, cards or components) equal to an amount requested by such Purchaser, not to exceed [**]% of the quantity shipped to the Purchaser (both separately in the case of modules, cards or components and within units of Equipment) in the previous [**] months. After Seller remedies any such Failure conditions, Seller shall invoice the applicable Purchaser for the spare units, and the spare quantities invoiced shall either be returned unused by the applicable Purchaser for credit against such invoice or retained and purchased by Purchaser.

8.10 Advance Replacement.

8.10.1 Advance Replacement Program. Upon request and purchase by Purchaser, Seller shall establish and maintain for Purchasers an advance replacement program for Defective Equipment pursuant to which Seller shall, within [**] hours of receipt of a Purchaser's notification of a Defective module, card, component or Equipment in accordance with this Agreement, ship, at Seller's sole expense using next day delivery, replacement module, card, component or Equipment for the Defective Equipment to Purchaser. For any Defective Equipment that is modular in nature, Seller shall have the right to replace defective modules, cards or components in the Equipment as appropriate, rather than replace the entire assembly of the Defective Equipment. Such program shall apply on a Purchaser-by-Purchaser and on a unit-by-unit basis, as elected and purchased [**] by TWC or the applicable Purchaser, and the cost of such program shall be as set forth on Exhibit B – Prices.

8.10.2 Return Procedures. Unless Seller either determines (which determination is supported to TWC's reasonable satisfaction) that such Defect does not exist or repairs such Defect in place, Seller shall provide Purchaser with an RMA for a module, card, component or Equipment to be replaced under the advance replacement program. Purchaser shall be invoiced for the Price of the replacement Equipment, module, card or component if the Defective Equipment, module, card component is not shipped to Seller within [**] days of receipt of the replacement module, card, component or Equipment. Unless Seller requests shipment by a designated carrier and pays such carrier directly, inbound shipping charges shall be prepaid by Purchaser and shall be reimbursed by Seller. Seller shall be responsible for outbound shipping charges. Title to returned module, card, component or Equipment shall pass to Seller upon Seller's receipt, and title to replacement module, card, component or Equipment shall pass to Purchaser upon Purchaser's receipt. Replacement module, card, component or Equipment, provided to Purchasers hereunder may be new or refurbished module, card, component or Equipment, with performance equivalent to new module, card, component or Equipment,; provided, however, no module, card, component or Equipment, provided by Seller to Purchasers hereunder shall have been returned to Seller more than [**] times for Defects of any nature.

8.11 Non-Warranty Repairs and Maintenance, Technical Assistance and Spare Parts. During the Term of this Agreement, and (a) for [**] years after the last manufacture of Equipment, or (b) until the expiration of the last Warranty Period which is in effect hereunder, whichever occurs last, Seller shall make available to each Purchaser of Equipment that has not materially defaulted in performance of its obligations under this Section the following:

8.11.1 Repair Information and Training. [**], Seller shall provide each Purchaser with all information reasonably necessary for in-house repair of Equipment. Each such Purchaser must sign a nondisclosure and confidentiality agreement containing standard and customary provisions with respect to the disclosure and use of such information prior to the receipt of such information. During 2013 and 2014, Seller shall offer an aggregate of up to a total of [**] days of training classes at sites to be determined by TWC to provide training in troubleshooting and repair of Equipment on dates agreed upon by the Parties. Such training shall be provided [**]. Upon the request of any Purchaser, Seller shall offer additional training classes pursuant to Seller's standard terms and conditions.

8.11.2 Provision of Spare Parts. At a price to be agreed upon by the Parties at the time of supply (which price shall in all circumstances be commercially reasonable and reflective of charges made within the industry for the provision of comparable materials), Seller shall make available all spare parts, tools, accessories, and replacements thereof that are reasonably necessary for repair of Equipment. All spare parts and replacements shipped by Seller shall perform according to the requirements of Specifications.

8.11.3 Non-Warranty Repairs. If requested by a Purchaser, Seller shall repair or replace defective or damaged Equipment (or modules, cards or components in the case of defective or damaged modules, cards or components) not under warranty at commercially reasonable charges that are reflective of charges made within the industry for the provision of comparable services; provided, however, that such Equipment, module, card or component is in a condition reasonably capable of repair (e.g., not disassembled or otherwise destroyed beyond reasonable repair).

8.11.4 Discontinuation of Services. Seller may, after the expiration of the period described in Section 8.11, discontinue the Services set forth in Section 8.11, in whole or in part; provided that:

(a) Seller notifies TWC [**] in advance of Seller's intent to discontinue such Services.

(b) Seller provides Purchasers a reasonable opportunity to purchase sufficient quantities of spare parts that are unique or proprietary to Seller and which TWC reasonably deems necessary to maintain and support Equipment. Seller promptly shall notify Purchasers if Seller or its suppliers intend to discontinue components necessary for manufacture of spare parts, and thereafter Seller shall provide Purchasers with no less than [**] during which time Purchasers shall be entitled to purchase such spare parts from Seller.

(c) Seller gives Purchasers an opportunity to purchase, from time to time, any special or custom test equipment needed for maintenance or repair of the Equipment, at Seller's current prices for such equipment, subject to availability.

8.12 CableLabs Specifications. Seller shall make commercially reasonable efforts to provide Equipment that complies in all material respects with DOCSIS and PacketCable standards. If at any time Seller fails to cause Products to comply with then-existing DOCSIS or PacketCable standards, then TWC may cancel all existing Purchase Orders and refuse to accept further Delivery of Products.

8.13 Technical Support. Seller shall make available to each Purchaser the opportunity to purchase for a fee Extended Warranty Contracts as set forth in Section 8.4 and Support Services as set forth in Exhibit E – Support Services Addendum. The "Coverage Period" for each item of Equipment is the period the Equipment is within the Warranty Period and such further period as a Purchaser has purchased Support Services. Seller shall specify and provide a support team for TWC during the Coverage Period, that includes at a minimum [**]. Seller shall notify TWC of any changes to the individuals specified and assigned to TWC's support team.

8.14 Monthly Reports. During the Coverage Period, Seller shall provide TWC with monthly reports in a format and containing such information relating to the Equipment submitted for repair or replacement as TWC shall reasonably specify.

8.15 System Data. Seller shall not, either during or after the Term, through access it may have to a Purchaser's System or through the Equipment, access, gather and/or retain any data that relates to a Purchaser's System or Subscribers, including personally identifiable Subscriber information or any other Subscriber data, collected by, generated by or stored in or through any item of Equipment ("System Data") and shall not take any action, or allow any third party to take any action, that would enable a third party to access, gather, or retain any such System Data for any purpose; provided, however, that the foregoing is not intended to prohibit Seller from gathering and retaining data relating to the frequency and causes of Failures of the Equipment for purposes of enabling Seller to comply with its warranty obligations under this Agreement and for purposes of determining future desirable modifications to the Equipment to include on Seller's product roadmap for the Equipment (collectively, the "Equipment Performance Data"). Seller acknowledges that all System Data (excluding the Equipment Performance Data) is the Proprietary Information of TWC or the applicable Purchaser and that TWC or the applicable Purchaser is the exclusive owner thereof.

8.16 Security Compromise. During the term of this Agreement, and for a period of [**] years thereafter (or if earlier, until [**] years after End of Life with respect to any particular model of the Equipment), if, while the affected Equipment is within the Initial Warranty Period or the affected Software is under Support Services and Purchaser is using a supported version of Software, a Security Compromise occurs that permits the unauthorized access to a Purchaser's System, then the Parties jointly shall develop a counter-measures program to remedy such Security Compromise, which program shall be implemented at Seller's sole expense. Notwithstanding the foregoing, to the extent a Security Compromise arises out of the acts or omissions of a Purchaser or any of Purchaser's employees, consultants, agents and/or subcontractors or any Purchaser's failure to implement any security patch available from Seller,

the above-referenced counter-measure program shall be implemented at Purchaser's sole expense, and further, Seller shall be reasonably compensated on a time and materials basis for its services in developing the counter-measures program.

8.17 Limitation of Warranties by Seller**. EXCEPT FOR THE EXPRESS WARRANTIES SET FORTH IN ARTICLE 8 OF THIS AGREEMENT, SELLER MAKES NO OTHER WARRANTIES REGARDING THE OPERATION OR PERFORMANCE OF THE EQUIPMENT, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT.**

9. TRAINING

9.1 Initial Equipment Training. During 2013 and 2014, Seller shall provide a total of [**] days of on-site, live training or such other method of training (web-based, remote, etc.) as mutually agreed by the Parties to train Purchasers' installation, operational and support personnel. Such [**] days of training shall be provided [**] to the Purchasers and will include CMTS admin, CLI, Video QAM and/or such other information and matters mutually agreed by the Parties. Upon receipt of TWC's training request, Seller and TWC will mutually agree on the schedule for each such training session. Seller shall use commercially reasonable efforts to meet TWC's request with respect to the scheduling of such training. Upon request from Seller, TWC will provide an estimate of the number of personnel to be trained by location and by function (engineering, operations, NOC, etc.). The [**] days of [**] training will terminate upon the completion of the [**] day of training or on December 31, 2014, whichever occurs first. Additional training sessions shall be provided pursuant to Section 9.2.

9.2 Additional Equipment Training. Seller shall provide additional training sessions as may be requested by a Purchaser from time to time at such Purchaser's expense at the rates set forth on Exhibit B – Prices.

9.3 Training Materials. Seller shall provide a reasonable number of copies of all training materials used by Seller, and Purchasers shall have the right to copy and use all such training materials supplied by Seller solely for the internal use only by such Purchaser and for the training of additional Purchaser personnel. Such material shall be deemed confidential information of the Seller.

10. SUPPORT SERVICES

Upon TWC's request, Seller shall make available for purchase and provide TWC and/or the Purchasers with and perform the support services for the Software as described in and in accordance with Exhibit E – Support Services Addendum (the "Support Services"). Seller shall continue to provide the Support Services so long as the Purchaser continues to pay the undisputed fees specified in this Agreement, as set forth in Exhibit B – Prices, and Seller may suspend Support Services if the Purchaser fails to pay such undisputed fees, provided that Seller must first provide the Purchaser written notice of such failure and the intended suspension pursuant to this Section and the Purchaser must have failed to cure such failure within [**] days after the receipt of such notice.

11. OWNERSHIP OF INTELLECTUAL PROPERTY RIGHTS

Each Party shall retain ownership of all of its pre-existing IP Rights, and each Party shall own all IP Rights with respect to any technology developed exclusively by such Party and included in any Specification, Equipment or other materials provided to the other hereunder. Subject to any rights or licenses granted pursuant to this Agreement, all of such Proprietary Information shall be received, held and used in accordance with the provisions of Article 22.

12. SOFTWARE

12.1 Software License. Seller hereby grants to each Purchaser a limited, world-wide, non-exclusive, irrevocable (except as set forth in Section 12.2), royalty-free license for the life of the Equipment, under all of its applicable IP Rights only for use by Purchasers and Subscribers (in accordance with Purchaser's standard terms and conditions that are consistent with the terms and conditions contained in this Agreement), the Software that is provided to such Purchaser hereunder, including without limitation any modifications, revisions or enhancements provided to such Purchaser. Such license shall be limited to the use of the Software by Purchasers only in connection with the use of the Equipment. Purchasers may transfer Software as permitted pursuant to Section 26.4 or in connection with a transfer of the Equipment hardware to any subsequent third party purchaser of such Equipment who acquires such Equipment in connection with either (i) a purchase or other acquisition of all or any portion of a Purchaser's System in which the Equipment has been deployed (whether by purchase or conveyance of assets or stock, merger, consolidation or other business reorganization), or (ii) a disposition of surplus Equipment that was originally purchased for deployment and not for resale by the Purchaser, provided that such third party purchaser agrees in a writing to be bound by the terms of this Agreement regarding ownership, use, and restrictions on use, of the Software; provided further that, before a Purchaser may make such a disposition, it shall first offer Seller the opportunity to repurchase the Equipment upon the same terms to be offered to such third party and Seller shall have [**] Business Days to accept such offer. Each Purchaser may make a reasonable number of copies of the Software and use such copies for Downloading Software modifications, releases and enhancements and for backup and archival purposes. No other license agreement for the same subject matter, executed by a Purchaser contemporaneously with, or purporting to become effective upon opening the delivery wrapper, shall alter, modify or amend the terms of the licenses granted pursuant to this Section. Purchasers may, at any time, terminate a Software license upon [**] days prior notice to Seller. Upon expiration or termination of a Software license, Purchaser shall return to Seller or destroy all copies of the Software for which such license has been terminated.

12.2 Title to Software; Restrictions. Except as set forth in this Agreement, Seller and/or Seller's licensors shall retain all rights and title in the Software. Except as expressly permitted by this Agreement, the Purchasers may not (a) modify, alter, adapt, or create derivative works based on the Software, nor reverse engineer, decompile, translate, disassemble, or otherwise attempt to recover the source code of the Software, (b) use the Software to develop a product that is competitive with the Equipment or the business of Seller, or (c) disclose the results of any performance tests or qualitative analysis on the Software to any third party without the prior written consent of Seller. In the event of any breach by Purchasers, which is incapable of cure, or if capable of cure has not been cured within [**] days after written notice from Seller, Seller may immediately terminate the license granted pursuant to Section 12.1 that is the subject of such breach.

12.3 Software Traps. Seller represents, warrants and covenants that, to Seller's knowledge, no portion of the Software as delivered shall contain any Virus or Traps. Prior to the shipment of any Software to a Purchaser, (a) Seller shall use commercially reasonable efforts to detect and screen out any Virus through the use of one or more current virus detection programs, and (b) if applicable, Seller shall make reasonable due inquiry of any third party software vendor to confirm that the Software as delivered does not contain any Traps. IF SELLER FAILS TO USE COMMERCIALLY REASONABLE EFFORTS TO DETECT A VIRUS OR IF SELLER FAILS TO PROVIDE PROMPT NOTICE TO ANY PURCHASER OF ANY SUCH TRAPS KNOWN TO OR DETECTED BY SELLER, AND SUCH FAILURE RESULTS IN A FAILURE OF OPERATIONS CAUSED BY SUCH VIRUS OR TRAPS, THEN SELLER SHALL BE LIABLE FOR ALL DAMAGES, WHETHER DIRECT, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES, INCLUDING LOST INCOME OR LOST REVENUE RESULTING FROM SUCH FAILURE OF OPERATION CAUSED BY SUCH VIRUS OR TRAPS.

12.4 Interface Information. From time to time at the request of TWC, Seller shall promptly disclose to TWC (subject to Seller's confidentiality obligations to third parties and TWC's confidentiality obligations under this Agreement) all Equipment external interface specifications, APIs, protocols and other tangible interface information not defined or otherwise provided by TWC that TWC or a third party manufacturer would reasonably require to have TWC's head-end and other System equipment conform to such interfaces for the sole purpose of being interoperable with the Equipment ("Interface Information"). All Interface Information shall sufficiently describe the details of the external interfaces not defined or otherwise provided by TWC to the Equipment in order to allow TWC and its third party manufacturer to understand such interfaces for the sole purpose of being interoperable with the Equipment. Seller hereby grants to the Purchasers a world-wide, non-exclusive, perpetual, irrevocable (except for a material breach of this Agreement), non-transferable (except as permitted under Section 27.5), royalty-free, fully paid-up license, under any of Seller's IP Rights embodied in the Interface Information, if any, that are necessary to access, copy, disclose, modify and create derivative works directly from such Interface Information for the sole purpose of maintaining interoperability of TWC's head-end and other System equipment with the Equipment in order to use the Equipment. During the Term, upon TWC's request, Seller shall provide technical support and consultation to assist TWC in understanding and applying the Interface Information. Such technical support and consultation shall be provided at Seller's then-current, standard consulting rates. Except for the express licenses granted in this Agreement, there are no other rights or licenses to any IP Rights conveyed under this Agreement by reason of implication, estoppel or otherwise.

13. TRADE NAMES AND TRADEMARKS

13.1 Branding of Equipment. Seller's brand name may appear on each item of Equipment. Once placed on an item of Equipment, Purchasers shall not remove Seller's trademarks or product identification, if any, from an item of Equipment without Seller's prior consent.

13.2 Rights in Trademarks. TWC and all Purchasers shall not in any manner represent that any of them has any rights in or to Seller's trade name and trademark. Seller shall not in any manner represent that it has any rights in or to the trade name and trademark "Time Warner Cable" or any other trade name or trademark used by TWC or any Purchaser to identify such Purchaser's business operations or services. Neither Party shall register or attempt to register any such trade names or trademarks of the other Party under any Law, and shall not at any time do or cause to be done any act or thing impairing the distinctiveness of such trade names or trademarks or any part of the other Party's interest therein whether or not they are registered.

13.3 Use of Seller Trademark. Purchasers may use Seller's trademark "Casa Systems" in the context of describing the Equipment to be provided to Purchasers under this Agreement in accordance with the written trademark guidelines provide by Seller.

14. IP RIGHTS INDEMNIFICATION

14.1 Indemnification by Seller. If any claim, suit, action or proceeding (a "Claim") is brought by a third party against TWC, any Purchaser or any of their Related Parties on the basis of an allegation that the Equipment (including Software), or the use, manufacture, import, service, support, sale or distribution thereof, or the provision or receipt of Services infringes or violates an IP Right of such third party enforceable in the United States, Seller shall: (a) at Seller's expense, defend or, subject to TWC's consent, which shall not be unreasonably withheld, settle such Claim, and (b) pay any and all any judgments, assessments, deficiencies, settlement amounts, fines, expenses (including court costs and reasonable attorneys' fees) (collectively, "Liabilities") awarded against TWC, the Purchaser or any Related Parties to the extent relating to or arising out of such Claim.

14.2 Procedures. In the event of a Claim, TWC or Purchaser, as Indemnified Party, and Seller, as Indemnifying Party, shall follow the procedures set forth in Section 15.2.

14.3 Infringing Equipment. If any Equipment provided by Seller under this Agreement becomes, or in Seller's reasonable opinion is likely to become, the subject of a Claim under this Article, or if as a result of such Claim, or the settlement thereof, the production, use, license, sale, marketing or transfer of the Equipment is prohibited or enjoined, Seller may, at its sole expense, at its option, do one or more of the following: (a) obtain for Purchasers the right to use the infringing Equipment without any additional cost to Purchasers, (b) modify the infringing Equipment so that it becomes non-infringing, while remaining in compliance with the Specifications in all material respects, subject to TWC's technical approval, or (c) replace the Equipment with a non-infringing product that performs substantially the same functions in substantially the same manner, while remaining in compliance with the Specifications in all respects so as to permit the installation and use of such Equipment in Purchaser's Systems utilizing the Equipment. If none of the remedies set forth in clauses (a), (b) or (c) are reasonably practicable, then Seller shall have the right, at Seller's sole discretion, to remove such Equipment from this Agreement and require Purchasers to return such Equipment to Seller, and in such event Seller shall refund to such Purchasers the original purchase price paid to Seller for such Equipment, less depreciation based on an [**] straight-line assumed useful life, plus the unearned portion of the fee for any Extended Warranty Contract and of any fee for Support Services that has been paid in advance. The liability of Seller with respect to any and all claims of infringement or violation of any intellectual property rights in connection with the Equipment and Services shall be limited to the specific undertakings contained in this Article 14.

14.4 Combinations and Modifications. Notwithstanding any other provision of this Article, Seller shall have no liability for any infringement arising from (a) use of the Equipment in combination with other items, unless (i) such combination is described in or reasonably contemplated by the Specifications, (ii) Seller sold, made, provided, or recommended them all as a combination, or (iii) the combination is consistent with the use of the Equipment for its intended purpose and in a manner consistent with the Specifications and this Agreement, or (b) modification of the Equipment after Delivery, unless Seller or an authorized agent of Seller made or specifically recommended or approved the modification, or the modification constitutes normal repair, replacement or implementation of Seller-provided options, enhancements or repair instructions for the Equipment.

14.5 Termination Right. Notwithstanding any other provision of this Agreement to the contrary, if the use of any Equipment infringes or violates an IP Right of a third party, and the removal of such infringing item would cause the Equipment to fail of its essential purpose, then TWC shall have the right to terminate this Agreement upon [**] days prior notice to Seller, during which [**]-day period Seller shall have the right to exercise any of the actions set forth in clauses (a), (b) and (c) of Section 14.3, in which case TWC shall not have the right to terminate this Agreement. Upon termination pursuant to the foregoing sentence, in addition to all other rights and remedies available at law or in equity, (a) Purchasers shall be entitled to cancel outstanding Purchase Orders without any further liability to Seller, and (b) each Purchaser shall have the right, at such Purchaser's option, to return the affected Equipment to Seller and Seller shall refund to such Purchaser the original purchase price paid to Seller for such Equipment, less any depreciation based on an [**] straight-line assumed useful life, plus the unearned portion of the fee for any Extended Warranty Contract and of any fee for Support Services that has been paid in advance.

14.6 Covenant Not to Sue or Take Adverse Action.

14.6.1 Seller covenants and agrees (on behalf of itself and its parents, affiliates and subsidiaries) not to bring any Claim against TWC, any TWC Affiliate or a Purchaser (collectively, the "TWC Related Entities" and each, a "TWC Related Entity") alleging infringement of any IP Rights (other than trademark rights) owned or controlled by Seller or any of its parents, affiliates, or subsidiaries with respect to the deployment (solely for the use of the TWC Related Entities and their respective Subscribers), use or acquisition of products (including without limitation hardware, software, equipment, systems and solutions) by TWC or any TWC Related Entity (i) prior to the Effective Date, (ii) during the Term of this Agreement, or (iii) during the [**] period after the expiration or termination of this Agreement.

14.6.2 Nothing herein shall limit or restrict Seller's or its affiliates' ability or right to assert any claim of infringement, to seek damages, or to enjoin TWC's or its TWC Related Entities' vendors, for infringement or misappropriation of Seller's or its affiliates', as the case may be, patents or other intellectual property rights; provided, however that, during the period during which Section 14.6.1 is in effect, and for a reasonable period of time, which shall be up to [**] months, as determined by TWC in its sole discretion, after Seller or its affiliates

secures the first of either a final, non-appealable judgment or a final, non-appealable injunction (including without limitation an administrative remedy such as an exclusion order and/or cease and desist order) against a vendor of TWC or its TWC Related Entities, Seller and its affiliates shall, to the full extent of their authority, permit TWC or the TWC Related Entities the opportunity to transition their ongoing supply of the product(s) and/or service(s) that are subject to such judgment or injunction to non-infringing products and services, which transition shall include without limitation the ability to continue to acquire product(s) and/or service(s) from such vendor during such transition period without interference from Seller or its affiliates, and provided further that Seller (on behalf of itself and its parents, affiliates and subsidiaries) shall waive and forever release all claims against any such vendor for damages and/or license fees owed to Seller and its affiliates by such vendor with respect to the provision of products (including without limitation hardware, software, equipment, systems and solutions) to TWC or any TWC Related Entity during the period during which Section 14.6.1 is in effect and through and including such transition period.

