APPLIED DNA SCIENCES INC
Form 10-K
December 18, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended September 30, 2018

¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number **001-36745**

APPLIED DNA SCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**59-2262718**
(State or other jurisdiction of	(I.R.S. Employer

incorporation or organization) Identification No.)

50 Health Sciences Drive, **Stony Brook, New York**	**11790**	**(631) 840-8800**
(Address of principal executive offices)	(Zip Code)	(Registrant's telephone number, including area code)

Securities registered under Section 12(b) of the Act:

Title of Each Class	**Name of each Exchange on Which Registered**
Common Stock, $0.001 par value	The NASDAQ Capital Market
Warrants to purchase Common Stock	The NASDAQ Capital Market

Securities registered under Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

¨ Yes x No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

¨ Yes x No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

x Yes ¨ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

x Yes ¨ No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 x Smaller reporting company x

Emerging growth company ¨

If an emerging growth company, indicate by a check mark if the registrant has elected to not use the extended transition period of complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). ¨ Yes x No

The aggregate market value of the Registrant's voting and non-voting common stock held by non-affiliates of the Registrant, based upon the last sale price of the common stock reported on The Nasdaq Capital Market as of the last business day of the Registrant's most recently completed second fiscal quarter (March 31, 2018), was approximately $38 million. Shares of the Registrant's common stock held by each executive officer and director and by each entity or person that, to the Registrant's knowledge, owned 5% or more of the Registrant's outstanding common stock as of March 31, 2018 have been excluded in that such persons may be deemed to be affiliates of the Registrant. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of December 14, 2018, the Registrant had outstanding 30,112,057 shares of common stock, par value $0.001 per share.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive Proxy Statement for the 2019 Annual Meeting of Shareholders, to be filed within 120 days after the end of the fiscal year ended September 30, 2018 and incorporated by reference in Part III hereof. Except with respect to information specifically incorporated by reference in the Annual Report on Form 10-K, the

Proxy Statement is not deemed to be filed as part hereof.

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PART I

Forward-looking Information

This Annual Report on Form 10-K (including but not limited to Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations") contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are intended to qualify for the "safe harbor" created by those sections. In addition, we may make forward-looking statements in other documents filed with or furnished to the Securities and Exchange Commission ("SEC"), and our management and representatives may make forward-looking statements orally or in writing to analysts, investors, representatives of the media and others. Forward-looking statements can generally be identified by the fact that they do not relate strictly to historical or current facts and include, but are not limited to, statements using terminology such as "can", "may", "could", "should", "assume", "forecasts", "believe", "designated to", "will "plan", "anticipate", "estimate", "potential", "position", "predicts", "strategy", "guidance", "intend", "seek", "budget", "projec the negative thereof or other comparable terminology regarding beliefs, plans, expectations or intentions regarding the future. You should read statements that contain these words carefully because they:

discuss our future expectations;

contain projections of our future results of operations or of our financial condition; and

state other "forward-looking" information.

We believe it is important to communicate our expectations. However, forward-looking statements are based on our current expectations, assumptions, estimates and projections about our business and our industry and are subject to known and unknown risks, uncertainties and other factors. Accordingly, our actual results and the timing of certain events may differ materially from those expressed or implied in such forward-looking statements due to a variety of factors and risks, including, but not limited to, those set forth under Item 1, "Business," Item 1A, "Risk Factors," Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," and our consolidated financial statements and notes thereto included in this report, those set forth from time to time in our other filings with the SEC, and the following factors and risks:

Our ability to continue as a going concern;

our lack of significant revenues;

our limited experience in marketing our large-scale PCR based manufacturing platform;

our history of net losses, which may continue, and our potential inability to achieve profitability;

the possibility that we may require additional financing, which may involve the issuance of additional shares of common stock or securities exercisable for common stock and dilute the percentage of ownership held by our current stockholders;

difficulty in obtaining or inability to obtain, additional financing if such financing becomes necessary;

the possibility we may fail to make timely payments on our secured convertible notes and, as a result, the noteholders enforcing their remedies and ultimately realizing on their collateral which includes substantially all of our assets, including our intellectual property;

volatility in the price and/or trading volume of our common stock;

future short selling and/or manipulation of the price of our common stock;

our inability to implement our short and long-term strategies;

competition from products and services provided by other companies, including competition in the principal markets for our drug and biologic candidates and linear DNA;

potential difficulties and failures in manufacturing our products;

loss of strategic relationships;

dependence on a limited number of key customers;

lack of acceptance of our products and services by potential customers;

potential failure to introduce new products and services;

difficulty or failure in expanding/and or maintaining our sales, marketing and support organizations and our distribution arrangements necessary to enable us to reach our goals with respect to increasing market acceptance of

our products and services;

seasonality in revenues related to our cotton customer contracts;

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shifting enforcement priorities of U.S. federal laws relating to cannabis;

inability to obtain and maintain regulatory approval in the pharmaceutical and biologic markets;

inability of our collaborators, licensees, and customers to develop, obtain approval for and successfully commercialize products that incorporate our technology;

inability of us, our collaborators, or customers to develop and timely manufacture complex biologic products and their components to exacting quality and safety standards;

inability to attract and retain qualified scientific, production and managerial personnel, including of Dr. Hayward, our Chief Executive Officer;

failure to maintain the listing on, or the delisting of our securities from, The NASDAQ Capital Market;

conflicts of interest with affiliates and related parties with whom we have engaged or entered into transactions;

inability to compete effectively in the industries in which we operate;

lack of success in our research and development efforts for new products;

failure to manage our growth in operations and acquisitions of new technologies and businesses;

inability to protect our intellectual property rights;

intellectual property litigation against us or other legal actions or proceedings in which we may become involved;

unauthorized disclosure of sensitive or confidential data (including customer data) and cybersecurity breaches; and

adverse changes in worldwide or domestic economic, political or business conditions.

All forward-looking statements and risk factors included in this Annual Report on Form 10-K are made as of the date hereof, based on information available to us as of such date, and we assume no obligations to update any

forward-looking statement or risk factor, unless we are required to do so by law. If we do update one or more forward-looking statements, no inference should be drawn that we will make updates with respect to other forward-looking statements or that we will make any further updates to those forward-looking statements at any future time.

Forward-looking statements may include our plans and objectives for future operations, including plans and objectives relating to our products and our future economic performance, projections, business strategy and timing and likelihood of success. Assumptions relating to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions, future business decisions, and the time and money required to successfully complete development and commercialization of our technologies, all of which are difficult or impossible to predict accurately and many of which are beyond our control.

Any of the assumptions underlying the forward-looking statements contained in this Annual Report on Form 10-K could prove inaccurate and, therefore, we cannot assure you that the results contemplated in any of such forward-looking statements will be realized. Based on the significant uncertainties inherent in these forward-looking statements, the inclusion of any such statement should not be regarded as a representation or as a guarantee by us that our objectives or plans will be achieved, and we caution you against relying on any of the forward-looking statements contained herein.

Our trademarks in the United States include Applied DNA Sciences®, SigNature® molecular tags, SigNature® T molecular tags, fiberTyping®, DNAnet®, digitalDNA®, SigNify®, BackTrac®, Beacon® and CertainT® All trademarks, service marks and trade names included or incorporated by reference in this Annual Report on Form 10-K are the property of their respective owners, including, without limitation, the PimaCott®, HomeGrown® LoneStar™ and HomeGrown Acala™ marks owned by Himatsingka America, Inc. and/or its affiliates.

ITEM 1. BUSINESS.

Overview

Using our large scale polymerase chain reaction (PCR) based manufacturing platform, we manufacture large quantities of linear DNA for various markets. Whether for supply chain security, brand protection, law enforcement or drug or biologic applications, it is our goal to help establish secure flourishing environments that foster quality, integrity and success. With secure taggants, high-resolution DNA authentication, and comprehensive reporting, our SigNature molecular tag technologies are designed to deliver what we believe to be the greatest levels of security, deterrence and legal recourse strength. Under our wholly owned subsidiary, LineaRx, Inc. (LRx), we supply DNA for use in the in vitro medical diagnostics, preclinical biotechnology and preclinical drug and biologic development and manufacturing markets. We are also engaged in preclinical and animal drug candidate development directly and with collaborators focusing on therapeutically relevant DNA constructs manufactured via our PCR-based DNA production platform.

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SigNature molecular tags, the core of our supply chain security technology platform, are what we believe to be nature's ultimate means of authentication and supply chain security. We believe our precision-engineered molecular tags have not been broken. Additional layers of protection and complexity are added to the mark in a proprietary manner. SigNature molecular tags in various carriers have proven highly resistant to UV radiation, heat, cold, vibration, abrasion and other extreme environments and conditions. We work closely with our customers to develop solutions that will be optimized to their specifications to deliver maximum impact. Our products and technology are protected by what we believe to be a robust portfolio of patents and trademarks.

Using our tagging products and technology, manufacturers, brands, and other stakeholders can ensure authenticity and protect against diversion throughout a product's journey from manufacturer to use.

