Spectra Systems
CORPORATION

A leading provider of advanced technology-based security solutions

Spectra Systems Corporation
Annual report and accounts 2016

Spectra Systems Corporation
is an established world leader in providing security technology, from banknotes and products to electronic gaming.

Spectra provides integrated solutions comprised of engineered materials for authentication and hardware and software systems which verify the unique signatures of the authentication materials.

WE OPERATE IN 35 COUNTRIES

FOUR ACQUISITIONS SINCE 2012

OVER 60 CUSTOMERS

WE HAVE 29 STAFF IN OUR OFFICES

Highlights

Financial highlights

- Revenue of US$11.1 million (2015: US$14.1 million)
- Adjusted EBITDA up 123% at US$2.4 million[1] (2015: US$1.1 million[1])
- Adjusted PBTA up 184% at US$2.0 million[1] (2015: US$0.7 million[1])
- Adjusted EBITDA per share up over 100% at US$0.05 (2015: US$0.02)
- Adjusted PBTA per share up over 100% at US$0.04 (2015: US$0.2)
- US$2.8 million of cash generated from operations (2015: US$0.5 million consumed)
- Strong balance sheet with cash of US$8.8 million (2015: US$9.8 million) at 31 December[2]
- Inaugural annual dividend of US$0.05 per share to be paid in June

1 Before stock compensation expense and exceptional items.

2 Does not include US$1.1 million (2015: US$1.1 million) of restricted and investment cash.

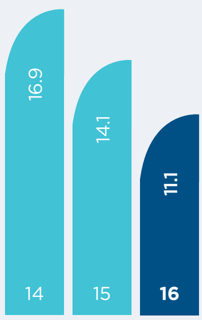
Operational highlights

- In-house manufacturing for G7 central bank commenced in Q4 with a 35% uplift to gross profits going forward
- Completed the acquisition and full integration of specialty phosphor assets and customer relationships
- Phosphor sales exceeded 2015 by 211%, with 115% of the increase due to a new sales channel not associated with the acquisition
- Brand authentication sales remained strong and at forecasted levels
- Secure Transactions Group performed in line with expectations
- Cost reductions through reduced R&D in 2016
- Cost reduction plan through staffing realignments and facility consolidation in 2017 with full impact in 2018

Revenue (US$ million)

11.1

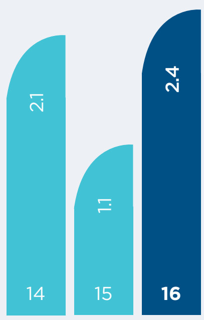
(2015: 14.1)



Adjusted EBITDA (US$ million)

2.4

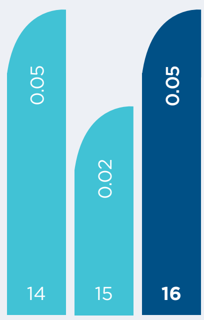
(2015: 1.1)



Adjusted EBITDA per share (US$)

0.05

(2015: 0.02)



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Our strategy
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Chief Executive Officer's statement
Page 6

Spectra at a glance

Spectra is a highly responsive organization that develops customized solutions for its customers.

Our solutions

Authentication systems

Spectra's sophisticated capabilities allow us to invent, develop and manufacture integrated solutions comprised of a system of taggant materials and sensor equipment to authenticate banknotes at high processing speeds.

Our solutions are used by:

- two G7 central banks;
- 17 other central banks for currency authentication; and
- a major G7 country for passport security.

Secure transactions

Spectra's Secure Transactions Group is the leading supplier of real-time fraud control and risk management systems to government-sanctioned gaming operators. Currently deployed in North America, Europe and Asia, our integrity systems monitor and audit more than US$20 billion in annual sales for online, internet and mobile phone-based lotteries and pari-mutuel organizations.

Our products have been engineered to provide:

- fully automated independent real-time monitoring; and
- compatibility with all gaming systems.

Smartphone authentication of product brands

TruBrand™ and TruNote™

Spectra's new technology enables end users to verify products and banknotes with a smartphone. This technology eliminates the need for costly readers and allows the consumer to authenticate the product themselves.

- TruBrand™ and TruNote™ are materials-based technologies that do not rely on images.

Banknote cleaning

Spectra's new technology has the potential to substantially reduce central bank costs and environmental impact of disposing of soiled banknotes. Two United States (US) patents on the use of supercritical fluids for cleaning and decontaminating banknotes in circulation were issued in 2015.

Our customers

Our end customers include a G7 central bank organization and one of the world's largest commercial security printers and papermakers, which supplies the Company's technology to a second G7 central bank and numerous other central banks.

Our solutions are used by:

- 19 central banks;
- commercial security printers and papermakers;
- Crane & Co.;
- national lotteries in six countries;
- suppliers of security threads for world currencies;
- Intralot SA;
- Scientific Games International inc.;
- GTECH S.p.A.;
- Governments of Turkey, India, Malaysia, Norway and Mexico; and
- 16 states within the US, including Puerto Rico.

> We have integrated our TruBrand™ cloud-based authentication services into the Secure Transactions Group to create an important new growth channel for the Group as the smartphone authentication technology gains traction.

ICS

Expanding its authentication of secure transactions

Spectra has recently expanded its authentication of secure transactions beyond physical banknotes with its secure internal control system (ICS) software platforms and is an established security provider for the worldwide gaming industry.

Our ICS software provide methods for fraud, money laundering and match fixing detection, as well as statistical analysis, and have many existing parallel applications used by the securities exchange industry.

Smartphone authentication of product brands

TruBrand™ and TruNote™

Spectra's new technology enables end users to verify product and banknote authenticity with a smartphone. Embedded in printed and holographic labels, TruBrand™ presents a covert materials-based signature for detection and analysis on the smartphone using cloud-based authentication.

Our strategy
Developing and acquiring for the future.

Our solutions

Strategic aim	Development strategy	Progress
Capitalize on existing suite of developed covert materials products	Future development of covert materials and sensors will be externally funded	Proposal issued for the joint development and licensing of a polymer banknote technology by a major printer of banknotes Proposal issued for the development and supply of further upgraded sensor capability to a G7 central bank in response to a standardization requirement
Advanced smartphone authentication technology	Leverage TruBrand™ smartphone technology to create new revenue streams for both materials as well as the Secure Transactions Group	Trials underway with large tobacco supplier in Asia
Increase high margin specialty materials sales	Develop and acquire specialty phosphor and taggants for authentication Develop new TruBrand™ taggants Internal development and licensing of novel phosphors	Acquired specialty phosphor company in January 2016 Increased phosphor sales beyond US banknotes into Asia and Europe through partners
Implement cost reductions	Identify areas for cost savings in both infrastructure and staff composition	Restructuring of staff is underway Consolidating operations upon the expiration of a property lease in mid-2017 Seeking lower cost materials or price reductions from suppliers

Outlook

New opportunities include G7 and other central banks

Penetration into the polymer banknote market through licensing agreements

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The successful production-scale testing and consummation of our TruBrand™ taggants by a large tobacco supplier in Asia, leading to sales in late 2018

The utilization of the Secure Transactions Group for cloud-based server authentication of TruBrand™

The sale of our smartphone technology TruNote™ for the authentication of banknotes

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New sales channel for our specialty phosphor materials to a banknote security thread manufacturer

Incorporation of phosphors in our smartphone products

Increased opportunities with long-standing customers

The benefits of reduced staffing and leased space is expected to be realized in 2018

Our markets

Spectra's market opportunity has expanded once more with the introduction of our smartphone authentication solutions for products, tax stamps and banknotes. The ability to empower anyone with a smartphone to authenticate products and banknotes containing our materials transforms the market.

Our TruBrand™, TruStamp™ and TruNote™ suite of solutions are the only materials-based smartphone authentication technologies in the world and rely on our proprietary materials. This is a powerful combination of new and disruptive technologies introduced by one company, which, in the span of two years, has gone from concept to market-ready products for sale and under test by large volume tobacco suppliers in Asia.

Spectra's current suite of portable reader-based solutions can be used for authenticating and tracking consumer and tax-bearing products. Our reader based business has grown considerably in Asia and has several recognizable brand owners as customers.

With over 150 billion banknotes manufactured annually worldwide and 85% of all transactions performed using banknotes, this business has proven to be a high quality, long-term revenue source for the Company. With 19 central bank customers and new developed technologies, particularly for polymer banknotes, we expect continued strong earnings from this sector.