14.7 Limitations to Covenant Not to Sue or Take Adverse Action. The waiver and covenant set forth in Section 14.6.1 shall not be applicable:

14.7.1 if, and only to the extent that, TWC or a Purchaser has breached its obligations under Article 22 of this Agreement and such breach, directly or indirectly, results in an infringement of the IP Rights of Seller or any of its Related Parties; or

14.7.2 to any IP Rights developed or acquired by Seller more than [**] after termination or expiration of this Agreement or, if later, the last Warranty Period hereunder; or

14.7.3 to any patent, copyright, trademark or trade secret (other than the Seller Covenant IP, as defined below) owned, controlled or assertable by any third party that through a Change of Control acquires control, directly or indirectly, of Seller after the Effective Date; provided, however, that the covenants in Section 14.6 shall nonetheless run with any assignment or other transfer to such third party or its affiliates of any patent, copyright, trademark or trade secret, and any patent, copyright, or trademark issuing on an application, owned, controlled or assertable by Seller or its affiliates before such Change of Control (collectively, for the purposes of this Section 14.7, "Seller Covenant IP") and shall bind such acquiring entity and its affiliates with respect to such Seller Covenant IP after such Change of Control.

14.8 Divestiture of IP Rights Subject to License. If Seller divests any right, title or interest in or to any IP Rights covered by Section 14.6 and not related to the divestiture of an on-going business to any person or entity (an "IP Rights Divestiture"), then (i) Seller automatically shall be deemed to have granted to TWC and the TWC Related Entities an irrevocable, non-exclusive, royalty-free, fully paid-up, worldwide license to use such IP Rights in connection with their businesses and operations (but not for the purpose of selling products or services to third parties, where such products or services compete with the Equipment or Services hereunder) for so long as the covenants in Section 14.6 remain in effect, and (ii) Seller shall make such IP Rights Divestiture expressly subject to the covenants in Section 14.6 and the license granted in clause (i) above.

14.9 Patent Pools. TWC shall not, and shall cause its TWC Related Entities not to, seek any reduction in fees (or refund of previously paid fees) with respect to IP Rights that are included in an open (i.e., open to potential licensees) patent licensing consortium or pool by reason of the licenses granted under this Agreement.

15. GENERAL INDEMNIFICATION

15.1 Indemnification by Seller. Seller shall defend, indemnify and hold harmless Purchasers and their Related Parties from and against any Claims (other than Claims related to IP Rights, which are governed by Section 14 hereof), and pay any Liabilities awarded against the Purchaser or any Related Parties to the extent relating to or arising out of such Claims, arising out of:

15.1.1 Any negligent act or omission or willful misconduct of Seller or its Related Parties in connection with the performance or non-performance of their obligations hereunder or any breach of any of Seller's representations, warranties, covenants or terms of, or defaults under, this Agreement.

15.1.2 Any Claim by third parties against the Purchasers or any of their Related Parties arising out of:

(a) Seller's relationships with its employees, suppliers, subcontractors, agents, and consultants in the course of its performance under this Agreement;

(b) Seller's design, development, manufacture, testing, production, and storage of the Equipment being provided to Purchasers under this Agreement, including any Security Compromise with respect to any Equipment that results in a Claim against TWC or any other Purchaser by any third party content provider;

(c) Seller's negligent performance of any Services hereunder; or

(d) Damages caused by Defective or unreasonably dangerous Equipment solely caused by Seller.

Nothing in this Section shall be construed to diminish or otherwise limit Seller's obligation to indemnify TWC and Purchasers with respect to a Claim for which TWC and Purchasers are entitled to indemnification pursuant to Article 14.

15.2 Procedure. In the event of a Claim by a third party, with respect to which a Party is entitled to indemnification hereunder, the Party seeking indemnification ("Indemnified Party") shall promptly notify the other Party ("Indemnifying Party") after receipt of notice of such Claim; provided that a delay in or failure by Indemnified Party to provide such notice shall not relieve Indemnifying Party of its obligations under this Article or Article 14, except to the extent that such delay or failure materially prejudices Indemnifying Party's ability to defend such Claim. The Indemnifying Party, at its sole expense, shall promptly assume the defense of such Claim using counsel of its own choosing and reasonably satisfactory to the Indemnified Party and the Indemnified Party shall reasonably cooperate with the Indemnifying Party in the defense of such Claim, including the settlement (subject to the requirements below with respect to

settlement) of the matter on the basis stipulated by the Indemnifying Party (with the Indemnifying Party being responsible for all costs and expenses of such defense and settlement, including the reimbursement of Indemnified Party's reasonable out-of-pocket costs or expenses incurred in providing information and assistance in connection therewith); provided, however, that if a conflict of interest exists vis-a-vis the interests of the Indemnifying Party and the Indemnified Party, or the Indemnifying Party fails to diligently defend the Indemnified Party, the Indemnified Party shall be entitled to defend the Claim with counsel of its own choosing at the expense of, for the account of and at the risk of the Indemnifying Party; provided, however, that the Indemnifying Party shall only be responsible for the expense of a single counsel regardless of the number of Indemnitees. The Indemnified Party shall engage counsel reasonably acceptable to the Indemnifying Party, take reasonable steps to monitor and control the fees and costs of counsel so chosen, and keep the Indemnifying Party reasonably informed of the status of such defense, including any settlement proposals by the claimant. In addition, the Indemnified Party may participate, in its sole discretion, in any Claim under this Article or Article 14 using its own counsel at its own expense. The Indemnifying Party shall not settle any such Claim without first obtaining the Indemnified Party's prior written consent where the settlement of such Claim results in any admission of guilt or liability on the part of the Indemnified Party, imposes any obligation or liability on the Indemnified Party, or has a judicially binding effect on the Indemnified Party (other than monetary liability for which the Indemnified Party is indemnified by the Indemnifying Party), such consent not to be unreasonably withheld.

16. INSURANCE

Seller shall at all times during the Term, at its sole expense, maintain the insurance coverage and otherwise comply with the requirements set forth in Exhibit D – Insurance Requirements.

17. LIMITATION OF LIABILITY

17.1 Limitation on Indirect Damages. EXCEPT (i) AS OTHERWISE SET FORTH IN THOSE SECTIONS OF THIS AGREEMENT CALLING FOR THE PAYMENT OF LIQUIDATED DAMAGES, (ii) AS SET FORTH IN SECTION 12.3, AND (iii) WITH RESPECT TO SELLER'S OBLIGATIONS TO DEFEND, INDEMNIFY AND HOLD HARMLESS TWC AND THE PURCHASERS WITH RESPECT TO THIRD PARTY CLAIMS IN ACCORDANCE WITH ARTICLES 14 AND 15, AND (iv) FOR A PARTY'S GROSSLY NEGLIGENT OR INTENTIONAL BREACH OF ARTICLE 22, SELLER SHALL NOT BE LIABLE TO TWC AND PURCHASERS, AND TWC AND PURCHASERS SHALL NOT BE LIABLE TO SELLER, FOR ANY AMOUNTS REPRESENTING THEIR RESPECTIVE LOSS OF PROFITS, LOSS OF BUSINESS, INDIRECT, SPECIAL, INCIDENTAL, EXEMPLARY, CONSEQUENTIAL, OR PUNITIVE DAMAGES, (EVEN IF PREVIOUSLY APPRISED OF THE POSSIBILITY THEREOF) ARISING FROM THE PERFORMANCE OR NONPERFORMANCE OF THIS AGREEMENT OR ANY ACTS OR OMISSIONS ASSOCIATED THEREWITH OR RELATED TO THE USE OF ANY EQUIPMENT OR SERVICES FURNISHED HEREUNDER, WHETHER THE BASIS OF THE LIABILITY IS BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY), STATUTES, OR ANY OTHER LEGAL THEORY.

17.2 Limitation on Damages. EXCEPT (i) AS OTHERWISE SET FORTH IN THOSE SECTIONS OF THIS AGREEMENT CALLING FOR THE PAYMENT OF LIQUIDATED DAMAGES, (ii) AS SET FORTH IN SECTION 12.3, (iii) WITH RESPECT TO SELLER'S OBLIGATIONS TO DEFEND, INDEMNIFY AND HOLD HARMLESS TWC AND THE PURCHASERS WITH RESPECT TO THIRD PARTY CLAIMS IN ACCORDANCE WITH ARTICLES 14 AND 15, AND (iv) PAYMENT OBLIGATIONS UNDER SECTION 6.4, THE MAXIMUM CUMULATIVE LIABILITY OF SELLER, ON THE ONE HAND, AND TWC AND THE TWC AFFILIATES IN THE AGGREGATE, ON THE OTHER HAND, WITH RESPECT TO ANY SINGLE CLAIM THAT ARISES OUT OF THE SAME EVENT OR SERIES OF RELATED EVENTS ARISING OUT OF OR RELATING TO THIS AGREEMENT, WHETHER BASED UPON WARRANTY, CONTRACT, TORT, OR OTHERWISE, SHALL NOT EXCEED AN AMOUNT EQUAL TO THE GREATER OF (A) ALL AMOUNTS PAID OR PAYABLE BY TWC AND ALL TWC AFFILIATES IN THE AGGREGATE UNDER THIS AGREEMENT DURING THE [**] MONTH PERIOD IMMEDIATELY PRECEDING THE DATE ON WHICH SUCH EVENT OR THE FIRST EVENT IN THE SERIES OF RELATED EVENTS OCCURRED, (OR, IF SUCH EVENT OCCURS (1) DURING THE FIRST YEAR FOLLOWING THE EFFECTIVE DATE, THEN DURING THE [**] MONTH PERIOD IMMEDIATELY FOLLOWING THE EFFECTIVE DATE, OR (2) FOLLOWING THE TERMINATION OF THIS AGREEMENT, THEN DURING THE FINAL [**] MONTH PERIOD IN WHICH THIS AGREEMENT IS IN EFFECT), OR (B) FIVE MILLION DOLLARS ($5,000,000).

17.3 Several Liability of TWC and BHN. TWC and each Affiliate are entitled to purchase Equipment and/or Services in accordance with this Agreement. TWC shall be responsible (subject to the limitations of liability set forth in this Agreement) for the acts or omissions of TWC and each of the TWC Responsible Affiliates as if such acts or omissions were the acts or omissions of TWC. Similarly, BHN shall be responsible (subject to the limitations of liability set forth in this Agreement) for the acts or omissions of BHN and each of the BHN Responsible Affiliates as if such acts or omissions were the acts or omissions of BHN. To the extent that a single legal entity owns operating assets, some of which are managed by TWC and some of which are managed by BHN, the obligations under this Agreement associated with the assets managed by TWC shall be the responsibility of TWC and the operations associated with such assets shall be considered to be the operations of a TWC Responsible Affiliate, and the obligations under this Agreement associated with the assets managed by BHN shall be the responsibility of BHN and the operations associated with such assets shall be considered to be the operations of a BHN Responsible Affiliate. Upon request, TWC, BHN, the TWC Responsible Affiliates and the BHN Responsible Affiliates shall inform Seller as to which TWC Affiliates and assets are owned or managed by TWC and which are owned or managed by BHN. Seller agrees that neither TWC nor any TWC Responsible Affiliate shall be liable for the obligations of BHN or the BHN Responsible Affiliates under this Agreement. Instead, for example, if BHN or a BHN Responsible Affiliate elects to purchase Equipment and/or Services hereunder, and notwithstanding any other provision of this Agreement, Seller shall look only to BHN and such BHN Responsible Affiliate for payment of amounts owed by BHN and BHN Responsible Affiliate under this Agreement and for performance of any other obligations relating to BHN and such BHN Responsible Affiliate under this Agreement. Similarly, Seller agrees that neither BHN nor any BHN Responsible Affiliate shall be liable for the obligations of TWC or the TWC Responsible Affiliates under this Agreement. Instead, for example, if TWC or a TWC

Responsible Affiliate elects to purchase Equipment and/or Services hereunder, and notwithstanding any other provision of this Agreement, Seller shall look only to TWC and such TWC Responsible Affiliate for payment of amounts owed by TWC and such TWC Responsible Affiliate under this Agreement and for performance of any other obligations relating to TWC and such TWC Responsible Affiliate under this Agreement. Notwithstanding the foregoing, neither BHN nor any BHN Responsible Affiliate shall be eligible to purchase Equipment and/or Services under this Agreement, unless and until BHN agrees to the terms of this Agreement in writing by executing an addendum in the form attached hereto as Exhibit C – Affiliate Addendum.

18. FORCE MAJEURE; DISASTER RECOVERY

18.1 Force Majeure. If the performance of this Agreement is delayed or prevented (other than the performance of payment obligations) by reason of Force Majeure, then the provisions of this Article shall apply:

18.1.1 Performance Excused. The Party whose performance is delayed or prevented shall promptly notify the other Party of the event and, except as set forth in Section 18.2, shall be excused from performance to the extent delayed or prevented if (a) such delay or failure arises from any cause or causes beyond the reasonable control of such Party, (b) such Party is without fault in causing such delay or failure, and (c) such delay or failure could not have been prevented by reasonable precautions and cannot reasonably be circumvented by such Party through the use of alternate sources, workaround plans or other means; provided, however, that the Party whose performance is excused shall take reasonable steps to avoid or remove such causes of nonperformance and shall continue to perform whenever and to the extent reasonably possible and provided further that any time for performance set forth in this Agreement shall be extended for a period equal to the period of such delay.

18.1.2 Partial Termination. If it appears that a time for delivery or performance scheduled pursuant to this Agreement shall be extended for more than 60 days, the Party receiving notice under Section 18.1.1 shall have the right to terminate, by notice to the other Party, any portion of this Agreement or of a Purchase Order covering the delayed performance and the obligations and liabilities of the Parties with respect to such portion of the Agreement or Purchase Order shall thereupon terminate, except to the extent that such obligations or rights are intended to survive pursuant to this Agreement.

18.1.3 Complete Termination. If it appears that a time for delivery or performance scheduled pursuant to this Agreement will be extended for more than six months, either Party shall have the right to terminate, by notice to the other Party, this Agreement. Upon termination pursuant to the foregoing sentence, Purchasers shall be entitled to cancel outstanding Purchase Orders without any further liability to Seller with respect thereto, and Seller shall be relieved of all delivery obligations with respect to such cancelled Purchase Orders.

18.2 Disaster Recovery

18.2.1 Seller shall maintain a business continuity/disaster recovery plan ("Disaster Recovery Plan"). Seller shall comply in all material respects with the Disaster Recovery Plan in

the event of a business disaster, including without limitation a Force Majeure event with respect to Seller and/or any of its subcontractors or suppliers covered by the Disaster Recovery Plan. Any performance failure or delay of Seller that is the result of Seller failing to comply (or to cause its subcontractors or suppliers to comply) with the Disaster Recovery Plan (including any failure of Seller to resume or restore, or cause to be resumed or restored, certain business activities by any target timeframe set forth in the Disaster Recovery Plan) shall in no event be excused under Section 18.1 of this Agreement.

18.2.2 Seller shall use commercially reasonable efforts to test appropriate components of the Disaster Recovery Plan at least once every [**] to validate that the Disaster Recovery Plan is operational and effective. Seller shall maintain such records as are reasonably required to document the results of each such test and shall use commercially reasonable efforts to correct any problems identified during each such test. Upon request, Seller shall certify to TWC that the [**] testing has been conducted, which certification shall specify the date or dates upon which such testing was performed, shall provide a summary of the test results with TWC, and shall consider any resulting input from TWC regarding potential improvements. Upon request, Seller shall also confirm to TWC that the Disaster Recovery Plan is current with respect to information that might change over time, such as facilities and addresses, team members and contact information, etc.

18.2.3 Seller shall use commercially reasonable efforts to promptly notify TWC of each disaster that triggers activity under the Disaster Recovery Plan that materially impacts Seller's ability to timely deliver the Equipment or timely perform the Services. Seller shall also provide such assistance as is reasonably requested by TWC to provide reasonable assurances to customers and potential customers of TWC and the Purchasers with respect to the continued delivery of the Equipment and Services provided under this Agreement following a disaster event that impacts the Equipment and Services, including with respect to the Disaster Recovery Plan, Seller's business continuity and disaster recovery ability.

18.2.4 Seller's Disaster Recovery Plan shall be reasonably calculated to provide for the full restoration of all warranty Services and Support Services under this Agreement, which plans and procedures may include the use of a third party contractor. Such restoration shall be made within [**] business days of the occurrence of a Force Majeure event.

19. COMPLIANCE WITH LAWS

19.1 General. Seller shall comply with all Laws in effect at the time of manufacture and Delivery of any Equipment provided hereunder (including procurement of required permits, licenses or certificates), including in connection with its design, manufacturing and Delivery of the Equipment.

19.2 Permits and Licenses. Seller shall obtain and maintain at its own expense all permits and licenses, other than permits or licenses required in connection with the ownership or operation of a Purchaser's facility, required by Law with respect to the Equipment and shall give all notices, pay all fees and comply with all Laws relating to its performance obligations specified herein. Seller shall secure all necessary permissions, approvals, licenses or consents, and pay all amounts due in connection therewith, for any rights not owned and controlled by

Seller necessary for Seller to provide, and for TWC and the Purchasers to use and receive, any Equipment and/or Services. Except as specifically detailed in Exhibit B – Prices, Seller and TWC have agreed that Seller will be financially responsible for all such permissions, approvals, licenses and consents, whether such permissions, approvals, licenses or consents are known or in existence as of the Effective Date or become know or come into existence at any time thereafter.

19.3 Export Control. The Parties shall adhere to the U.S. Export Administration Laws and shall not export or re-export any Confidential Information, technical data, equipment, products, or software received from the other Party, or any direct product of such Confidential Information, technical data, equipment, products, or software, to any person or company who is a legal resident of or is controlled by a legal resident of any proscribed country listed in Section 779.4(f) of the U.S. Export Administration Regulations (as the same may be amended from time to time) or any similar or successor provision, unless properly authorized by the appropriate U.S. Governmental Authority. Seller shall adhere to all applicable international export and U.S. import Laws in Seller's performance of this Agreement.

19.4 Plant and Work Rules. Seller's employees, while on the premises of any Purchaser, shall comply with all plant and work rules and regulations of Purchaser, provided that such rules and regulations have been provided to Seller sufficiently in advance by Purchaser so as to reasonably permit such compliance, including where required by Law, submission of satisfactory clearance from the U.S. Department of Defense and other Governmental Authorities.

19.5 Fair Labor Standards Act. Seller agrees to comply with the requirements of the Fair Labor Standards Act of 1938, as amended, in producing the Equipment to be furnished hereunder. All invoices shall contain substantially the following assurance: "Seller hereby certifies that these goods were purchased in compliance with all applicable requirements of Sections 6, 7, and 12 of the Fair Labor Standards Act of 1938, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof."

19.6 M/WBE Participation. It is the policy of TWC to encourage suppliers to subcontract with certified minority and women-owned business enterprises ("M/WBEs") for products and services rendered to the extent such M/WBEs are available and qualified to perform such subcontracts. TWC shall require certification by city, state, or federal agencies; the National Minority Supplier Development Council and its affiliates; the Women's Enterprise Business National Council; or other generally recognized certifying agencies from all firms claiming to be an M/WBE if and to the extent that Seller subcontracts the performance of any of its obligations under this Agreement to M/WBEs.

19.7 Application to Subcontractors. All provisions of this Article also shall apply to all subcontractors, and substantially similar terms shall be stated in all contracts between Seller and its subcontractors. Seller shall not permit any subcontractor to commence any Services relating to this Agreement until the subcontractor delivers to Seller or TWC evidence of insurance in the amounts and on the terms provided in this Agreement. The foregoing shall in no way diminish Seller's obligation to obtain TWC's prior written consent prior to subcontracting any Services hereunder.

20. TERM AND TERMINATION

20.1 Term. The initial term of this Agreement shall commence upon the Effective Date and expire on the third (3rd) anniversary of the Effective Date ("Initial Term"). Following the Initial Term, the Term of this Agreement shall automatically renew for successive one year periods (each, a "Renewal Term" and the Renewal Term(s), if any, together with the Initial Term, shall be referred to herein as the "Term") unless at least ninety (90) days prior to the date of any such renewal, TWC, in its sole discretion, notifies Seller in writing of its decision not to renew this Agreement. Following the Initial Term and the first two Renewal Terms, the Term of this Agreement shall automatically renew, for successive one year periods (also a "Renewal Term"), unless at least ninety (90) days prior to the date of any such renewal, either party notifies the other in writing of its decision not to renew this Agreement. Seller shall give TWC written notice of the expiration of the Initial Term or any Renewal Term then in effect, as the case may be, not less one hundred and twenty (120) days prior to such expiration.

20.2 Termination of Agreement. In addition to a Party's rights to terminate this Agreement or a Purchase Order as set forth elsewhere in this Agreement, this Agreement and any outstanding Purchase Orders may be terminated upon any of the following events effective upon notice from the terminating Party:

20.2.1 Termination by Either Party. Either Party may terminate this Agreement:

(a) If the other Party makes an assignment for the benefit of creditors.

(b) If voluntary or involuntary proceedings are instituted by or against the other Party under any federal, state, or other bankruptcy or insolvency Laws, and, in the case of proceedings commenced against such other Party, such proceedings are not terminated within 60 days, or a receiver is appointed for such other Party.

(c) If the other Party ceases to function as a going concern, subject to a permitted assignment in accordance with this Agreement.

(d) If the other Party fails to perform any other material provision of this Agreement and does not cure such failure within a period of [**] days after receipt of notice from the non-breaching Party reasonably specifying such failure and stating such non-breaching Party's intention to terminate this Agreement if such failure is not cured. This clause (d) shall not be applicable with respect to breaches committed by a Purchaser that is an Affiliate and, instead, the provisions of Section 20.2.2 shall apply.

20.2.2 Termination by Seller with Respect to a Purchaser that is an Affiliate. Seller may terminate this Agreement with respect to any Purchaser that is an Affiliate only if such Purchaser fails to perform any material provision of this Agreement and does not cure such failure within a period of [**] days after receipt of notice from Seller reasonably specifying such failure and stating its intention to terminate this Agreement with respect to such Purchaser if such failure is not cured. Such termination shall apply only with respect to the Affiliate that is in breach.

20.3 Effect of Termination. Termination of this Agreement shall not affect any Purchaser's right to use the Equipment purchased and paid for hereunder, including without limitation any Software therein, except as provided in Section 12.2.

21. OTHER REPRESENTATIONS AND WARRANTIES

21.1 By TWC. TWC represents and warrants to Seller as follows:

21.1.1 Valid Corporation. TWC is a limited liability company, duly organized, validly existing and in good standing under the Laws of the State of Delaware and has full power and authority as a limited liability company to own and lease its properties and assets and to carry on its business as now being conducted.

21.1.2 Power and Authority. TWC has taken all necessary action required by Law, by TWC's organizational documents, or otherwise to authorize the execution and performance of this Agreement, and the transactions required hereby, and this Agreement is a valid and binding obligation of TWC, enforceable in accordance with its terms, except as may be limited by applicable bankruptcy, insolvency or similar Laws affecting creditors' rights generally or the availability of equitable remedies.

21.1.3 No Violation of Other Agreements. The execution, delivery, and performance of this Agreement does not and will not violate any provision of TWC's organizational documents, any provision of any agreement or commitment to which TWC is a party or which is applicable to TWC, or to its knowledge violate any Law applicable to TWC.

21.1.4 No Consent Required. No consent, order, permit, or other authorization, approval, or similar action is required from any party, court, Governmental Authority, or agency for TWC to enter into and perform its obligations under this Agreement or the transactions contemplated herein.

21.2 By Seller. Seller represents and warrants to TWC as follows:

21.2.1 Valid Corporation. Seller is a corporation duly organized, validly existing, and in good standing under the Laws of the State of Delaware and has full corporate power and authority to own and lease its properties and assets and to carry on its business as now being conducted.