The core technologies of our supply chain security business are supplied as tag, test and track solutions for large complex supply chains. Our tag, test and track solutions allow our customers to use molecular tags to mark objects in a unique manner that we believe cannot be replicated, and then identify these objects by detecting the absence or presence of the molecular tag. We believe that our disruptive tracking platform offers broad commercial relevance across many industry verticals. Our underlying strategy in the tagging business is to become a solutions provider for supply chains of process industries in which contracts for our products and services are larger and of longer duration as compared to our historic norms, where the benefits to customers and consumers are more significant, and where our forensic security and traceability offer a unique and protected value. Consumers, governments and companies are demanding details about the systems and sources that deliver their goods. They worry about quality, safety, ethics, and the environmental impact. Farsighted organizations are directly addressing new threats and opportunities presented by this question: Where do these goods come from? This is the question and the concerns we are beginning to address for a growing number of companies. We supply key building blocks for creating secure supply chains with traceability of goods, which in turn can help ensure integrity in supply, honest sales and marketing claims, and ethical and sustainable sourcing.

Customers using our PCR-produced linear DNA products and services for use in vitro medical diagnostics, preclinical biotechnology research and preclinical drug and biologic development and manufacturing receive DNA product we believe is made cleaner and faster than historical manufacturing methods, thereby offering the opportunity for increased efficiency and turnaround times in their processes. We are also engaged in preclinical and animal drug candidate development activities focusing on therapeutically relevant DNA constructs manufactured via our PCR-based production platform. We seek to develop, acquire and commercialize, along or with partners, a diverse portfolio of nucleic acid based drugs and biologics based on PCR-produced linear DNA which we believe will improve existing nucleic acid based therapeutics or to create new nucleic acid based therapeutics that address unmet medical needs.

Corporate History

We are a Delaware corporation, which was initially formed in 1983 under the laws of the State of Florida as Datalink Systems, Inc. In 1998, we reincorporated in the State of Nevada, and in 2002, we changed our name to our current name, Applied DNA Sciences, Inc. In December 2008, we reincorporated from Nevada to the State of Delaware.

Our corporate headquarters are located at the Long Island High Technology Incubator at Stony Brook University in Stony Brook, New York, where we established laboratories for the manufacture of molecular tags, product prototyping, molecular tag authentication and bulk DNA production. The address of our corporate headquarters is 50 Health Sciences Drive, Stony Brook, New York 11790, and our telephone number is (631) 240-8800. We maintain a website at *www.adnas.com* where general information about us is available. The information on, or that may be accessed through, our website is not incorporated by reference into and should not be considered a part of this report.

Industry Background

Supply chain security

Supply chains are the systems used by companies to obtain products and services for resale, their own consumption or as a component in a product or service that they then resell. Supply chains often include the sourcing of raw materials, their processing in various stages to create products, and transportation and logistics to move goods both within the supply chain process and to the final consumer. Many different companies may be part of a supply chain, and often the owner of the supply chain has limited ability to oversee and supervise all components of its supply chain. Supply chain security refers to efforts to enhance the security of the supply chain. It combines traditional practices of supply chain management with the security requirements driven by threats such as terrorism, piracy and theft. We focus on two particular parts of supply chain security, the identity of goods to detect substitution of specified inputs with something else, often a cheaper, inferior input and the traceability of goods to a point in its lifecycle. For example, a company might specify that sheets be made of high quality pima cotton but the company that wove the material for the sheets substituted cheaper and inferior upland cotton. We call a supply chain with such security problems a leaky supply chain. Leaky supply chains create significant and growing problems to companies in a wide range of industries as well as governments and individuals worldwide. Large retailers assemble sprawling networks of suppliers in developing countries to produce their goods at cheaper cost, underscoring the difficulties of policing a global supply chain. This is a global problem that only appears to be increasing. Leaky supply chains allow materials to become diluted, diverted or counterfeited, devaluing corporate reputations, potentially causing health and safety concerns, and hindering investment, and may cost hundreds of thousands of people their livelihood every year. In addition, a company with a leaky supply chain has essentially been cheated, since they paid a premium price for an inferior substitution.

As more and more companies begin to address the problem of supply chain security, we expect that different systems will compete to be the leading standards by which products can be tracked across world markets. To ensure only genuine products are entering the marketplace requires cutting edge technology. Historically, leaky supply chains and other types of fraud have been combated by embedding various authentication systems and rare and easily distinguishable materials into products; technologies such as radio frequency identification ("RFID") devices, holograms or integrated circuit chips onto packaging; magnetic strips in automatic teller machine cards; banknote threads on currency; elemental taggants in explosives; and radioactivity and rare molecules in crude oil. We believe these techniques are effective but have generally been reverse-engineered and replicated which limit their usefulness as forensic methods for authentication of the sources of products and other items.

Brand Protection

Establishing a strong brand is pivotal to business success, as it is how a company is perceived by the customer. We believe that protecting that brand is as important. Counterfeiting affects brands across the globe and effective brand protection strategy has become imperative for companies. Many customers do not even realize that they have a counterfeit product, attributing the poor quality to the brand thus tarnishing its name. A recent Organization for Economic Co-operation and Development (OECD) report (June 23, 2017) reiterates a number of trends that have been evident for more than a decade – virtually all brands are being counterfeited, and counterfeit and pirated products are originating from virtually all economies on all continents. Counterfeiters are improving their logistics networks, manipulating transit routes, exploiting governance gaps and taking advantage of the huge growth in online shopping, thereby underlining the need for secure supply chains to protect brands. Consumer safety and satisfaction, brand reputation and revenues can be adversely impacted by counterfeiting. Our SigNature molecular tags can be applied to many products, affording quick and definitive identification of authentic products, and aiding in brand protection efforts.

Law Enforcement Applications

Burglaries, car theft, and cash-in-transit robberies are worldwide problems begging for a solution. The United States leads the world in the occurrence of home burglaries, with a burglary occurring about every 18 seconds in the U.S. (The SafeWise Report - September 13, 2017). Interpol reported that for the year ending December 31, 2017, they had received 7.2 million records of reported stolen motor vehicles from 126 different countries (Interpol — Database Statistics). According to the FBI, there were an estimated 765,484 motor vehicles stolen in the United States in 2016 and the value of the stolen motor vehicles was approximately $5.9 billion. These crimes have wide-ranging impacts, affecting law enforcement agencies, insurance companies, legislative bodies, and justice departments.

Asset identification, management, protection and authentication solutions that deliver value to the customer are critical components of any successful theft deterrent program. In addition to tagging assets with a unique mark to prevent theft and facilitate return of stolen goods, it is imperative that would-be thieves know that the items are marked and that law enforcement is trained to properly identify recovered property. Forensic marking of home assets, including automobiles, uses technology to code valuables at risk of theft to identify burglars, linking them directly with a crime scene. Over the years, authorities have found it difficult to obtain convictions of thieves in possession of suspected stolen property unless the true owner can be identified.

Nucleic Acid-Based Therapeutics

Nucleic acid-based therapeutics have emerged as a new class of drugs and biologics for treating unmet medical needs. Gene therapy, which includes adoptive cell therapy, DNA vaccines and RNA-based therapies, is the foundation for the current fast-paced medical revolution. All gene therapies are driven by DNA, which is required in large scale. As of January 2018, almost 2600 gene therapy clinical trials have been completed, are ongoing or have been approved worldwide (The Journal of Gene Medicine: Gene Therapy Clinical Trials Worldwide to 2017; An Update -March 25, 2018). To date, DNA for gene therapies has been supplied via bacterial plasmids. Bacterial plasmid must be purified to remove bacterial toxins and native bacterial DNA before therapeutic use, a process that increases manufacturing time and complexity. We believe PCR-produced DNA is a better alternative than plasmid DNA for gene therapy. Through the use of our PCR-based manufacturing platforms, we feel we are well situated to supply DNA to the growing nucleic acid-based drug and biologic markets. Therapeutics utilizing our PCR produced linear DNA will require clinical trials and approval by the Food and Drug Administration (“FDA”) which may not occur for many years, if at all.

Products and Services

SigNature® molecular tags, SigNature® T molecular tags, fiberTyping®, DNAnet®, SigNify® BackTrac®, Beacon® and CertainT® comprise our principal security technology platform. The large-scale production of specific DNA sequences is used in the diagnostics and reagent industries. Contract research and drug development and commercialization relating to PCR-produced DNA constructs forms the basis of LRx.

Signature Molecular Tags

SigNature Molecular Tags. The SigNature molecular tag is our patented molecular taggant technology, at the core of our platform. It provides forensic power and protection for a wide array of applications. Highly secure, robust and durable, SigNature molecular tags are an ingredient that can be used to fortify brand protection efforts; strengthen

supply chain security; and mark, track and convict criminals. Through our SigNature molecular tags, custom DNA sequences can be embedded into a wide range of host carriers including natural and synthetic fibers, ink, varnish, thread, metal coatings, and pharmaceuticals and nutraceuticals. SigNature molecular tags can be made resistant to challenging environments such as heat, cold, vibration, abrasion, organic solvents, chemicals, UV radiation and other extreme environmental conditions, and so can be identified for numerous years after being embedded directly, or into media applied or attached to the item to be marked. Each individual molecular tag is recorded and stored in a secure database so that we can later detect it using a simple spot test, or the molecular tags can be forensically analyzed in our laboratories to obtain definitive proof of the presence or absence of a specific SigNature molecular tag (e.g., one designed to mark a particular product). Our in-lab forensic testing capability delivers an expert witness Certificate of DNA Authentication ("CODA"). Because DNA is one of the densest information carriers known, and can be amplified with high fidelity, only minute quantities of SigNature molecular tags are necessary for successful analysis and authentication. As a result, SigNature molecular tags can fold seamlessly into production and logistics workflows at extremely low concentrations.