The worldwide replacement of unfit banknotes has a cost approaching US$10 billion annually. This, along with the increasing demands for governments to reduce costs, is a business case for our banknote cleaning technology, Aeris™. Aeris™ has the potential to generate significant hardware sales with ongoing service revenue once the long central bank sales cycle plays out. Aeris™ has no competition and, now that patents have been issued, the market is ours exclusively.

Spectra's secure ICS software products have been augmented with new capabilities since the acquisitions and have resulted in revenue growth with existing customers as well as with new ones. Along with the expansion in internet-based lotteries, we expect to provide cloud-based authentication for a potentially large number of customers using our materials-based TruBrand™, TruStamp™ and TruNote™ smartphone authentication.

Chief Executive Officer's statement

Through achieving key commercial milestones, Spectra has substantially improved its performance in 2016.

Introduction

For the second year running, Spectra has generated significant EBITDA, up over 100% relative to 2015 (before stock compensation expense and exceptional items). This steep growth was driven by increased use of our in-house manufacturing for a contracted G7 central bank customer, as well as a new central bank end customer for our high margin phosphor materials. In-house manufacturing was in effect for the last quarter of 2016 and will continue for the duration of the contract to beyond 2026. Both of these revenue streams are sales of consumables to large central bank end customers, as opposed to more intermittent hardware revenue, and are therefore expected to continue to fuel profitability in the long term.

In addition to these high performing revenue streams, we had a solid performance from our brand authentication and gaming software business lines, and our newest authentication product for materials-based smartphone authentication won its first customer in 2016, which resulted in successful trials with other potentially very large customers in Asia.

Revenue for the year was US$11.1 million (2015: US$14.1 million). EBITDA for the year, before stock compensation expense and exceptional items, as a result of the above factors, was up 123% at US$2.4 million, compared to the prior year at US$1.1 million.

Having generated cash from operations of US$2.8 million (2015: US$0.5 million consumed), cash at the period end amounted to US$8.8 million (2015: US$9.8 million), excluding US$1.1 million of restricted and investment cash (2015: US$1.1 million). This is notwithstanding US$3.1 million expended on the phosphor assets acquisition.

The Company therefore has sufficient resources to execute on its growth plans with its existing cash reserves.

With the Company having reached sustainable profits and having sufficient resources to execute on its growth plans with its existing cash reserves, the Board is delighted to start paying dividends. Its dividend policy will take account of the Group's profitability and underlying growth, and the maintenance of sufficient cash reserves. The Board intends to distribute substantially all of the Company's profits until its year-end unrestricted cash balances have fallen to approximately US$5 million, whereupon it intends to pay dividends twice covered by earnings. It therefore intends to pay an inaugural annual dividend of US$0.05 per share on or about June 30, 2017 to shareholders of record as of June 9, 2017 and thereafter to pay an annual dividend as described above in June after the audited close of each financial year.

Review of operations

Authentication Systems

The Authentication Systems Group, which includes the security phosphor materials, generated revenue of US$9.8 million (2015: US$12.8 million) and adjusted EBITDA of US$1.9 million (2015: US$1.1 million). The fall-off in revenue relative to 2015 is associated with the final delivery of sensors to a G7 central bank in 2015. The increased earnings in 2016 reflect the success we have had in greatly increasing high margin materials sales of our security phosphor materials as well as the realization of a long-term increase in gross profit from the in-house manufacturing of our covert materials sold to a G7 central bank and another 18 central banks through a licensing arrangement.

> The Company's strategy for increasing revenue and earnings is shifting towards brand authentication markets while continuing to expand our banknote business through licensing and the sale of already developed technologies.

Achievements included:

- Acquisition and integration of a security phosphor company in February 2016 without new hires.
- Record sales of security phosphors with a new large central bank as the end customer.
- In-house manufacturing of covert materials for a G7 central bank.
- Continued strong brand authentication sales of US$1.5 million (2015: US$1.5 million).
- Successful trials of the TruBrand™ smartphone-based authentication technology leading to decisive larger scale production tests in 2017.

Although we cannot be assured of the continued sales levels of the phosphor materials, we are confident that our proven ability to deliver large quantities of material in 2016 to a new customer will have lasting value which will translate into sustainable increases in our sales of these materials.

Secure Transactions Group

The Secure Transactions Group, formed around the various gaming technology acquisitions made in 2012, performed in line with management expectations, generating adjusted EBITDA of US$0.5 million (2015: US$0.5 million) on revenue of US$1.3 million (2015: US$1.3 million).

The Secure Transactions Group has won three new contracts and four new licenses, and has succeeded in introducing a new 64-bit Premier Integrity package which has been integrated with the software systems of the three major lottery providers. Norway has adopted this new offering and the state of Virginia has adopted our products for two online/mobile products. We are confident that we will see growth of the business in 2017.

In addition, we have integrated our TruBrand™ cloud-based authentication services into the Secure Transactions Group to create an important new growth channel for the Group as the smartphone authentication technology gains traction.

Aeris™ banknote cleaning technology

While there was no revenue contribution from this business line in 2016, development and marketing related expenses for the Aeris™ product were restricted to approximately US$50k. With the completion of a significant number of central bank tests as well as internal banknote cleaning studies behind us, the program costs associated with this new technology will now contract to very basic collateral marketing materials and travel to potential customers and strategic partners.

The risk averse nature of the banknote industry, with its long sales cycle and the many special interests which would be negatively affected by the success of Aeris™ banknote cleaning technology, will impact the adoption cycle of the product. The Company is therefore looking to partner with a credible industry hardware supplier to advance the adoption of Aeris™.

Strategy

The Company's strategy for increasing revenue and earnings is shifting towards brand authentication markets while continuing to expand our banknote business through licensing and the sale of already developed technologies.

We have developed and introduced an impressive suite of covert authentication products which are currently under consideration by central banks and potential corporate licensing partners. With multiple developed technologies for both paper and polymer substrates already in front of potential customers, we no longer need to fund internally the development of covert banknote technologies.

We will focus our efforts going forward on reaping the benefits of these developed covert materials products, while also supporting and innovating, as required, for our existing central bank customers. All additional work on covert materials and sensors will be entirely externally funded and a restructuring of our staffing requirements is already underway to cut costs while bolstering expertise in phosphors and smartphone applications software development.

> The Company's shorter-term prospects have increased with the growth of the authentication business beyond covert materials and hardware.

Review of operations continued

Strategy continued

The Company has made a significant and deliberate strategic decision to aggressively grow its revenue and earnings through the sale of secure materials beyond the covert central bank products. This approach focuses on generating high margins from our unique security materials, which include phosphors and taggants for brand authentication. Taggant sales for brand authentication using our TruBrand™ smartphone technology will create new revenue streams for both materials as well as for the Secure Transactions Group through cloud-based server authentication, bringing a fully synergistic benefit to the entire business.

Mirroring the shift towards secure materials beyond covert technologies is an effort to further reduce and restructure our staffing as well as our infrastructure needs. The shift in emphasis will accelerate revenue growth, reduce costs, and further increase and smooth out our earnings as we go forward.

Prospects

The Company's shorter-term prospects have increased with the growth of the authentication business beyond covert materials and hardware. In addition, while we are transitioning to a mode of capitalizing on our already developed covert technologies and customers, we have several significant opportunities ahead for this side of the business going forward.

We are targeting six specific opportunities, three of which are relatively near term and three of which are somewhat longer term.

The important, near-term and significant opportunities are:

1) The continued sale of our specialty phosphor materials to a security thread manufacturer providing product to what we believe is a large Asian central bank.

2) The successful production-scale testing and consummation of our TruBrand™ taggants by a large tobacco supplier in Asia, leading to sales in late 2018.

3) Increased revenue for the Secure Transactions Group from both online gaming and cloud-based authentication services for our TruBrand™ customers.

The longer-term (two to four years) opportunities are:

4) The joint development and licensing of a polymer banknote technology by a major printer of banknotes.

5) The development and supply of further upgraded sensor capability to a G7 central bank in response to a standardization requirement.

6) The sale of our smartphone technology TruNote™ for the authentication of banknotes.

We are pleased that we are able to supplement our sustained and growing profitability with a number of near-term and longer-term prospects of a significant scale. We are particularly delighted that the authentication business outside of banknotes is increasing ahead of expectations and that it can provide a smoothing of our long-term banknote business with its characteristically extended sales cycles and delays. We believe that we have a number of transformative opportunities ahead in several aspects of our business that will drive near and long-term earnings growth for the Company and its shareholders.