21.2.2 Power and Authority. Seller has full corporate power and authority to carry out the transactions described in this Agreement. Seller has taken all necessary action required by Law, its Certificate or Articles of Incorporation, its Bylaws, or otherwise to authorize the execution and performance of this Agreement, and the transactions required hereby, and this Agreement is a valid and binding obligation of Seller, enforceable in accordance with its terms, except as may be limited by applicable bankruptcy, insolvency or similar Laws affecting creditors' rights generally or the availability of equitable remedies.

21.2.3 No Violation of Other Agreements. The execution, delivery, and performance of this Agreement does not and will not violate any provision of the Certificate or Articles of Incorporation or Bylaws of Seller, any provision of any agreement or commitment to which Seller is a party or which is applicable to Seller, or to its knowledge violate any Law applicable to Seller.

21.2.4 No Consent Required. No consent, order, permit, or other authorization, approval, or similar action is required from any party, court, Governmental Authority, or agency for Seller to enter into and perform its obligations under this Agreement or the transactions contemplated herein.

22. CONFIDENTIALITY AND MEDIA RELEASES

22.1 Proprietary Information. Seller, on the one hand, and TWC and each other Purchaser, on the other hand (but severally as to TWC and each other Purchaser) (each, a "party") for purposes of this Article), agree that any information or data (including information or data received by the disclosing party from a third party and as to which the disclosing party has confidentiality obligations) (a) fixed in a tangible medium and furnished by one to the other under this Agreement and marked as the confidential or proprietary information of the disclosing party, including information relating to the Equipment and Services; (b) otherwise provided or disclosed orally and stated to be confidential or proprietary at the time the information is provided or in a writing which is provided within [**] days thereafter which generally describes such information; (c) relating to the quantity of Equipment ordered by any Purchaser(s) hereunder; (d) relating to the terms and conditions of this Agreement; or (e) relating to any current, former or prospective Subscriber, is, in each case, confidential or proprietary information of the disclosing party (collectively, the "Proprietary Information"), and shall be the subject of no less than reasonable efforts to maintain its secrecy and shall not be used for any purpose other than the purposes of this Agreement or disclosed to anyone other than to the recipient's employees or agents or consultants rendering services related to the subject matter of this Agreement who have entered into an agreement with the receiving party, or are otherwise bound, to hold proprietary information of such nature in trust and confidence under standards at least as rigorous as those provided in this Agreement and who need to use the Proprietary Information for the purposes of this Agreement.

22.2 Exceptions Required by Law. Notwithstanding the provisions of Section 22.1, a party receiving Proprietary Information may disclose such Proprietary Information (a) pursuant to an order or judgment of any court or governmental body, or (b) pursuant to any Law, provided that the disclosing party in the case of either subparagraph (a) or (b) above, gives reasonable notice to the other party in advance of such disclosure, if not prohibited by law, and seeks confidential treatment of such information from the entity to which the disclosure is made and discloses only that information which is legally required to be disclosed.

22.3 Other Exceptions. The restrictions and obligations in Section 22.1 shall not apply with respect to any Proprietary Information, other than personally identifiable information relating to a Subscriber, that the receiving party can demonstrate with written evidence: (a) is or becomes generally available to the public through any means other than a breach by the receiving party of its obligations under this Agreement; (b) is disclosed to the receiving party without an obligation of confidentiality by a third party who has the right to make such disclosure; (c) is developed independently by the receiving party; (d) was rightfully in possession of the receiving party without obligations of confidentiality prior to receipt under this

Agreement; or (e) is required to be disclosed to enforce rights under this Agreement. In addition, either party may disclose the terms of this Agreement to bona fide potential or actual: advisors, consultants, investors, acquirers, lenders, investment bankers or other financial partners in connection with financing or business combination activity, provided that the person or entity to whom the disclosure is made has entered into an agreement with the party making such disclosure, or is otherwise bound, to hold proprietary information of such nature in trust and confidence under standards at least as rigorous as those provided in this Agreement.

22.4 Remedies. Each of the parties acknowledges and agrees that any breach or threatened breach of the obligations set forth in this Article 22 may result in the substantial likelihood of irreparable harm and injury to the owner of the Proprietary Information for which monetary damages alone would be an inadequate remedy, and which damages are difficult to accurately measure, and further agrees that the disclosing party shall have the right to seek injunctive relief upon any violation or threatened violation of the terms of this Agreement, in addition to all other rights and remedies available at law or in equity.

22.5 Return of Proprietary Information. Upon the termination, cancellation or expiration of this Agreement for any reason or upon the reasonable request of the disclosing party, all Proprietary Information, together with any copies that may be authorized herein, shall be returned to the disclosing party or, if requested by the disclosing party, certified destroyed by the receiving party; provided, however, that this Section shall not apply with respect to Proprietary Information which is needed in connection with the use and support of the Equipment.

22.6 Gathering of Statistical and Other Information. TWC shall determine in TWC's sole discretion the scope and method for gathering statistical information, if any, to be collected in connection with the use of the Equipment.

22.7 Publicity and Certain Communications. Subject to Sections 22.2 and 22.3, unless and only to the extent specifically authorized in writing by the other party, which authorization must address both the form and content of any communication, neither Seller nor TWC shall directly or indirectly, initiate or have, and shall not authorize any of its employees or agents to initiate or have, any oral or written communication (whether in the form of news releases, advertising or solicitation materials, or blog or social media postings) with or directed to any person other than the employees or contractors of the parties hereto who have responsibility for the administration or performance of this Agreement (including without limitation the press, the public, Subscribers, the trade, and governmental and quasi-governmental agencies, authorities and instrumentalities) (i) that concerns (a) this Agreement or the negotiation (or other transactions in contemplation of), termination, renewal, non-renewal or expiration of this Agreement or any other prior, then current, or proposed agreement, arrangement or understanding with the other party relating to the distribution of the Equipment, (b) any modification or amendment hereof or thereof, or (c) the provision of the Equipment to TWC; or (ii) that would or could adversely affect relations between the other party, on the one hand, and the other party's customers (including, in the case of TWC, Subscribers) or such agencies, authorities or instrumentalities, on the other hand.

22.8 Residuals. Each of the Parties shall be free to use for any purpose the Residuals (as defined herein) resulting from access to or work with the other Party's Proprietary Information, provided that such party shall maintain the confidentiality of the Proprietary Information as provided herein. The term "Residuals" means information that is in non-tangible form that is unintentionally retained by persons who have had access to the Proprietary Information in the ordinary course of business and in good faith, including ideas, concepts, know-how or techniques contained therein. The parties shall not have any obligation to limit or restrict the assignment of such persons or to pay royalties for any work resulting from the use of Residuals. To the extent any Residuals constitute a trade secret, the owner of the Proprietary Information from which such Residuals are derived hereby grants the party wishing to use the Residual a non-exclusive, royalty-free, perpetual license to such trade secrets to make such use, without notice or accounting, subject, however, to the requirements for maintaining the confidentiality of the underlying Proprietary Information. Nothing in this Section shall be deemed to grant to the other party a license under a party's patent, copyright or trademark rights, nor shall this Section apply to any information learned through reverse engineering, disassembling or decompiling of the Equipment or Software.

23. DOCUMENTATION AND NEW GENERATION EQUIPMENT

23.1 Documentation. Seller shall provide documentation for the Equipment which is compliant with Specifications and the reasonable standards of Seller's industry with respect to content, size, legibility and reproducibility.

23.2 New Generation Equipment. During the term of this Agreement, Seller may use commercially reasonable efforts to develop improved versions of the Equipment (each an "Improvement"). Promptly after Seller develops an Improvement, Seller shall deliver a written notice to TWC notifying TWC of the development of the Improvement and offering to sell to TWC the Equipment with such Improvement upon terms and conditions as may be agreed upon by Seller and TWC. Regardless of whether TWC accepts or rejects any such Seller proposal, TWC shall have the right to purchase the initial Equipment or any subsequent Equipment with an Improvement previously accepted by TWC on the terms and conditions applicable to purchases of the Equipment under this Agreement (including without limitation Section 6.5).

24. SYSTEM LICENSE

To the extent that Seller owns any IP Rights, whether currently existing or hereafter acquired (or is the licensee of any such IP Rights with a right to sublicense such IP Rights without payment of any additional fee or other consideration to the licensor or any third party), and, in either event, such IP Rights are necessary to enable a Subscriber to receive the telecommunication, entertainment, information, programming, applications, data or other services provided by a Purchaser's System only by directly and fully utilizing the functions and features of the Equipment as identified in the Specifications and as provided by Seller to Purchaser when used in the Purchaser's System, Seller hereby grants to each Purchaser a non-exclusive, irrevocable (except for a material breach of this Agreement), perpetual, worldwide, fully-transferable (but only to the extent that the Equipment as delivered by Seller is transferred), royalty-free license to use such IP Rights in connection with the Equipment to receive such telecommunication, entertainment, information, programming, applications, data or other

services provided by a Purchaser's System to its Subscribers. For purposes of clarity, the foregoing license grant shall not apply to any Enhancement for which Seller is entitled to charge a fee pursuant to the terms of this Agreement.

25. LIQUIDATED DAMAGES

TWC and Seller acknowledge that it is impractical and extremely difficult to determine the actual damages or lost revenues that may proximately result from a Party's failure to perform certain obligations under this Agreement. Accordingly, any amounts payable to TWC, Seller or a Purchaser as "liquidated damages" under this Agreement are (a) liquidated damages, and not a penalty, and (b) reasonable and not disproportionate to the presumed damages to TWC, Seller or such Purchaser, as the case may be, in lost revenues or otherwise from a failure by the other to comply with the applicable provisions of this Agreement. Unless specified otherwise in this Agreement, all payments of liquidated damages shall be made in cash, by check or by wire transfer no later than [**] days after receipt of notice from the Party requesting payment.

26. NOTICES

All notices or other communications required under this Agreement shall be in writing, addressed to the applicable Party in accordance with the contact information set forth below or as subsequently changed by a notice provided in compliance with this Section 26, and shall be deemed given: (A) one business day after deposit with an overnight courier, when sent by overnight courier; (B) five days after deposit with the U.S. Postal Service when sent by registered or certified mail, postage prepaid, return receipt requested; or (C) upon actual receipt by the addressee when sent by any other method.

To TWC:	Time Warner Cable Enterprises LLC 60 Columbus Circle New York, New York 10023 Attn: Chief Technology Officer
Copy To:	Time Warner Cable Enterprises LLC 60 Columbus Circle New York, New York 10023 Attn: General Counsel, Legal Department
To Seller:	Casa Systems, Inc. 100 Old River Road Andover, MA 01810 Attn: Legal Department
Copy To:	Casa Systems, Inc. 100 Old River Road Andover, MA 01810 Attn: Jerry Guo

or to such substitute addresses and persons as either party may designate to the other from time to time by written notice in accordance with this Section.

27. GENERAL

27.1 English Language. All documentation, manuals, notices, reports, and correspondence under this Agreement shall be submitted and maintained in the English language and all dollar amounts are in United States Dollars.

27.2 Financial Information. [**].

27.3 Subcontractors. Prior to subcontracting any of its obligations hereunder for the support of Equipment, Seller shall (a) provide to TWC the full legal name, address, contact person, telephone number and facsimile number of such Party, and (b) obtain TWC's consent prior to such subcontracting, which consent shall not be unreasonably withheld or delayed. Such requirement shall not apply to purchases of incidental, standard commercial supplies or raw materials. Seller shall remain solely responsible for the performance of all of its obligations hereunder, notwithstanding the approval by TWC of any subcontractor hereunder.

27.4 Relationship of the Parties. The relationship of Seller and its successors in interest, on the one hand, and TWC, Purchasers and their respective successors in interest, on the other hand, is that of independent contractors, and not one of principal and agent, joint venture or partnership. Neither Seller, on the one hand, nor TWC and Purchasers, on the other hand, shall have any authority to create or assume, in the name or on behalf of the other Party, any obligation, express or implied, nor to act or purport to act as the agent or the legally empowered representative of the other Party for any purpose whatsoever.

27.5 Assignment; Binding Effect. This Agreement shall be binding on and inure to the benefit of the Parties and their respective successors and assigns, but no Party shall have the power to assign this Agreement or any rights or obligations hereunder or under any Purchase Order (including by operation of law or by virtue of a "Change of Control," which for purposes of this Section 27.5 shall be deemed to be an assignment) without the prior written consent of the other Party hereto. Notwithstanding the foregoing, either Party may, without the consent of the other Party, assign its rights and obligations under this Agreement or a Purchase Order to (a) any entity that currently controls, is controlled by or is under common control with such Party (for purposes of this Section only, an "Affiliate") and (b) any successor entity in the event of such Party's transfer of all or substantially all of its assets or stock, merger, spin-off, consolidation, reorganization or other business combination; provided, however, that in any of the foregoing events, to the extent the assignor has incurred obligations prior to the date of such assignment, the assignor shall not be relieved of any of such obligations hereunder except to the extent performed or satisfied by the assignee; and further provided, however, that in no event may Seller assign this Agreement to any "TWC Competitor", as defined herein, without TWC's prior written consent to be granted in TWC's sole discretion. Additionally, notwithstanding the foregoing: (i) the benefits of the performance warranties provided under Article 8 and the indemnities under Article 14 may be enforced by a subsequent owner of the Equipment; and (ii) any Purchaser may assign the benefits of this Agreement which relate to any Equipment previously purchased by such Purchaser or subject to an outstanding Purchase Order submitted

by such Purchaser in connection with a transfer of such Equipment to (A) an Affiliate, or (B) any entity that purchases or otherwise acquires a Purchaser's System (whether by purchase or conveyance of assets or stock, merger, consolidation or other business reorganization) in which the Equipment has been deployed. The purchaser of, or successor to, a Purchaser's business or assets described in the foregoing clause (ii) shall be entitled to buy Equipment for a period of twelve months after the consummation of such transaction on terms and conditions substantially similar to those set forth in this Agreement. In the case of any assignment which is made in accordance with the terms and conditions of this Section, including without limitation an assignment made in connection with a Change in Control, the assigning party shall cause the assignee to accept in writing the assignment and the terms and conditions of this Agreement. "Change in Control" with respect to any Party means the acquisition (whether by purchase or conveyance of assets or stock, merger, consolidation or other business reorganization) by any person or group, whether in one transaction or in a series of related transactions, and whether directly or indirectly, (I) of the power to vote or control the vote of shares or interests in such Party having fifty percent (50%) or more of the total number of votes that may be cast for the election of directors or of such other governing or managing body of such Party, or (II) of fifty percent (50%) or more in fair market value of such Party's assets. "TWC Competitor" means any person or entity, and any person or entity that controls, is controlled by, or is under common control with any other person or entity, that offers (1) any direct broadcast satellite services, (2) any wireline video, television, data or voice services to subscribers, or (3) any wireless video, television, data or voice services to subscribers, in each case in any area where any TWC Related Party holds a cable franchise or otherwise has the right to provide any such services or any similar services. Any purported assignment in violation of this Agreement shall be null and void.

27.6 Severability. If any provision of this Agreement is declared or found to be illegal, unenforceable, or void by a court of law, the Parties shall negotiate in good faith to agree upon a substitute provision that is legal and enforceable and is as nearly as possible consistent with the intentions underlying the original provision. If the remainder of this Agreement is not materially affected by such declaration or finding and is capable of substantial performance, then the remainder shall be enforced to the extent permitted by Law.

27.7 Waivers. No delay or omission by either Party to exercise any right or power will impair any such right or power or be construed to be a waiver thereof. A waiver by any Party of any of the covenants, conditions, or contracts to be performed by the other or any breach thereof shall not be construed to be a waiver of any succeeding breach thereof or of any other covenant, condition, or contract herein contained. No change, waiver, or discharge hereof shall be valid unless in writing and signed by an authorized representative of the Party against which such change, waiver, or discharge is sought to be enforced.

27.8 Remedies. Except as expressly provided otherwise in this Agreement, in addition to any remedies provided in this Agreement, the Parties shall have all remedies provided at law or in equity. The rights and remedies provided in this Agreement or otherwise under Law shall be cumulative and the exercise of any particular right or remedy shall not preclude the exercise of any other rights or remedies in addition to, or as an alternative of, such right or remedy, except as expressly provided otherwise in this Agreement.

27.9 No Third-Party Beneficiaries. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any entity, other than Seller and Purchasers, and their respective successors and permitted assigns, any remedy or claim by reason of this Agreement, and any such remedies or claims shall be for the exclusive benefit of Seller and Purchasers. References in this Agreement to "TWC" only shall not include any other Purchaser. Each Purchaser hereunder other than TWC shall be provided a copy of this Agreement; provided, however, that TWC or BHN, as the case may be, shall ensure that this Agreement is treated as Proprietary Information and shall be responsible for any unauthorized disclosure of this Agreement and/or its contents by such Purchasers.

27.10 Applicable Law; Venue; Jury Waiver. The interpretation, validity and enforcement of this Agreement, and all legal actions brought under or in connection with the subject matter of this Agreement, shall be governed by the law of the State of New York (except that any conflicts-of-law principles of such state that would result in the application of the law of another jurisdiction shall be disregarded). Any legal action brought under or in connection with the subject matter of this Agreement shall be brought only in the United States District Court for the Southern District of New York or, if such court would not have jurisdiction over the matter, then only in a New York State court sitting in the Borough of Manhattan, City of New York. Each Party submits to the exclusive jurisdiction of these courts and agrees not to commence any legal action under or in connection with the subject matter of this Agreement in any other court or forum. Each Party waives any objection to the laying of the venue of any legal action brought under or in connection with the subject matter of this Agreement in the Federal or state courts sitting in the Borough of Manhattan, City of New York, and agrees not to plead or claim in such courts that any such action has been brought in an inconvenient forum. IT IS MUTUALLY AGREED BY AND BETWEEN THE PARTIES THAT THEY EACH WAIVE TRIAL BY JURY IN ANY ACTION, PROCEEDING, OR COUNTERCLAIM BROUGHT BY EITHER OF THEM AGAINST THE OTHER PARTY ON ANY MATTER WHATSOEVER ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS AGREEMENT.

27.11 Time is of the Essence. Time of performance is of the essence in this Agreement and a substantial and material term hereof.

27.12 Expenses. Each of the Parties shall pay its own costs and expenses associated with the execution and performance of this Agreement.

27.13 Survival. The rights and obligations of the Parties set forth in Articles 1, 4, 8, 10, 11, 12, 13, 14, 15, 17, 19, 21, 22, 24, 25, 26 and 27 and Sections 3.4, 6.1, 6.2, 6.4, 7.1, 7.2.3, 9.3, 18.1.1 and 20.3 shall survive the expiration or termination of this Agreement for any reason.

27.14 Exhibits. All references herein to Exhibits are to the Exhibits attached hereto, which shall be incorporated in and constitute a part of this Agreement by such reference. If there is any conflict between the terms of this Agreement and the terms of any Exhibit, the terms of this Agreement shall control. The following is a list of Exhibits to this Agreement:

Exhibit A – Equipment and Specifications

Exhibit B – Prices

Exhibit C – Affiliate Addendum

Exhibit D – Insurance Requirements

Exhibit E – Support Services Addendum

27.15 Entire Agreement. This Agreement, including any Exhibits and documents referred to in this Agreement or attached hereto and each Purchase Order conforming to this Agreement, constitutes the entire and exclusive statement of this Agreement with respect to its subject matter and supersedes any and all oral or written representations, understandings, or agreements relating thereto. Any other terms or conditions included in any quotes, Purchase Orders, acknowledgments, bills of lading, or other documents utilized or exchanged by the Parties shall not be binding unless and only to the extent that a written agreement signed by authorized representatives of the Parties after the Effective Date expresses the intent of the signing Parties to be bound thereby. This Agreement may be modified, supplemented or changed only by an agreement in writing which makes specific reference to this Agreement and which is signed by both the Parties.

27.16 Performance by Affiliates. TWC, at its option, may exercise any of its rights or remedies under this Agreement, and/or perform any of its duties or obligations hereunder, by itself or through any TWC Affiliate in conformity with the terms and conditions of this Agreement.

27.17 Captions. The captions and headings contained herein are for purposes of convenience only and are not a part of this Agreement.

27.18 Construction. This Agreement and the Exhibits hereto have been drafted jointly by the Parties and in the event of any ambiguities in the language hereof, there shall be no inference drawn in favor of or against either Party.

27.19 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same instrument.

[SIGNATURE PAGE FOLLOWS]

The Parties hereto have executed this Agreement as of the Effective Date.

Seller:		**TWC:**	
CASA SYSTEMS, INC.		TIME WARNER CABLE ENTERPRISES LLC	
By:	/s/Gary Hall	By:	/s/Mike Lajoie
Name:	Gary Hall	Name:	Mike Lajoie
Title:	Chief Financial Officer	Title:	Executive Vice President
Date:	November 6, 2013	Date:	October 31, 2013

EXHIBIT A
TO
MASTER PURCHASE AGREEMENT
BETWEEN
TIME WARNER CABLE ENTERPRISES LLC
AND
CASA SYSTEMS INC.

Equipment and Specifications

Data Sheet
March 2010

LINEAGE POWER

Compact Power Line Shelves

Model: J85480S1, L1 – L14

The 1U (1.75") high CPL family of shelves mount in 19-inch wide frames and provide up to 11kW of 48V output power per shelf. There are three or four slots for rectifiers, converters (PEMs). L1 accepts the CP843A full featured Pulsar controller for applications requiring plant control.

- Only 16.81" wide fits inside equipment that is designed into a 19" rack
- Two DC Outputs may be common or split. Each output bus is rated for 100A with two-hole lug landings for 2 AWG wire.
- Either IEC-320 or AMP Mate_N_Lok AC inputs
- Analog, RS485 or dual/redundant I^2C communications.
- Adjustable mounting ears for flush or set back positions.
- Stackable up to 8 high with 32 paralleled power supplies.
- Optional CP843A controller w/display & interactive panel

Rectifier Shelves (AC Input, DC Output)

List	Max Power	# AC Inputs	AC Input Plug	DC Output Bus	Max Rectifier Size	Communications Features		Ordering Codes
						Shelf Controller	Protocol	
1	8kW	4	IEC-320, C13	Common	CP2000	CP843A	Analog, I^2C RS485	CC109143723
4	8kW		IEC-320, C13	Common		No		108994538
6	8kW		AMP Mate_N_Lok	Common				CC109104378
7	11kW		AMP Mate_N_Lok	Split	CP2725		Analog. I^2C	CC109121902
9	8kW		IEC-320, C13	Split	CP2000		Analog. I^2C	CC109137072

PEM Shelves (DC Input, DC Output)

List	Capacity	# DC Inputs	DC Input Plug	DC Output Bus	Max PEM Size	Communications Features		Ordering Codes
						Controller	Protocol	
14	8kW	2	AMP Power-Blade	Split	CP2000	No	Analog, I^2C	CC109124784

Notes:
List 1 shelf allows side access to CP843A Pulsar Controller Outputs.
L7, L9: Split Bus Shelves cannot be paralleled. L1, L4, L6: Up to eight shelves may be paralleled.

Consult the factory for product availability

Casa Systems power rectifier unit provides the surge protection to the Equipment. The maximum surge absorption of the Casa Systems power rectifier is: AC power lines – +/-1.0kV Differential and +/-2.0kV Common mode.