SigNature molecular tags have been subjected to rigorous testing by the Idaho National Laboratory, a U.S. National Laboratory, by CALCE (the Center for Advanced Life Cycle Engineering), the largest electronic products and systems research center focused on electronics reliability, and by verified procedures in our laboratories. The molecular tag has passed all tests across a broad spectrum of materials and substrates, and has met key military stability standards. SigNature molecular tags have also passed a strenuous "red-team" vetting on behalf of the U.S. Defense Logistics Agency.

SigNature molecular tags now exist on hundreds of millions of commodity quantities ranging from consumer product packaging to microcircuits to cotton and synthetic fibers; to our knowledge, none has ever been copied.

SigNature T Molecular Tags and fiberTyping

SigNature T Molecular Tags. SigNature T molecular tags are a unique patented tagging and authentication system specifically designed for textiles and apparel. Specially engineered to adhere tenaciously to textile substrates, including natural and synthetic fibers, SigNature T molecular tags are resistant to standard textile production conditions. The result: an enduring forensic level molecular tag that remains present from the fiber stage through to the finished product.

Our SigNature T technology allows for better quality control and assurance at any point in the supply chain. SigNature T molecular tags are currently used for brand protection efforts and raw material source compliance programs. For example, American grown cotton fibers can be tagged at the gin in the United States, verified as “American grown” and then traced through every step of the supply chain.

fiberTyping. Our patented cotton genotyping platform, known as “fiberTyping,” described below, complements our SigNature T molecular tag system. fiberTyping is employed to identify the genus and species of the fibers before or after they are tagged with SigNature T molecular tags. fiberTyping cannot be used to provide unique identity of a specific cotton through the supply chain.

fiberTyping is not a molecular tag, but a genotyping test of native cotton fiber DNA, which gives a clear result that determines whether the intended “nature-made” endogenous cotton DNA is present in fiber, yarn or fabric. Samples from the primary material are sent to our forensic labs for DNA analysis and authentication. Cotton classification and the authentication of cotton species after cotton has left its place of origin are issues of global significance, important to brand owners and to governments that must regulate the international cotton trade. The use of endogenous DNA to identify the cotton fiber content in textile supply chains, along with the SigNature T molecular tag system is a significant opportunity for brand license holders to control their intellectual property, for brands to shield themselves against legal liabilities, and for governments to improve their ability to enforce compliance with trade agreements between nations.

We believe that our proprietary DNA extraction protocols and methodologies are more effective than existing forensic systems. We believe that the combination of our SigNatureT molecular tags and fiberTyping solutions cover the forensic authentication market for textiles and that the related protocols we have developed may be applicable to multiple industry verticals (such as ingredients in nutraceuticals and cannabis) and can mark and authenticate products at every stage of their life cycle, from beginning to end.

DNAnet, Smart DNA and Backtrac

Recognizing that DNA-based evidence is the cornerstone of modern-era law enforcement, we have developed what we believe to be the ultimate crime fighting tools – currently being used in vehicle and home asset marking, as well as commercial applications.

These molecular tags can be used to definitively link evidence and offenders to specific crime scenes. As the crime is investigated, the fluorescing molecular marker can assist police in linking the offender and stolen items to a specific crime scene, creating a greater ability to identify and convict.

These long-lasting tagging solutions contain unique molecular tags that can help return stolen or lost property to its rightful owner.

Beacon

Beacon locked optical markers deliver secure real-time inspection capabilities. A unique patented encrypted mechanism creates a protected, covert screening tool that can be easily adapted to packaging, security labels and high–value assets through inks, varnishes and coatings. When Beacon locked optical markers are combined with SigNature molecular tags, a strong and flexible security and screening solution is created where authenticity and provenance can be determined with confidence.

SigNify

Developing a secure method for real-time, in-field screening of molecularly-tagged items has long been a priority for us. We believe that standard fluorophores, up-converting phosphors, holograms and other more-traditional screening tools provide little to no defense against counterfeiting. We believe that secure in-field inspection backed with forensic-level molecular tag authentication is the key to maintaining a well-defended supply chain or asset management program.

The SigNify IF portable DNA reader provides definitive real-time authentication of SigNature and SigNature T molecular tags in the field. With SigNify IF, Signature molecular tags become a true, front-line solution for supply chain integrity.

Information Technology Systems

Applied DNA Sciences Portal. The CertainT and other customer applications include the use of a software platform that enables customers to manage the security of company-marked goods from point of marking to point of authentication or validation to end of life. The base platform is configurable to customer requirements which differ by vertical market, company business process and IT environment. Basic functions offered include molecular tag inventory management, program training and communications, a database of marked items information, associated documents and images, chain of custody and location tracking, sample authentication processing and CODA downloads, and other administrative functions. Designed for either cloud or local operation, the system supports mobile data capture using bar codes or other technologies. The system is architected as the controller and repository for other validation and authentication devices such as our SigNify DNA Readers, DNA Transfer Systems, and other third party devices and is designed to share data with third party applications through standard interfaces.

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DNA Transfer Systems and Cannabis Tracking System. Our DNA Transfer Systems and Cannabis Tracking System are developed for DNA marking applications which are high volume with a need for monitoring and control. They are computer based, fully automated, offer remote internet access for real-time monitoring and can be configured for application-specific alerts and reporting online. They are being used to mark cotton at six U.S. cotton gins in the 2018-2019 ginning season and one location in Australia.

CertainT Supply Chain Platform

CertainT helps brands confirm their product's authenticity and origin with certified, trust, transparency and traceability through the seamless amalgamation of several of our platform technologies to tag, test and track. The CertainT trademark indicates use of the CertainT tagging, testing and tracking platform to enable proof of product claims for any material, item or product. Secure and proven, the CertainT Platform helps manufacturers, brands or other commercial organizations deliver on their promise that customers are buying products that are ethically-sourced, safe and authentic.

Large-scale production of specific DNA sequences using PCR.

Our patented Triathlon™ PCR systems allow for the large-scale production of specific DNA sequences. The systems are computer-controlled, self-contained and modular. DNA sequences produced through our processes and systems are being used by customers as components of diagnostic tests and reagents, which provide us the opportunity to cross-sell our DNA-based supply chain security solutions to this installed base and others. We believe we have the ability to manufacture longer DNA sequences valuable in gene therapies, adoptive cell therapies (such as CAR T), DNA vaccines, RNA therapies and diagnostics, with what we believe is a distinct competitive advantage in cost, cleanliness, and time-to-market. These types of DNA are distinct from our DNA security markers and represent a potential new entry into medical markets, where we believe there are opportunities for our broader platform. Customers using our PCR-produced linear DNA products and services for use in in vitro medical diagnostics, preclinical biotechnology research and preclinical drug and biologic manufacturing receive DNA product that we believe is made cleaner and faster than historical manufacturing methods, thereby offering the opportunity for increased efficiency and turnaround times in their processes.

Contract Research

Under LRx, we act as a contract research organization for the nucleic acid-based medical and biologic markets. In addition, LRx is providing contract research services to several RNA based drug and biologic customers for preclinical studies. These services include the design, development and manufacture of PCR-produced DNA templates

for RNA.

Therapeutics

In addition, we seek to develop, acquire and commercialize, ourselves or with partners, a diverse portfolio of nucleic acid-based drugs and biologics based on PCR-produced linear DNA to improve existing nucleic acid-based therapeutics or to create new nucleic acid-based therapeutics that address unmet medical needs. We are also engaged in preclinical and animal drug candidate development activities focusing on therapeutically relevant DNA constructs manufactured through our large scale PCR production systems. LRx uses its PCR systems to rapidly produce customized DNA for use by our CRO/CMO clients, our preclinical drug and biologic clients and partners, and for our own preclinical nucleic acid-based drugs and biologics under development in the field of CAR T-cell immunotherapy.

Our Strategy

The core technologies of our supply chain security business are supplied as tag, test and track solutions for large complex supply chains. Our tag, test and track solutions, allow our customers to use molecular tags to mark objects in a unique manner, and then identify these objects by detecting the absence or presence of the molecular tag.

We believe that our disruptive tracking platform offers broad commercial relevance across many industry verticals. Our underlying strategy in the tagging business is to become a solutions provider for supply chains of process industries in which contracts for our products and services are larger and of longer duration as compared to our historic norms, where the benefits to customers and consumers are more significant, and where our forensic security and traceability offer a unique and protected value. Consumers, governments and companies are demanding details about the systems and sources that deliver their goods. They worry about quality, safety, ethics, and the environmental impact. Farsighted organizations are directly addressing new threats and opportunities presented by this question: Where do these goods come from? This is the question and the concerns we are beginning to address for a growing number of companies. We supply key building blocks for creating secure supply chains with traceability of goods, which in turn can help ensure integrity in supply, honest sales and marketing claims, and ethical and sustainable sourcing.

