

# NANOTECH SECURITY CORP.

# **ANNUAL INFORMATION FORM**

**December 13, 2016** 

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# 1. GENERAL MATTERS

Unless indicated or if the context requires otherwise, "Nanotech", the "Company", "we", "us" and "our" refer to Nanotech Security Corp. and its subsidiary. As an issuer listed on the TSX Venture Exchange, the Company is not required to file an annual information form but is doing so voluntarily with the intention of enhancing its corporate disclosure and thereby improving its access to capital markets. The information contained in this annual information form ("AIF") is as of December 13, 2016, except where otherwise stated.

Each section of the Management's Discussion and Analysis for the fiscal year ended September 30, 2016 ("2016 Annual MD&A"), that are referred to in this AIF are incorporated by reference and filed on SEDAR at <a href="www.sedar.com">www.sedar.com</a>. Except for otherwise provided, notwithstanding references to the Company's website, it is not incorporated into this AIF.

In this AIF, unless otherwise indicated, all dollar amounts are expressed in Canadian dollars and references to "\$" are to Canadian dollars. Nanotech primarily sells its products and services in US dollars, and incurs expenses primarily in Canadian and US dollars.

# Exchange Rate Information

The following table sets out, for each period indicated, the rate of exchange for one US dollar in Canadian dollars at the end of such period, the high, low, and average rate of exchange during those periods based on the noon buying rates of exchange published by the Bank of Canada:

Year	High	Low	Average(*)	<b>End of Period</b>
Year Ended September 30, 2016	C\$1.4589	C\$1.2544	C\$1.3252	C\$1.3117
Year Ended September 30, 2015	C\$1.3413	C\$1.1136	C\$1.2292	C\$1.3345
Year Ended September 30, 2014	C\$1.1251	C\$1.0284	C\$1.0831	C\$1.1200

<sup>\*</sup>Note: The average of the daily noon buying rates on the last business day of each month during the period.

# 2. FORWARD-LOOKING INFORMATION

This AIF contains forward-looking statements concerning anticipated developments in the Company's operations in future periods, the adequacy of Nanotech's financial resources, and the events or condition that may occur in the future. Forward-looking statements are frequently, but not always, identified by words such as "expects", "anticipates", "believes", "intends", "estimates", "predicts", "potential", "targeted" "plans", "possible" and similar expressions, or statements that events, conditions or results "will", "may", "could" or "should" occur or be achieved.

These forward-looking statements include, without limitation, statements about the Company's market opportunities, strategies, competition, and the Company's views that its optics based technologies will continue to show promise for large scale production. Other forward-looking statements imply that the Company will remain capable of being financed and/or will be able to partner development until profitability is eventually realized. The principal risks related to these forward-looking statements are that the Company's products receive market acceptance, that its intellectual property claims will be sufficiently broad or enforceable to provide the necessary protection or attract the necessary capital.

These forward-looking statements are based on the beliefs, expectations and opinions of management on the date the statements are made. Consequently, all forward-looking statements made in this AIF or the documents incorporated by reference are qualified by this cautionary statement and there can be no certainty that actual results or developments the Company anticipates will be realized. For additional information with respect to certain of these risks or factors reference should be made to the "Business Risks" section of the MD&A and notes to the consolidated financial statements for the year ended September 30, 2016, as well as with the Company's continuous disclosure materials filed from time to time with Canadian securities regulatory authorities, which are available online at www.sedar.com. Nanotech disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, other than as required by law. Caution needs to be used when taking forward-looking statements into account when evaluating the Company.

Glossary of Certain Terms

"Fortress Optical" refers to Fortress Optical Features Ltd., a company developing and selling banknote security features that was acquired by Nanotech in September 2014.

"**IP**" is an acronym for intellectual property.

"nano" is a scale of one billionth of a metre. A toy glass marble is one billionth the size of the earth.

"OTF" means Optical Thin Film. Colour shifting OTF is an optics based technology whereby various metals, silica and other materials are applied to thin film to create colour shifting properties that allow it to shift between two colours depending on the tilt angle at which the banknote and its thread are viewed.

"OVD" means Optical Variable Devices. OVDs are a category of visual security features which includes holograms, QR codes (or Quick Response a printable matrix bar code) and various kinds of tags, as well as the Company's nano-optic products.