Casa Systems C100G CCAP Technical Specifications

System

2x600 Gbps switching capacity
MPEG switching from any port to any port
12 DOCSIS module slots per system
1~11 Downstreams modules per system
1~11 Upstream modules per system

DOCSIS Features

Full DOCSIS 3.0 compliant
Full EuroDOCSIS 3.0
DOCSIS 3.0 downstream channel bonding up to 64 channels
DOCSIS 3.0 upstream channel bonding up to 64 channels
DOCSIS 3.0 AES encryption/decryption
DOCSIS 3.0 IPv6
DOCSIS 3.0 Multicast
Complete DOCSIS/EuroDOCSIS 1.1 features
DOCSIS/EuroDOCSIS 2.0 A-TDMA (standard)
PacketCable 1.5 compliant
PacketCable MultiMedia (PCMM) 1.0
DSG
L2VPN

IP Features

OSPFv2
IS-IS (IPv4 & IPv6)
RIPv2
BGP (IPv4 & IPv6)
PIM-SM
ICMP snooping
ICMP v2 and v3
Static IP routing
DHCP Relay and option 82
DHCPv6
DHCP prefix delegation
Multiple DHCP servers
Proxy ARP
IP subnet bundling
Multiple default routes
Access Control Lists
MPLS

Management

RS232 serial port (RJ45)
10/100BASE-T management port
Command line interface (CLI)
Telnet
SSH
SNMPv1, v2 & v3
Standard DOCSIS & IETF MIBs
IPDR
Casa Systems Enterprise MIBs
Event logging through Syslog
Electronic mail notification
Resource usage reporting
TACACS+ and RADIUS

DOCSIS QAM Module (DQM)

DS8X4	32 channels, 4 channels/port
DS8X8	64 channels, 8 channels/port
DS8X96	1024 channels
	128 channels/port
QAM modulation	Annex A or B
QAM constellations	64, 128 & 256 QAM
Data rates (DOCSIS)	27 Mbps @ 64 QAM
	38 Mbps @ 256 QAM
Data rates	36 Mbps @ 64 QAM
(EuroDOCSIS)	51 Mbps @ 256 QAM
Frequency range (center)	48 to 1000 MHz
Frequency step size	5 kHz
Channel width	6 to 8 MHz (tunable)
Maximum output/ch	60 dBmV @ 1-ch/port
	56 dBmV @ 2-ch/port
	52 dBmV @ 4-ch/port
	49 dBmV @ 8-ch/port
Output step size	0.1 dB
Output accuracy	± 5ppm
Return loss	50 ~ 870 MHz, 14 dB
	870 ~ 1002 MHz 10 dB

Casa Systems C100G CCAP Technical Specifications

DOCSIS Control and Upstream Module (DCU)

US16X2	32 channels, 2 channels/port 5–65Mhz
US16X4	64 channels, 4 channels/port 5–65Mhz
US16X8	128 channels, 8 channels/port 5–100Mhz
Modulation	QPSK, 8,16,32 & 64 QAM
Data rate/channel	0.32 – 30.72 Mbps
Input range	–4 to 26 dBmV

Switch and Management Modules (SMM)

SMM2X10G	
	Two 10 GigE interfaces
	Eight GigE interfaces
	GigE copper or fiber SFP
	Full line-rate support
SMM8X10G	
	Eight 10 GigE interfaces
	Two GigE interfaces
	GigE copper or fiber SFP
	Full line-rate support

RF I/O Downstream Module (RFD)

Number of ports module	8 ports per module
Connector	F-type, 75 Ω

RF I/O Upstream Module (RFU)

Number of ports module	16 ports per module
Connector	F-type, 75 Ω

Additional Features

Dynamic upstream & downstream load balancing
Spectrum Management
Software-defined MAC domains
Software channel licensing
Ingress cancellation filtering

Mechanical

Form factor	13RU
Height	21 in. / 533 mm
Width	19 in. / 482 mm
Depth	16 in. / 406 mm
Weight	120 lbs (fully loaded)
Mounting high	19 inch, 13 rack unit
Front panel LED	Power & alarm

Environmental

Operating temperature	0° to 50° C
Storage temperature	–40° to 70° C
Operating humidity	5% to 95%, non-cond.
Power requirements (DC)	–40.5 to –60 V (dual)
Power consumption	< 3600 W (nominal)

Regulatory Compliance

Designed to NEBS level 3 requirements

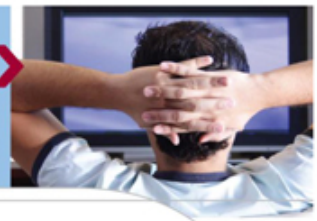
casa systems

Casa Systems, Inc.
100 Old River Road
Suite 100
Andover, MA 01810

Tel: 978.688.6706
Fax: 978.688.6584

info@casa-systems.com
www.casa-systems.com

Casa Systems Downstream DS8X96 CCAP Module



Feature Highlights

Converged Cable Access Platform (CCAP) Functionality
DS8X96 provides the scale and software functionality required to deliver Full CCAP functionality to its C10G CMTS platform by enabling MSOs to immediately deploy DOCSIS, IPTV and digital video over a single RF port and greatly increasing channel density over existing CMTS modules on the market

Superior Channel Density
Industry leading 96 channels per port including 32 unique channels per port of narrowcast and 64 channels of broadcast for a total of 768 channels per module

Channel Bonding
Delivers 256 variable size DOCSIS channels that can be used for bonding

Cost Effectiveness
Industries lowest cost per DOCSIS 3.0 channel for this class of product, delivering an economical solution for high bandwidth multimedia applications

Overview

Casa Systems' downstream DS8x96 module delivers unprecedented density and performance. The DS8x96 module delivers an industry leading 96 channels per port including 32 unique channels per port of narrowcast and 64 channels of broadcast for a total of 768 channels per module. Designed to be deployed today in the carrier class C10G Cable Modem Termination System (CMTS) platform, the DS8x96 module delivers up to eleven primary DS8x96 modules and one protection module, yielding a total combination of over 8000 narrowcast and broadcast channels supported in the downstream direction.

The DS8x96 DOCSIS module is a complete DOCSIS downstream unit that includes DOCSIS packet processing, QoS, DOCSIS downstream MAC, PHY, and RF upconversion. Each downstream QAM channel can be configured to support DOCSIS or MPEG/DVB-C video.

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Casa Systems Downstream DS8X96 CCAP Module

DS8x96 QAM Module

Number of Channels channels/port	768 channels, 96
QAM modulation	Annex A, B or C
QAM constellations	64, 128, & 256 QAM
Data rates (DOCSIS)	27 Mbps @ 64 QAM 38 Mbps @ 256 QAM
Data rates (EuroDOCSIS)	36 Mbps @ 64 QAM 51 Mbps @ 256 QAM
Frequency range (center)	48 to 1000 MHz
Frequency step size	1 Hz
Channel width	6 to 8 MHz (tunable)
Maximum output power (sum total of all channels)	60 dBmV @ 1 ch/port 59 dBmV @ 2 ch/port 58 dBmV @ 4+ ch/port
Output step size	0.1 dB
Output accuracy	± 5ppm
Return loss dB	50 – 870 MHz, 14 870 – 1002 MHz 10 dB
Modulation error rate	43 dB (equalized)
Wideband noise	-73 dBc

Channel Bonding

The DS8x96 has 256 variable size DOCSIS channels that can be used for bonding. These bonded channels can be grouped together, delivering numerous channel configurations and maximum flexibility.

Converged Cable Access Platform (CCAP) Functionality

The CCAP specification calls for improved density and increased functionality and the DS8x96 delivers. The DS8x96 module brings Full CCAP functionality to its C10G CMTS platform by enabling MSOs to immediately deploy DOCSIS, IPTV and digital video over a single RF port and greatly increasing channel density over existing CMTS modules on the market.

Investment Protection

For those MSO's who aren't ready to deploy CCAP right now, the DS8x96 module still delivers superior channel density at a lower cost than its competitors.

When ready, existing C10G customers can seamlessly migrate to CCAP by adding the DS8x96 module without changing any other hardware on the platform. This protects their initial investment in Casa Systems while providing additional capex and opex savings moving forward.

casa systems

Casa Systems, Inc.
100 Old River Road
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Tel: 978.688.6706
Fax: 978.688.6584

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www.casa-systems.com

EXHIBIT B
TO
MASTER PURCHASE AGREEMENT
BETWEEN
TIME WARNER CABLE ENTERPRISES LLC
AND
CASA SYSTEMS INC.

Exhibit B — Prices

Pricing Addendum to Master Purchase Agreement

Pricing Summary

Overview

This **Exhibit B – Prices** is entered into in connection with the Master Purchase Agreement (the "Purchase Agreement") to which it is attached. Capitalized terms used but not otherwise defined in this Exhibit shall have the meanings given them in the Purchase Agreement into which this Exhibit is incorporated by reference. This Exhibit addresses pricing for Equipment and Services.

Pricing Terms Summary

The CASA C100G CMTS is a chassis based solution that houses plug-in modules. The plug-in modules are used to scale downstream and upstream capacity of the C100G. Pricing is set forth in Attachment A – Summary Pricing Table.

C100G COMPONENTS

- C100G Chassis – includes metal frame, fan tray, power supplies, and RF Redundancy kit
- 8x96 Downstream Module ("DS") – has 8 physical RF ports. Each physical RF port is capable of supporting 32 unique channels per port and a shared pool of 64 channels or as an option, each of the 8 ports can support up to 40 unique channels with no shared pool of additional channels.
- 16x4 Upstream Module ("US") – this card has 16 physical RF ports. Each physical RF port can support up to 4 channels per port for a total of 64 upstream channels.
- 8x10G Systems Management Module ("SMM"). The SMM has (8) 10G Ethernet ports and (2) 1GB Ethernet ports. The TWC configuration provides for dual SMM units which provide automatic redundancy switchover in the event of a unit failure.
- SFP – a module that plugs into the SMM ports for interfacing in the external routing network.
- AC Rectifier – provides for AC Power connection to the C100G

Downstream Channel Pricing Methodology

[**].

Upstream Channel Pricing Methodology

The 16x4 upstream modules are capable of supporting 4 channels per port. The 16x4 US module has 16 ports. The maximum capacity of the 16x4 US card is 64 channels.

Video QAM Licensing

Video QAM channels are $[**] per channel. The minimum purchase quantity is [**] QAM channels or $[**].

Video QAM replication (non-unique channel duplication on the 8x96 DS module) are [**].

Warranty, Support Services, Extended Warranty and Advance Replacement

Hardware and Software warranty as described in the Purchase Agreement is included in the Equipment Price for a period of [**] months beginning on the date of Delivery of the Equipment. For clarification, this includes 24/7/365 technical assistance, the Equipment warranty and Support Services for Software.

After the Initial Warranty Period, Support Services (including technical assistance) for the Software portion of the Equipment is available as elected by the Purchaser at a fee equal to [**]% of the original purchase Price of the Equipment supported.

After the Initial Warranty Period, an Extended Warranty Contract for the hardware portion of the Equipment is available as elected by the Purchaser at a fee equal to [**]% of the original purchase Price of the Equipment covered. As elected by Purchaser, Extended Warranty Contracts are required to be purchased on a continuous basis (i.e. no gaps in Extended Warranty coverage) upon conclusion of the Initial Warranty Period.

At any time during which (i) the Equipment to be covered is within the Initial Warranty Period, or (ii) Purchaser has purchased an Extended Warranty Period, as elected by the Purchaser, with respect to the Equipment to be covered, an advance replacement program ([**] return) as described in Section 8.10 of the Purchase Agreement is available at a fee equal to [**]% of the original purchase Price of the Equipment covered.

Fees applicable to the repair or replacement of Equipment that is either out of warranty or that has suffered a Non-Warranty Defect shall be as set forth in Attachment B – Non-Warranty Prices.

Training

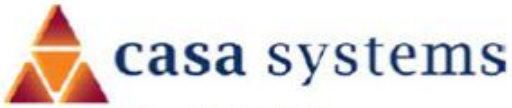
If additional on-site training is required beyond what is stated in the Purchase Agreement, the cost is $[**] per day, plus out-of-pocket expenses, if applicable. Expenses must be in writing and pre-approved by Purchaser.

Attachment A – Summary Pricing Table

Casa Systems, Inc.
100 Old River Road
Andover, MA 01810
978-688-6706

Part Number	Description	TWC Unit Price (USD)
[**]	[**]	[**]
[**]	[**]	[**]
[**]	[**]	[**]
[**]	[**]	[**]
[**]	[**]	[**]
[**]	[**]	[**]
[**]	[**]	[**]
[**]	[**]	[**]
	[**]	

Attachment B – Non-Warranty Prices



100 Old River Road, Unit 100
Andover, MA 01810 USA
Phone: 978-688-6706 Fax: (978) 688-6584
Web: http://casa-systems.com

Time & Material Support Fees:

Part Number	Service Provided	Price
[**]	[**]	[**]
[**]	[**]	[**]
[**]	[**]	[**]
[**]	[**]	[**]

EXHIBIT C
TO
MASTER PURCHASE AGREEMENT
BETWEEN
TIME WARNER CABLE ENTERPRISES LLC
AND
CASA SYSTEMS INC.

Affiliate Addendum

1. **Agreement Reference**. Reference is hereby made to that certain Master Purchase Agreement by and between Time Warner Cable Enterprises LLC ("**TWC**") and Casa Systems, Inc. ("**Seller**"), effective as of _____, 2013 (as amended from time to time by TWC and Seller, the "**Agreement**").

2. **Acceptance of Agreement**. Bright House Networks, LLC ("**BHN**") hereby agrees, for the benefit of Seller, to be bound by the terms and conditions of the Agreement, which are hereby incorporated by reference into this Addendum. BHN hereby makes the same representations and warranties to Seller as TWC makes to Seller pursuant to Section 21.1, subject to the following modifications:

[[Insert changes as required to reflect BHN's form of entity and state of organization.]]

Executed as of the __ day of _____, 20__.

BRIGHT HOUSE NETWORKS, LLC

By: _____
Name: _____
Title: _____

EXHIBIT D
TO
MASTER PURCHASE AGREEMENT
BETWEEN
TIME WARNER CABLE ENTERPRISES LLC
AND
CASA SYSTEMS INC.

Insurance Requirements

Seller shall at all times during the term of this Agreement, at its sole expense, maintain the minimum insurance coverages and limits listed below. The following required minimum coverages and limits may be met by a combination of the primary policy with a follow-form Excess Umbrella Liability Policy.

1. Commercial General Liability Coverage

Coverages: Premises & Operations, Broad Form or Blanket Contractual Liability, Independent Contractors Liability, Products/Completed Operations, Personal Injury and Broad Form Property Damage

Minimum Limits:

Each Occurrence (BI/PD)	$[**]
General Aggregate	$[**]
Products/Completed Operations	$[**]
Medical Expenses (any one person)	$[**]

- TWC must be named as an **Additional Insured** – Use ISO Endorsement CG 2010 or CG 2026 (or equivalent) for *ongoing operations*
- Seller shall maintain *completed operations* coverage for a minimum of [**] years following the completion and acceptance of the work performed by Seller.

2. Business Automobile Liability Coverage

Coverages: Auto Coverage for *non*-owned and hired cars only. Blanket Contractual Coverage.

Minimum Limits:

Each Accident	$[**]	*Combined single limit for bodily*
General Aggregate	$[**]	*injury & property damage*

3. Workers' Compensation Insurance

Coverages and Minimum Limits:

Part I	Workers' Compensation	Statutory Limits
Part II	Employer's Liability	
	Bodily Injury by Accident	$[**]
	Bodily Injury by Disease (Each Employee)	$[**]
	Disease Policy Limit	$[**]

4. Umbrella/Excess Liability Policy (Follow-Form)

Per Occurrence	Amount must be such that when added to primary policy coverage, limits are equal to: $[**]
General Aggregate	$[**]

5. Errors and Omissions (E&O) Insurance

Coverages: Must include cyber liability coverage Minimum Limits:

Professional E&O	$[**]

6. Insurance – General Conditions

a) The certificate holder shall be:

Time Warner Cable Enterprises LLC, its subsidiaries and affiliated companies
7815 Crescent Executive Drive, Charlotte, NC 28217
Attn: Contracts Administrator

b) The certificate must be provided on the industry standard "ACORD" form (or equivalent) upon contract execution and within [**] days of policy renewal.

c) Insurance carriers must have an A.M. Best rating of *at least A-*.

d) The Seller will name "Time Warner Cable Inc., its subsidiaries, affiliated companies, directors, officers, employees and agents" as an Additional Insured on the general liability policy by policy endorsement.

To meet this obligation, the Seller must provide TWC with:

- Certificate of Insurance in accordance with the insurance provisions of the contract and these insurance requirements. The following shall be included in the "Description of Operations" section of the certificate:

  TIME WARNER CABLE INC., ITS SUBSIDIARIES, AFFILIATED COMPANIES, DIRECTORS, OFFICERS, EMPLOYEES AND AGENTS ARE NAMED AS ADDITIONAL INSURED AS THEIR INTEREST MAY APPEAR (ATIMA).

- Additional Insured Endorsement for *ongoing operations* ISO CG 2010, CG 2026 or equivalent.

e) The general liability insurance policy will contain a statement that said policy is *primary* coverage to Time Warner Cable Inc., its subsidiaries, affiliated companies, directors, officers, employees and agents; and that any coverage maintained by Time Warner Cable Inc. is *excess* and *non-contributory* for claims or losses resulting from the negligence of the Seller.

f) The Workers' Compensation policy shall include a waiver of subrogation in favor of Time Warner Cable Inc., its subsidiaries, affiliated companies, directors, officers, employees and agents for claims or losses resulting from the Seller's negligence.

g) The Seller will endeavor to provide TWC at least [**] days prior written notice of any policy cancellation or modification to any policies which reduce such policy coverage and/or limits below the limits set forth in this Exhibit.

h) The cost of any deductible amounts or self-insured retentions contained in any of the insurance policies is to be borne by the Seller without any increase or adjustment to the applicable contract amount.

i) The minimum limits of insurance coverage required by these insurance provisions will in no way limit or diminish the Seller's liability.

j) All of the above conditions will also apply to any subcontracted operations.

EXHIBIT E
TO
MASTER PURCHASE AGREEMENT
BETWEEN
TIME WARNER CABLE ENTERPRISES LLC
AND
CASA SYSTEMS INC.

Support Services Addendum

1. Scope

This **Exhibit E – Support Services Addendum** is entered into in connection with the Master Purchase Agreement (the "Purchase Agreement") to which it is attached. Seller agrees to provide Support Services to TWC and the Purchasers during the Initial Warranty Period and during the Period for which TWC or the Purchasers have purchased Support Services for the Software on the terms and conditions set forth below.

Capitalized terms used but not otherwise defined in this Exhibit shall have the meanings given them in the Purchase Agreement into which this Exhibit is incorporated by reference. Seller shall be liable for all Support Services performed by its subcontractors or agents in the same manner as if Seller had performed the Support Services itself.

2. Technical Support

Support Services include:

2.1 7x24 Call Center Service

Seller will provide twenty-four-hours-a-day, seven days a week, year-round support through Seller Call Centers. Purchasers may contact the Call Center either by phone or by email, provided that Purchasers shall always have the option to contact the Call Center by phone should they choose to do so.

Email: support@casa-systems.com
Telephone (USA): +1.978.699.3045

The Call Center objective is to identify the cause of a defect, problem and/or disturbance with respect to the Equipment and to provide the Purchaser with instructions on how to restore the Equipment back to normal operational condition as soon as practically possible. The defect, problem or disturbance causing the issue may not necessarily be remedied during the initial response.

Relevant data regarding the defect, problem or disturbance reported shall be

provided by the Purchaser upon request from Seller and may also be gathered by Seller through remote connection to the affected Equipment. This data will be recorded in the form of a “Case”. When all relevant data is gathered, Seller will respond with a Trouble Report Acknowledgement and inform the Purchaser of the Case number.

The Call Center service can also be used to answer non-urgent routine questions and queries related to Equipment operation and/or maintenance. Non-urgent questions and queries shall be addressed on a priority basis and will be quickly and competently answered.

All inquiries will result in a Case being opened and the Case will remain open until the issue or question has been fully resolved or answered to the Purchaser’s satisfaction.

2.2 Technical Support System

Seller shall provide a Purchaser accessible Technical Support System from which the Purchaser can download the latest software and technical documentation and open Cases to request problem resolution assistance. Note that a Purchaser can only download and install Seller software provided pursuant to this Exhibit to Equipment that is within the Initial Warranty Period or for which the Purchaser has purchased Support Services.

Seller shall provide a log-in and password to the Seller FTP server and instructions on how to use it. To request log-in access to the Seller Technical Support System, Purchasers may send an email to support@casa-systems.com requesting log-in access to the Seller FTP server and including the email addresses of all technical team contacts authorized to open Cases with Seller.

The ticketing system uses the email address to automatically identify Purchaser and ensure that Purchaser receives the Support Services to which it is entitled. If an unauthorized person sends an email to Seller, Purchaser’s account information will not be automatically identified by Seller’s technical support team, which may result in a delayed or no response from Seller. Additional technical contacts can be added at any time by sending an email to support@casa-systems.com.

2.3 Problem Resolution Process

Seller provides a comprehensive, organized effort to resolve all Purchaser Equipment related issues including:

- Utilization of remote access to the Purchaser Equipment for problem isolation and solution creation,
- Use of a problem replication lab with all the necessary equipment,

- Researching the problem and delivering tested solutions to Purchaser,
- Consultation with the Purchaser regarding a solution implementation plan,
- Repair or replacement of defective hardware per the Purchase Agreement, and
- Providing a tested fix or workaround solution for Software issues.

3. Exclusions

3.1 Subject to Section 8.6 of the Purchase Agreement, the Support Services do not cover Equipment and Software with respect to Non-Warranty Defects.

3.2 Seller shall, at Purchaser's request, assist Purchaser in identifying and solving any Non-Warranty Defects. Subject to Section 8.6 of the Purchase Agreement, Seller's work in relation to any Non-Warranty Defects shall be regarded as a professional services engagement and will be invoiced to Purchaser separately.

3.3 If requested by a Purchaser, out of warranty hardware shall be repaired in accordance with Section 8.11.3 of the Purchase Agreement. Purchaser will receive an invoice for repair work in accordance with the Purchase Agreement, and Purchaser will be responsible for all shipping charges.

4. Service Response Commitments

4.1 In order for Seller to commit to and achieve the service response times set forth herein, Purchaser is required to provide Seller with remote access to the Equipment related to the Case and/or assist Seller in obtaining relevant information related to the Case. Through the Problem Resolution process, Seller will provide professional and workmanlike solutions on how to eliminate Severity Level 1, Severity Level 2 and Severity Level 3 defects (as defined herein) in the Equipment and restore the Equipment to normal operational condition by implementing a temporary solution, if relevant, and then a permanent solution, if necessary.

4.2 Seller agrees to respond to technical problems within the timeframes described in Table 1, depending on the Severity Level of the problem. The Permanent Fix times do not apply to hardware repair or replacement. For faster fix times due to hardware defects, Seller recommends that the Purchaser maintain on-site spares.

For Severity Level 1 problem reports, Seller shall, within a maximum time period of [**], contact the Purchaser by email or phone in order to request all information related to the defect, problem and/or disturbance. During the subsequent response time, Seller will request information from the Purchaser and access the Equipment to gather data necessary in order for Seller to find a temporary or permanent solution and provide the Purchaser with instructions enabling the Purchaser to restore the Equipment back to normal operational condition as soon as practically possible.

For Severity Level 1 problems, instructions enabling Purchaser to restore the Equipment back to normal operational condition shall be given to Purchaser within [**].

If a temporary solution is provided in order to restore the Equipment to normal operational condition, Seller shall subsequently provide a permanent solution within the response times specified In Table 1.