With the Company having reached sustainable profits and having sufficient resources to execute on its growth plans with its existing cash reserves, the Board is delighted to start paying dividends. It intends to pay an inaugural annual dividend of US$0.05 per share in June 2017 and thereafter to pay the dividend in June after the audited close of each fiscal year.

Nabil M. Lawandy
Chief Executive Officer
May 26, 2017

Corporate governance and financial statements

Corporate governance

Financial statements

Board of Directors and senior management

Board of Directors

BJ Penn
Non-executive Chairman

Mr. Penn was Acting Secretary of the US Navy from March to May 2009, having previously been Assistant Secretary of the US Navy (Installations and Environment) from March 2005. He was also Director, Industrial Base Assessments from October 2001 to March 2005, with responsibility for the overall health of the US defense industrial base. He commenced his career as a Naval Aviator, having received his BS from Purdue University, West Lafayette, and his MS from the George Washington University, Washington, DC. Mr. Penn has been a member of the Board since June 2010 and became Chairman of the Board on 7 June 2011.

Nabil M. Lawandy
President and Chief Executive Officer

Dr. Lawandy is the founder, President and Chief Executive Officer of the Company. From 1981 to 1999, Dr. Lawandy was a tenured full professor of Engineering and Physics at Brown University. He holds a BA in Physics, and an MSc and PhD in Chemistry, both from the Johns Hopkins University. He has authored over 170 reviewed scientific papers and is an inventor on 52 US and 27 foreign issued patents. He has also received a Presidential Young Investigator Award, an Alfred P. Sloan Fellowship, a Rolex Award for Enterprise and a Samuel Slater Award for Innovation.

Donald Stanford
Non-executive Director

Mr. Stanford, who was until 2001 the Chief Technical Officer of GTECH Corporation, is an Adjunct Professor of Computer Science and Engineering at Brown University and is an instructor in the Program in Innovation, Management and Entrepreneurship (PRIME). He holds a BA in International Relations and an MS in Computer Science and Applied Mathematics, both from Brown University. Over 30 years, he has held every technical leadership position, including Vice President of Advanced Development and Chief Technology Officer. Mr. Stanford serves on several boards including Spectra Systems, Times Squared Academy Charter School and the Business Innovation Factory.

Mr. Stanford is a member of the RI Science and Technology Advisory Council. He serves on the Brown advisory councils to the President and the School of Engineering. In 1999 Mr Stanford received the Black Engineer of the Year Award for Professional Achievement. In 1999 he also received the Honorable Thurgood Marshall Award for Community Service from the NAACP. In 2002 he received the Brown Graduate School's Distinguished Graduate Award and the RI Professional Engineer's Award for Community Service.

Martin Jaskel
Non-executive Director

Mr Jaskel has over 40 years of involvement in the financial services industry. He began in the United Kingdom government bond market as a broker with leading firms, latterly as a Partner in W Greenwell & Co. In 1986, as an element of the deregulation of the UK markets, W Greenwell was sold to Midland Bank and became the leading Gilt-Edged Market Maker, of which Mr Jaskel was a Director. In 1988 he was appointed Director of Global Sales and Marketing of Midland Montagu Treasury (the treasury division of Midland Bank) after chairing a committee to redesign the distribution of Treasury products. In 1990 he was appointed Director of Global Sales at NatWest Treasury and rebuilt the neglected franchise global distribution of treasury and capital markets products.

In 1994 he was promoted to Managing Director of Global Trade and Banking Services. He sat on the Advisory Board of ECGD, the UK export – import bank, was responsible for several years for signing off all the UK exposure to BAE and Airbus and sat on several government and Bank of England advisory boards. In 1997 he left NatWest and founded financial services consultancies, which included a consultancy at KPMG Corporate Finance and the corporate FX division of Travelex plc, and an interim appointment as the Managing Director of a private real estate company with a £500 million portfolio of commercial and residential property. In 2005 he joined European American Capital Limited, an FSA-authorized and regulated specialized advisory bank, as Senior Advisor. He has wide experience as a Non-executive Director of both publicly quoted and private companies.

Senior management

Brian E. McLain
Chief Financial Officer and Company Secretary

Mr. McLain has been Spectra's Chief Financial Officer since January 2017. Before joining Spectra, he served as the Corporate Controller for OMNIlife Science, Inc. Prior to OMNIlife, he progressed from the role of Corporate Controller to Vice President, Finance & Business Solutions at SeraCare Life Sciences, Inc., which was quoted on NASDAQ prior to being bought out in 2012.

Previously, he served in various roles at International Power, a UK-owned power producer, and Excelergy Corporation, a venture-backed software business. He started his career at Arthur Andersen. Mr. McLain holds a BS from Boston College and is a licensed Certified Public Accountant.

James Cherry
Director of Authentication Systems

Mr. Cherry serves as Director of Authentication Systems. He joined the Company in 2002 from Auspex Systems, an enterprise network data storage system business, where he had been involved in marketing and product management for seven years. Prior to that, he had worked for five years at DuPont in product management.

Scott Tillotson
Director of Secure Transactions

Mr. Tillotson serves as Director of Secure Transactions Group. He has held a variety of positions with Spectra for ten years and GTECH Corporation, a leader in the lottery industry, for nine years in product marketing and management. Prior to that, he worked for the IBM Corporation as an Account Executive and Systems Engineer. Mr. Tillotson holds a BSEE from Purdue University.

William Goltsos
Vice President, Engineering

Dr. Goltsos was appointed Vice President, Engineering in April 2000. From September 1996 to April 2000, he served as Senior Systems Engineer. Prior to that, from 1992 to 1996, he served as a staff member of the MIT/Lincoln Laboratory's Optical Communications Group. Dr. Goltsos holds a BS in Physics from Rensselaer Polytechnic Institute and an MS and PhD in Physics from Brown University.

Andrei Smuk
Director of Research and Development

Dr. Smuk, who joined the Company in 2000, was appointed Director of Research and Development in 2006. He is responsible for the development of advanced materials and innovative sensor systems. He received a PhD in Physics from Brown University in 2000 and an MS in Applied Physics from the Moscow Institute of Physics and Technology in 1994.

Key
- Audit Committee
- Compensation Committee
- Government Security Committee
- Nominating Committee

Directors' report
for the year ended December 31, 2016

The Directors present their report and the audited consolidated financial statements for the year ended December 31, 2016.

Domicile

Spectra Systems Corporation is a C corporation and is registered and domiciled in the United States of America.

Principal activity

The principal activity of the Company is to invent, develop and sell integrated optical systems that provide customers with increased efficiency, security tracking and product life. The integrated systems combine consumables and engineered optical materials with software and hardware for use in applications. The Company also provides software tools to the lottery and gaming industries for fraud, money laundering and match fixing detection, as well as statistical analysis.

Results and dividends

The Company's statements of income and other comprehensive income are set out on page 18 and show the results for each year.

There is no federal or state income tax liability on the respective income tax returns due to timing differences arising between items of income and expense recorded on the books and those reported on the tax returns. Additionally, the Company has approximately US$27 million in federal and US$4 million in state net operating loss carryforwards to offset future income reported on the respective tax returns.

The Directors intend to pay a dividend of US$0.05 per share on or about June 30, 2017 to shareholders of record as of June 9, 2017.

Review of business and future developments

A review of the operations of the Group is contained in the Spectra at a glance review on page 2.

Principal risks and uncertainties and financial risk management

Complex products

Certain of the products produced by the Company are highly complex and are designed to be used in complex systems. Failure to correct errors or other problems identified after deployment could result in events that may have a negative effect on the Company's business and financial condition.

The Company's markets may become impacted by technological change

Markets for the Company's products may become characterized by rapidly changing technology, evolving industry standards and increasingly sophisticated customer requirements. The introduction of products embodying new technology and the emergence of new industry standards could render the Company's existing products obsolete and unmarketable and may exert pricing pressure on existing products. If the Company could not then develop products that remain competitive in terms of technology and price and that meet customer needs, this could have a negative impact on the business.

Expiry of patents

All patents have a limited duration of enforceability. US patents generally have a duration of 20 years from the filing date. Once a patent expires, the invention disclosed in the patent may be freely used by the public without accounting to the patent owner, as long as there are no other unexpired patents that embrace an aspect of the invention. There is no certainty that any improvement, new use or new formulation will be patented to extend the protection of the underlying invention or provide additional coverage to adequately protect the invention. As a result, the public may have the right to freely use the invention described in and previously protected by an expired patent.

Dependence on key personnel

The success of the Company's revenues are dependent on a limited number of employees, in particular the Chief Executive Officer and other managers with technological and development input. The Company has endeavored to ensure that its key employees are incentivized but cannot guarantee the retention of these staff. The Company also has the benefit of keyman insurance.