Customers using our PCR-produced linear DNA products and services for in vitro medical diagnostics, preclinical biotechnology research and preclinical drug and biologic manufacturing receive DNA product made we believe cleaner and faster than historical manufacturing methods, thereby offering the opportunity for increased efficiency and turnaround times in their processes. We are also engaged in preclinical and animal drug candidate development focusing on therapeutically relevant DNA constructs manufactured via our PCR-based production platform. We seek to develop, acquire and commercialize, along with partners, a diverse portfolio of nucleic acid-based therapeutics based on PCR-produced linear DNA to improve existing nucleic acid-based therapeutics or create new nucleic acid-based therapeutics that address unmet medical needs.

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Our products and services are offered in the United States, Europe and Asia. At the present time, we are focusing our efforts on textile and apparel, pharmaceuticals and nutraceuticals, microcircuits and other electronics, legal cannabis and PCR-produced linear DNA products, as well as and services for in vitro medical diagnostics, preclinical biotechnology research and preclinical biotherapeutic manufacturing. Currently, approximately twenty percent of our annual revenue comes from the textile market. The cotton ginning season in the United States takes place between September and March each year; therefore, revenues from our cotton customer contracts may be seasonal and recognized primarily during our first and fourth fiscal quarters, which may cause operating results to fluctuate significantly quarterly and annually. The basic technology we use in various markets is very similar, and we believe our solutions are adaptable for many types of products and markets. To date, the substantial portion of our revenues has been generated from sales of our SigNature and SigNature T molecular tags, our principal supply chain security and product authentication solutions. We expect to grow revenues from sales of our SigNature molecular tags, SigNature T molecular tags, SigNify and CertainT offerings as we work with companies and governments to secure supply chains for various types of products and product labeling throughout the world. In addition, we expect to continue to grow revenues from PCR-produced linear DNA products and services using our Triathlon™ PCR systems.

The basic technology we use in various markets is very similar, and we believe our solutions are adaptable for many types of products and markets.

Target Potential High-Volume Markets

We will continue to focus our efforts on target vertical markets that are characterized by a high level of vulnerability to leaky supply chains, product diversion and a lack of security. We also intend to expand into additional related high volume markets.

Pursue Strategic Acquisitions and Alliances

We intend to pursue strategic acquisitions of companies and technologies that strengthen and complement our core technologies, improve our competitive positioning, allow us to penetrate new markets, and grow our customer base. We also intend to work in collaboration with potential strategic partners in order to continue to market and sell new product lines derived from, but not limited to, DNA technology.

Present Markets:

Textiles and Apparel

Textile identity and the authentication of a product's origin, are issues of global significance, important to brand owners for quality assurance and compliance, and to governments that must regulate international trade, enforce textile labeling, and protect consumers. We believe that CertainT, an integrated platform to Tag, Test, and Track fiber, yarn, fabrics all the way to finished goods, enables brands and manufacturers to preserve the integrity authenticity and quality of the source materials in a global supply chain. As a result, consumers will have confidence that claims and ingredients listed on the label are proven in the finished product. CertainT molecular business solutions are relevant to natural fibers like cotton, wool, cashmere, down and feather, and leather, as well as man-made fiber, recycled polyester, viscose and other synthetic products used in apparel, footwear and home textiles globally. The molecular tag is robust, and inert. It has no impact on the form or function of raw materials or end products and is persistent throughout the manufacturing process. The information content of each unique SigNature T tag can be assigned with precision to a supply chain objective. Thus, SigNature T tagged materials have their own identity and may offer, for example, a unique story of where, when, and/or how they were made. The flexible nature of SigNature T technology facilitates easy addition of the tag at virtually any stage of textile production. Molecular tag analysis verifies goods identity as the corner stone of the platform. Testing can be conducted at Applied DNA's ISO 17025 accredited forensic laboratories in Stony Brook, New York, or in the field, for some validated products, using portable processes and equipment.

Our Market Response

As part of the CertainT platform, our patented SigNature T molecular tag technology for molecular tagging and authentication has been proven to be scalable and commercially applicable in integrated textile supply chains, in cotton as well as recycled polyester and is currently in use by our customers. Our SigNature T molecular tag commercial program involves the creation of unique SigNature T molecular tags that can be used to tag a customer's cotton fiber at the ginning stage. Installed in October 2017, our updated fully automated, secure DNA Transfer Systems allow for traceability and monitoring of all molecularly-tagged cotton at multiple gins in Arkansas, Texas and California. During fiscal 2018, a DNA Transfer System was installed in a gin in Australia. The DNA Transfer Systems allow for expansion of tagging at other gins to support increased demand for tagging in future years.

Once tagged, the cotton fiber may be authenticated for textile identity from grower to ginner to spinner to manufacturer to distributor to retailer. At each step of the process, its textile identity will be tested to link the original cotton fiber to finished product, preserving the authenticity of the product and the integrity of the supply chain. SigNature T DNA tags are being used to mark premium Pima cotton fiber, known as PimaCott® and are also beginning to be used to mark Upland cotton, under the HomeGrown™ LoneStar™ and HomeGrown Acala™ trademarks. As the cotton ginning in the U.S. takes place sometime between September and March each year, it is possible that revenues from this business will be seasonal.

In June 2017, we entered into a new licensing agreement with Himatsingka America, Inc., which is part of the Himatsingka Group. ("Himatsingka America"), a leading supplier of home textiles. This agreement terminates an earlier licensing agreement dated March 25, 2015 between Divatex Home Fashion, Inc. (a predecessor to Himatsingka America) and the Company. Under the terms of the Agreement, Himatsingka America will be solely responsible for promoting, marketing and selling on a worldwide basis the Company's technology with respect to finished and unfinished cotton products. The Agreement grants Himatsingka America an exclusive license to use our technology in respect of cotton, subject to certain carve-outs including governmental users, non-commercial trade associations and others. The Agreement has a term that continues until June 23, 2042, except in the case of patents, in which case the term continues with respect to a patent until such patent is no longer in effect. The Agreement also provides that Himatsingka America will make royalty payments on a quarterly basis in arrears in the event that our technology is used on non-home products. Himatsingka America is responsible for the inspection and compliance within the supply chain.

Himatsingka America is generally required to use our technology during the term of the Agreement, subject, among other things, to their customers' requirements. We have established an independent testing laboratory in Ahmedabad, India, which is required by the agreement. Finished products made from this tagged fiber are offered for sale under the PimaCott®, HomeGrown®, LoneStar™ and HomeGrown Acala™ content branded labels. The Agreement includes customary mutual indemnification provisions. See also the information under the caption "—Distribution of our Products and Commercial Agreements—Himatsingka America."

In January 2016, we signed a cooperative research and development agreement ("CRADA") with the United States Department of Agriculture ("USDA") to collaborate on the development of genotyping assays for cultivars from specific geographic regions of the world. This agreement was extended on April 1, 2018 for an additional five years. It is important to be able to differentiate cotton based on country of origin to help avoid "Conflict Cotton", cotton grown using child labor or other undesirable practices. We believe this will assist the cotton industry in protecting the quality and traceability of the products and help protect their economic investments.

For recycled polyester, over 15 million pounds of fiber have been initially tagged with our SigNature T molecular tagging technology.

On June 28, 2017, we signed a multi-year license agreement with GHCL Limited, a global manufacturer of home textiles, to provide CertainT platform services in connection with source-verified, polyethylene terephthalate (PET) and recycled PET (rPET post-consumer) in select home textile products. PET is the clear plastic best known for its use in water bottles, and is the most widely recycled plastic in the world. GHCL is using our CertainT platform in connection with PET and/or recycled PET blended bed sheets, pillowcases, and shams products sold in-store or online in the United States. GHCL has also licensed our CertainT trademark for use on its products, as well as for promotional, marketing and sales materials. The agreement provides for guaranteed minimum annual revenues in order to maintain exclusivity during the renewal period, as well as trademark licensing royalties to us. GHCL is using our CertainT platform for verifying PET and recycled PET authenticity from source to retail shelf. With this platform,

GHCL assures that any of its textile products using PET and recycled PET will contain the original source raw materials. We will provide our patented and proprietary tagging, testing and tracking services to GHCL as a CertainT licensee. As part of the platform, Applied DNA's molecular tag is extruded into recycled components that create recycled PET fiber, with no impact to performance or quality of the fiber or filament yarns. Thereafter, any piece of CertainT-tagged textiles can be forensically authenticated by detecting the molecular tag in the recycled PET fiber, ensuring its authenticity and origin. During October 2018, GHCL launched CIRKULARITY™, a new brand of eight lines of bedding supporting the circular economy. These lines center on "reduce, reuse and recycle". REKOOP®, the inspiration behind CIRKULARITY, is a brand of bedding products made from recycled plastic (rPET) and is the first bedding product to use our CertainT platform. REKOOP uses our CertainT platform to trace and authenticate the post-consumer recycled polyester plastic in its bed sheets, pillowcases, and shams throughout the entire supply chain.