"R&D" means research and development.

"SFU" means Simon Fraser University located at 8888 University Drive, Burnaby, BC V5A 1S6.

# 3. CORPORATE STRUCTURE

Nanotech Security Corp. was incorporated under the laws of the Province of British Columbia, Canada on May 4, 1984. It was originally incorporated as Cancom Industries Ltd. and has undergone three name changes namely Strategic Technologies Inc., Wireless2 Technologies Inc. and then to its current name, Nanotech Security Corp. which was adopted on April 14, 2010.

The Company's head office is located at Suite 505 - 3292 Production Way, Burnaby, British Columbia, V5A 4R4. The Company's registered and legal records office is in care of its attorneys, McMillan LLP at Suite 1500 - 1055 West Georgia Street, Vancouver, British Columbia, Canada V6E 4N7.

The only change to the Company's constitutional documents was to update corporate articles in 2005 to reflect the adoption of a new British Columbia corporate law statute (formerly the *Company Act* (British Columbia) now the *Business Corporations Act* (British Columbia)) and in 2011 to update certain governance provisions. The current corporate articles are available online at www.sedar.com.

The Company has one wholly-owned subsidiary, Tactical Technologies Inc. ("Tactical Technologies"), which is incorporated in the State of Delaware and operates a surveillance and officer protection equipment manufacturing business from facilities in Holmes, Pennsylvania, USA. Tactical Technologies' registered office is c/o Delaware Corporation Organizers, Inc., 1201 North Market Street, P.O. Box 1347, Wilmington, Delaware, 19801.

# 4. GENERAL DEVELOPMENT OF THE BUSINESS

# A. Overview of Nanotech's Two Business Divisions

The Company operates its business through two divisions – Optics and Tactical. The Company's reportable segments are strategic business units that offer different products and services. They are managed separately as each business is in a different stage in its life cycle and requires different sales and marketing strategies.

# i. Optics

The Optics division (previously referred to as the "Security Features" division) designs, manufactures and markets nano-optic OVDs and OTF products. These products have brand protection and enhancement applications across a wide range of markets including banknotes, secure government documents, commercial branding, and the pharmaceutical industry. Nanotech is initially focusing its efforts on the banknote market due to its somewhat higher margins and the Company has an established customer base.

The Company's nano-optic technology employs arrays of billions of nano-indentations that are impressed or embossed onto a substrate material such as polymer, paper, metal, or fabric. By using sophisticated algorithms to direct an electron beam, the Company creates arrays of unique light signatures (visual images). These nano-indentation structures create images with colour shifting effects that provide visual features such as 3D, high-definition and motion-impression, and can also display distinct colours including skin tones, white, and black; some of which effects are not possible using current holographic technology. Sample images of the nano-optic features can be seen on the Company's website at: www.nanosecurity.ca.

The OTF technology security features are manufactured using precision engineered nanometre thick layers of metals and ceramics to form filters designed to uniquely manipulate visible and non-visible light. This unique manipulation of light properties is used to create specialized security features in the form of threads, stripes and patches that are applied to banknotes and other secure documents. By using sophisticated electron beam and sputtered deposition methods Nanotech precisely controls the construction and inherent properties to provide custom tailored colour shifting solutions. An individual looking at these threads, stripes and patches sees an obvious colour shift (e.g. green to magenta) when it is tilted or rotated.

The Company's OTF is used in colour shift OTF threads currently incorporated in various countries' currency denominations. These threads are inserted into banknote paper during the paper manufacturing process. The fact that these threads are inserted into paper makes for an overt security feature which is not easily replicated. The Company targets the sales of these products directly into the banknote industry, to government issuing authorities, and to convertor suppliers (commonly known as channel partners) that will sell to the paper mills, or to issuing authorities of various countries.