Forward-looking statements

All statements, other than statements of historical fact, contained in this document constitute "forward-looking statements". In some cases, forward-looking statements can be identified by terms such as "may", "intend", "might", "will", "should", "could", "would", "believe", or the negative of these terms and similar expressions. Such forward-looking statements are based on assumptions and estimates, and involve risks, uncertainties and other factors which may cause the actual results, financial condition, performance or achievements of the Company, or industry results to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. New factors may emerge from time to time that could cause the Company's business not to develop as it expects and it is not possible for the Company to predict all such factors. Given these uncertainties, investors are cautioned not to place any undue reliance on such forward-looking statements. Except as required by law, the Company disclaims any obligation to update any such forward-looking statements in this document to reflect future events or developments.

Key performance indicators (in millions)

- Revenue of US$11.1 million (2015: US$14.1 million).
- Adjusted EBITDA of US$2.4 million (2015: US$1.1 million).
- Adjusted EBITDA per share, in cents, of US$0.05 (2015: US$0.02).
- Basic earnings per share, in cents, of US$0.03 (2015: US$0.00).

Post-reporting date events

On January 18, 2017, the Company extended its lease for manufacturing and warehouse space in East Providence until October 31, 2022.

Financial instruments

Details of the use of financial instruments by the Company are contained in note B of the financial statements.

Directors' responsibilities

The Directors are responsible for preparing the Directors' report and the financial statements on the basis of preparation set out in note A of the financial statements and in accordance with United States Generally Accepted Accounting Principles (US GAAP). The Directors of the Company are responsible for the document in which the financial information is included.

In preparing these financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgments and accounting estimates that are reasonable and prudent; and
- state whether they have been prepared in accordance with US GAAP, subject to any material departures disclosed and explained in the financial statements.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions, disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that the financial statements comply with all legal requirements. They are also responsible for safeguarding the assets of the Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Directors' interests

The Directors' beneficial interests in the common stock of the Company were as follows:

	December 31,	
Ordinary shares	**2016**	2015
N.M. Lawandy	**1,883,570**	1,883,570
M. Jaskel	**9,960**	9,960
	1,893,530	1,893,530

Substantial shareholdings

The following shareholders held 3% or more of the issued common stock of the Company at December 31, 2016:

	Ordinary shares	% issued
Worsley Investors Fund	6,870,000	15.18
O. Salam	3,594,464	7.94
N. Slater	3,210,000	7.09
N.M. Lawandy	1,883,570	4.16
H. Heye	1,813,850	4.01
	17,371,884	**38.38**

Directors' report continued
for the year ended December 31, 2016

Directors' compensation

The following table details the Directors' earned compensation for the year ended December 31, 2016:

	Salary and bonus	Benefits	Board fees	Total compensation
Executive Directors				
N.M. Lawandy	$ 475,000	$ 35,606	$ —	$ 510,606
Non-executive Directors				
B. Penn	—	—	12,000	12,000
M. Jaskel	—	—	12,000	12,000
D. Stanford	—	—	12,000	12,000
O. Salam	—	—	4,000	4,000
R. Puton	—	—	4,000	4,000
J. Donohue	—	—	4,000	4,000
Total	**$ 475,000**	**$ 35,606**	**$ 48,000**	**$ 558,606**

Directors' share options

At December 31, 2016, Directors had options or warrants to purchase ordinary shares under the Company's stock option plan as follows:

	Options held at December 31, 2016	Weighted average exercise price	Options vested at December 31, 2016
N.M. Lawandy	4,105,292	$ 0.55	2,851,250
B. Penn	220,000	0.50	153,333
M. Jaskel	220,000	0.50	153,333
D. Stanford	220,000	0.50	153,333
	4,765,292	**$ 0.55**	**3,311,249**

Corporate governance

At both December 31, 2016 and the date of this report, the Board comprised one Executive Director, Nabil M. Lawandy, and three independent Non-Executive Directors, BJ Penn, as Chairman, Martin Jaskel and Donald Stanford. On April 12, 2016, the Board contracted to four members in response to a G7 central bank customer security requirement relating to the composition of the Board. At that time, Oussama Salam, Roland Puton and Jeffrey Donohue resigned from the Board. The Board usually meets at least every three months to closely monitor the progress of the Company towards the achievement of budgets, targets and strategic objectives.

The Board also operates four Committees, the Audit Committee, the Compensation Committee, the Nominating Committee and the Government Security Committee.

The Audit Committee comprises Martin Jaskel, Nabil M. Lawandy and Donald Stanford. It has primary responsibility for monitoring the quality of internal controls and ensuring that the financial performance of the Company is properly measured and reported on. It will receive and review reports from the Company's management and auditors relating to the interim and annual accounts and the accounting and internal control systems in use throughout the Company. The Audit Committee intends to meet no less than three times each financial year and will have unrestricted access to the Company's auditors.

The Compensation Committee comprises Martin Jaskel, BJ Penn and Donald Stanford. It reviews the performance of the Executive Directors and makes recommendations to the Board on matters relating to remuneration and terms of employment. The Committee also makes recommendations to the Board on proposals for the granting of share options and other equity incentives pursuant to any share options scheme or equity incentive scheme in operation from time to time.

The Nominating Committee comprises Martin Jaskel, as Chairman, BJ Penn and Donald Stanford. The Committee seeks and nominates qualified candidates for election or appointment to Spectra's Board of Directors.

The Government Security Committee comprises BJ Penn, as Chairman, and Nabil M. Lawandy. It is responsible for ensuring the implementation within the Company of all procedures, organizational matters and other aspects pertaining to the security and safeguarding of information, including the exercise of appropriate oversight and the monitoring of operations to ensure that protective measures are effectively maintained and implemented.

The Board intends to comply with Rule 21 of the AIM Rules relating to Directors' dealings and will also take all reasonable steps to ensure compliance by the Company's applicable employees. The Company has adopted a share dealing code for this purpose on substantially the same terms as the Model Code.

Website publication

The Directors are responsible for ensuring the annual report and the financial statements are made available on a website. Financial statements are published on the Company's website in accordance with legislation in the United Kingdom governing the preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Company's website is the responsibility of the Directors. The Directors' responsibility also extends to the ongoing integrity of the financial statements contained therein.

Auditors

All of the current Directors have made themselves aware of any information needed by the Company's auditors for the purposes of their audit and to establish that the auditors are aware of that information. The Directors are not aware of any relevant information of which the auditors are unaware.

Miller Wachman LLP have expressed their willingness to continue as the Company's auditors and a resolution to re-appoint Miller Wachman LLP will be proposed at the Annual General Meeting.

By order of the Board

Brian McLain
Company Secretary
June 1, 2017

Independent auditors' report

To the Board of Directors and stockholders of Spectra Systems Corporation

We have audited the accompanying financial statements of Spectra Systems Corporation, which comprise the balance sheets as of December 31, 2016 and 2015, and the related statements of income and other comprehensive income, stockholders' equity, and cash flows for the year then ended, and the related notes to the financial statements.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Spectra Systems Corporation as of December 31, 2016 and 2015, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Miller Wachman LLP

Miller Wachman LLP
Boston, Massachusetts
June 1, 2017

Balance sheets
December 31, 2016 and 2015

		2016		2015
Assets				
Current assets				
Cash and cash equivalents	$	**8,807,868**	$	9,808,487
Accounts receivable, net of allowance for doubtful accounts of $12,500 and $12,650 in 2016 and 2015, respectively		**2,538,230**		4,198,356
Other receivables		**167,792**		52,705
Inventory		**2,914,671**		2,824,195
Prepaid expenses		**103,981**		124,975
Deferred tax assets		**619,000**		170,000
Total current assets		**15,151,542**		17,178,718
Property, plant and equipment, net		**2,560,970**		2,867,526
Other assets				
Intangible assets, net		**7,304,113**		4,627,355
Restricted cash and investments		**1,091,732**		1,073,558
Deferred tax assets		**370,000**		819,000
Other assets		**145,727**		19,285
Total other assets		**8,911,572**		6,539,198
Total assets	$	**26,624,084**	$	26,585,442
Liabilities and stockholders' equity				
Current liabilities				
Accounts payable	$	**401,603**	$	1,463,698
Accrued expenses and other liabilities		**1,437,346**		1,564,641
Deferred revenue		**1,260,319**		1,247,273
Total current liabilities		**3,099,268**		4,275,612
Non-current liabilities				
Deferred revenue		**255,886**		277,222
Total non-current liabilities		**255,886**		277,222
Total liabilities		**3,355,154**		4,552,834
Commitments and contingencies (note J)				
Stockholders' equity				
Common stock, $0.01 par value, 125,000,000 shares authorized at December 31, 2016 and 2015; 45,251,370 shares issued and outstanding at December 31, 2016 and 2015		**452,514**		452,514
Additional paid-in capital – common stock		**55,061,067**		54,936,776
Accumulated other comprehensive loss		**(113,313)**		(86,291)
Accumulated deficit		**(32,131,338)**		(33,270,391)
Total stockholders' equity		**23,268,930**		22,032,608
Total liabilities and stockholders' equity	$	**26,624,084**	$	26,585,442

The accompanying notes are an integral part of these financial statements.