Table 1. Service Response Commitments

SEVERITY LEVEL	SERVICE WINDOW	RESPONSE	TEMPORARY FIX	PERMANENT FIX
1	[**]	[**]	[**]	[**]
2	[**]	[**]	[**]	[**]
3	[**]	[**]	[**]	[**]
4	[**]	[**]	[**]	[**]

Actual restoration time for diagnosed hardware defects will depend on the availability of spares. Seller recommends that the Purchaser establish spares availability to meet restoration time commitments.

The above stated time periods are not additive. The beginning of each time interval for both the Response and for the Temporary or Permanent Fix as stated above is the time that the Purchaser has contacted Seller to report the Error or make the inquiry. The “Service Window” is the time period during which Seller will work to remedy the defect, problem or disturbance.

4.3 Seller shall provide, to each Purchaser whose access to the Software has been subject to a Severity Level 1 problem, service level [**] against Support Services fees or other amounts to be paid by TWC or the Purchasers if Seller has failed to respond to a request for support for a Severity Level 1 problem after the periods specified in Section 4.2 above. For the first [**] after the designated response time, the amount [**] shall be $[**] for each [**] interval, or portion thereof, during which Seller fails to respond. For the [**] after the designated response time, and for each [**] thereafter, the amount [**] shall be $[**] per [**], or portion thereof, during which Seller fails to respond. For example, if Purchaser reports a Severity Level 1 problem at [**], and Seller fails to respond until [**], the Purchaser shall be entitled to a [**] equal to $[**]. If Purchaser reports a Severity Level 1 problem at [**], and Seller fails to respond until [**], the amount of [**] shall be $[**].

4.4 Seller shall provide to each Purchaser whose access to the Software has been subject to a Severity Level 1 problem, a [**] against Support Services fees or other amounts to be paid by TWC or the Purchasers if Seller fails to provide a Temporary or Permanent Fix for that Severity Level 1 problem within the applicable resolution time set forth in the table in Section 4.2 above. Such [**] shall be equal to [**] percent ([**]%) of the monthly Support Services fees under the Purchase Agreement for the month in which the Severity Level 1 problem was first properly reported to Seller for each [**], or portion thereof, by which the Temporary or Permanent Fix times are missed for such Severity Level 1 problem, provided, however, [**] shall be based upon the Support Services fees then paid or payable under the Purchase Agreement for such month plus an amount equal to the Support Services fees that would have been paid for the Software that is within the Initial Warranty Period had such Software not been within the Initial Warranty Period and been covered by Support Services. For example, if a Severity Level 1 problem is reported by Purchaser at [**] and persists without a Temporary or Permanent Fix for [**] after the Severity Level 1 problem is first reported by Purchaser, and if the monthly Support Services fees under the Purchase Agreement for all Purchasers for the month of [**](including fees that would have been paid with respect to Software within the Initial Warranty Period) are $[**], the Purchaser shall be entitled to [**] equal to $[**].

4.5 [**] the foregoing Sections 4.3 and 4.4 shall be applied to the next invoice for fees or other amounts to be paid by TWC or any Purchaser. The amount of any [**] shall be paid in cash to TWC only upon termination of Purchasers' use of the Software in the event that [**] have not been used prior to such termination. The Parties agree that (i) it would be impractical and extremely difficult to fix the actual damages to Purchaser that may proximately result from the failure of Seller to timely perform the obligations set forth in Section 4.2 and to which the [**] relate, (ii) such [**] and not a penalty, (iii) such [**] constitute a reasonable remedy that is not disproportionate to the presumed damage caused by the failure of Seller to timely perform the obligations set forth in such Section 4.2. If Seller is liable for [**] as described in Sections 4.3 and 4.4 above in any two out of three consecutive months, then TWC may terminate the Agreement upon written notice

to Seller. Such termination right, along with the [**] to TWC as described in this Section 4, shall be Purchaser's sole and exclusive remedy with respect to a breach by Seller of the specific response time and resolution time obligations set forth in Section 4.2. Notwithstanding the foregoing, nothing in this Section shall affect TWC or any Purchaser's right to pursue any other remedies available to it at law or in equity with respect to any act or omission of Seller that constitutes a material breach of any other provision of this Exhibit E or the Agreement, even though such act or omission also constitutes a breach by Seller of the specific response time and resolution time obligations set forth in Section 4.2 of this Exhibit E.

5. Definition of Severity Levels

Each trouble report shall include the following information: (a) the name and telephone number of the person making the report, and (b) the Severity Level of the reported defect, problem or disturbance, which shall be assigned by the Purchaser in good faith. Problems fall into one of four categories:

5.1 Severity Level 1 (Critical service impact)

Definition: an emergency or very serious defect, problem and/or disturbance in the Equipment causing the Equipment to become inoperative or severely disturbed or frequently interrupted or causing a severe performance degradation, service degradation or loss of capability in the Equipment.

1. >[**]% of the Equipment deployed by a Purchaser in a single market area is down (modems offline or data services out), or there is a significant loss of utility of a material function of the Equipment experienced by at least [**]% of the Subscribers then serviced by the Equipment within a single market area.
2. Equipment is not accessible through CLI or SNMP.

For the purpose of this Agreement, Severity Level 1 defects, problems and/or disturbances shall include, but not be limited to, the following:

- Complete Node Failure – The Equipment does not handle any traffic and a manual intervention is needed to restore the system,
- Equipment crashes repeatedly or hangs,
- A major disturbance in the Equipment's functionality resulting in a capacity decrease of more than [**]% of the functionality of the node,
- Critical functionality not available,
- Major fault or disturbance affecting a specific area of functionality, but not the whole system/node, and/or
- Major problems or disturbances that require immediate action, such as restarts.

5.2 Severity Level 2 (Major service impact)

Definition: a serious defect, problem and/or disturbance in the Equipment deployed by a Purchaser in a single market area which is causing such Equipment to become disturbed or frequently interrupted or is causing a performance degradation, service degradation or loss of capability in relation to such Equipment but which does not qualify as a Severity Level 1 problem. Such serious defect could also result in operation and maintenance affecting faults that prohibits proper operation or maintenance or results in a lower level of Equipment performance that may result in Purchaser complaints or significantly increased workload on Purchaser's maintenance staff.

1. Part of the Equipment deployed by a Purchaser in a single market area does not function fully, resulting in full or partial loss of services,
2. Services are still available but Purchaser experiences major degradation of services, and/or
3. Faults affecting launch of new services.

For the purpose of this Agreement, Severity Level 2 defects, problems and/or disturbances shall include, but not be limited to, the following:

- Degraded performance,
- Incorrect behavior of functions, and/or
- Lack of ability to add new Purchasers/services.

5.3 Severity Level 3 (Minor impact)

Definition: a minor defect, problem and/or disturbance in the Equipment not significantly affecting Subscriber service delivery or the performance, service, operation and maintenance of the Equipment and which does not qualify as a Severity Level 2 problem, but, however, resulting in a deviation from the Equipment specified functionality.

- Services are mostly available but may experience minor degradation,
- Defects cause inconvenience but not major service disruption,
- Minor failure of functions,
- Command syntax issues, and/or
- Non-Subscriber (service) affecting defects, problems and/or disturbances.

5.4 Severity Level 4 (Informational)

Definition: informational requests or minor documentation errors not affecting operation and maintenance of the Equipment, such as:

- Configuration questions and problems,

- Feature request,
- Enhancement request, and/or
- Technical questions.

6. Responsibilities of Seller

Seller shall:

- collaborate with Purchaser in a spirit of trust and co-operation,
- ensures that its staff will comply with any and all regulations and requirements made known to Seller concerning the conduct of its personnel at Purchaser's premises,
- have access to suitable test plans and associated equipment in order to provide the services defined in this agreement,
- maintain knowledge of the hardware, software, and documentation applicable to or used in the Purchaser's System,
- cause as limited interference as reasonably possible to the Equipment and Purchaser's existing System and the operation thereof when performing any Support Services,
- inform Purchaser in advance whenever the performance of Support Services may or is likely to cause such interference in the Equipment or Purchaser's existing System or the operation thereof,
- inform Purchaser without undue delay in the event Seller is of the opinion that Purchaser has failed to fulfill any of Purchaser's obligations under the Purchase Agreement or this Exhibit,
- comply with Section 9 of this Exhibit whenever Seller makes remote access to the Equipment or any other hardware or software within Purchaser's System, and
- respect the confidentiality and privacy of the Purchaser's information.

7. Responsibilities of Purchaser

Purchaser shall:

- agree to install and carry out the recommended operation and maintenance of the Equipment according to service guidelines provided by Seller,
- keep an operational logbook and record of faults in accordance with reasonable instructions provided by Seller,
- agree to provide Seller with named points of contact that are authorized to request support from Seller,
- agree to provide Seller Technical Support with remote access to the Equipment for troubleshooting purposes when needed,
- agree to provide Seller with accurate statistical information regarding the performance of the Equipment upon reasonable request,

- ensure that Purchaser's maintenance staff is sufficient in number and have an adequate level of competence in order to carry out Purchaser's obligations and for the purpose of liaison with Seller, to include commercially reasonable on-site support and test equipment to troubleshoot problems,
- agree to characterize the Severity Level of problems in good faith and as accurately as possible,
- agree to provide Seller with the following information when requesting support:
    - Serial number of affected unit (chassis serial number),
    - Contact Name,
    - Severity Level of the problem,
    - Symptoms and description of the problem,
    - Hardware and software revision levels, as appropriate, and
    - Detailed information as reasonably requested by Seller Technical Support, such as data obtained by querying the system (e.g. 'show tech'),
- agree to return all defective parts in a timely manner to Seller per the returned material authorization process, and
- agree to accept temporary fixes and workarounds that resolve problems until permanent solutions are available, provided that such temporary fixes and workarounds do not impose unreasonable additional expense or burden upon the Purchaser.

Whenever a Purchaser is responsible for providing information to Seller in order to support Seller's provision of Support Services under this Exhibit, Purchaser shall only be required to provide such information as is in Purchaser's possession and control and as is reasonably available to Purchaser without unreasonable effort or expense.

8. Enhancements.

8.1 During such period as a Purchaser is receiving Support Services, and in addition to providing resolutions to defects, problems and/or disturbances reported by a Purchaser, Seller promptly shall notify TWC of all Minor Enhancements available from or through Seller at the same time as such Minor Enhancements are generally made available by Seller to its other customers. Such notice shall reasonably detail any defects, problems and/or disturbances that the Minor Enhancement corrects, as well as all new features or functionality contained in the Minor Enhancement. All Minor Enhancements shall be developed by Seller and made available to the Purchasers [**], provided that the affected Software is either within the Initial Warranty Period or covered by Support Services. Upon delivery, each Minor Enhancement shall be considered part of the "Software" under the Purchase Agreement and this Exhibit. Nothing in this Section shall be construed to require Seller to develop Minor Enhancements or new features at the request of TWC, other than as necessary to provide a resolution to a defect, problem or disturbance, and Seller is not obligated to deliver any specific number

of Minor Enhancements. TWC may obtain a list of available Minor Enhancements from Seller at any time upon request. Seller shall deliver each Minor Enhancement to TWC prior to deployment to any Purchaser and within a reasonable amount of time after the Minor Enhancement is made available to other Seller customers.

8.2 During such period as a Purchaser is receiving Support Services, Seller also shall promptly notify TWC of all Major Enhancements available from or through Seller at the same time as such Major Enhancements are generally made available by Seller to its other customers. Such notice shall reasonably detail any new features or functionality contained in the Major Enhancements. All Major Enhancements shall be developed by Seller and made available to the Purchasers [**], provided that the affected Software is either within the Initial Warranty Period or covered by Support Services. Upon delivery, any Major Enhancement shall be considered part of the "Software" under the Purchase Agreement and this Exhibit. Nothing in this Section shall be construed to (i) require Seller to develop Major Enhancements or new features at the request of TWC, (ii) prevent Seller from declining to develop a Major Enhancement or new feature unless TWC and Seller agree with respect to a separate charge for the development and/or license of such Major Enhancement, or (iii) require a Purchaser to accept or install a particular Major Enhancement (in which case if the Purchaser declines to accept or install a particular Major Enhancement, Seller shall support the current version of the Software used by the Purchaser). Seller shall deliver each Major Enhancement to TWC prior to deployment to any Purchaser and at the same time as the Major Enhancement is made available to other Seller customers.

8.3 TWC may test each Minor Enhancement and Major Enhancement for a reasonable period of time not to exceed [**] days after receipt thereof to confirm that such Minor Enhancement or Major Enhancement does not contain any defects, problems or disturbances. During the testing process, Seller shall, if requested by TWC, provide TWC reasonable access to Seller personnel who can respond to questions regarding testing and acceptance or rejection of the Minor Enhancement or Major Enhancement. If such testing reveals that an Minor Enhancement or Major Enhancement contains a defect, problem or disturbance, Seller shall promptly correct such issue and/or replace such Minor Enhancement or Major Enhancement with a corrected version. If Seller is not able to correct any such issue, a Purchaser will have the right not to deploy the Minor Enhancement or Major Enhancement (in which case Seller shall support the current version of the Software used by the Purchaser).

8.4 Provided that the affected Software is either within the Initial Warranty Period or covered by Support Services, Seller shall support each Minor Enhancement and Major Enhancement for a minimum period of [**] after release thereof to any Purchaser, and Seller shall in any event support the last [**] Major Versions (as defined herein) that have been released to any Purchaser. For purposes of this Exhibit, "Major Version" shall mean a version of the Software where there is a change in the X component of the X.YY.ZZ release number. All version numbers

shall be reasonably determined by Seller in accordance with normal industry practice. All Minor Enhancements and Major Enhancements shall (i) be fully compatible with the prior release of the Software, such that any and all software and equipment that is interoperable with the prior release shall be interoperable to the same extent with the then-current Minor Enhancement or Major Enhancement without the Purchaser having to make material expenditures for new equipment or other ancillary items and subject only to reasonable requirements agreed upon by TWC and Seller, and (ii) not cause any material diminution in functionality or performance of the Equipment or material non-compliance with the Specifications.

8.5 Seller shall make available to each Purchaser any and all changes and additions to, or reissues of, applicable documentation originally provided with the Software, as necessary to keep the documentation reasonably current with the latest release of the Software, [**]. Seller shall make available to each Purchaser, upon request, documentation for each Minor Enhancement or Major Enhancement describing each defect, problem and/or disturbance addressed by such Minor Enhancement or Major Enhancement and its solution, access to new files containing the solution, and a description of a test procedure to confirm the solution.

8.6 Seller shall not introduce any Minor Enhancement or Major Enhancement or any other revisions, modifications or alterations in any other form to the Software to TWC or any Purchaser unless and until Seller has delivered such Minor Enhancement or Major Enhancement or such other revisions, modifications or alterations to TWC for testing pursuant to Section 8.3 and such Minor Enhancement or Major Enhancement or such other revisions, modifications or alterations have been accepted by TWC.

9. Remote Access.

To the extent that Seller is authorized to gain remote access to a Purchaser's Equipment or System for purposes of performing its obligations hereunder, Seller shall ensure that (a) such access is restricted to authorized employees and contractors; (b) it provides TWC with a list of all such authorized employees and contractors upon TWC's request; (c) such remote access is used solely for purposes of fulfilling Seller's obligations under this Exhibit; (d) such remote access is obtained through a secure connection, which Purchaser shall cooperate with Seller in obtaining; (e) Seller uses such remote access capability only to access Equipment or other products that are directly involved in Seller's performance of its obligations hereunder and does not access any other Purchaser or third party systems, databases, equipment or software; (f) Seller shall comply with all applicable policies, standards and or requirements, as provided by TWC or Purchaser to Seller from time to time, provided that such rules and regulations have been provided to Seller sufficiently in advance so as to reasonably permit such compliance; and (g) Seller shall not utilize such remote access to gain access to any System Data. Upon TWC's request, Seller will provide periodic security audits of its access of Purchasers' Equipment and Systems and methods and will change authentication elements to such access to the Equipment and Systems periodically to maintain the integrity and security of Seller's access.

10. Term and Renewal of Support Services.

10.1 Seller agrees to provide, or have provided on its behalf, Support Services to the Purchasers (a) [**] for all Software that remains within the Initial Warranty Period, and (b) in return for the Support Services fees as set forth in Exhibit B – Prices for such additional Software as Purchaser has elected to purchase Support Services in accordance with the terms and conditions of the Purchase Agreement. To exercise an election to purchase Support Services, TWC and/or the applicable Purchaser shall issue a Purchase Order to Seller, which Purchase Order shall designate the Software to be supported.

10.2 Notwithstanding anything herein to the contrary, each Purchaser shall be entitled to purchase and Seller shall offer to provide Support Services to such Purchaser (i) during the term of the Purchase Agreement and for a period of [**] years thereafter (or if earlier, until [**] years after End of Life with respect to any particular model of Equipment), and (ii) during any further period during which Seller provides support services to users of the Software generally (the period described in clauses (i) and (ii) being hereinafter referred to as the "Support Window"), provided that (a) such Purchaser's license for the Software remains in effect, (b) such Purchaser has either kept current and continuously purchased Support Services for the Software, or such Purchaser is willing to pay any reinstatement fee specified herein. Seller shall provide Purchasers with written notice if at any time Seller wishes to generally discontinue providing Support Services to users of the Software; provided, however, that Seller shall not discontinue the provision of Support Services to any Purchaser for any Software prior to the expiration of the Support Window. Upon written request from a Purchaser, which request must be made within [**] days following the receipt of Seller's notice of proposed discontinuance, Seller will continue to offer to provide Support Services to such Purchaser for the period specified by such Purchaser in its request, not to exceed [**] months from the end of the Support Services term then in effect. A general discontinuance of support services to users of the Software does not include Seller's cessation of support for a particular release or version of the Software, if Seller continues to provide support services for a subsequent release or version of the Software. Should a Purchaser discontinue Support Services for any period of time and at a later date desire to reinstate the Support Services, such Purchaser must first make a payment to Seller in an amount equal to the payments that would have been made if such Purchaser had not had an interruption in Support Services.

11. Other Services

In addition to the Support Services specified in this Exhibit, Seller may, upon TWC's request and Seller's written agreement, provide TWC with additional technical support as professional services on a fee-for-service basis in accordance with Seller's

then-current standard fees for such services. The actual professional services to be provided and the schedule for performance of such professional services shall be mutually agreed upon by the Parties in writing, and the fee shall be reasonable under the circumstances, taking into consideration the services to be performed and the rates or fees charged by comparable vendors for the provision of comparable services.

FIRST AMENDMENT TO
MASTER PURCHASE AGREEMENT

This First Amendment to the Master Purchase Agreement (the "First Amendment") is effective as of January 1, 2014 (the "Amendment Date") by and between **Time Warner Cable Enterprises LLC** ("TWC") and **Casa Systems, Inc.** ("Seller"). TWC and Seller may each be referred to herein individually as a "Party" and collectively as the "Parties." Capitalized terms used in this First Amendment and not otherwise defined herein shall have the meanings set forth in the Agreement.

INTRODUCTION

1. TWC and Seller are parties to that certain Master Purchase Agreement, dated October 31, 2013 (the "Agreement").

2. Seller has provided a quote, dated January 6, 2014, for equipment and services in response to TWC's Request for Proposal (the "RFP Quote") for the [**] service groups for TWC's New York City CCAP project (the "NYC Project") as set forth in Exhibit 1. In addition, TWC may purchase an additional [**] systems for the [**] markets (the "Expansion Order").

3. The RFP Quote and the Expansion Order include certain equipment in configurations not currently included as Equipment under the Agreement ("Additional Equipment") and/or lower pricing for certain Equipment that is currently included under the Agreement (the "Price Reduction").

4. Based on the RFP Quote, TWC expects to issue Purchase Orders for the NYC Project aggregating approximately [**] dollars ($[**]) on or about February 5, 2014. TWC is further considering the purchase of approximately an additional [**] systems for the [**] markets on or before June 30, 2014.

5. Based on the foregoing premises, the Parties wish to amend Attachment A to Exhibit B to the Agreement to include the Additional Equipment and Price Reduction as set forth herein.

NOW, THEREFORE, in consideration of the covenants and agreements contained herein, and for other valuable consideration, the receipt and adequacy of which are hereby acknowledged, TWC and Seller agree as follows:

1. Conditional Amendment to Attachment A to Exhibit B of the Agreement. Effective as of the Amendment Date, and subject to the terms and conditions set forth in Section 2 of this First Amendment, Attachment A to Exhibit B of the Agreement is amended and restated in its entirety to read as set forth in Appendix A to this First Amendment. Should there be any conflict between the terms and conditions in Exhibit B of the Agreement and Appendix A to this First Amendment, the terms and conditions of Appendix A to this First Amendment shall control to resolve such conflict. The Equipment and Software listed in Appendix A to this First Amendment shall be included within the term "Equipment" for all purposes of the Agreement. The Parties acknowledge and agree that the delivery dates for Equipment ordered pursuant to Purchase Orders placed by TWC and/or the Purchasers for the NYC Project and for any Expansion Order shall be established by mutual agreement of the Parties. The Parties shall

participate in a weekly status call to discuss the status of deliveries to be made pursuant to such Purchase Orders until such time as all deliveries called for under such Purchase Orders have been made. The Parties further acknowledge and agree that Section 5.5(a) of the Agreement shall not apply with respect to Purchase Orders placed by TWC and/or the Purchasers for the NYC Project or for any Expansion Order, and thus TWC and the Purchasers shall not be entitled to terminate any such Purchase Orders without cause in accordance with the provisions of Section 5.5(a). For clarity, nothing in this Section shall affect in any way TWC and the Purchasers' right to terminate Purchase Orders pursuant to Section 5.5(b) or Section 20.2 or any other provision of the Agreement.

2. Failure to Timely Place Purchase Orders for NYC Project. The Parties acknowledge and agree that (i) Seller's RFP Quote for the NYC Project is based upon service group and related information obtained from TWC, and (ii) the assumed number of systems and system configurations for the NYC Project may change after site assessments are completed by TWC and Seller. Notwithstanding anything herein to the contrary, this First Amendment is explicitly made conditional upon TWC and the Purchasers issuing Purchase Orders for the NYC Project totaling an aggregate of approximately [**] dollars ($[**]) (the term "approximately" meaning for purposes of this Section 2 that the aggregate amount of the Purchase Orders shall be not less than [**]% of the specified amount). Such Purchase Orders must be placed on or about February 1, 2014, but in no event later than February 15, 2014 (the "Purchase Order Deadline"). If TWC and the Purchasers fail to place such Purchase Orders, then this First Amendment shall be considered to be void and without any effect, and the Pricing set forth in Attachment A to Exhibit B of the Agreement as in effect prior to this First Amendment shall remain in effect. However, the pricing set forth in Appendix A to this First Amendment shall apply to the Purchase Orders placed on or after the Amendment Date and prior to the Purchase Order Deadline.

3. Future Pricing and Expansion Order. Provided that TWC and the Purchasers have placed the Purchase Orders specified in Section 2 above on or before the Purchase Order Deadline, the Pricing set forth in Appendix A to this First Amendment shall apply to all Purchase Orders for Equipment placed on or after the Amendment Date, including without limitation any Expansion Order.

4. Installation Services. Seller wishes to provide installation Services for the installation of the Equipment purchased by TWC and the Purchasers in connection with the NYC Project. It is Seller's intent to work with a third party vendor that specializes in such work and has performed such work for TWC in NYC. Seller intends to work closely with the TWC team in NYC to make sure that Seller's installation Services partner is acceptable to TWC. In order to provide the installation Services, Seller will need to perform hub site assessments and develop a detailed Statement of Work ("SOW") covering each hub site. Seller will use commercially reasonable efforts to develop such SOWs and provide a [**] price that is competitive with the price charged for substantially similar installation services by third parties under similar circumstances. The terms of the SOWs will be negotiated in good faith by Seller and will be subject to mutual agreement of the Parties. Seller will provide TWC and the Purchasers a [**] off the final, mutually agreed price for the NYC installation Services.