On July 11, 2017 we signed a new multi-year exclusive license agreement with Loftex Home, LLC ("Loftex"), a well-respected manufacturer of high-quality towels and home textiles. Under a prior agreement entered into during March 2017, we agreed to provide our CertainT™ platform services to Loftex to verify the authenticity and origin of rPET (post-consumer) used in bath and beach towels. This new multi-year agreement between the two companies is now exclusive for bath and beach towels in the United States, non-exclusive for plush throws and bath rugs, and provides for long term minimum annual revenues, in order to maintain exclusivity, as well as trademark licensing royalties to us.

For information on our statement of work with American & Efird and research project with BLC, please see "Distribution of our Products and Commercial Agreements."

Microcircuits and other electronics

The vast majority of counterfeits discovered in military equipment are semiconductors, the stamp-sized silicon wafers that act as the "brains" of nearly every type of modern electronic system. According to an article in DefenseOne (Counterfeits Can Kill U.S. Troops. So Why Isn't Congress and DoD Doing More to Stop it? — August 8, 2013), the U.S. military is an important consumer of these tiny products; a single F-35 Joint Strike Fighter jet is controlled by more than 2,500 semiconductors.

One of the reasons counterfeit microcircuits are a major concern in weapons procurement is because the chips, which control targeting accuracy and other critical parameters, can wreak havoc if they do not perform to specifications. They can also be a means of sabotaging weapon systems if covertly supplied by a hostile government through seemingly legitimate companies.

The Defense Logistics Agency (DLA) is the nation's combat support agent for logistics. DLA The Agency manages over 5 million parts, supports more than 2,300 weapon systems, and accounts for nearly 85% of the spare parts for our military forces. DLA's reach extends far beyond DoD. The Agency supports Foreign Military Sales (FMS) to more than 100 nations. DLA provides significant support to worldwide humanitarian relief, the Federal Emergency

Management Agency (FEMA), and other federal, state, and local customers.

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The problem is not limited to the defense industry. According to an April 2016 report by OECD and the EU Intellectual Property Office, fake products are worth nearly $461 billion per year, or roughly 2.5% of all global trade.

Our Market Response

On November 15, 2012, DLA began to require that defense contractors provide certain items that have been marked with DNA produced by us or our authorized licensees. This requirement was in place for items falling within Federal Supply Class (FSC) 5962, Electronic Microcircuits, which have been determined to be at high risk for counterfeiting.

Beginning on December 15, 2014, DLA's Electronic Product Test Center ("PTC") in Columbus, Ohio began DNA marking all FSC 5962 microcircuits. This change created a centralized, streamlined DNA marking process within DLA. On November 13, 2014, we were awarded a contract by DLA to provide DLA with SigNature DNA molecular tags and related equipment, services and training. This contract was then extended through October 13, 2018. An additional follow-on two-year contract (plus one exercise year) to ensure there is no lapse in support of the current DNA program at DLA's PTC was signed on September 6, 2018.

In addition, on June 6, 2017, we were awarded a two-year, approximately $1.5 million competitive-bid development contract. The award, funded by the Office of the Secretary of Defense on behalf of the DLA, runs from June 1, 2017 to May 31 2019, and was granted via a Rapid Innovation Fund (RIF) that provides DLA with innovative technologies that can be rapidly inserted into acquisition programs to meet specific defense needs. Management oversight for this RIF contract is from DLA HQ located in Fort Belvoir, Virginia. This firm-fixed price contract follows our prior RIF contract, described further below, that enabled us to develop counterfeit mitigation technologies based upon our proprietary DNA platforms, that protect plastics, silicone elastomers, oils, bearings, fasteners and many other high-risk commodities that are procured by DLA on behalf of DoD. This contract will extend our authentication platform to facilitate broader use in protecting high-risk or mission-critical material purchased by DLA.

This contract together with prior development contracts have strengthened our core capabilities to offer supply chain risk management solutions across an expanded range of critical components used in defense, industrial and consumer markets.

On November 20, 2017 we signed a CRADA with the U.S. Army Research, Development and Engineering Command's Edgewood Chemical Biological Center ("ECBC") to study the commercialization of ECBC's innovative rapid, in-field DNA microarray technology for use in military and commercial supply chains. ECBC is the nation's primary DoD technical research organization for non-medical chemical and biological warfare defense.

Under the terms of the CRADA, a cooperative effort under the DLA RIF award secured by us in June 2017, ECBC's subject matter experts and our science team will cooperatively study the feasibility of commercializing ECBC's in-field DNA detection technology in varied supply chains. ECBC's hand-held in-field DNA microarray technology allows for detection of a DNA taggant within a few minutes. The project goal is to demonstrate the system with our taggants introduced into standard inks or varnishes or onto other surfaces, without the need for DNA amplification or other sample preparation, thus greatly simplifying in-field DNA detection.

Cash-in-Transit

Cash-in-transit businesses transport and store cash and ATM cassettes. In the U.K. alone, there is an estimated £500 billion being transported each year (approximately $755 billion as of December 2015) or £1.4 billion per day (approximately $2.2 billion) (British Security Industry Association: "Combating Cash Delivery Crime"). The nature of this business makes cash-in-transit an attractive target for criminals and as a result the industry invests in excess of £100 million (approximately $151.1 million) per year in security equipment and devices. Since 2009, the number of CViT (Cash and Valuables in Transit) convictions attributed to the use of SigNature DNA in cash boxes has risen to more than 125, with prison sentences of over 610 years. SigNature DNA forensic tags are helping Police across Europe to identify stolen cash and to link the evidence directly to the perpetrators. According to the FBI, in 2016, over 40 people were killed or injured in over 4,000 robberies of financial institutions across the nation (Bank Crime Statistics 2016 - FBI).

Our Market Response

We incorporate our SigNature DNA molecular tags in cash degradation inks that are used in the cash-in-transit industry in countries throughout the United Kingdom and other countries within Europe. This solvent-based ink marks bank notes if the cash box is compromised and has the ability to penetrate the bank notes rapidly and permanently. We believe our SigNature DNA molecular tags are more resilient and detectable than other competing technologies.

To date, the use of SigNature DNA in the cash handling industry has allowed our products to facilitate the convictions of more than 125 criminals across Europe involved in cash-in-transit crime with aggregate prison sentences of over 610 years. SigNature DNA has been used since 2008 in Europe within the ink and / or smoke systems of Intelligent Bank Note Neutralisation Systems ("IBNS"), more commonly known as cash boxes and ATM cassettes. Unique, SigNature DNA molecular tags are incorporated into each IBNS during manufacture.

Consumer Asset Marking

Car crime is a very large and profitable business, costing billions of dollars per year and representing approximately one-third of all reported crime. It is estimated that approximately 70 percent of stolen cars are broken up and sold for spare parts, while the rest are given a false identity and sold, with many of those being exported to the Middle and Far East.

Everyone has assets they want to look after - from household goods such as TVs, jewelry and antiques to office equipment including computers and laptops. There are a wide variety of valuable items that need to be uniquely identified and protected from theft. Forensic marking of home assets uses technology to code valuables at risk of theft to mark burglars, linking them directly with a crime scene.

Over the years, authorities have found it difficult to obtain convictions of thieves in possession of suspected stolen property unless the true owner can be identified. If marked items are stolen and later found, police can link them directly with the crime scene, not only allowing the property to be returned to its owner, but also increasing the chance of convicting the thieves.

Our Market Response

We believe that DNAnet, Smart DNA and Backtrac enhance law enforcement effectiveness by providing forensic quality evidence. The DNAnet, SmartDNA and Backtrac Asset Marking program provides a simple and cost-effective way for asset owners to deter crime and protect their property, a way for law enforcement to identify the rightful owners of lost or stolen property, and a way to tell criminals…stay away because you will get caught!.

Our Smart DNA is being used to protect the automobiles of one major European automotive manufacturer against the theft of their automotive parts after being imported into at least one E.U. country. New cars are marked with a unique code applied at point of importation or delivery to the customer. Customer details are registered on a secure database. The DNA molecular tag provides absolute identification to the vehicle. The molecular tags are covert and difficult to remove. If found, vehicles and their component parts are traceable back to the car, from anywhere on the globe. If the car is stolen and recovered, police will be able to link the criminal to the crime, and will know exactly where to return the vehicle. Highly visible warning stickers are displayed on the windshield of the car, deterring theft in the first place. To date, over 70,000 high-end cars have been marked with Smart DNA.

Printing and Packaging

The scourge of counterfeiting in packaging has greatly intensified in recent years. Counterfeiting has spiked, causing detrimental health concerns for consumers, safety concerns for law enforcement agencies, and financial concerns for businesses worldwide. As a result, the global anti-counterfeit packaging market is estimated to reach approximately $206.57 billion by the year 2021, according to Markets and Markets.

Billions of dollars per year are at stake for companies as they seek ways to ensure that the products sold with their logos and branding are authorized and authentic. The proliferation of counterfeiting requires brand owners and their converter/printer partners to work together to create a multi-layered protection plan so that their packaging and labels protect their brands and deter those trying to profit at their (and their reputation’s) expense.

Counterfeiters have become so good at their unlawful activity that spotting the difference between legitimate and counterfeit products can be daunting. They have many ways to subvert legitimate brands. They may take an out-of-date — but legitimate — product and sell it in packaging and labels that have been faked. Sometimes, everything — including the packaging, labels and product itself — is counterfeit. Criminals might also use legitimate packaging with knock-off products.