Statements of income and other comprehensive income
for the years ended December 31, 2016 and 2015

		2016		2015
Revenues				
Product	$	**9,036,814**	$	11,672,565
Service		**1,620,503**		1,747,474
Royalty		**464,302**		693,824
Total revenues		**11,121,619**		14,113,863
Cost of sales		**3,523,360**		7,402,407
Gross profit		**7,598,259**		6,711,456
Operating expenses				
Research and development		**2,347,591**		2,549,341
General and administrative		**3,421,310**		3,525,747
Sales and marketing		**737,273**		655,395
Total operating expenses		**6,506,174**		6,730,483
Income/(loss) from operations		**1,092,085**		(19,027)
Other income/(expense)				
Interest income		**52,432**		86,648
Other income, net		**351**		769
Foreign currency loss		**(5,815)**		(33,635)
Total other income, net		**46,968**		53,782
Income before provision for income taxes		**1,139,053**		34,755
Provision for income taxes		**—**		—
Net income	$	**1,139,053**	$	34,755
Earnings per share				
Basic	$	**0.03**	$	—
Diluted	$	**0.03**	$	—
Weighted average number of common shares				
Basic		**45,251,370**		45,251,370
Diluted		**45,297,370**		45,251,370
Other comprehensive (loss)/income				
Unrealized loss on currency exchange	$	**(32,837)**	$	(59,863)
Reclassification for realized loss in net income		**5,815**		33,635
Total other comprehensive loss		**(27,022)**		(26,228)
Comprehensive income	$	**1,112,031**	$	8,527

The accompanying notes are an integral part of these financial statements.

Statements of stockholders' equity
for the years ended December 31, 2016 and 2015

	Common stock					
	Shares	Amount	Additional paid-in capital	Accumulated deficit	Other comprehensive loss	Total stockholders' equity
Balance at December 31, 2014	**45,251,370**	**$ 452,514**	**$ 54,913,613**	**$ (33,305,146)**	**$ (60,063)**	**$ 22,000,918**
Compensation cost related to amortization of stock options	—	—	23,163	—	—	23,163
Reclassification for realized loss in net income	—	—	—	—	33,635	33,635
Unrealized loss on currency exchange	—	—	—	—	(59,863)	(59,863)
Net income	—	—	—	34,755	—	34,755
Balance at December 31, 2015	**45,251,370**	**$ 452,514**	**$ 54,936,776**	**$ (33,270,391)**	**$ (86,291)**	**$ 22,032,608**
Compensation cost related to amortization of stock options	—	—	124,291	—	—	124,291
Reclassification for realized loss in net income	—	—	—	—	5,815	5,815
Unrealized loss on currency exchange	—	—	—	—	(32,837)	(32,837)
Net income	—	—	—	1,139,053	—	1,139,053
Balance at December 31, 2016	**45,251,370**	**$ 452,514**	**$ 55,061,067**	**$ (32,131,338)**	**$ (113,313)**	**$ 23,268,930**

The accompanying notes are an integral part of these financial statements.

Statements of cash flows
for the years ended December 31, 2016 and 2015

		2016		2015
Cash flows from operating activities				
Net income	$	1,139,053	$	34,755
Adjustments to reconcile net income to net cash provided by/(used in) operating activities:				
Depreciation and amortization		1,097,673		866,673
Stock-based compensation expense		124,291		23,163
Allowance for doubtful accounts		22,177		—
Inventory obsolescence		—		75,671
Changes in operating assets and liabilities:				
Accounts receivable		1,638,365		(2,499,512)
Other receivable		(115,442)		(2,052)
Inventory		143,013		1,295,314
Prepaid expenses		21,455		(17,853)
Other assets		(2,656)		1,989
Accounts payable		(1,126,920)		453,617
Accrued expenses and other liabilities		(128,068)		160,922
Deferred revenue		(8,306)		(921,685)
Net cash provided by/(used in) operating activities		2,804,635		(528,998)
Cash flows from investing activities				
Restricted cash and investments		(18,174)		1,426,442
Payment of patent and trademark costs		(390,679)		(326,192)
Payment of software costs		(123,675)		—
Asset acquisitions		(3,118,489)		(213,917)
Purchases of property, plant, and equipment		(129,646)		(288,584)
Net cash (used in)/provided by investing activities		(3,780,663)		597,749
Effect of exchange rate on cash and cash equivalents		(24,591)		(33,110)
Net (decrease)/increase in cash and cash equivalents		(1,000,619)		35,641
Cash and cash equivalents, beginning of the year		9,808,487		9,772,846
Cash and cash equivalents, end of the year	$	8,807,868	$	9,808,487
Supplemental disclosures of cash flow information				
Income taxes paid	$	—	$	500
Non-cash investing activities				
Acquisition of patents through accounts payable	$	64,428	$	228,536
Acquisition of property, plant and equipment through accounts payable	$	—	$	44,000

The accompanying notes are an integral part of these financial statements.

Notes to the financial information
for the years ended December 31, 2016 and 2015

Note A – Corporate information

Spectra Systems Corporation (the “Company”) develops and sells integrated optical systems that provide customers with increased efficiency, security tracking and product life. The integrated systems combine consumables and engineered optical materials with software and hardware for use in applications. The Company develops and sells its integrated solutions across a spectrum of markets, including currency manufacturing and cleaning, branded products, industrial logistics and other highly sensitive documents. The Company also provides software tools to the lottery and gaming industries for fraud, money laundering and match fixing detection, as well as statistical analysis.

The Company was incorporated on July 3, 1996 in Delaware as Spectra Acquisition Corp. On August 26, 1996, the Company purchased substantially all of the assets of SSC Science Corporation (SSCSC) and changed its name to Spectra Science Corporation. The assets were purchased for US$1,654,000 in cash plus common stock warrants. The acquisition was accounted for using the purchase method of accounting.

On June 8, 2001, the Company changed its name to Spectra Systems Corporation.

On July, 25 2011, the Company raised US$20,241,179, net of offering costs, on the London Stock Exchange in a placing of 18,592,320 common shares at a placing price of £0.753 per new common share, representing 41.09% of the enlarged common share capital of the Company. As a result of the offering, anti-dilution provisions found in the Company’s Amended and Restated Certificate of Incorporation converted all of the issued and outstanding preferred shares into 17,185,052 common shares, giving 26,659,050 common shares in issue at the time of the placing.

On June 6, 2012, the Company acquired all of the assets of ESI Integrity, Inc., including its proprietary source codes, multi-year contracts, long-standing customer relationships and assumed liabilities. US$1,425,000 was paid in consideration for the assets.

On September 14, 2012, the Company acquired certain assets of Lapis Software Associates, including their proprietary source codes, multi-year and long-standing customer relationships, and assumed liabilities. US$726,000 was paid in consideration for the assets.

On February 28, 2014, the Company acquired certain assets of Inksure Technologies, Inc., including their long-standing customer relationships and authentication technology. US$1,356,000 was paid in consideration for the assets.

On September 30, 2015, the Company acquired certain assets of Solaris Nanosciences, Inc. (Solaris), including technology and customer relationships in exchange for US$213,917 in cash. The Company also recorded US$184,000 in contingent payments based on a royalty payment arrangement for anticipated continuing business.

On January 28, 2016, the Company acquired certain specialty phosphor assets including technology and customer relationships. The total consideration amounted to US$3,118,489 (See note M).

Note B – Significant accounting policies

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (US GAAP) requires management to make estimates and judgments that affect the amounts reported in the financial statements and accompanying notes. The accounting estimates that require management’s most difficult and subjective judgments include the assessment of recoverability of property, plant, and equipment; the valuation of inventory; intangible assets; and the recognition and measurement of income tax assets and liabilities. The actual results may differ materially from management’s estimates.