5. Effect on Agreement. Except as specifically amended by this First Amendment, all terms and conditions of the Agreement are unamended and will remain in full force and effect.

6. Counterparts. This First Amendment may be executed in more than one counterpart, each of which shall be deemed to be an original and all of which together shall be deemed a single document. Signatures delivered by facsimile shall have the same force and effect as original signatures.

7. Governing Law. This First Amendment shall be subject to and governed by the laws of the State of New York, other than such laws, rules, regulations and case law that would result in the application of the laws of a jurisdiction other than the State of New York.

The Parties have executed this First Amendment as of the date first written above.

CASA SYSTEMS, INC.

By: /s/ Gary Hall

Name: Gary Hall

Title: CFO

Date: February 28, 2014

TIME WARNER CABLE ENTERPRISES LLC

By: /s/ Henry Hryckiewicz

Name: Henry Hryckiewicz

Title: Senior Vice President

Date: February 24, 2014

Attachment A – Summary Pricing Table

Part Number	Description	TWC Unit Price (USD)
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]
	[**]	
[**]	[**]	$ [**]

Part Number	Description	TWC Unit Price (USD)
	[**]	
[**]	**[**]**	**$ [**]**
	[**]	
[**]	**[**]**	**$ [**]**
	[**]	
	[**]	

[**]

SECOND AMENDMENT TO
MASTER PURCHASE AGREEMENT

This **Second Amendment to the Master Purchase Agreement** (this "Second Amendment") is entered into as of December 18, 2014, but effective for all purposes as of October 1, 2014 (the "Second Amendment Date") by and between **Time Warner Cable Enterprises LLC** ("TWC") and **Casa Systems, Inc.** ("Seller"). TWC and Seller may each be referred to herein individually as a "Party" and collectively as the "Parties."

INTRODUCTION

(a) TWC and Seller are parties to that certain Master Purchase Agreement, dated October 31, 2013, as amended effective as of January 1, 2014 (the "Agreement"). Capitalized terms used in this Second Amendment and not otherwise defined herein shall have the meanings set forth in the Agreement.

(b) TWC is considering the purchase of equipment for an estimated [**] service groups for TWC's Maxx Phase II project (the "Maxx Project") and for an estimated [**] service groups for TWC's BAU markets (the "BAU Project" and, together with the Maxx Project, the "Projects") through March 31, 2015.

(c) Seller has offered the following incentives to TWC in connection with the Projects: (i) a [**] for Equipment ordered on or after the Second Amendment Date through March 31, 2015, and (ii) provided that TWC and the Purchasers place Purchase Orders for the purchase of an aggregate of not less than $[**] of Equipment for the Projects through March 31, 2015 (with such amount being determined prior to application of [**] described in clause (i) of this Paragraph C), [**] 16x8 upstream card with 64 channels in exchange for [**] 16x4 upstream card with 64 channels previously purchased by TWC or a Purchaser, for up to [**] 16x8 upstream cards with 64 channels (the "[**]" and collectively, the "Incentives").

(d) The Parties now wish to amend the Agreement to add certain equipment not currently included as Equipment under the Agreement ("Additional Equipment"). Seller is further willing to fulfill Purchase Orders for the Projects and to provide TWC and the Purchasers with the Incentives, as set forth herein.

NOW, THEREFORE, in consideration of the covenants and agreements contained herein, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, TWC and Seller agree as follows:

- **Pricing; Additional Equipment.** The Parties acknowledge and agree that Pricing for Equipment to be purchased under the Agreement was amended pursuant to a conditional amendment to Attachment A to Exhibit B of the Agreement adopted pursuant to that certain First Amendment to Master Purchase Agreement dated effective as of January 1, 2014 (the "First Amendment"). The Parties further acknowledge and agree that the conditions referenced in the First Amendment were satisfied by TWC, and the Pricing set forth in the First Amendment is no longer conditional and remains in full force and effect, as amended pursuant to this Second

Amendment. Effective as of the Second Amendment Date, Attachment A to Exhibit B of the Agreement is amended to add the Additional Equipment set forth in Appendix A to this Second Amendment. The Equipment listed in Appendix A shall be included within the term "Equipment" for all purposes of the Agreement.

- **Purchase Orders for the Projects.** The Parties acknowledge and agree that the delivery dates for Equipment ordered pursuant to Purchase Orders placed by TWC and/or the Purchasers for the Projects shall be established by mutual agreement of the Parties. The Parties shall participate in a weekly status call to discuss the status of deliveries to be made pursuant to such Purchase Orders until such time as all deliveries called for under such Purchase Orders have been made.

- **Incentives.**

  - In calculating Pricing for Purchase Orders for the Projects placed during the period commencing on the Second Amendment Date and continuing through and including March 31, 2015, the Parties shall apply the [**] described in Paragraph C.(i) above to the Price of the Equipment ordered pursuant to the Purchase Order for the Projects.

  - Provided that TWC and the Purchasers place Purchase Orders for the purchase of an aggregate of not less than $[**] of Equipment for the Projects through March 31, 2015 (with such amount being determined prior to application of the discount described in Paragraph C.(i) above), Seller shall execute delivery of the [**] shall be based on a process and shipment dates, which shall not be later than September 30, 2015, mutually agreed by the Parties.

  - Seller acknowledges that TWC has made no commitment to purchase any volume of Equipment. Similarly, TWC has not committed to any fixed number of service groups that will participate in the Projects. Seller shall not have an exclusive privilege to sell to or otherwise provide TWC or the Purchasers with, and TWC and the Purchasers may contract with other manufacturers and suppliers for the procurement of, products and services similar to the Equipment and Services.

- **DOCSIS 3.1 Compliance.**

  - Seller shall develop and make available to TWC and the Purchasers software for the 8x96 line cards and FaTDMA software for the 16x8 line cards (such cards, collectively, the "DOCSIS 3.1 Cards") that will be interoperable with DOCSIS 3.1-compliant cable modems (the "DOCSIS 3**.1** Support") no later than September 30, 2015. In order to meet the requirements set forth in the preceding sentence, Seller shall provide TWC and the Purchasers, without additional charge, an Update to the Software. Such Update shall be provided by Seller in a form that may be installed by remote Download into the DOCSIS 3.1 Cards,

should a Purchaser so choose. Further, once such Update has been Accepted as provided in Section 4(b) below, TWC and Purchaser may request and upon such request Seller shall cause the specified DOCSIS 3.1 Cards, as applicable, delivered on or after the date of such Acceptance to include such Update in the unit as delivered. The DOCSIS 3.1 Support described in this Section 4(a) shall be a part of and shall be included within the Specifications for the DOCSIS 3.1 Cards as of the earlier of (i) the date the Software that Seller has updated to provide the DOCSIS 3.1 Support has been Accepted by TWC as provided in Section 4(b) below (subject, if applicable, to any DOCSIS 3.1 Support waived pursuant to clause (2) thereof), and (ii) the date on which Seller makes DOCSIS 3.1 Cards with DOCSIS 3.1 Support commercially available.

- Seller shall provide TWC a version of the Software that Seller has updated to provide the DOCSIS 3.1 Support for testing purposes no later than September 30, 2015. TWC may test such Software for a reasonable period of time not to exceed [**] days after receipt thereof to confirm that such Software complies in all material respects with the Specifications therefor, including without limitation the requirements of Section 4(a) above, and does not contain any material defects or problems. During the testing process, Seller shall, if requested by TWC, provide TWC reasonable access to Seller personnel who can respond to questions regarding testing and acceptance or rejection of such Software. If TWC determines that such Software complies in all material respects with the Specifications therefor, including without limitation the requirements of Section 4(a) above, and does not contain any material defects or problems, TWC shall accept such Software that provides the DOCSIS 3.1 Support ("Accept" or "Acceptance"). If such testing reveals that such Software fails to comply in all material respects with the Specifications, or does contain material defects or problems, TWC shall notify Seller and Seller shall promptly correct such issue and/or replace such Software with a corrected version that provides the DOCSIS 3.1 Support. TWC shall then have an additional period of up to [**] days to retest such Software. If the defects or problems still have not been remedied, or there are new defects or problems, then TWC may at its option and by written notice to Seller no later than [**] days after completion of such retest either, in its sole discretion: (1) again reject such Software and repeat the procedure set forth in this Section; or (2) waive the deficiency, with any such waiver being set forth in writing and constituting Acceptance. If TWC elected the option set forth in clause (1) on at least one prior occasion (thus providing Seller the opportunity to cure any deficiencies), and Seller has not provided Software with DOCSIS 3.1 Support on or before December 31, 2015, (i) TWC and the Purchasers may cancel any or all Purchase Orders then outstanding for the purchase of Equipment, provided that such Purchase Orders were issued subsequent to the Second Amendment Date, and (ii) Seller shall [**] (including without limitation any purchase Price that is paid after December 31, 2015) to Seiler for all Equipment ordered by TWC or the Purchasers for the Projects through

March 31, 2015 and subsequent to the Second Amendment Date, [**]shall be paid within [**] days after TWC's written notice of its election of the remedy set forth in this sentence (or if the purchase Price is paid after such date, within [**] days after payment of such purchase Price). The remedies set forth above shall be TWC and the Purchasers' sole and exclusive remedies with respect to Seller's failure to provide the DOCSIS 3.1 Support. Notwithstanding the foregoing, nothing in this Section shall relieve Seller from its obligations as set forth in the Agreement regarding compliance with the Specifications, including without limitation Seller's obligation to use commercially reasonable efforts to provide the DOCSIS 3.1 Support with respect to DOCSIS 3.1 Cards purchased by TWC and the Purchasers on and after the Second Amendment Date for the Projects.

- TWC and Seller acknowledge that it is impractical and extremely difficult to determine the actual damages or lost revenues that may proximately result from Seller's failure to perform its obligations under this Section 4. [**], and (ii) reasonable and not disproportionate to the presumed damages to TWC and/or the Purchasers, as the case may be, in lost revenues or otherwise from a failure by the other to comply with the applicable provisions of this Amendment.

- **Expiration of Discount.** Section 3(a) of this Second Amendment shall expire on March 31, 2015, except that any discount with respect to any Purchase Order for the Projects placed on or before such date shall survive. For clarity, Section 3(b) shall not expire and shall continue in effect in accordance with its terms.

- **Effect on Agreement.** Except as specifically amended by this Second Amendment, the Agreement will remain in full force and effect and is hereby ratified and confirmed.

- **Counterparts.** This Second Amendment may be executed in more than one counterpart, each of which shall be deemed to be an original and all of which together shall be deemed a single document. Signatures delivered by facsimile shall have the same force and effect as original signatures.

- **Governing Law.** This Second Amendment shall be subject to and governed by the laws of the State of New York, other than such laws, rules, regulations and case law that would result in the application of the laws of a jurisdiction other than the State of New York.

[Signature page follows]

The Parties have executed this Second Amendment to be effective on the Second Amendment Date.

CASA SYSTEMS. INC.

By: /s/ Gary Hall

Name: Gary Hall

Title: CFO

Date: December 22, 2014

TIME WARNER CABLE ENTERPRISES LLC

By: /s/ Dinni Jain

Name: Dinni Jain

Title: Chief Operating Officer

Date: December 18, 2014

Appendix A: Amendment to Attachment A to Exhibit B

Part Number	Description	TWC Unit Price (USD)
[**]	[**]	[**]

THIRD AMENDMENT TO
MASTER PURCHASE AGREEMENT

This **Third Amendment to the Master Purchase Agreement** (this "Third Amendment") is entered into effective as of October 1, 2015 (the "Third Amendment Date") by and between **Time Warner Cable Enterprises LLC** ("TWC") and **Casa Systems, Inc.** ("Seller").

RECITAL

TWC and Seller are parties to that certain Master Purchase Agreement dated October 31, 2013, as amended (the "Agreement"). The Parties desire to further amend the Agreement as set forth herein. Capitalized terms used in this Third Amendment and not otherwise defined herein shall have the meanings set forth in the Agreement.

AGREEMENT

In consideration of the Recital, which is incorporated into this Third Amendment, and the covenants, agreements and other consideration set forth in this Third Amendment, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, agree as follows:

1. Potential New Market Project. TWC is considering the purchase of Equipment for TWC regions that do not currently use Seller's Equipment, including [**] for an estimated [**] active service groups in the [**] regions (the "New Market Project"). Seller hereby agrees to provide the following incentives to Purchasers in connection with the New Market Project:

(A) [**], ordered on or before December 31, 2016. This incentive shall be provided via [**] for the applicable units of part number [**] ordered by TWC.

(B) A [**]% discount off the Prices for Equipment ordered on or after the Third Amendment Date through December 31, 2016. In calculating Pricing for Purchase Orders placed during the period commencing on the Third Amendment Date and continuing through and including December 31, 2016, the Parties shall apply this [**]% discount to the Price of the Equipment ordered pursuant to the applicable Purchase Order for the New Market Project.

(C) When a Purchaser orders either part number [**] or part number [**] or any other 8x96 or 8x192 card with at least 16 channels per port, [**] shall be completed by no later than December 31, 2016, subject to Section 4 below.

2. Potential Existing Market Project. TWC also is considering the purchase of [**] chassis for an estimated [**] active service groups in TWC regions that currently use Seller's Equipment (the "Existing Market Project" and, together with the New Market Project, the "Projects"). Seller hereby agrees when a Purchaser orders either part number [**] or part number [**] or any other 8x96 or 8x192 card with at least 16 channels per port, [**] shall be completed by no later than December 31, 2016, subject to Section 4 below.

3. [**].

4. Return of Equipment. With respect to the Projects [**], TWC shall cause Purchasers to return to Seller [**], as applicable, appropriately packaged and in operational condition, within [**] days following Purchaser's receipt of the corresponding [**], respectively, even if such [**]-day return period extends beyond December 31, 2016.

5. Pricing; Additional Equipment. The Parties further wish to amend the Agreement to add certain equipment not currently included as Equipment under the Agreement (the "Additional Equipment"). Accordingly, effective as of the Third Amendment Date, ***Attachment A*** to *Exhibit B* of the Agreement is deleted and replaced in its entirety by ***Appendix A*** to this Third Amendment, which includes the price reductions set forth in this Third Amendment and adds the Additional Equipment.

6. No Equipment Purchase or Volume Commitment. Seller acknowledges that TWC has made no commitment to purchase any volume of Equipment. Similarly, TWC has not committed to any fixed number of service groups that will participate in the Projects. Seller shall not have an exclusive privilege to sell to or otherwise provide TWC or the Purchasers with, and TWC and the Purchasers may contract with other manufacturers and suppliers for the procurement of, products and services similar to the Equipment and Services.

7. Effect on Agreement. Except as specifically amended by this Third Amendment, the Agreement will remain in full force and effect.

8. Counterparts. This Third Amendment may be executed in more than one counterpart, each of which shall be deemed to be an original and all of which together shall be deemed a single document. Signatures delivered by facsimile shall have the same force and effect as original signatures.

9. Governing Law. This Third Amendment shall be subject to and governed by the laws of the State of New York, other than such laws, rules, regulations and case law that would result in the application of the laws of a jurisdiction other than the State of New York.

The Parties have executed this Third Amendment to be effective on the Third Amendment Date.

CASA SYSTEMS, INC.		**TIME WARNER CABLE ENTERPRISES LLC**	
By:	/s/ Gary Hall	By:	/s/ Hamid Heidary
Name:	Gary Hall	Name:	Hamid Heidary
Title:	CFO	Title:	EVP/CTO
Date:	12/30/15	Date:	12/29/15

Appendix A: Amendment and Restatement of Attachment A to Exhibit B

Part Number	Description	Unit Price
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	

Part Number	Description	Unit Price
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
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[**]	**[**]**	**[**]**
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[**]	**[**]**	**[**]**
	[**]	
[**]	**[**]**	**[**]**
	[**]	
	[**]	

FOURTH AMENDMENT TO
MASTER PURCHASE AGREEMENT

This **Fourth Amendment to the Master Purchase Agreement** (this "Fourth Amendment") is entered into effective as of January 1, 2016 (the "Fourth Amendment Date") by and between **Time Warner Cable Enterprises LLC** ("TWC") and **Casa Systems, Inc.** ("Seller").

RECITAL

TWC and Seller are parties to that certain Master Purchase Agreement dated October 31, 2013, as amended (the "Agreement"). The Parties desire to further amend the Agreement as set forth herein. Capitalized terms used in this Fourth Amendment and not otherwise defined herein shall have the meanings set forth in the Agreement.

AGREEMENT

In consideration of the Recital, which is incorporated into this Fourth Amendment, and the covenants, agreements and other consideration set forth in this Fourth Amendment, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, agree as follows:

1. Credit. Seller shall apply a credit of $[**] to TWC Purchase Order #42000-0000143904 that has a Purchase Order price of $[**] prior to such credit.

2. DOCSIS 3.1 Compliance. In consideration of [**] hereunder, Section 4 of the Second Amendment, dated December 18, 2014 to the Agreement is hereby deemed void *ab initio*.

3. Effect on Agreement. Except as specifically amended by this Fourth Amendment, the Agreement will remain in full force and effect.

4. Counterparts. This Fourth Amendment may be executed in more than one counterpart, each of which shall be deemed to be an original and all of which together shall be deemed a single document. Signatures delivered by facsimile shall have the same force and effect as original signatures.

5. Governing Law. This Fourth Amendment shall be subject to and governed by the laws of the State of New York, other than such laws, rules, regulations and case law that would result in the application of the laws of a jurisdiction other than the State of New York.

[Signature page follows]

The Parties have executed this Fourth Amendment to be effective on the Fourth Amendment Date.

CASA SYSTEMS, INC.

By: /s/ Gary Hall

Name: Gary Hall

Title: CFO

Date: February 5, 2016

TIME WARNER CABLE ENTERPRISES LLC

By: /s/ Hamid Heidary

Name: Hamid Heidary

Title: Executive Vice President

Date: February 1, 2016

Exhibit 10.24

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT Agreement (the "Agreement"), effective November 17, 2017 (the "Effective Date"), is made and entered into by and between Casa Systems, Inc. (the "Company"), and Jerry Guo (the "Executive").

RECITALS

WHEREAS, the Company desires to continue to employ the Executive as its President and Chief Executive Officer; and

WHEREAS, the Executive has agreed to accept such continued employment on the terms and conditions set forth in this Agreement;

NOW, THEREFORE, in consideration of the foregoing and of the respective covenants and agreements of the parties herein contained, the parties hereto agree as follows:

1. *Term of Employment.* The term of this Agreement shall commence on the Effective Date and continue until terminated in accordance with the provisions set forth in Section 7 below (the "Term of Employment"). No provision of this Agreement shall be construed to create a promise of employment for any specific period of time, and nothing herein shall alter the Company's policy of employment at-will, under which both the Company and the Executive remain free to end the employment relationship for any reason, at any time, with or without Cause (as defined below) or notice. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay the Executive any compensation or grant the Executive any benefit beyond the end of the Term of Employment, except as explicitly set forth below.

2. *Position.* During the Term of Employment, the Executive shall continue to serve as the Company's President and Chief Executive Officer, working out of the Company's Andover, MA office and traveling as required by the Executive's job duties. The Executive shall report to the Company's Board of Directors (the "Board").

3. *Scope of Employment.* During the Term of Employment, the Executive shall be responsible for the performance of those duties consistent with the Executive's position, plus such other duties as may from time to time be assigned to the Executive by the Board. The Executive shall perform and discharge faithfully, diligently, and to the best of the Executive's ability, the Executive's duties and responsibilities hereunder. The Executive shall devote the Executive's entire business time, loyalty, attention and efforts to the business and affairs of the Company and its affiliates. The Executive agrees to abide by the rules, regulations, instructions, personnel practices and policies of the Company and any changes therein that may be adopted from time to time by the Company.

4. *Compensation.* As full compensation for all services rendered by the Executive during the Term of Employment, the Company will provide to the Executive the following:

(a) *Base Salary.* The Executive shall receive a base salary at the annualized rate of $677,806 (the "Base Salary"), to be paid in installments in accordance with the Company's regularly established payroll procedure.

(b) *Discretionary Bonus*. Following the end of each calendar year and subject to the approval of the Board, the Executive may be eligible to receive in that subsequent year a discretionary retention and performance bonus (the "Annual Bonus"). The target amount of such

Annual Bonus will be 150% of the Executive's then current Base Salary, based on the Executive's performance and the Company's performance during the applicable calendar year, as determined by the Board in its sole discretion. The Executive must be an active employee of the Company on the date the Annual Bonus is distributed in order to be eligible for and to earn any bonus award, as it also serves as an incentive to remain employed by the Company.

(c) *Long-Term Incentive Program*. The Executive shall continue to be eligible to participate in the Company's annual Long Term Incentive Program, with a target award equal to five hundred and fifty percent (550%) of the Executive's then current Base Salary, and with the form, terms and conditions of such long-term incentive awards to be determined in the sole discretion of the Board.

(d) *Vacation and Holidays.* The Executive shall be eligible for up to five (5) weeks of paid vacation per calendar year, to be taken at such times as may be approved in advance by the Board. The number of vacation days for which the Executive is eligible shall accrue at the rate of 2.083 days per month that the Executive is employed during such calendar year. The Executive's use and forfeiture of vacation time shall be in accordance with the Company's applicable policies and practices. In addition, the Executive will be eligible to take those holidays observed by the Company.

(e) *Benefits.* The Executive may participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided that the Executive is eligible under (and subject to all provisions of) the plan documents governing those programs. Benefits are subject to change at any time in the Company's sole discretion.

(f) *Withholdings.* All compensation payable to the Executive shall be subject to applicable taxes and withholdings.

5. *Expenses.* The Executive shall be entitled to reimbursement by the Company for all reasonable business and travel expenses incurred by the Executive on the Company's behalf during the course of the Executive employment, upon the presentation by the Executive of documentation itemizing such expenditures and attaching all supporting vouchers and receipts. Reimbursement will be made no later than 30 calendar days after the expense is substantiated (which must occur within 30 calendar days after the expense is incurred). The expenses eligible for reimbursement under this provision may not affect the amount of such expenses eligible for reimbursement in any other taxable year, and the right to reimbursement is not subject to liquidation or exchange for another benefit.

6. *Assignment, Invention and Non-Disclosure Agreement.* As a condition of the Executive's continued employment pursuant to the terms set forth herein, the Executive hereby reaffirms the Executive's obligations set forth in the Assignment, Invention and Non-Disclosure Agreement dated April 29, 2003 (the "Non-Disclosure Agreement") that the Executive previously executed for the benefit of the Company, which remains in full force and effect.

7. *Termination.*

(a) *Death and Disability.* In the event of the Executive's death during the Term of Employment, this Agreement shall terminate immediately. If, during the Term of Employment, the Executive shall suffer a "Disability" within the meaning of Section 22(e)(3) of the Internal Revenue Code of 1986, the Company may terminate the Executive's employment. Section 22(e)(3) provides, in relevant part: "An individual is permanently and totally disabled if he is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months." In the event the Executive is terminated due to death or Disability, the Executive shall be eligible to receive the separation benefits set forth in Section 8(b) below.

(b) *Termination by the Company for Cause.* The Executive may be terminated by the Company immediately and without notice for "Cause." "Cause" shall mean:

(i) Willful misconduct by the Executive; or

(ii) Willful failure by the Executive to perform his responsibilities to the Company (including, without limitation, breach by the Executive of any provision of this Agreement or the Non-Disclosure Agreement).