Our Market Response

Our integrated platform of forensic level molecular tags and optical and digital technologies offers a high level of security and flexibility in a cost-effective and easy-to-use format to suit the requirements and budget of most companies. They can be added to the varnish, ink or toner in labels and packaging to act as a trace without impacting the quality of the substrate. Our SigNify IF reader or forensic laboratory process is required to detect th black 1px solid">

CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)

..

6

CITIZENSHIP OR PLACE OF ORGANIZATION

DELAWARE

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

7

SOLE VOTING POWER

2,306,560

8

SHARED VOTING POWER

- 0 -

9

SOLE DISPOSITIVE POWER

2,306,560

10

SHARED DISPOSITIVE POWER

- 0 -

11

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

2,306,560

12

CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES

o

13

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

8.2%

14

TYPE OF REPORTING PERSON

OO

8

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON COWEN GROUP, INC.		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP	(a) x (b) o	
3	SEC USE ONLY		
4	SOURCE OF FUNDS OO		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)	¨	
6	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 2,306,560	
	8	SHARED VOTING POWER - 0 -	
	9	SOLE DISPOSITIVE POWER 2,306,560	
	10	SHARED DISPOSITIVE POWER - 0 -	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,306,560		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES	o	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 8.2%		
14	TYPE OF REPORTING PERSON CO		

9

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON RCG HOLDINGS LLC		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) x (b) o
3	SEC USE ONLY		
4	SOURCE OF FUNDS OO		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		¨
6	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 2,306,560	
	8	SHARED VOTING POWER - 0 -	
	9	SOLE DISPOSITIVE POWER 2,306,560	
	10	SHARED DISPOSITIVE POWER - 0 -	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,306,560		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		o
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 8.2%		
14	TYPE OF REPORTING PERSON OO		

10

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON C4S & CO., L.L.C.		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP	(a) x (b) o	
3	SEC USE ONLY		
4	SOURCE OF FUNDS OO		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)	¨	
6	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 2,306,560	
	8	SHARED VOTING POWER - 0 -	
	9	SOLE DISPOSITIVE POWER 2,306,560	
	10	SHARED DISPOSITIVE POWER - 0 -	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,306,560		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES	o	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 8.2%		
14	TYPE OF REPORTING PERSON OO		

11

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON PETER A. COHEN		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) x (b) o
3	SEC USE ONLY		
4	SOURCE OF FUNDS OO		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		¨
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER - 0 -	
	8	SHARED VOTING POWER 2,306,560	
	9	SOLE DISPOSITIVE POWER - 0 -	
	10	SHARED DISPOSITIVE POWER 2,306,560	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,306,560		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		o
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 8.2%		
14	TYPE OF REPORTING PERSON IN		

12

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON MORGAN B. STARK		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) x (b) o
3	SEC USE ONLY		
4	SOURCE OF FUNDS OO		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		¨
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER - 0 -	
	8	SHARED VOTING POWER 2,306,560	
	9	SOLE DISPOSITIVE POWER - 0 -	
	10	SHARED DISPOSITIVE POWER 2,306,560	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,306,560		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		o
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 8.2%		
14	TYPE OF REPORTING PERSON IN		

13

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON JEFFREY M. SOLOMON		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) x (b) o
3	SEC USE ONLY		
4	SOURCE OF FUNDS OO		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		¨
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER - 0 -	
	8	SHARED VOTING POWER 2,306,560	
	9	SOLE DISPOSITIVE POWER - 0 -	
	10	SHARED DISPOSITIVE POWER 2,306,560	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,306,560		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		o
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 8.2%		
14	TYPE OF REPORTING PERSON IN		

14

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON THOMAS W. STRAUSS		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) x (b) o
3	SEC USE ONLY		
4	SOURCE OF FUNDS OO		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		¨
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER - 0 -	
	8	SHARED VOTING POWER 2,306,560	
	9	SOLE DISPOSITIVE POWER - 0 -	
	10	SHARED DISPOSITIVE POWER 2,306,560	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,306,560		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		o
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 8.2%		
14	TYPE OF REPORTING PERSON IN		

15

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON DAVID W. BARRON		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) x (b) o
3	SEC USE ONLY		
4	SOURCE OF FUNDS		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		¨
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER - 0 -	
	8	SHARED VOTING POWER - 0 -	
	9	SOLE DISPOSITIVE POWER - 0 -	
	10	SHARED DISPOSITIVE POWER - 0 -	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON - 0 -1		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		o
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0%		
14	TYPE OF REPORTING PERSON IN		

1 See Item 5

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON PETER A. FELD		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) x (b) o
3	SEC USE ONLY		
4	SOURCE OF FUNDS		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		¨
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER - 0 -	
	8	SHARED VOTING POWER - 0 -	
	9	SOLE DISPOSITIVE POWER - 0 -	
	10	SHARED DISPOSITIVE POWER - 0 -	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON - 0 -1		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		o
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0%		
14	TYPE OF REPORTING PERSON IN		

1 See Item 5

CUSIP NO. 452521107

1	NAME OF REPORTING PERSON KENNETH H. TRAUB		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) x (b) o
3	SEC USE ONLY		
4	SOURCE OF FUNDS		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		¨
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER - 0 -	
	8	SHARED VOTING POWER - 0 -	
	9	SOLE DISPOSITIVE POWER - 0 -	
	10	SHARED DISPOSITIVE POWER - 0 -	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON - 0 -[1]		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		o
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0%		
14	TYPE OF REPORTING PERSON IN		

1 See Item 5

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The following constitutes Amendment No. 10 ("Amendment No. 10") to the Schedule 13D filed by the undersigned. This Amendment No. 10 shall be deemed to amend and restate in their entirety Items 2, 3 and 5 and add to Items 4, 6 and 7 of the Schedule 13D. The primary purpose of amending the Schedule 13D is (i) to disclose the delivery of a letter to the Issuer nominating individuals for election to the Board of Directors of the Issuer (the "Board"), (ii) to remove RCG PB, Ltd as a Reporting Person as a result of its sale of all the Shares directly owned by it in the open market as part of a liquidation process and (iii) to add Cowen Overseas Investment LP as a Reporting Person as a result of its purchase of Shares in the open market.

Item 2. Identity and Background.

Item 2 is hereby amended and restated to read as follows:

(a) This statement is filed by:

(i) Ramius Value and Opportunity Master Fund Ltd, a Cayman Islands exempted company ("Value and Opportunity Master Fund"), with respect to the Shares directly and beneficially owned by it;

(ii) Cowen Overseas Investment LP, a Cayman Islands limited partnership ("COIL"), with respect to the Shares directly and beneficially owned by it;

(iii) Ramius Navigation Master Fund Ltd, a Cayman Islands exempted company ("Navigation Master Fund"), with respect to the Shares directly and beneficially owned by it;

(iv) Ramius Enterprise Master Fund Ltd, a Cayman Islands exempted company ("Enterprise Master Fund"), that serves as the sole shareholder of Navigation Master Fund;

(v) Ramius Advisors, LLC, a Delaware limited liability company ("Ramius Advisors"), that serves as the investment advisor of Enterprise Master Fund and Navigation Master Fund and the general partner of COIL;

(vi) Ramius Value and Opportunity Advisors LLC, a Delaware limited liability company ("Value and Opportunity Advisors"), that serves as the investment manager of Value and Opportunity Master Fund;

(vii) Ramius LLC, a Delaware limited liability company ("Ramius"), that serves as the sole member of each of Value and Opportunity Advisors and Ramius Advisors;

(viii) Cowen Group, Inc., a Delaware corporation ("Cowen"), that serves as the sole member of Ramius;

(ix) RCG Holdings LLC, a Delaware limited liability company ("RCG Holdings"), that is a significant shareholder of Cowen;

(x) C4S & Co., L.L.C., a Delaware limited liability company ("C4S"), that serves as managing member of RCG Holdings;

(xi) Peter A. Cohen, who serves as one of the managing members of C4S;

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(xii) Morgan B. Stark, who serves as one of the managing members of C4S;

(xiii) Thomas W. Strauss, who serves as one of the managing members of C4S;

(xiv) Jeffrey M. Solomon, who serves as one of the managing members of C4S;

(xv) David W. Barron, who is a nominee for the Board;

(xvi) Peter A. Feld, who is a nominee for the Board; and

(xvii) Kenneth H. Traub, who is a nominee for the Board.

Each of the foregoing is referred to as a "Reporting Person" and collectively as the "Reporting Persons." Each of the Reporting Persons is party to that certain Joint Filing and Solicitation Agreement, as further described in Item 6. Accordingly, the Reporting Persons are hereby filing a joint Schedule 13D.

(b) The address of the principal office of each of Ramius Advisors, Value and Opportunity Advisors, Ramius, Cowen, RCG Holdings, C4S and Messrs. Cohen, Stark, Strauss, Solomon and Feld is 599 Lexington Avenue, 20th Floor, New York, New York 10022. The principal business address of Mr. Barron is 580 California St., 16th Floor, San Francisco, CA 94104. The principal business address of Mr. Traub is 2 Applegate Drive, Robbinsville, New Jersey 08691.