The Company conducts research at its secure Burnaby, BC head office, 4D LABS nanofabrication facility, a Canadian federal government sponsored physics laboratory and clean room facility located at SFU, and at its 35,000 ft<sup>2</sup> secure production and R&D facility in Thurso, QC, near Ottawa, Canada. The Thurso facility is self-contained within its 100,000 ft<sup>2</sup> building, located on 11 Acres and is owned by the Company. The facility houses two large vacuum deposition machines which have a combined annual output capacity of approximately 3.0 million m<sup>2</sup> of colour shift OTF. With

the new Hueck Folien collaboration described below, the total annual capacity has increased to 7.0 million m<sup>2</sup> and with further equipment upgrades at the Thurso facility (at an estimated cost of approximately \$5 million) the output could be increased to as much as 10 million m<sup>2</sup> of OTF per year. OTF is produced on rolls and sent to an intermediary convertor which processes the rolled sheets into threads, stripes and patches which are then sent to a banknote printer for insertion into, or attachment to, banknotes.

The Company believes that its nano-optic OVDs can compete with holograms in virtually all applications where holograms are currently used. The advantages of the Company's nano-optic technology over hologram technology include a potential lower cost per application due to being able to produce the image in a single step process and 3D display of colour images. Colour shifts in hologram images are not as easily controlled as images created by the Company's nano-optic technology. These nano-optic images also employ a greater palette of colours and can be made to appear animated or in motion. In addition, the Company's nano-optic images and the stamping dies that produce them have a very low aspect ratio (height of die features or depth of nano-indentation contour) allowing for higher production yields and better longevity.

The Company's first commercial order for nano-optic images was a participant identity authentication badge which was developed for use at the TED2014 and TEDActive 2014 conferences held in Vancouver. A nano-optic image "TED 30" was integrated as a security feature on each participant's ID badge for both events, making the badges instantly recognizable as an authentic TED ID badge. During 2016 the Company provided a nano-optic OVD for authentication and brand enhancement at the UEFA Euro 2016 football championship for its admission tickets. The technology was chosen for its intense high definition, full colour imaging capability and anticounterfeiting properties – replacing older hologram technology used in past events.

The Company's current target markets for nano-optic OVDs include governmental banking authorities, banknote printers, governmental agencies concerned with document security such as taxpaid stamps. The Company believes that its nano-optic OVDs can also be used for marketing and brand enhancement purposes due to the strikingly vivid and intense high definition effects when applied as a corporation's proprietary brand logo and embossed onto commercial packaging or directly onto products.

The Company estimates that the market for OVDs is in the range of \$2.5 billion annually, of which about half is for branded commercial products and one-third for government security documents such as passports, identification documents such as drivers' licenses, military and law enforcement identification, as well as other security, restricted access and the like. The final one-sixth of the estimated market size relates to OVD as security features on banknotes. (Source Secure Monde International)

#### **R&D** Contracts

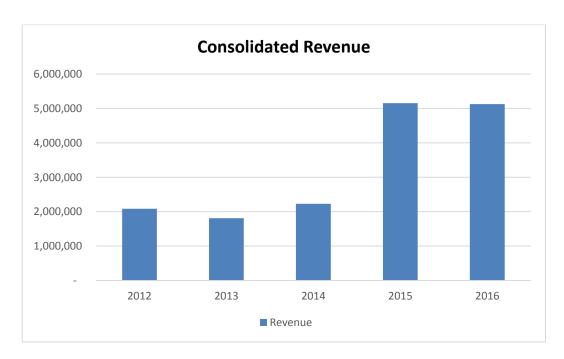
Since 2014 the Company has conducted contract securities features R&D for certain issuing authorities. In 2016 the Company received a series of security feature development contracts from one major currency issuing authority that could lead to an expanded development program to provide security feature prototypes and manufacturing components as well as potential future commercial contracts for implementation of security features on that authority's banknotes. Under the 2016 agreement, the Company retains the rights to its existing inventions, technologies, and core IP and the issuing authority receives a royalty–free exclusive license to the IP for any new security feature developed. The issuing authority must not unreasonably withhold consent from the Company's use

of the IP developed under the R&D contract in the Company's other commercial opportunities. The Company believes consent could be withheld if there were any risk that an alternative commercial use of a security feature proposed for banknotes would compromise or denigrate the value of the feature. The Company takes steps to segregate its third party paid contract R&D work from the proprietary R&D which it conducts at its own expense and for its own account. There is some inherent risk of overlap of these programs which could lead to competing claims to the same new IP. There is also some risk that contract R&D work could lead to new IP which supersedes the Company's existing technology.