Cause shall be determined by the Company, which determination shall be conclusive. The Executive's employment shall be considered to have been terminated for "Cause" if the Company determines, within 30 days after the Executive's resignation, that termination for Cause was warranted.

(c) *Termination by the Company Without Cause.* The Executive may be immediately terminated by the Company without Cause upon delivery of written notice to the Executive. In the event the Executive is terminated without Cause, the Executive shall be eligible to receive the severance benefits set forth in Section 8(a) below.

(d) *Termination by the Executive for Good Reason.* The Executive may terminate the Executive's employment under this Agreement for "Good Reason" in accordance with "Good Reason Process." For purposes hereof, the term "Good Reason" shall exist upon (i) a material diminution in the Executive's Base Salary; (ii) a material diminution in the Executive's authority, duties or responsibilities; (iii) a material change in geographic location at which the Executive performs services; or (iv) any material breach by the Company of this Agreement. "Good Reason Process" means the following series of actions: (i) the Executive reasonably determines in good faith that Good Reason exists, (ii) the Executive notifies the Company or the acquiring or succeeding corporation (if applicable) in writing of the existence of Good Reason within 60 days of the occurrence of the event that gave rise to the existence of Good Reason, (iii) the Executive cooperates in good faith with the Company's (or the acquiring or succeeding corporation's, if applicable) efforts to remedy the conditions that gave rise to the existence of Good Reason for a period of 30 days following such notice (such 30 day period, the "Cure Period"), (iv) notwithstanding such efforts, Good Reason continues to exist and (v) the Executive terminates his employment within 30 days after the end of the Cure Period. For the avoidance of doubt, if the Company or the acquiring or succeeding corporation successfully remedies the conditions that gave rise to the existence of Good Reason during the Cure Period, Good Reason shall be deemed not to have existed. In the event the Executive terminates employment under this Agreement for Good Reason, the Executive shall be eligible to receive the severance benefits set forth in Section 8(a).

(e) *Termination by the Executive without Good Reason.* The Executive may terminate the Executive's employment with the Company without Good Reason at any time subject to the Executive's provision of thirty (30) days' advance written notice to the Company (the "Applicable Notice Period"), provided, however, that the Company may, in its sole discretion, in lieu of all or part of the Applicable Notice Period, pay the Executive an amount equal to the Base Salary that would otherwise have been payable to the Executive had the Executive remained employed for the duration of the Applicable Notice Period. In such instance, the Executive's termination will become effective on the date set forth in a written notice of termination to be provided by the Company (the "Early Termination Date"), and the Executive will be paid an amount equal to the Base Salary the

Executive would have received had the Executive remained employed by the Company between the Early Termination Date and the end of the Applicable Notice Period (the "Early Termination Payment"), with the Early Termination Payment to be made no later than the 30th day following the end of the Applicable Notice Period.

(f) *Effect of Termination.* Except for a termination by the Company without Cause or by the Executive for Good Reason, or due to the Executive's death or Disability, in the event of any termination of the Term of Employment under any other circumstance (including, without limitation, the Company's termination of the Executive for Cause or the Executive's termination without Good Reason), the Company's obligations under this Agreement shall immediately cease and the Executive shall be entitled to only the Base Salary that has accrued and to which the Executive is entitled as of the effective date of such termination, and an amount equal to the value of any vacation time accrued but unused as of such date (the "Accrued Compensation"), and, if applicable, any Early Termination Payment that may be due pursuant to section 7(e) above. The Executive shall not be entitled to any other compensation or consideration, including any bonus not yet paid, that the Executive may have received had the Executive's Term of Employment not ceased.

8. *Severance Benefits*

(a) *Severance Benefits in the Event of Termination Without Cause or for Good Reason.* Subject to Section 15 below and to the Executive's compliance with the conditions set forth in Section 8(c) below, in the event that the Company terminates the Executive's employment without Cause or the Executive terminates the Executive's employment for Good Reason, the Executive will be eligible to receive, in addition to the Accrued Compensation, the following severance benefits (the "Severance Benefits"): (i) the Company will pay to the Executive an amount equal to the sum of (A) the Executive's annualized Base Salary, at the rate then in effect, and (B) the Executive's target annual bonus for the year in which the Executive's termination of employment occurs, payable in equal installments and in accordance with the Company's standard payroll policy as then in effect, for a period of twelve (12) months commencing at the time set forth in Section 8(c) hereof (the "Severance Period"), (ii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue until the conclusion of the Severance Period or, if earlier, until the date the Executive becomes eligible to enroll in the medical plans of any new employer, to pay the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply; and (iii) all outstanding and unvested stock options and other equity awards then held by the Executive shall become fully vested and exercisable and, with respect to any stock options then held by the Executive, those options shall remain exercisable for the period of time set forth in the applicable grant agreement.

(b) *Separation Benefits in the Event of Termination Due to Death or Disability.* Subject to Section 15 below and, in the event of the Executive's termination due to Disability, to the Executive's compliance with the conditions set forth in Section 8(c) below, in addition to the Accrued Compensation (but, for the avoidance of doubt, in lieu of the Severance Benefits set forth in Section 8(a) above), in the event of a termination of the Executive due to the Executive's death or Disability, the Executive (or his estate in the event of his death) will receive the following separation benefits (the "Separation Benefits"): All outstanding and unvested stock options and other equity awards then held by the Executive shall become fully vested and exercisable and, with respect to any stock options then held by the Executive, those options shall remain exercisable for the period of time set forth in the applicable grant agreement.

(c) *Separation and Release of Claims Agreement.* As a condition of the Executive's receipt of the Severance Benefits or, in the event of the Executive's termination due to his Disability, Separation Benefits, the Executive must execute and return to the Company a separation and release of claims agreement provided by and satisfactory to the Company (the "Separation Agreement"), and such Separation Agreement must become binding and enforceable within 60 calendar days after the Executive's termination of employment or such shorter period as may be specified by the Company in the Separation Agreement. Except as provided in section 15 below, any payments to be made either in a lump sum or in the form of salary continuation pursuant to the terms of Section 8(a) of this Agreement shall be payable in accordance with the normal payroll practices of the Company, with such payment or, as may be applicable, the first such payment, due and payable as soon as administratively practicable following the date the Separation Agreement becomes effective (provided, however, that if the 60-day period following the Executive's termination from employment would end in a calendar year subsequent to the year in which the Executive's employment ends, payments will not be made or begin before the first payroll period of the subsequent year). For the avoidance of doubt, if the Executive does not timely execute the Separation Agreement, or if the Executive revokes the executed Separation Agreement within the time period permitted by law, the Executive will not be entitled to any payments or benefits (including the accelerated vesting of stock options or other equity awards) set forth in Section 8 of this Agreement, any stock options and other equity awards that vested on account of such termination as provided for in Section 8(a) or 8(b) of this Agreement, as applicable, shall be cancelled with no consideration due to the Executive, and the Company will not have any further obligations to the Executive under this Agreement or otherwise. The Executive agrees that, should the Executive become eligible to participate in the medical plan of any subsequent employer prior to the conclusion of the Severance Period, the Executive will provide the Company with written notice thereof within five (5) business days of such eligibility. The Executive further agrees to repay any overpayment of health benefit premiums made by the Company hereunder. Notwithstanding anything to the contrary herein, in the event that the Company's payment of the amounts described in Section 8(a) would subject the Company to any tax or penalty under the Patient Protection and Affordable Care Act (as amended from time to time, the "ACA") or Section 105(h) of the Internal Revenue Code of 1986, as amended ("Section 105(h)"), or applicable regulations or guidance issued under the ACA or Section 105(h), the Executive and the Company agree to work together in good faith to restructure such benefit.

9. *Absence of Restrictions.* The Executive represents and warrants that the Executive is not bound by any employment contracts, restrictive covenants or other restrictions that prevent the Executive from continuing employment with, or carrying out the Executive's responsibilities for, the Company, or which are in any way inconsistent with any of the terms of this Agreement.

10. *Amendments.* Any amendment to this Agreement shall be made in writing and signed by the parties hereto.

11. *Notice.* Any notice required to be given, served or delivered to any of the parties hereto shall be sufficient if it is in writing and sent by certified or registered mail with proper postage prepaid, telecopier (with receipt confirmed), courier service or personal delivery addressed as follows:

To Executive:

At the address set forth in the Executive's personnel file

To Company:

Casa Systems, Inc.
Attn: Legal Counsel
100 Old River Road, Unit 100
Andover, MA 01810

or to such other address as a party from time to time may designate by notice to the other.

12. *Applicable Law; Jury Trial Waiver.* This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts (without reference to the conflict of laws provisions thereof). Any action, suit or other legal proceeding arising under or relating to any provision of this Agreement shall be commenced only in a court of the Commonwealth of Massachusetts (or, if appropriate, a federal court located within the Commonwealth of Massachusetts), and each of the Company and the Executive consents to the jurisdiction of such a court. Each of the Company and the Executive hereby irrevocably waives any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this Agreement.

13. *Entire Agreement.* This Agreement constitutes the entire agreement between the parties and supersedes all prior agreements and understandings, whether written or oral, relating to the subject matter of this Agreement.

14. *Successors and Assigns.* This Agreement shall be binding upon and inure to the benefit of both parties and their respective successors and assigns, including any corporation with which or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the obligations of the Executive are personal and shall not be assigned by the Executive.

15. *Section 409A.*

(a) *Six Month Delay*. If (i) a termination of employment pursuant to this Agreement constitutes a "separation from service" as defined in Section 409A of the Internal Revenue Code of 1986, as amended (the "Code") and (ii) any portion of any payment, compensation or other benefit provided to the Executive in connection with the Executive's separation from service (as defined in Section 409A of Code) is determined to constitute "nonqualified deferred compensation" within the meaning of Section 409A and (iii) the Executive is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, as determined by the Company in accordance with its procedures, by which determination the Executive hereby agrees to be bound, such portion of the payment, compensation or other benefit will not be paid before the earlier of (A) the day that is six months plus one day after the date of separation from service (as determined under Section 409A) or (B) the tenth day after the date of the Executive's death (as applicable, the "New Payment Date"). The aggregate of any payments that otherwise would have been paid to the Executive during the period between the date of separation from service and the New Payment Date will be paid to the Executive in a lump sum in the first payroll period beginning after such New Payment Date, and any remaining payments will be paid on their original schedule.

(b) *General 409A Principles*. For purposes of this Agreement, each amount to be paid or benefit to be provided will be construed as a separate identified payment for purposes of Section 409A, and any payments that are due within the "short term deferral period" as defined in Section 409A or are paid in a manner covered by Treas. Reg. Section 1.409A-1(b)(9)(iii) will not be treated as deferred compensation unless applicable law requires otherwise. Neither the Company nor the Executive will have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Section 409A. This Agreement is intended to comply with the provisions of Section 409A and the Agreement will, to the extent practicable, be construed in accordance therewith. Terms defined in the Agreement will have the meanings given such terms under Section 409A if and to the extent required to comply with Section 409A. In any event, the Company makes no representations or warranty and will have no liability to the Executive or any other person if any provisions of or payments under this Agreement are determined to constitute deferred compensation subject to Code Section 409A but not to satisfy the conditions of that section.

16. *Acknowledgment*. The Executive states and represents that the Executive has had an opportunity to fully discuss and review the terms of this Agreement with an attorney. The Executive further states and represents that the Executive has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs the Executive's name of the Executive's own free act.

17. *Miscellaneous.*

(a) No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

(b) The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement.

(c) In case any provision of this Agreement shall be invalid, illegal or otherwise unenforceable, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Name: Jerry Guo
Title: President & CEO

Date: Nov. 17, 2017

EXECUTIVE:

/s/ Jerry Guo
Jerry Guo

Date: Nov. 17, 2017

Exhibit 10.25

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT Agreement (the "Agreement"), effective November 17, 2017 (the "Effective Date"), is made and entered into by and between Casa Systems, Inc. (the "Company"), and Lucy Xie (the "Executive").

RECITALS

WHEREAS, the Company desires to continue to employ the Executive as its Senior Vice President of Operations; and

WHEREAS, the Executive has agreed to accept such continued employment on the terms and conditions set forth in this Agreement;

NOW, THEREFORE, in consideration of the foregoing and of the respective covenants and agreements of the parties herein contained, the parties hereto agree as follows:

1. *Term of Employment.* The term of this Agreement shall commence on the Effective Date and continue until terminated in accordance with the provisions set forth in Section 7 below (the "Term of Employment"). No provision of this Agreement shall be construed to create a promise of employment for any specific period of time, and nothing herein shall alter the Company's policy of employment at-will, under which both the Company and the Executive remain free to end the employment relationship for any reason, at any time, with or without Cause (as defined below) or notice. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay the Executive any compensation or grant the Executive any benefit beyond the end of the Term of Employment, except as explicitly set forth below.

2. *Position.* During the Term of Employment, the Executive shall continue to serve as the Company's Senior Vice President of Operations, working out of the Company's Andover, MA office and traveling as required by the Executive's job duties. The Executive shall report to the Company's Chief Executive Officer.

3. *Scope of Employment.* During the Term of Employment, the Executive shall be responsible for the performance of those duties consistent with the Executive's position, plus such other duties as may from time to time be assigned to the Executive by the Company. The Executive shall perform and discharge faithfully, diligently, and to the best of the Executive's ability, the Executive's duties and responsibilities hereunder. The Executive shall devote the Executive's entire business time, loyalty, attention and efforts to the business and affairs of the Company and its affiliates. The Executive agrees to abide by the rules, regulations, instructions, personnel practices and policies of the Company and any changes therein that may be adopted from time to time by the Company.

4. *Compensation.* As full compensation for all services rendered by the Executive during the Term of Employment, the Company will provide to the Executive the following:

(a) *Base Salary.* The Executive shall receive a base salary at the annualized rate of $376,836 (the "Base Salary"), to be paid in installments in accordance with the Company's regularly established payroll procedure.

(b) *Discretionary Bonus.* Following the end of each calendar year and subject to the approval of the Board, the Executive may be eligible to receive in that subsequent year a discretionary retention and performance bonus (the "Annual Bonus"). The target amount of such

Annual Bonus will be 100% of the Executive's then current Base Salary, based on the Executive's performance and the Company's performance during the applicable calendar year, as determined by the Board in its sole discretion. The Executive must be an active employee of the Company on the date the Annual Bonus is distributed in order to be eligible for and to earn any bonus award, as it also serves as an incentive to remain employed by the Company.

(c) *Long-Term Incentive Program*. The Executive shall continue to be eligible to participate in the Company's annual Long Term Incentive Program, with a target award equal to three hundred and fifty percent (350%**)** of the Executive's then current Base Salary, and with the form, terms and conditions of such long-term incentive awards to be determined in the sole discretion of the Board.

(d) *Vacation and Holidays.* The Executive shall be eligible for up to five (5) weeks of paid vacation per calendar year, to be taken at such times as may be approved in advance by the Board. The number of vacation days for which the Executive is eligible shall accrue at the rate of 2.083 days per month that the Executive is employed during such calendar year. The Executive's use and forfeiture of vacation time shall be in accordance with the Company's applicable policies and practices. In addition, the Executive will be eligible to take those holidays observed by the Company.

(e) *Benefits.* The Executive may participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided that the Executive is eligible under (and subject to all provisions of) the plan documents governing those programs. Benefits are subject to change at any time in the Company's sole discretion.

(f) *Withholdings.* All compensation payable to the Executive shall be subject to applicable taxes and withholdings.

5. *Expenses.* The Executive shall be entitled to reimbursement by the Company for all reasonable business and travel expenses incurred by the Executive on the Company's behalf during the course of the Executive employment, upon the presentation by the Executive of documentation itemizing such expenditures and attaching all supporting vouchers and receipts. Reimbursement will be made no later than 30 calendar days after the expense is substantiated (which must occur within 30 calendar days after the expense is incurred). The expenses eligible for reimbursement under this provision may not affect the amount of such expenses eligible for reimbursement in any other taxable year, and the right to reimbursement is not subject to liquidation or exchange for another benefit.

6. *Non-Disclosure, Inventions, Non-Competition, and Non-Solicitation Agreement.* As a condition of the Executive's continued employment pursuant to the terms set forth herein, the Executive hereby reaffirms the Executive's obligations set forth in the Assignment, Invention and Non-Disclosure Agreement dated December 6, 2016 (the "Non-Disclosure Agreement") and the Non-Competition and Non-Solicitation Agreement dated December 6, 2016 (the "Non-Competition Agreement") that the Executive previously executed for the benefit of the Company, which remain in full force and effect.

7. *Termination.*

(a) *Death and Disability.* In the event of the Executive's death during the Term of Employment, this Agreement shall terminate immediately. If, during the Term of Employment, the Executive shall suffer a "Disability" within the meaning of Section 22(e)(3) of the Internal Revenue Code of 1986, the Company may terminate the Executive's employment. Section 22(e)(3) provides, in relevant part: "An individual is permanently and totally disabled if he is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment

which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months." In the event the Executive is terminated due to death or Disability, the Executive shall be eligible to receive the separation benefits set forth in Section 8(b) below.

(b) *Termination by the Company for Cause.* The Executive may be terminated by the Company immediately and without notice for "Cause." "Cause" shall mean:

(i) Willful misconduct by the Executive; or

(ii) Willful failure by the Executive to perform his responsibilities to the Company (including, without limitation, breach by the Executive of any provision of this Agreement, the Non-Disclosure Agreement, or the Non-Competition Agreement).

Cause shall be determined by the Company, which determination shall be conclusive. The Executive's employment shall be considered to have been terminated for "Cause" if the Company determines, within 30 days after the Executive's resignation, that termination for Cause was warranted.

(c) *Termination by the Company Without Cause.* The Executive may be immediately terminated by the Company without Cause upon delivery of written notice to the Executive. In the event the Executive is terminated without Cause, the Executive shall be eligible to receive the severance benefits set forth in Section 8(a) below.

(d) *Termination by the Executive for Good Reason.* The Executive may terminate the Executive's employment under this Agreement for "Good Reason" in accordance with "Good Reason Process." For purposes hereof, the term "Good Reason" shall exist upon (i) a material diminution in the Executive's Base Salary; (ii) a material diminution in the Executive's authority, duties or responsibilities; (iii) a material change in geographic location at which the Executive performs services; or (iv) any material breach by the Company of this Agreement. "Good Reason Process" means the following series of actions: (i) the Executive reasonably determines in good faith that Good Reason exists, (ii) the Executive notifies the Company or the acquiring or succeeding corporation (if applicable) in writing of the existence of Good Reason within 60 days of the occurrence of the event that gave rise to the existence of Good Reason, (iii) the Executive cooperates in good faith with the Company's (or the acquiring or succeeding corporation's, if applicable) efforts to remedy the conditions that gave rise to the existence of Good Reason for a period of 30 days following such notice (such 30 day period, the "Cure Period"), (iv) notwithstanding such efforts, Good Reason continues to exist and (v) the Executive terminates his employment within 30 days after the end of the Cure Period. For the avoidance of doubt, if the Company or the acquiring or succeeding corporation successfully remedies the conditions that gave rise to the existence of Good Reason during the Cure Period, Good Reason shall be deemed not to have existed. In the event the Executive terminates employment under this Agreement for Good Reason, the Executive shall be eligible to receive the severance benefits set forth in Section 8(a).

(e) *Termination by the Executive without Good Reason.* The Executive may terminate the Executive's employment with the Company without Good Reason at any time subject to the Executive's provision of thirty (30) days' advance written notice to the Company (the "Applicable Notice Period"), provided, however, that the Company may, in its sole discretion, in lieu of all or part of the Applicable Notice Period, pay the Executive an amount equal to the Base Salary that would otherwise have been payable to the Executive had the Executive remained employed for the duration of the Applicable Notice Period. In such instance, the Executive's termination will become effective on the date set forth in a written notice of termination to be provided by the Company (the

"Early Termination Date"), and the Executive will be paid an amount equal to the Base Salary the Executive would have received had the Executive remained employed by the Company between the Early Termination Date and the end of the Applicable Notice Period (the "Early Termination Payment"), with the Early Termination Payment to be made no later than the 30th day following the end of the Applicable Notice Period.

(f) *Effect of Termination.* Except for a termination by the Company without Cause or by the Executive for Good Reason, or due to the Executive's death or Disability, in the event of any termination of the Term of Employment under any other circumstance (including, without limitation, the Company's termination of the Executive for Cause or the Executive's termination without Good Reason), the Company's obligations under this Agreement shall immediately cease and the Executive shall be entitled to only the Base Salary that has accrued and to which the Executive is entitled as of the effective date of such termination, and an amount equal to the value of any vacation time accrued but unused as of such date (the "Accrued Compensation"), and, if applicable, any Early Termination Payment that may be due pursuant to section 7(e) above. The Executive shall not be entitled to any other compensation or consideration, including any bonus not yet paid, that the Executive may have received had the Executive's Term of Employment not ceased.

8. *Severance Benefits*

(a) *Severance Benefits in the Event of Termination Without Cause or for Good Reason.* Subject to Section 15 below and to the Executive's compliance with the conditions set forth in Section 8(c) below, in the event that the Company terminates the Executive's employment without Cause or the Executive terminates the Executive's employment for Good Reason, the Executive will be eligible to receive, in addition to the Accrued Compensation, the following severance benefits (the "Severance Benefits"): (i) the Company will pay to the Executive an amount equal to the sum of (A) the Executive's annualized Base Salary, at the rate then in effect, and (B) the Executive's target annual bonus for the year in which the Executive's termination of employment occurs, payable in equal installments and in accordance with the Company's standard payroll policy as then in effect, for a period of twelve (12) months commencing at the time set forth in Section 8(c) hereof (the "Severance Period"), (ii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue until the conclusion of the Severance Period or, if earlier, until the date the Executive becomes eligible to enroll in the medical plans of any new employer, to pay the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply; and (iii) all outstanding and unvested stock options and other equity awards then held by the Executive shall become fully vested and exercisable and, with respect to any stock options then held by the Executive, those options shall remain exercisable for the period of time set forth in the applicable grant agreement.

(b) *Separation Benefits in the Event of Termination Due to Death or Disability.* Subject to Section 15 below and, in the event of the Executive's termination due to Disability, to the Executive's compliance with the conditions set forth in Section 8(c) below, in addition to the Accrued Compensation (but, for the avoidance of doubt, in lieu of the Severance Benefits set forth in Section 8(a) above), in the event of a termination of the Executive due to the Executive's death or Disability, the Executive (or his estate in the event of his death) will receive the following separation benefits (the "Separation Benefits"): All outstanding and unvested stock options and other equity awards then held by the Executive shall become fully vested and exercisable and, with respect to any stock options then held by the Executive, those options shall remain exercisable for the period of time set forth in the applicable grant agreement.