Cash and cash equivalents

The Company considers highly liquid investment purchases with a maturity of 90 days or less at the date of acquisition to be cash equivalents.

Restricted cash and investments

Restricted cash and investments represents a certificate of deposit held as collateral for certain performance requirements in accordance with terms of a services contract. At both December 31, 2016 and 2015, the agreement required that US$500,000 be maintained as collateral. The collateral will be released as the Company meets contractual milestones. Restricted cash and investments of US$1,091,732 and US$1,073,558 as of December 31, 2016 and 2015, respectively, are certificates of deposit whose maturity exceeded 90 days at the date of acquisition, of which US$500,000 is restricted.

Notes to the financial information continued
for the years ended December 31, 2016 and 2015

Note B – Significant accounting policies continued

Significant concentrations

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist principally of cash and cash equivalents and trade accounts receivable. The Company's cash management policies restrict investments to low-risk highly liquid securities, and the Company restricts its transactions to financial institutions with good credit standing. The Company has cash and investments, including restricted, on deposit with financial institutions which are insured by either the Federal Deposit Insurance Corporation up to US$250,000 per institution or the Canadian Deposit Insurance Corporation up to 100,000 Canadian Dollars per institution. The Company also maintains cash on hand and cash in bank accounts in the United Kingdom, neither of which are subject to insurance. As of December 31, 2016, the amount of cash and investments, including restricted, not insured was US$9,325,201.

Concentrations of credit risk with respect to trade accounts receivable are limited due to the concentration of business with government entities. The Company's management attempts to minimize credit risk on its accounts receivable by monitoring credit exposure on a regular basis.

The following table summarizes the number of customers that individually comprise greater than 10% of total accounts receivable and their aggregate percentage of the Company's total accounts receivable as of:

	December 31,	
	2016	2015
Number of significant customers	**3**	2
Percentage of total receivables	**73%**	80%

The following table summarizes the number of customers that individually comprise greater than 10% of total revenues and their aggregate percentage of the Company's total revenues for the years ended:

	December 31,	
	2016	2015
Number of significant customers	**3**	3
Percentage of total revenue	**64%**	72%

The following table summarizes the geographic concentration of revenue for the years ended:

	December 31,	
	2016	2015
United States of America	**$ 7,951,227**	$ 10,207,794
Europe	**2,165,437**	2,884,471
Rest of World	**1,004,955**	1,021,598
	$ 11,121,619	$ 14,113,863

Accounts receivable

Accounts receivable are stated at the amount management expects to collect from outstanding customer accounts. Management provides for uncollectible accounts through a provision for bad debt expense. At December 31, 2016 and 2015, the Company had a US$12,500 and a US$12,650 allowance for doubtful accounts, respectively.

Note B – Significant accounting policies continued

Fair value of financial instruments

The carrying amounts of the Company's financial instruments, which include cash and cash equivalents, accounts receivable and accounts payable, are carried in the financial statements at amounts that approximate their fair market values at December 31, 2016 and 2015.

Fair value is the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

Level 1 – Quoted prices in active markets for identical assets or liabilities.

Level 2 – Observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 – Inputs that are generally unobservable and typically reflect management's estimate of assumptions that market participants would use in pricing the asset or liability.

As of December 31, 2016 and 2015, the Company has certificates of deposit of US$1,091,732 and US$1,073,558, respectively, which is included in restricted cash and investments. The Company considers this certificate of deposit as a Level 2 investment.

Foreign currency translation

The functional currency of the Company's foreign operations is the applicable local currency, the Canadian Dollar. The functional currency is translated into US Dollars for balance sheet accounts using currency exchange rates in effect as of the balance sheet date and for revenue and expense accounts using an average exchange rate in effect during the applicable period. The translation adjustments are deferred as a separate component of stockholders' equity in accumulated other comprehensive loss.

Inventory

Inventories are stated at the lower of cost or market. Cost is determined using the first-in, first-out method. The Company regularly reviews inventory quantities on hand and records a provision to write down excess and obsolete inventory to its estimated net realizable value if less than cost.

Intangible assets

Goodwill represents the excess of purchase price over the fair value of the net assets acquired. Goodwill is not amortized, but is subject to at least an annual assessment for impairment or whenever events or circumstances indicate that it might be impaired.

Other intangible assets consist of patents, trademarks and various intangible assets identified as part of a business combination such as contracts, customer relationships and technology. Patents and trademarks are recorded at cost. For intangible assets identified as part of a business combination, values are assigned using various valuation techniques, including the present value of expected future cash flows. Intangible assets are amortized using the straight-line method over their estimated useful lives ranging from seven to 15 years. The Company evaluates the possible impairment of its intangible assets annually or whenever events or circumstances indicate the carrying value of the assets may not be recoverable.

Property and equipment

Property and equipment is stated on the basis of purchase price. Depreciation is calculated using the straight-line method over the following estimates useful lives:

Laboratory equipment	3–7 years
Computer and office equipment	3–5 years
Furniture and fixtures	7 years
Leasehold improvements	Shorter of lease term or estimated useful life
Software	3–5 years
Manufacturing equipment	5–7 years

Maintenance and repairs are charged to expense as incurred. When assets are retired or otherwise disposed of, the assets and related allowances for depreciation and amortization are eliminated from accounts and any resulting gain or loss is reflected in net income.

Note B – Significant accounting policies continued

Investment in affiliates

The Company accounts for investments in affiliates under the cost method of accounting if the Company owns less than 20% of the affiliates' outstanding capital. As of December 31, 2016, the Company held a 19% ownership in an affiliate (SpectraMed), and a 10% ownership in an affiliate (Solaris). These affiliates have had significant losses in prior years and the Company had previously reduced its investments in these affiliates to US$nil.

Accounting for stock-based compensation

In accounting for the Employee Stock Option Plan, the Company uses the Black-Scholes option pricing model to calculate compensation costs associated with options granted to employees. Total compensation costs are recorded over the option vesting period, generally three years.

Revenue recognition

Product revenue includes sales of pigments and security taggants, delivery of prototypes and contracts with multiple elements including nonrecurring engineering and follow-on manufacturing. Service revenue includes research and development services provided for a fixed price or provided for a specific period.

Revenues related to sales of pigments and security taggants and research and development services provided for a specific period are generally recognized when products are shipped or services are provided, the risk of loss has passed to the customer, the sales price is fixed or determinable and collectability is reasonably assured.

Revenue from multiple element arrangements is deferred until all elements of the contract are delivered unless all of the following criteria have been met: (1) the product or service has been delivered; (2) the fee for the delivered element is not subject to forfeiture, refund or concession based on performance or delivery of the undelivered element; and (3) the fair value of the delivered element is determined based upon the price charged by the Company or the price charged by competitors when similar services or products are sold separately, in which case the revenues for each element will be recognized independently in accordance with the Company's policy.

The Company enters into arrangements that can include various combinations of software, services and hardware. Where elements are delivered over different periods of time, and when allowed under US GAAP, revenue is allocated to the respective elements based on their relative selling prices at the inception of the arrangement, and revenue is recognized as each element is delivered.

Revenue from fixed-price development contracts is recognized on the percentage-of-completion method, measured by the percentage of effort incurred to date to estimated total effort for each contract. That method is used because management considers total effort to be the best available measure of progress on the contracts. Because of inherent uncertainties in estimating effort, it is at least reasonably possible that the estimates used will change within the near term.

Royalties are recognized when they are earned based on sales or use of technologies by third parties except where future income is not anticipated to cover non-refundable advances received, when the excess royalty is taken to income.

Research and development

Internal research and development costs are expensed as incurred. Certain third party research and development costs are capitalized in connection with contracted work. These costs are expensed as certain milestones are achieved. Overhead, general and administrative and training costs are expensed as incurred.

Income tax

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income taxes. The benefits from net operating losses carried forward may be impaired or limited in certain circumstances. In addition, a valuation allowance can be provided for deferred tax assets when it is more likely than not that all or some portion of the deferred tax asset will not be realized. The Company has a deferred tax asset of US$989,000 at December 31, 2016 and 2015. For both 2016 and 2015, there is no federal or state income tax liability on those respective income tax returns.

Advertising costs

Advertising costs are charged to expense when incurred. Advertising expense was US$36,725 and US$35,379 for 2016 and 2015, respectively.

Shipping and handling

The Company reports the cost of shipping and handling as an operating expense. Shipping and handling expense was US$138,262 and US$245,019 for 2016 and 2015, respectively.