#### ii. Tactical

The Company's legacy Tactical division (previously named Surveillance) designs and sells a wide range of sophisticated surveillance and officer protection equipment and conducts surveillance training for the law enforcement and defense industries in the United States and Canada. These products include outfitting surveillance vans for covert operations and services include teaching accredited classes in electronic surveillance. The Tactical division conducts research, production, and training at its facility in Holmes, PA, USA.

The Tactical division customizes surveillance vans for government agencies and has successfully developed surveillance products, including most recently the P-25 digital transmission system allowing federal, state and local law enforcement agencies to communicate with each other over a single frequency using both digital and analog frequencies, and the release of the Echo 8i that converts analog audio signals to digital, enabling secure smart-phone connectivity wirelessly.



**Five Year Annual Revenue** 

# **B.** Three Year History

**Year Ended September 30, 2016.** During 2016 the Company made significant advancements towards supplying several issuing authorities. In February 2016, the Company announced a development contract to develop a unique optically variable security feature using Nanotech's nano-optic technology. The

Company also completed a rigorous supplier acceptance process to supply colour shifting OTF as a windowed thread in banknotes for a large Asian country. The OTF will be produced in cooperation with Hueck Folien, an Austrian manufacturer and film supplier, which will produce under license from Nanotech. The Company announced on April 7, 2016 it had been chosen by UEFA to produce an image of its Super Victor mascot on admission tickets for its Euro 2016 football championship held in France June 10 to July 10, 2016. The Company raised \$4.2 million through a private placement of convertible debentures priced at \$1,000 per debenture and convertible to common shares at a price of \$1.25 per share.

Year Ended September 30, 2015. After the acquisition of Fortress Optical at the end of fiscal 2014, the Company has been leveraging its acquired customer base and commenced discussions with several of the top ten banknote issuing authorities about the possible use of the Company's optic technologies in banknotes. On November 17, 2015, the Company announced it signed a Memorandum of Understanding ("MOU") with Hueck Folien to supply colour shifting OTF to the banknote market. The MOU outlined an operational agreement to collaborate in the volume production of a colour shifting OTF. The definitive commercial agreement related to the MOU was finalized in 2016. The OTF product is initially to be used in banknotes as threads and then expanded into other markets in the future. The Company's nano-optic technology was successfully applied to metal coins in a production environment at an issuing mint. The Company raised \$2.6 million through a private placement of equity units (common share and one half warrant) priced at \$1.00 to fund operations.

Year Ended September 30, 2014. In fiscal 2014, after completing the acquisition of its core nano-optic technology at the end of 2013, the Company focussed on commercializing the technology. During the spring of 2014 the Company successfully demonstrated the commercialization of its nano-optic technology at the TED2014 and TEDActive 2014 conferences held in Vancouver, BC and expanded its management team, adding Troy Bullock as the Company's Chief Financial Officer. In September 2014. the Company completed its acquisition of Fortress Optical, which provides the Company with banknote sales channels, the ability to manufacture OTF, and industry capability including Mr. Iginatius (Igi) LeRoux an experienced executive in the banknote security products industry. Concurrent with the Fortress Optical acquisition, the Company raised \$10.2 million through a private placement of equity units (common share and one-half warrant) priced at \$1.50.

Over the past three fiscal years to September 30, 2016 the Company's optics business has remained expenditure based and focused on the R&D of optics based anti-counterfeiting and product authentication solutions. Since late 2009, the Company has expended approximately \$14.5 million in R&D on this technology. These amounts have been expensed as incurred. The Company financed its R&D primarily from funds raised by private placement sales of its equity shares as well as some Canadian and other government R&D program funding. Nanotech holds an exclusive worldwide license to the nano-optic (and other) technology in all fields, subject to a 3% sales royalty in favour of SFU on certain of its IP.

The Tactical division's business involves designing and manufacturing sophisticated vehicle and personnel surveillance, tracking, monitoring and officer protection communications and forensic equipment. This equipment is sold mainly to US federal agencies like the Drug Enforcement Authority and Federal Bureau of Investigation. This business has been operated by the Company for over 20 years with relatively stable revenues in the \$2 million per year range. The last three years have not seen any significant developments or changes in this business although some new products have been developed which will likely keep the revenue relatively stable.