(c) *Separation and Release of Claims Agreement.* As a condition of the Executive's receipt of the Severance Benefits or, in the event of the Executive's termination due to his Disability, Separation Benefits, the Executive must execute and return to the Company a separation and release of claims agreement provided by and satisfactory to the Company (the "Separation Agreement"), and such Separation Agreement must become binding and enforceable within 60 calendar days after the Executive's termination of employment or such shorter period as may be specified by the Company in the Separation Agreement. Except as provided in section 15 below, any payments to be made either in a lump sum or in the form of salary continuation pursuant to the terms of Section 8(a) of this Agreement shall be payable in accordance with the normal payroll practices of the Company, with such payment or, as may be applicable, the first such payment, due and payable as soon as administratively practicable following the date the Separation Agreement becomes effective (provided, however, that if the 60-day period following the Executive's termination from employment would end in a calendar year subsequent to the year in which the Executive's employment ends, payments will not be made or begin before the first payroll period of the subsequent year). For the avoidance of doubt, if the Executive does not timely execute the Separation Agreement, or if the Executive revokes the executed Separation Agreement within the time period permitted by law, the Executive will not be entitled to any payments or benefits (including the accelerated vesting of stock options or other equity awards) set forth in Section 8 of this Agreement, any stock options and other equity awards that vested on account of such termination as provided for in Section 8(a) or 8(b) of this Agreement, as applicable, shall be cancelled with no consideration due to the Executive, and the Company will not have any further obligations to the Executive under this Agreement or otherwise. The Executive agrees that, should the Executive become eligible to participate in the medical plan of any subsequent employer prior to the conclusion of the Severance Period, the Executive will provide the Company with written notice thereof within five (5) business days of such eligibility. The Executive further agrees to repay any overpayment of health benefit premiums made by the Company hereunder. Notwithstanding anything to the contrary herein, in the event that the Company's payment of the amounts described in Section 8(a) would subject the Company to any tax or penalty under the Patient Protection and Affordable Care Act (as amended from time to time, the "ACA") or Section 105(h) of the Internal Revenue Code of 1986, as amended ("Section 105(h)"), or applicable regulations or guidance issued under the ACA or Section 105(h), the Executive and the Company agree to work together in good faith to restructure such benefit.

9. *Absence of Restrictions.* The Executive represents and warrants that the Executive is not bound by any employment contracts, restrictive covenants or other restrictions that prevent the Executive from continuing employment with, or carrying out the Executive's responsibilities for, the Company, or which are in any way inconsistent with any of the terms of this Agreement.

10. *Amendments.* Any amendment to this Agreement shall be made in writing and signed by the parties hereto.

11. *Notice.* Any notice required to be given, served or delivered to any of the parties hereto shall be sufficient if it is in writing and sent by certified or registered mail with proper postage prepaid, telecopier (with receipt confirmed), courier service or personal delivery addressed as follows:

To Executive:

At the address set forth in the Executive's personnel file

To Company:

Casa Systems, Inc.
Attn: Legal Counsel
100 Old River Road, Unit 100
Andover, MA 01810

or to such other address as a party from time to time may designate by notice to the other.

12. *Applicable Law; Jury Trial Waiver.* This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts (without reference to the conflict of laws provisions thereof). Any action, suit or other legal proceeding arising under or relating to any provision of this Agreement shall be commenced only in a court of the Commonwealth of Massachusetts (or, if appropriate, a federal court located within the Commonwealth of Massachusetts), and each of the Company and the Executive consents to the jurisdiction of such a court. Each of the Company and the Executive hereby irrevocably waives any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this Agreement.

13. *Entire Agreement.* This Agreement constitutes the entire agreement between the parties and supersedes all prior agreements and understandings, whether written or oral, relating to the subject matter of this Agreement.

14. *Successors and Assigns.* This Agreement shall be binding upon and inure to the benefit of both parties and their respective successors and assigns, including any corporation with which or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the obligations of the Executive are personal and shall not be assigned by the Executive.

15. *Section 409A.*

(a) *Six Month Delay*. If (i) a termination of employment pursuant to this Agreement constitutes a "separation from service" as defined in Section 409A of the Internal Revenue Code of 1986, as amended (the "Code") and (ii) any portion of any payment, compensation or other benefit provided to the Executive in connection with the Executive's separation from service (as defined in Section 409A of Code) is determined to constitute "nonqualified deferred compensation" within the meaning of Section 409A and (iii) the Executive is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, as determined by the Company in accordance with its procedures, by which determination the Executive hereby agrees to be bound, such portion of the payment, compensation or other benefit will not be paid before the earlier of (A) the day that is six months plus one day after the date of separation from service (as determined under Section 409A) or (B) the tenth day after the date of the Executive's death (as applicable, the "New Payment Date"). The aggregate of any payments that otherwise would have been paid to the Executive during the period between the date of separation from service and the New Payment Date will be paid to the Executive in a lump sum in the first payroll period beginning after such New Payment Date, and any remaining payments will be paid on their original schedule.

(b) *General 409A Principles*. For purposes of this Agreement, each amount to be paid or benefit to be provided will be construed as a separate identified payment for purposes of Section 409A, and any payments that are due within the "short term deferral period" as defined in Section 409A or are paid in a manner covered by Treas. Reg. Section 1.409A-1(b)(9)(iii) will not be treated as deferred compensation unless applicable law requires otherwise. Neither the Company nor the Executive will have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Section 409A. This Agreement is intended to comply with the provisions of Section 409A and the Agreement will, to the extent practicable, be construed in accordance therewith. Terms defined in the Agreement will have the meanings given such terms under Section 409A if and to the extent required to comply with Section 409A. In any event, the Company makes no representations or warranty and will have no liability to the Executive or any other person if any provisions of or payments under this Agreement are determined to constitute deferred compensation subject to Code Section 409A but not to satisfy the conditions of that section.

16. *Acknowledgment*. The Executive states and represents that the Executive has had an opportunity to fully discuss and review the terms of this Agreement with an attorney. The Executive further states and represents that the Executive has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs the Executive's name of the Executive's own free act.

17. *Miscellaneous.*

(a) No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

(b) The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement.

(c) In case any provision of this Agreement shall be invalid, illegal or otherwise unenforceable, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Name: Jerry Guo
Title: President & CEO

Date: Nov. 17, 2017

EXECUTIVE:

/s/ Lucy Xie
Lucy Xie

Date: 11/17/2017

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT Agreement (the "Agreement"), effective November 17, 2017 (the "Effective Date"), is made and entered into by and between Casa Systems, Inc. (the "Company"), and Weidong Chen (the "Executive").

RECITALS

WHEREAS, the Company desires to continue to employ the Executive as its Chief Technology Officer; and

WHEREAS, the Executive has agreed to accept such continued employment on the terms and conditions set forth in this Agreement;

NOW, THEREFORE, in consideration of the foregoing and of the respective covenants and agreements of the parties herein contained, the parties hereto agree as follows:

1. *Term of Employment.* The term of this Agreement shall commence on the Effective Date and continue until terminated in accordance with the provisions set forth in Section 7 below (the "Term of Employment"). No provision of this Agreement shall be construed to create a promise of employment for any specific period of time, and nothing herein shall alter the Company's policy of employment at-will, under which both the Company and the Executive remain free to end the employment relationship for any reason, at any time, with or without Cause (as defined below) or notice. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay the Executive any compensation or grant the Executive any benefit beyond the end of the Term of Employment, except as explicitly set forth below.

2. *Position.* During the Term of Employment, the Executive shall continue to serve as the Company's Chief Technology Officer, working out of the Company's Andover, MA office and traveling as required by the Executive's job duties. The Executive shall report to the Company's Chief Executive Officer.

3. *Scope of Employment.* During the Term of Employment, the Executive shall be responsible for the performance of those duties consistent with the Executive's position, plus such other duties as may from time to time be assigned to the Executive by the Company. The Executive shall perform and discharge faithfully, diligently, and to the best of the Executive's ability, the Executive's duties and responsibilities hereunder. The Executive shall devote the Executive's entire business time, loyalty, attention and efforts to the business and affairs of the Company and its affiliates. The Executive agrees to abide by the rules, regulations, instructions, personnel practices and policies of the Company and any changes therein that may be adopted from time to time by the Company.

4. *Compensation.* As full compensation for all services rendered by the Executive during the Term of Employment, the Company will provide to the Executive the following:

(a) *Base Salary.* The Executive shall receive a base salary at the annualized rate of $376,836 (the "Base Salary"), to be paid in installments in accordance with the Company's regularly established payroll procedure.

(b) *Discretionary Bonus.* Following the end of each calendar year and subject to the approval of the Board, the Executive may be eligible to receive in that subsequent year a discretionary retention and performance bonus (the "Annual Bonus"). The target amount of such

Annual Bonus will be 100% of the Executive's then current Base Salary, based on the Executive's performance and the Company's performance during the applicable calendar year, as determined by the Board in its sole discretion. The Executive must be an active employee of the Company on the date the Annual Bonus is distributed in order to be eligible for and to earn any bonus award, as it also serves as an incentive to remain employed by the Company.

(c) *Long-Term Incentive Program*. The Executive shall continue to be eligible to participate in the Company's annual Long Term Incentive Program, with a target award equal to two hundred percent (200%) of the Executive's then current Base Salary, and with the form, terms and conditions of such long-term incentive awards to be determined in the sole discretion of the Board.

(d) *Vacation and Holidays.* The Executive shall be eligible for up to five (5) weeks of paid vacation per calendar year, to be taken at such times as may be approved in advance by the Board. The number of vacation days for which the Executive is eligible shall accrue at the rate of 2.083 days per month that the Executive is employed during such calendar year. The Executive's use and forfeiture of vacation time shall be in accordance with the Company's applicable policies and practices. In addition, the Executive will be eligible to take those holidays observed by the Company**.**

(e) *Benefits.* The Executive may participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided that the Executive is eligible under (and subject to all provisions of) the plan documents governing those programs. Benefits are subject to change at any time in the Company's sole discretion.

(f) *Withholdings.* All compensation payable to the Executive shall be subject to applicable taxes and withholdings.

5. *Expenses.* The Executive shall be entitled to reimbursement by the Company for all reasonable business and travel expenses incurred by the Executive on the Company's behalf during the course of the Executive employment, upon the presentation by the Executive of documentation itemizing such expenditures and attaching all supporting vouchers and receipts. Reimbursement will be made no later than 30 calendar days after the expense is substantiated (which must occur within 30 calendar days after the expense is incurred). The expenses eligible for reimbursement under this provision may not affect the amount of such expenses eligible for reimbursement in any other taxable year, and the right to reimbursement is not subject to liquidation or exchange for another benefit.

6. *Non-Disclosure, Inventions, Non-Competition, and Non-Solicitation Agreement.* As a condition of the Executive's continued employment pursuant to the terms set forth herein, the Executive hereby reaffirms the Executive's obligations set forth in the Assignment, Invention and Non-Disclosure Agreement dated January 24, 2004 (the "Non-Disclosure Agreement") and the Non-Competition and Non-Solicitation Agreement dated January 24, 2004 (the "Non-Competition Agreement") that the Executive previously executed for the benefit of the Company, which remain in full force and effect.

7. *Termination.*

(a) *Death and Disability.* In the event of the Executive's death during the Term of Employment, this Agreement shall terminate immediately. If, during the Term of Employment, the Executive shall suffer a "Disability" within the meaning of Section 22(e)(3) of the Internal Revenue Code of 1986, the Company may terminate the Executive's employment. Section 22(e)(3) provides, in relevant part: "An individual is permanently and totally disabled if he is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment

which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months." In the event the Executive is terminated due to death or Disability, the Executive shall be eligible to receive the separation benefits set forth in Section 8(b) below.

(b) *Termination by the Company for Cause.* The Executive may be terminated by the Company immediately and without notice for "Cause." "Cause" shall mean:

(i) Willful misconduct by the Executive; or

(ii) Willful failure by the Executive to perform his responsibilities to the Company (including, without limitation, breach by the Executive of any provision of this Agreement, the Non-Disclosure Agreement, or the Non-Competition Agreement).

Cause shall be determined by the Company, which determination shall be conclusive. The Executive's employment shall be considered to have been terminated for "Cause" if the Company determines, within 30 days after the Executive's resignation, that termination for Cause was warranted.

(c) *Termination by the Company Without Cause.* The Executive may be immediately terminated by the Company without Cause upon delivery of written notice to the Executive. In the event the Executive is terminated without Cause, the Executive shall be eligible to receive the severance benefits set forth in Section 8(a) below.

(d) *Termination by the Executive for Good Reason.* The Executive may terminate the Executive's employment under this Agreement for "Good Reason" in accordance with "Good Reason Process." For purposes hereof, the term "Good Reason" shall exist upon (i) a material diminution in the Executive's Base Salary; (ii) a material diminution in the Executive's authority, duties or responsibilities; (iii) a material change in geographic location at which the Executive performs services; or (iv) any material breach by the Company of this Agreement. "Good Reason Process" means the following series of actions: (i) the Executive reasonably determines in good faith that Good Reason exists, (ii) the Executive notifies the Company or the acquiring or succeeding corporation (if applicable) in writing of the existence of Good Reason within 60 days of the occurrence of the event that gave rise to the existence of Good Reason, (iii) the Executive cooperates in good faith with the Company's (or the acquiring or succeeding corporation's, if applicable) efforts to remedy the conditions that gave rise to the existence of Good Reason for a period of 30 days following such notice (such 30 day period, the "Cure Period"), (iv) notwithstanding such efforts, Good Reason continues to exist and (v) the Executive terminates his employment within 30 days after the end of the Cure Period. For the avoidance of doubt, if the Company or the acquiring or succeeding corporation successfully remedies the conditions that gave rise to the existence of Good Reason during the Cure Period, Good Reason shall be deemed not to have existed. In the event the Executive terminates employment under this Agreement for Good Reason, the Executive shall be eligible to receive the severance benefits set forth in Section 8(a).

(e) *Termination by the Executive without Good Reason.* The Executive may terminate the Executive's employment with the Company without Good Reason at any time subject to the Executive's provision of thirty (30) days' advance written notice to the Company (the "Applicable Notice Period"), provided, however, that the Company may, in its sole discretion, in lieu of all or part of the Applicable Notice Period, pay the Executive an amount equal to the Base Salary that would otherwise have been payable to the Executive had the Executive remained employed for the duration of the Applicable Notice Period. In such instance, the Executive's termination will become effective on the date set forth in a written notice of termination to be provided by the Company (the

"Early Termination Date"), and the Executive will be paid an amount equal to the Base Salary the Executive would have received had the Executive remained employed by the Company between the Early Termination Date and the end of the Applicable Notice Period (the "Early Termination Payment"), with the Early Termination Payment to be made no later than the 30th day following the end of the Applicable Notice Period.

(f) *Effect of Termination.* Except for a termination by the Company without Cause or by the Executive for Good Reason, or due to the Executive's death or Disability, in the event of any termination of the Term of Employment under any other circumstance (including, without limitation, the Company's termination of the Executive for Cause or the Executive's termination without Good Reason), the Company's obligations under this Agreement shall immediately cease and the Executive shall be entitled to only the Base Salary that has accrued and to which the Executive is entitled as of the effective date of such termination, and an amount equal to the value of any vacation time accrued but unused as of such date (the "Accrued Compensation"), and, if applicable, any Early Termination Payment that may be due pursuant to section 7(e) above. The Executive shall not be entitled to any other compensation or consideration, including any bonus not yet paid, that the Executive may have received had the Executive's Term of Employment not ceased.

8. *Severance Benefits*

(a) *Severance Benefits in the Event of Termination Without Cause or for Good Reason.* Subject to Section 15 below and to the Executive's compliance with the conditions set forth in Section 8(c) below, in the event that the Company terminates the Executive's employment without Cause or the Executive terminates the Executive's employment for Good Reason, the Executive will be eligible to receive, in addition to the Accrued Compensation, the following severance benefits (the "Severance Benefits"): (i) the Company will pay to the Executive an amount equal to the sum of (A) the Executive's annualized Base Salary, at the rate then in effect, and (B) the Executive's target annual bonus for the year in which the Executive's termination of employment occurs, payable in equal installments and in accordance with the Company's standard payroll policy as then in effect, for a period of twelve (12) months commencing at the time set forth in Section 8(c) hereof (the "Severance Period"), (ii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue until the conclusion of the Severance Period or, if earlier, until the date the Executive becomes eligible to enroll in the medical plans of any new employer, to pay the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply; and (iii) all outstanding and unvested stock options and other equity awards then held by the Executive shall become fully vested and exercisable and, with respect to any stock options then held by the Executive, those options shall remain exercisable for the period of time set forth in the applicable grant agreement.

(b) *Separation Benefits in the Event of Termination Due to Death or Disability.* Subject to Section 15 below and, in the event of the Executive's termination due to Disability, to the Executive's compliance with the conditions set forth in Section 8(c) below, in addition to the Accrued Compensation (but, for the avoidance of doubt, in lieu of the Severance Benefits set forth in Section 8(a) above), in the event of a termination of the Executive due to the Executive's death or Disability, the Executive (or his estate in the event of his death) will receive the following separation benefits (the "Separation Benefits"): All outstanding and unvested stock options and other equity awards then held by the Executive shall become fully vested and exercisable and, with respect to any stock options then held by the Executive, those options shall remain exercisable for the period of time set forth in the applicable grant agreement.

(c) *Separation and Release of Claims Agreement.* As a condition of the Executive's receipt of the Severance Benefits or, in the event of the Executive's termination due to his Disability, Separation Benefits, the Executive must execute and return to the Company a separation and release of claims agreement provided by and satisfactory to the Company (the "Separation Agreement"), and such Separation Agreement must become binding and enforceable within 60 calendar days after the Executive's termination of employment or such shorter period as may be specified by the Company in the Separation Agreement. Except as provided in section 15 below, any payments to be made either in a lump sum or in the form of salary continuation pursuant to the terms of Section 8(a) of this Agreement shall be payable in accordance with the normal payroll practices of the Company, with such payment or, as may be applicable, the first such payment, due and payable as soon as administratively practicable following the date the Separation Agreement becomes effective (provided, however, that if the 60-day period following the Executive's termination from employment would end in a calendar year subsequent to the year in which the Executive's employment ends, payments will not be made or begin before the first payroll period of the subsequent year). For the avoidance of doubt, if the Executive does not timely execute the Separation Agreement, or if the Executive revokes the executed Separation Agreement within the time period permitted by law, the Executive will not be entitled to any payments or benefits (including the accelerated vesting of stock options or other equity awards) set forth in Section 8 of this Agreement, any stock options and other equity awards that vested on account of such termination as provided for in Section 8(a) or 8(b) of this Agreement, as applicable, shall be cancelled with no consideration due to the Executive, and the Company will not have any further obligations to the Executive under this Agreement or otherwise. The Executive agrees that, should the Executive become eligible to participate in the medical plan of any subsequent employer prior to the conclusion of the Severance Period, the Executive will provide the Company with written notice thereof within five (5) business days of such eligibility. The Executive further agrees to repay any overpayment of health benefit premiums made by the Company hereunder. Notwithstanding anything to the contrary herein, in the event that the Company's payment of the amounts described in Section 8(a) would subject the Company to any tax or penalty under the Patient Protection and Affordable Care Act (as amended from time to time, the "ACA") or Section 105(h) of the Internal Revenue Code of 1986, as amended ("Section 105(h)"), or applicable regulations or guidance issued under the ACA or Section 105(h), the Executive and the Company agree to work together in good faith to restructure such benefit.

9. *Absence of Restrictions.* The Executive represents and warrants that the Executive is not bound by any employment contracts, restrictive covenants or other restrictions that prevent the Executive from continuing employment with, or carrying out the Executive's responsibilities for, the Company, or which are in any way inconsistent with any of the terms of this Agreement.

10. *Amendments.* Any amendment to this Agreement shall be made in writing and signed by the parties hereto.

11. *Notice.* Any notice required to be given, served or delivered to any of the parties hereto shall be sufficient if it is in writing and sent by certified or registered mail with proper postage prepaid, telecopier (with receipt confirmed), courier service or personal delivery addressed as follows:

To Executive:

At the address set forth in the Executive's personnel file

To Company:

Casa Systems, Inc.
Attn: Legal Counsel
100 Old River Road, Unit 100
Andover, MA 01810

or to such other address as a party from time to time may designate by notice to the other.

12. *Applicable Law; Jury Trial Waiver.* This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts (without reference to the conflict of laws provisions thereof). Any action, suit or other legal proceeding arising under or relating to any provision of this Agreement shall be commenced only in a court of the Commonwealth of Massachusetts (or, if appropriate, a federal court located within the Commonwealth of Massachusetts), and each of the Company and the Executive consents to the jurisdiction of such a court. Each of the Company and the Executive hereby irrevocably waives any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this Agreement.

13. *Entire Agreement.* This Agreement constitutes the entire agreement between the parties and supersedes all prior agreements and understandings, whether written or oral, relating to the subject matter of this Agreement.

14. *Successors and Assigns.* This Agreement shall be binding upon and inure to the benefit of both parties and their respective successors and assigns, including any corporation with which or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the obligations of the Executive are personal and shall not be assigned by the Executive.

15. *Section 409A.*

(a) *Six Month Delay*. If (i) a termination of employment pursuant to this Agreement constitutes a "separation from service" as defined in Section 409A of the Internal Revenue Code of 1986, as amended (the "Code") and (ii) any portion of any payment, compensation or other benefit provided to the Executive in connection with the Executive's separation from service (as defined in Section 409A of Code) is determined to constitute "nonqualified deferred compensation" within the meaning of Section 409A and (iii) the Executive is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, as determined by the Company in accordance with its procedures, by which determination the Executive hereby agrees to be bound, such portion of the payment, compensation or other benefit will not be paid before the earlier of (A) the day that is six months plus one day after the date of separation from service (as determined under Section 409A) or (B) the tenth day after the date of the Executive's death (as applicable, the "New Payment Date"). The aggregate of any payments that otherwise would have been paid to the Executive during the period between the date of separation from service and the New Payment Date will be paid to the Executive in a lump sum in the first payroll period beginning after such New Payment Date, and any remaining payments will be paid on their original schedule.

(b) *General 409A Principles*. For purposes of this Agreement, each amount to be paid or benefit to be provided will be construed as a separate identified payment for purposes of Section 409A, and any payments that are due within the "short term deferral period" as defined in Section 409A or are paid in a manner covered by Treas. Reg. Section 1.409A-1(b)(9)(iii) will not be treated as deferred compensation unless applicable law requires otherwise. Neither the Company nor the Executive will have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Section 409A. This Agreement is intended to comply with the provisions of Section 409A and the Agreement will, to the extent practicable, be construed in accordance therewith. Terms defined in the Agreement will have the meanings given such terms under Section 409A if and to the extent required to comply with Section 409A. In any event, the Company makes no representations or warranty and will have no liability to the Executive or any other person if any provisions of or payments under this Agreement are determined to constitute deferred compensation subject to Code Section 409A but not to satisfy the conditions of that section.

16. *Acknowledgment*. The Executive states and represents that the Executive has had an opportunity to fully discuss and review the terms of this Agreement with an attorney. The Executive further states and represents that the Executive has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs the Executive's name of the Executive's own free act.

17. *Miscellaneous.*

(a) No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

(b) The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement.

(c) In case any provision of this Agreement shall be invalid, illegal or otherwise unenforceable, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Name: Jerry Guo
Title: President & CEO

Date: Nov. 17, 2017

EXECUTIVE:

/s/ Weidong Chen
Weidong Chen

Date: 11/17/2017

Exhibit 21.1

Subsidiaries of Casa Systems, Inc.

Name of Subsidiary	Jurisdiction of Incorporation or Organization
Casa Communications Limited	Ireland
Casa Communications Technology S.L.	Spain
Casa Properties LLC	Delaware
Casa Systems B.V.	Netherlands
Casa Systems Canada Ltd.	Quebec, Canada
Casa Systems SAS	France
Casa Systems Securities Corporation	Massachusetts
Guangzhou Casa Communication Technology LTD	China

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use in this Registration Statement on Form S-1 of Casa Systems, Inc. of our report dated March 8, 2017 relating to the financial statements, which appears in such Registration Statement. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
November 17, 2017