Note C – Related party transactions

The Company sold phosphor products and received royalties amounting to approximately US$2,684,000 and US$1,211,000 for the years ended December 31, 2016 and 2015, respectively, to a company owned by a shareholder.

On September 30, 2015, the Company purchased certain assets, including technology and customer relationships, from Solaris in exchange for US$213,917 in cash. The Company also recorded US$184,000 in contingent payments based on a royalty payment arrangement for anticipated continuing business. The agreement requires the Company to pay Solaris 10% of any revenues hereafter received by the Company from the commercial exploitation of the assets. The Chief Executive Officer of Solaris is also the Chief Executive Officer of Spectra.

Note D – Inventories

Inventories consist of the following:

	December 31,	
	2016	2015
Raw materials	**$ 2,079,163**	$ 2,111,413
Finished goods	**835,508**	712,782
	$ 2,914,671	$ 2,824,195

Note E – Property and equipment

Property and equipment consists of the following:

	December 31,	
	2016	2015
Laboratory equipment	**$ 655,335**	$ 981,343
Computer and office equipment	**352,157**	629,544
Furniture and fixtures	**136,850**	136,850
Leasehold improvements	**1,470,046**	1,802,635
Software	**340,937**	348,483
Manufacturing equipment	**1,897,755**	2,604,386
Total	**4,853,080**	6,503,241
Less: accumulated depreciation	**(2,292,110)**	(3,635,715)
	$ 2,560,970	$ 2,867,526

Depreciation expense amounted to US$436,573 and US$449,173 for the years ended December 31, 2016 and 2015, respectively. As part of its consolidation of East Providence operations (see note J), the Company disposed of US$1,780,968 of fully depreciated equipment.

Notes to the financial information continued
for the years ended December 31, 2016 and 2015

Note F – Intangible assets

Intangible assets consist of the following:

	December 31, 2016	December 31, 2015
Patents	**$ 2,503,041**	$ 2,120,741
Customer relationships	**3,043,000**	1,943,000
Non-compete agreements	**188,440**	177,440
Developed technology	**1,502,000**	632,000
Tradename	**30,000**	30,000
Trademarks	**90,547**	17,739
Goodwill	**2,468,863**	1,564,863
Total	**9,825,891**	6,485,783
Less: accumulated amortization	**(2,521,778)**	(1,858,428)
	$ 7,304,113	$ 4,627,355

Amortization expense amounted to US$661,100 and US$417,500 for the years ended December 31, 2016 and 2015, respectively.

Estimated amortization expense is as follows:

Year ending December 31,	
2017	$ 604,358
2018	569,659
2019	526,587
2020	445,836
2021	394,065
Thereafter	4,763,608
	$ 7,304,113

Note G – Other assets

Other assets consist of the following:

	December 31, 2016	December 31, 2015
Rental deposits	**$ 18,897**	$ 18,786
Deferred contract costs	**123,675**	—
Other	**3,155**	499
	$ 145,727	$ 19,285

Note H – Accrued expenses and other liabilities

Accrued expenses and other liabilities consist of the following:

	December 31, 2016	December 31, 2015
Royalties	**$ 793,719**	$ 808,510
Employee compensation	**272,057**	303,441
Contingent costs	**184,000**	184,000
Professional fees	**93,883**	82,830
Property and franchise taxes	**30,000**	90,629
Product warranty	**25,000**	25,000
Other	**38,687**	70,231
	$ 1,437,346	$ 1,564,641

Note I – Income taxes

The approximate components of the income tax provision are as follows:

	December 31, 2016	December 31, 2015
Income tax provision/(benefit) computed at:		
Federal statutory rate – current	**$ 351,000**	$ (54,000)
State statutory rate – current	**62,000**	(10,000)
Federal deferred	**90,000**	89,000
State deferred	**16,000**	16,000
Change in valuation allowance	**(519,000)**	(41,000)
Provision for income taxes	**$ —**	$ —

A reconciliation of the statutory federal income tax rate with our effective income tax rate was as follows:

	December 31, 2016	December 31, 2015
Statutory federal rate	**34.0%**	34.0%
State income taxes, net of income tax benefit	**0.1%**	1.2%
Non-deductible expenses and other	**(28.1%)**	(44.8%)
Change in valuation allowance	**(6.0%)**	9.6%
Effective tax rate	**—**	—

Notes to the financial information continued
for the years ended December 31, 2016 and 2015

Note I – Income taxes continued

Approximate deferred income tax assets are as follows:

	December 31, 2016	December 31, 2015
Depreciation and amortization	$ (153,000)	$ (138,000)
Deferred revenue	(492,000)	(492,000)
Deferred rent	—	7,000
Federal and state tax credits	1,054,000	1,054,000
Inventory	97,000	189,000
Bad debts	5,000	5,000
Net operating loss carryforward	8,643,000	9,048,000
Valuation allowance	(8,165,000)	(8,684,000)
Total deferred income tax assets	$ 989,000	$ 989,000

The Company uses an effective tax rate of 40% consisting of a federal rate of 34% and a state rate of 6% net of federal effect.

As of December 31, 2016, the Company has net operating loss carryforwards expiring between 2018 and 2036 for US federal income tax purposes of approximately US$27,000,000 and US$4,000,000 expiring between 2017 and 2020 for state income tax purposes. A valuation allowance has been established for US$8,165,000 and US$8,684,000 as of December 31, 2016 and 2015, respectively, for the deferred tax benefit related to those loss carryforwards and other deferred tax assets.

At December 31, 2016, the Company also had approximately US$1,100,000 of tax credit carryforwards that are available to offset federal and state liabilities. The credits will begin to expire between 2018 and 2028 for federal and between 2018 and 2023 for state.

The utilization of the tax carryforwards described above are dependent upon future profitability prior to any expiration dates. Additionally, alternative minimum taxes, if any, and substantial changes in ownership and tax laws and regulations may substantially limit their realization.

The Company accounts for the effect of any uncertain tax positions based on a "more likely than not" threshold to the recognition of the tax positions being sustained based on the technical merits of the position under scrutiny by the applicable taxing authority. If a tax position or positions are deemed to result in uncertainties of those positions, the unrecognized tax benefit is estimated based on a "cumulative probability assessment" that aggregates the estimated tax liability for all uncertain tax positions. The Company is not currently under examination by any taxing jurisdiction. The Company's federal and state income tax returns are generally open for examination for three years following the date filed.

Note J – Commitments and contingencies

The Company is involved from time to time in litigation incidental to the conduct of its business. The Company is not currently a party to any lawsuit or proceeding.

Lease commitments

The Company holds four real estate leases. The Company's lease agreement for corporate office space expired September 30, 2012 and is now in a month-to-month arrangement. The Company signed a five-year lease agreement for manufacturing and warehouse space in East Providence beginning in November 2013 and expiring in October 2017. During January 2017, this lease was extended through October 2022 (see note P). To support the ICS business, the Company signed a lease which has been extended through January 2019. The Company's lease for laboratory space in East Providence has been extended through May 31, 2020 for a portion of the space. The Company will vacate the remaining portion of the space by June 1, 2017 and consolidate its operations at its other East Providence locations. Rent expense was US$434,591 and US$419,990 for the years ended December 31, 2016 and 2015, respectively.

Note J – Commitments and contingencies continued

Lease commitments continued

Future minimum lease payments are as follows:

Year ending December 31,		
2017	$	308,105
2018		253,921
2019		234,165
2020		166,940
2021		120,817
Thereafter		102,770
	$	1,186,718

License and supply agreements

In 1996, and subsequently amended in 1999 and 2002, the Company entered into a license agreement under which the Company obtained a nonexclusive right to use certain technology through the term of the licensor's patents on such technology. The license agreement contains provisions for royalties to be paid on sales of products developed under the agreement. For the years ended December 31, 2016 and 2015, the Company recorded US$185,191 and US$224,904, respectively, in royalty expense.

Note K – Stockholders' equity

Common and preferred stock

On July 25, 2011, the Company raised US$20,241,179, net of offering costs, on the London Stock Exchange in a placing of 18,592,320 common shares at a placing price of £0.753 per new common share, representing 41.09% of the enlarged common share capital of the Company. As a result of the offering, anti-dilution provisions found in the Company's Amended and Restated Certificate of Incorporation converted all of the issued and outstanding preferred shares into 17,185,052 common shares, giving 26,659,050 common shares in issue at the time of the placing. At December 31, 2016 there were 45,251,370 common shares issued and outstanding and no preferred shares in issue.