The address of the principal office of each of Value and Opportunity Master Fund, Enterprise Master Fund, Navigation Master Fund, and COIL is c/o Citco Fund Services (Cayman Islands) Limited, Regatta Office Park, Windward 1, 2nd Floor, PO Box 31106, Grand Cayman KY1-1205, Cayman Islands. The officers and directors of each of Value and Opportunity Master Fund and Cowen and their principal occupations and business addresses are set forth on Schedule A, annexed to Amendment No. 6 to the Schedule 13D ("Schedule A"), and is incorporated by reference in this Item 2.

(c) The principal business of each of Value and Opportunity Master Fund, Navigation Master Fund and COIL is serving as a private investment fund. Value and Opportunity Master Fund has been formed for the purpose of making equity investments and, on occasion, taking an active role in the management of portfolio companies in order to enhance shareholder value. Each of Navigation Master Fund and COIL has been formed for the purpose of making equity and debt investments. Enterprise Master Fund is the sole shareholder of Navigation Master Fund. The principal business of Value and Opportunity Advisors is acting as the investment manager of Value and Opportunity Master Fund. The principal business of Ramius Advisors is acting as the investment advisor of each of Navigation Master Fund and Enterprise Master Fund and as the general partner of COIL. Ramius is engaged in money management and investment advisory services for third parties and proprietary accounts and serves as the sole member of each of Value and Opportunity Advisors and Ramius Advisors. Cowen provides alternative investment management, investment banking, research, and sales and trading services through its business units, Ramius and Cowen and Company. Cowen also serves as the sole member of Ramius. RCG Holdings is a significant shareholder of Cowen. C4S serves as managing member of RCG Holdings. Messrs. Cohen, Strauss, Stark and Solomon serve as co-managing members of C4S.

Mr. Barron is Senior Vice President and a cofounder of Brisbane Digital Consulting Group, a strategy and technology consulting firm focused on digital media technologies in the telecommunications, consumer electronics, media and technology industries. Mr. Feld is a Managing Director of Ramius and co-portfolio manager of Value and Opportunity Master Fund. Mr. Traub is the President and Chief Executive Officer of Ethos Management, a private investment and consulting firm that he founded in 2009.

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(d) No Reporting Person, nor any person listed on Schedule A, has, during the last five years, been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) No Reporting Person, nor any person listed on Schedule A, has, during the last five years, been party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) Messrs. Cohen, Stark, Strauss, Solomon, Barron, Feld and Traub are citizens of the United States of America. The citizenship of the persons listed on Schedule A is set forth therein.

Item 3. Source and Amount of Funds or Other Consideration.

Item 3 is hereby amended and restated to read as follows:

The Shares purchased by Value and Opportunity Master Fund, Navigation Master Fund, and COIL were purchased with working capital (which may, at any given time, include margin loans made by brokerage firms in the ordinary course of business) in open market purchases, except as otherwise noted, as set forth in Schedule B, which is annexed hereto and is incorporated by reference herein. The aggregate purchase cost of the 2,306,560 Shares beneficially owned in the aggregate by Value and Opportunity Master Fund, Navigation Master Fund and COIL is approximately $10,935,660, excluding brokerage commissions.

Item 4. Purpose of Transaction.

Item 4 is hereby amended to add the following:

On December 29, 2010, Value and Opportunity Master Fund delivered a letter to the Issuer (the “Nomination Letter”) nominating Messrs. Barron, Feld and/or Traub, (the “Nominees”), as set forth therein, and announcing its intention to solicit proxies for their election to the Issuer’s Board at the Issuer’s 2011 annual meeting of shareholders, or any other meeting of shareholders held in lieu thereof, and any adjournments, postponements, reschedulings or continuations thereof (the “2011 Annual Meeting”). The Reporting Persons believe that the terms of two (2) directors currently serving on the Board expire at the 2011 Annual Meeting and if this remains the same, Value and Opportunity Master Fund will withdraw one (1) of its Nominees. The Reporting Persons intend to engage in discussions with management, the Board and shareholders of the Issuer regarding the nomination of directors at the 2011 Annual Meeting and the composition of the Issuer’s Board generally.

Item 5. Interest in Securities of the Issuer.

Item 5 is hereby amended and restated to read as follows:

The aggregate percentage of Shares reported owned by each person named herein is based upon 28,175,759 Shares outstanding, as of October 29, 2010, which is the total number of Shares outstanding as reported in the Issuer’s Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on November 5, 2010.

A. Value and Opportunity Master Fund

(a) As of close of the close of business on December 31, 2010, Value and Opportunity Master Fund beneficially owned 1,756,872 Shares.

Percentage: Approximately 6.2%.

(b) 1. Sole power to vote or direct vote: 1,756,872
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 1,756,872
4. Shared power to dispose or direct the disposition: 0

(c) The transactions in the Shares by Value and Opportunity Master Fund since the filing of Amendment No. 9 to the Schedule 13D are set forth in Schedule B and are incorporated herein by reference.

B. COIL

(a) As of the close of business on December 31, 2010, COIL beneficially owned 217,790 Shares.

Percentage: Less than 1%.

(b) 1. Sole power to vote or direct vote: 217,790
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 217,790
4. Shared power to dispose or direct the disposition: 0

(c) The transactions in the Shares by COIL since the filing of Amendment No. 9 to the Schedule 13D are set forth in Schedule B and are incorporated herein by reference.

C. Navigation Master Fund

(a) As of the close of business on December 31, 2010, Navigation Master Fund beneficially owned 331,898 Shares.

Percentage: Approximately 1.2%.

(b) 1. Sole power to vote or direct vote: 331,898
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 331,898
4. Shared power to dispose or direct the disposition: 0

(c) The transactions in the Shares by Navigation Master Fund since the filing of Amendment No. 9 to the Schedule 13D are set forth in Schedule B and are incorporated herein by reference.

D. Enterprise Master Fund

(a) Enterprise Master Fund, as the sole shareholder of Navigation Master Fund, may be deemed the beneficial owner of the 331,898 Shares owned by Navigation Master Fund.

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Percentage: Approximately 1.2%.

(b) 1. Sole power to vote or direct vote: 331,898
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 331,898
4. Shared power to dispose or direct the disposition: 0

(c) Enterprise Master Fund has not entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares on behalf of Navigation Master Fund since the filing of Amendment No. 9 to the Schedule 13D are set forth on Schedule B and are incorporated herein by reference.

E. Ramius Advisors

(a) Ramius Advisors, as the investment advisor of Enterprise Master Fund and Navigation Master Fund and the general partner of COIL, may be deemed the beneficial owner of the (i) 331,898 Shares owned by Navigation Master Fund and (ii) 217,790 Shares owned by COIL.

Percentage: Approximately 2.0%.

(b) 1. Sole power to vote or direct vote: 549,688
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 549,688
4. Shared power to dispose or direct the disposition: 0

(c) Ramius Advisors has not entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares by Navigation Master Fund and COIL since the filing of Amendment No. 9 to the Schedule 13D are set forth in Schedule B and are incorporated herein by reference.

F. Value and Opportunity Advisors

(a) Value and Opportunity Advisors, as the investment manager of Value and Opportunity Master Fund may be deemed the beneficial owner of the 1,756,872 Shares owned by Value and Opportunity Master Fund.

Percentage: Approximately 6.2%.

(b) 1. Sole power to vote or direct vote: 1,756,872
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 1,756,872
4. Shared power to dispose or direct the disposition: 0

(c) Value and Opportunity Advisors has not entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D on behalf of Value and Opportunity Master Fund are set forth on Schedule B and incorporated herein by reference.

G. Ramius

(a) Ramius, as the sole member of each of Value and Opportunity Advisors and Ramius Advisors, may be deemed the beneficial owner of the (i) 1,756,872 Shares owned by Value and Opportunity Master Fund, (ii) 331,898 Shares owned by Navigation Master Fund and (iii) 217,790 Shares owned by COIL.

Percentage: Approximately 8.2%.

(b)
1. Sole power to vote or direct vote: 2,306,560
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 2,306,560
4. Shared power to dispose or direct the disposition: 0

(c) Ramius has not entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D on behalf of Value and Opportunity Master Fund, Navigation Master Fund and COIL are set forth on Schedule B and incorporated herein by reference.

H. Cowen

(a) Cowen, as the sole member of Ramius, may be deemed the beneficial owner of the (i) 1,756,872 Shares owned by Value and Opportunity Master Fund, (ii) 331,898 Shares owned by Navigation Master Fund and (iii) 217,790 Shares owned by COIL.

Percentage: Approximately 8.2%.

(b)
1. Sole power to vote or direct vote: 2,306,560
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 2,306,560
4. Shared power to dispose or direct the disposition: 0

(c) Cowen has not entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D on behalf of Value and Opportunity Master Fund, Navigation Master Fund and COIL are set forth on Schedule B and incorporated herein by reference.

I. RCG Holdings

(a) RCG Holdings, as a significant shareholder of Cowen, may be deemed the beneficial owner of the (i) 1,756,872 Shares owned by Value and Opportunity Master Fund, (ii) 331,898 Shares owned by Navigation Master Fund and (iii) 217,790 Shares owned by COIL.