Stock option plans

In February 2002, the Company adopted the 2002 Stock Plan (the "2002 Plan") which provided for the grant of incentive stock options and nonqualified stock options, stock awards and stock purchase rights for the purchase of up to 1,500,000 shares of the Company's common stock to officers, employees, consultants and Directors of the Company. The Board of Directors is responsible for administration of the 2002 Plan. The Board determines the term of each option, the option exercise price, and the number of shares for which each option is granted and the rate at which each option is exercisable. Incentive stock options may be granted to an officer or employee at an exercise price per share of not less than the fair value per common share on the date of the grant (not less than 110% of fair value in the case of holders of more than 10% of the Company's voting stock) and with a term not to exceed ten years from the date of the grant (five years for incentive stock options granted to holders of more than 10% of the Company's voting stock). Nonqualified stock options may be granted to consultants or Directors at an exercise price per share of not less than 85% of the fair value of the common stock. Stock options generally vest over three years and are exercisable over a period up to ten years from the date of grant. As of December 31, 2016, 135,000 options were outstanding under the 2002 Plan.

In May 2007, the Company adopted the 2007 Stock Plan (the"2007 Plan") which provided for the grant of incentive stock options and nonqualified stock options, stock awards and stock purchase rights for the purchase of up to 14,100,000 shares of the Company's common stock to officers, employees, consultants and Directors of the Company. The Board of Directors is responsible for administration of the 2007 Plan. The Board determines the term of each option, the option exercise price, and the number of shares for which each option is granted and the rate at which each option is exercisable. Stock options generally vest over three years and are exercisable over a period up to ten years from the date of grant. As of December 31, 2016, 6,912,414 options were outstanding and 7,052,586 options were available for grant under the 2007 Plan.

During the year ended December 31, 2016, the remaining 344,451 options that were issued without a plan expired.

Note K – Stockholders' equity continued

Stock option plans continued

Information related to stock options granted by the Company is summarized as follows (including certain options granted outside of the Plans):

	December 31, 2016			December 31, 2015		
	Number of shares under option		Weighted average exercise price	Number of shares under option		Weighted average exercise price
Outstanding at beginning of year	6,012,391	$	0.74	6,141,491	$	0.74
Granted	3,306,689		0.37	—		—
Exercised	—		—	—		—
Forfeited/canceled	(2,271,666)		0.91	(129,100)		0.73
Outstanding at end of year	7,047,414	$	0.51	6,012,391	$	0.74

The following table summarizes information about stock options outstanding at December 31, 2016:

	Options outstanding				Options exercisable		
Exercise price range	Number of outstanding shares	Weighted average contractual life (years)		Weighted average exercise price	Number of shares		Weighted average exercise price
US$0.30–US$0.84	6,587,414	6.22	$	0.47	4,376,284	$	0.52
US$0.85–US$1.23	460,000	3.97		1.19	460,000		1.19
	7,047,414	6.07	$	0.51	4,836,284	$	0.58

As of December 31, 2016, the weighted average contractual life for exercisable stock options was 4.55 years.

The Company's stock price closed at US$0.31 (£0.255) on December 31, 2016. As of December 31, 2016, the aggregate intrinsic value for outstanding and exercisable stock options was US$72,659 and US$24,309, respectively. Intrinsic value for stock options is defined as the difference between the current market value of the stock and the exercise price. The intrinsic value represents the value that would have been received by the option holders had the option holders exercised all of their options as of that date.

The Company currently uses the Black-Scholes option pricing model to determine the fair value of its stock options. The valuations determined using this model are affected by assumptions regarding a number of complex and subjective variables including stock price, volatility, expected life of options, risk-free interest rates, and expected dividends, if any. The Company recorded stock-based compensation costs of US$124,291 and US$23,163 for the years ended December 31, 2016 and 2015, respectively. There was no stock-based compensation expense capitalized during either year. During the year ended December 31, 2016, the weighted average grant date fair value of stock options granted was US$0.37. The assumptions used to value stock option grants are as follows for the year ended:

	December 31, 2016
Risk-free rate	0.7%
Expected life (years)	5.00
Assumed volatility	32.7%
Expected dividends	None

As of December 31, 2016, there was approximately US$242,491 of unrecognized compensation cost, related to unvested stock-based payments granted to our employees, Directors and consultants, which is expected to be recognized over a weighted average period of two years. Total unrecognized compensation cost will be adjusted for future changes in estimated forfeitures and recognized over the remaining vesting periods of the stock grants.

Note L – Employee retirement plan

During 1999, the Company adopted a defined contribution plan, established under the guidelines of Section 401(k) of the Internal Revenue Code (IRC), which covers all employees. Employees are eligible to participate in the employee retirement plan (Plan) at the beginning of the first month following the date of hire. Employees may contribute up to the maximum allowed by the IRC of eligible pay on a pretax basis. The Company made a matching contribution of 50% of employee contributions up to 4% of eligible salary. Company matching contributions vest at 25% after one year of service, 50% at the end of two years of service and 100% at the end of three years of service. For the years ended December 31, 2016 and 2015, the Company's matching contributions were US$39,482 and US$41,419, respectively.

Note M – Business combinations

On January 29, 2016, the Company acquired certain specialty phosphor assets primarily used in the authentication of world banknotes for total consideration of US$3,118,489. In addition to the assets, most importantly, the Company has acquired long-standing customer relationships related to the assets including a major world supplier of banknote inks. The Company will incorporate the acquired assets within its existing phosphor business and reports this acquisition as part of its Authentication Systems segment.

The following tables provide further details of this acquisition:

Assets acquired	
Inventories	233,489
Goodwill	964,000
Customer relationships (15-year amortization period)	1,050,000
Developed technology (10-year amortization period)	860,000
Non-compete agreement (3-year amortization period)	11,000
	3,118,489

Note N – Segment reporting

In accordance with ASC 280, management has identified three operating segments. The first is the Authentication Systems Group, which captures the hardware, software and materials related to the authentication of banknotes, tax stamps and other high value goods. The second segment is the Secure Software Transactions Group, which provides an Internal Control System (ICS) software offering to the lottery and gaming industries. ICS provides tools for fraud, money laundering and match fixing detection, as well as statistical analysis. The third segment is the Banknote Cleaning Group, which captures the technology related to cleaning soiled banknotes.

Information for each reportable segment as of December 31, 2016 and 2015 is as follows:

		Gross revenue	Income/(loss) from operations	Depreciation and amortization	Capital expense	Segment assets
2015	Secure Software Transactions	$ 1,321,822	$ 162,058	$ 202,957	$ 18,517	$ 3,147,070
	Authentication Systems	12,792,041	357,509	626,843	22,690	22,633,632
	Banknote Cleaning	—	(538,594)	36,873	247,377	804,740
	Total	**$ 14,113,863**	**$ (19,027)**	**$ 866,673**	**$ 288,584**	**$ 26,585,442**
2016	Secure Software Transactions	$ 1,274,211	$ 350,686	$ 205,433	$ 16,206	$ 2,563,557
	Authentication Systems	9,847,408	791,399	849,539	40,000	23,165,251
	Banknote Cleaning	—	(50,000)	42,701	73,440	895,276
	Total	**$ 11,121,619**	**$ 1,092,085**	**$ 1,097,673**	**$ 129,646**	**$ 26,624,084**

Note O – Earnings per share

The calculation of basic earnings per share is based on the net income divided by the weighted average number of common shares outstanding. Diluted earnings per share is calculated by considering the dilutive impact of common stock equivalents under the treasury stock method as if they were converted into common stock as of the beginning of the period or as of the date of grant, if later. For 2015, the exercise price of all options exceeded the average market price of the shares in issue and therefore are not considered in the diluted earnings per share calculation. The following table shows the calculation of basic and diluted earnings per common share:

	December 31, 2016	December 31, 2015
Numerator		
Net income	$ 1,139,053	$ 34,755
Denominator		
Weighted average number of common shares outstanding	45,251,370	45,251,370
Effect of dilutive securities		
Stock options	46,000	—
Diluted weighted average number of common shares outstanding	45,297,370	45,251,370
Earnings per common share		
Basic	$ 0.03	$ —
Diluted	$ 0.03	$ —

Note P – Subsequent events

The Company evaluated all events or transactions that occurred through June 1, 2017, the date these financial statements were available to be issued.

On January 18, 2017, the Company extended its lease for manufacturing and warehouse space in East Providence until October 31, 2022. The minimum lease commitment is included in the lease commitment table within note J.

On March 30, 2017, the Company declared a dividend of US$0.05 per share to be paid on or around June 30, 2017 to shareholders of record as of June 9, 2017.

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