Percentage: Approximately 8.2%.

(b)
1. Sole power to vote or direct vote: 2,306,560
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 2,306,560
4. Shared power to dispose or direct the disposition: 0

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(c) RCG Holdings has not entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D on behalf of Value and Opportunity Master Fund, Navigation Master Fund and COIL are set forth on Schedule B and incorporated herein by reference.

J. C4S

(a) C4S, as the managing member of RCG Holdings, may be deemed the beneficial owner of the (i) 1,756,872 Shares owned by Value and Opportunity Master Fund, (ii) 331,898 Shares owned by Navigation Master Fund and (iii) 217,790 Shares owned by COIL.

Percentage: Approximately 8.2%.

(b)
1. Sole power to vote or direct vote: 2,306,560
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 2,306,560
4. Shared power to dispose or direct the disposition: 0

(c) C4S has not entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D on behalf of Value and Opportunity Master Fund, Navigation Master Fund and COIL are set forth on Schedule B and incorporated herein by reference.

K. Messrs. Cohen, Stark, Strauss and Solomon

(a) Each of Messrs. Cohen, Stark, Strauss and Solomon, as the managing members of C4S, may be deemed the beneficial owner of the (i) 1,756,872 Shares owned by Value and Opportunity Master Fund, (ii) 331,898 Shares owned by Navigation Master Fund and (iii) 217,790 Shares owned by COIL.

Percentage: Approximately 8.2%.

(b)
1. Sole power to vote or direct vote: 0
2. Shared power to vote or direct vote: 2,306,560
3. Sole power to dispose or direct the disposition: 0
4. Shared power to dispose or direct the disposition: 2,306,560

(c) None of Messrs. Cohen, Stark, Strauss or Solomon has entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D on behalf of Value and Opportunity Master Fund, Navigation Master Fund and COIL are set forth on Schedule B and incorporated herein by reference.

L. Messrs. Barron, Feld and Traub

(a) As of the close of business on December 31, 2010, none of Messrs. Barron, Feld and Traub directly owned any Shares. Each of Messrs. Barron, Feld and Traub, as a member of a “group” with the other Reporting Persons for the purposes of Section 13(d)(3) of the Securities Exchange Act of 1934, as amended, is deemed the beneficial owner of the (i) 3,335,650 Shares beneficially owned by Value and Opportunity Master Fund and (ii) 1,111,850 Shares beneficially owned by COIL. Each of Messrs. Barron, Feld and Traub disclaims beneficial ownership of such Shares.

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Percentage: 0%.

(b) 1. Sole power to vote or direct vote: 0
2. Shared power to vote or direct vote: 0
3. Sole power to dispose or direct the disposition: 0
4. Shared power to dispose or direct the disposition: 0

(c) Neither of Messrs. Barron, Feld and Traub has entered into any transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D. The transactions in the Shares since the filing of Amendment No. 9 to the Schedule 13D on behalf of Value and Opportunity Master Fund, Navigation Master Fund and COIL are set forth on Schedule B and incorporated herein by reference.

To the best of the Reporting Persons' knowledge, none of the persons listed on Schedule A, who are not also Reporting Persons, beneficially owns any securities of the Issuer.

(d) No person other than the Reporting Persons is known to have the right to receive, or the power to direct the receipt of dividends from, or proceeds from the sale of, the Shares.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer.

Item 6 is hereby amended to add the following:

On January 3, 2010, the Reporting Persons entered into a Joint Filing and Solicitation Agreement in which, among other things, (a) the Reporting Persons agreed to the joint filing on behalf of each of them of statements on Schedule 13D with respect to the securities of the Issuer, (b) the Reporting Persons agreed to solicit proxies or written consents in connection with the Solicitation, and (c) Value and Opportunity Master Fund, Navigation Master Fund and COIL agreed to bear all expenses incurred in connection with the Solicitation, including approved expenses incurred by any of the parties in connection with the Solicitation, subject to certain limitations. A copy of this agreement is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

Pursuant to letter agreements, Value and Opportunity Master Fund has agreed to indemnify Messrs. Barron and Traub against any and all claims of any nature arising from the Solicitation and any related transactions. A form of the indemnification letter agreement is attached hereto as Exhibit 99.2 and is incorporated herein by reference.

Value and Opportunity Master Fund has agreed to compensate Messrs. Barron and Traub for being named as and serving as nominees for election as directors of the Issuer pursuant to letter agreements (the "Compensation Letter Agreements"). Pursuant to the terms of the Compensation Letter Agreements, Value and Opportunity Master Fund has agreed to pay each of Messrs. Barron and Traub (i) $10,000 in cash upon the earlier to occur of (a) the filing of a preliminary consent statement with the SEC relating to the Solicitation and (b) the submission of a letter to the Issuer nominating Messrs. Barron and Traub for election as directors at the 2011 Annual Meeting and (ii) $10,000 in cash upon the earlier to occur of (a) the filing of a definitive consent statement with the SEC relating to the Solicitation and (b) the filing of a definitive proxy statement with the SEC relating to a solicitation of proxies in favor of Messrs. Barron and Traub's election as directors of the Issuer at the Annual Meeting.

Pursuant to the Compensation Letter Agreements, each of Messrs. Barron and Traub agreed to use such compensation to acquire securities of the Issuer (the "Nominee Shares") at such time that Messrs. Barron and Traub shall determine, but in any event no later than 14 days after receipt of such compensation. If elected or appointed to serve as a director of the Board, each of Messrs. Barron and Traub agreed not to sell, transfer or otherwise dispose of any Nominee Shares within two years of their election or appointment as a director; provided, however, in the event that the Issuer enters into a business combination with a third party, each of Messrs. Barron and Traub may sell, transfer or exchange the Nominee Shares in accordance with the terms of such business combination. A form of the Compensation Letter Agreements is attached hereto as Exhibit 99.3 and is incorporated herein by reference.

Except as set forth herein, there are no contracts, arrangements, understandings or relationships among the Reporting Persons, or between the Reporting Persons and any other person, with respect to the securities of the Issuer.

Item 7.Material to be Filed as Exhibits.

Item 7 is hereby amended to add the following exhibits:

99.1	Joint Filing and Solicitation Agreement by and among Ramius Value and Opportunity Master Fund Ltd, Cowen Overseas Investment LP, Ramius Navigation Master Fund Ltd, Ramius Enterprise Master Fund Ltd, Ramius Advisors, LLC, Ramius Value and Opportunity Advisors LLC, Ramius LLC, Cowen Group, Inc., RCG Holdings LLC, C4S & Co., L.L.C., Peter A. Cohen, Morgan B. Stark, Thomas W. Strauss, Jeffrey M. Solomon, David W. Barron, Peter A. Feld and Kenneth H. Traub, dated January 3, 2010.
99.2	Form of Indemnification Letter Agreement.
99.3	Form of Compensation Letter Agreement.
99.4	Powers of Attorney for David W. Barron and Kenneth H. Traub.

SIGNATURES

After reasonable inquiry and to the best of his knowledge and belief, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

Dated: January 3, 2010

RAMIUS VALUE AND OPPORTUNITY MASTER FUND LTD
By: Ramius Value and Opportunity Advisors LLC,
its investment manager

COWEN OVERSEAS INVESTMENT LP
By: Ramius Advisors, LLC,
its general partner

RAMIUS NAVIGATION MASTER FUND LTD
By: Ramius Advisors, LLC,
its investment advisor

RAMIUS ENTERPRISE MASTER FUND LTD
By: Ramius Advisors, LLC,
its investment advisor

RAMIUS ADVISORS, LLC
By: Ramius LLC,
its sole member

RAMIUS VALUE AND OPPORTUNITY ADVISORS LLC
By: Ramius LLC,
its sole member

RAMIUS LLC
By: Cowen Group, Inc.,
its sole member

COWEN GROUP, INC.

RCG HOLDINGS LLC
By: C4S & Co., L.L.C.,
its managing member

C4S & CO., L.L.C.

By: /s/ Owen S. Littman
Name: Owen S. Littman
Title: Authorized Signatory

/s/ Owen S. Littman
OWEN S. LITTMAN
As attorney-in-fact for Jeffrey M. Solomon, Peter A. Cohen, Morgan B. Stark, Thomas W. Strauss, David W. Barron and

Kenneth H.
Traub

/s/ Peter A. Feld
PETER A. FELD

SCHEDULE B

Transactions in the Shares by the Reporting Persons and RCG PB, Ltd
Since the Filing of Amendment No. 9 to the Schedule 13D

Shares of Common Stock Purchased / (Sold)	Price Per Share($)	Date of Purchase / Sale
RAMIUS VALUE AND OPPORTUNITY MASTER FUND LTD		
795,000	5.6938	12/30/2010
(380,843)	6.4100	12/31/2010
RAMIUS NAVIGATION MASTER FUND LTD		
(71,947)	6.4100	12/31/2010
COWEN OVERSEAS INVESTMENT LP		
217,790	5.6938	12/30/2010
(47,210)	6.4100	12/31/2010
RCG PB, LTD		
(424,443)	5.6788	12/30/2010
(643,080)	5.6788	12/30/2010