# 5. BUSINESS OPERATIONS

#### A. Overview

Nanotech is a leader in next-generation anti-counterfeiting products for the banknote, government and tax-paid stamp markets. The Company's optics technologies have future applications into other markets including pharmaceutical packaging and commercial brand protection spaces. The nano-optic technology was developed in-house at the Burnaby facilities after the Company secured license rights to certain technology from SFU. The existing OTF technology and secure production facility was acquired in September 2014 to expand the business and to accelerate the further commercialization of the Company's optics based products.

Over the past three years, the Company has generated customer interest in its nano-optic technology. The technology has shown to be compatible with large scale manufacturing techniques through trials by independent third parties as well as through its commercial applications in 2014 and 2016.

The Optics division's current operations is focussed on penetrating the banknote market with a range of nano-optic OVDs and OTF products and entering into the tax-paid stamps market. The Company is currently delivering nano-optic OVDs and colour shifting OTF to several banknote issuing authorities. The Optics division is perceived by management to have significantly greater growth potential relative to the Tactical division.

The Tactical division designs and sells a wide range of sophisticated surveillance and officer protection equipment and conducts surveillance training for the law enforcement and defense industries mostly in the United States, but also used in Australia, United Kingdom and Canada. The operations of the Tactical division are subject to a large number of United States and foreign laws governing production and deployment of covert surveillance equipment. Tactical Technologies has only a small niche position within a multi-billion dollar law enforcement and security industry supply business. Tactical Technologies relies on innovation and customer service to secure its niche therefore a discussion of Tactical Technologies' competitors, many of which are large international industrial giants, is not meaningful.

In the fiscal year ended September 30, 2016, \$2.9 million (2015 \$3.1 million) in revenue was derived from the Optics division and \$2.2 million (2015 \$2.1 million) in revenue was derived from the sale of law enforcement equipment by the Tactical division. Going forward the Company expects the majority of its revenue growth will derive from the Optics division. The Tactical division revenue is from the sale of law enforcement equipment direct to end-users, whereas the Optics division revenue represent development contracts and the sale of optics based products that can be direct or to intermediaries such as banknote printers or convertors who convert rolled OTF sheets into threads suitable for insertion or attachment to banknotes.

The Company currently has 41 full time employees, of which 10 employees work out of the Burnaby office, 18 work out of the Thurso facility, and 13 work in the Tactical division. Overall, the Company has received approximately \$20.9 million funding (of which all is equity except \$7.2 million) over the last three fiscal years.

#### **B.** Banknote Market Information

Despite increasing use of electronic payments as a share of the dollar value of transactions, the number of banknotes produced worldwide each year continues to grow as cash continues to be the dominant form of exchange for daily transactions. The annual production of banknotes in 2014 was approximately 165

billion. (Source – Secura Monde International). The top 10 banknote users represent 60% to 72% of the market and are shown as follows:

	Country	Banknotes per annum
1.	China	50 to 60 billion
2.	India	18 to 22 billion
3.	United States	6 to 7 billion
4.	European Central Bank	6 to 7 billion
5.	Brazil	4 billion
6.	Indonesia	4 billion
7.	Philippines	4 billion
8.	Russia	3 to 4 billion
9.	Mexico	2 to 3 billion
10.	Nigeria	2 to 3 billion

(source – Secura Monde International 2014)

Banknotes contain multiple security features. As an example, the US \$20 banknote incorporates some 27 separate security features, including watermarks, speciality inks, hidden images, inserted strips and several others. Based on the number of banknotes being issued annually, with an estimated average of 10 security features per banknote, and an estimate of the average licensing rate for security features of \$1.25 per thousand, the Company estimates the current banknote security feature market expressed in potential revenue is approximately \$2 billion per year.

# C. Intellectual Property

As part of the Company's strategy to bring to market new and innovative products it has prioritized and significantly invested in securing IP around its licensed technology, core research and discoveries. As a result, the Company continues to increase its portfolio of issued and pending patents for its technologies. The Company's IP portfolio covers multiple aspects of our technology from OTF filters, processes for creating nano-indentation master dies, and ultra-violet inks to processes in compressible colour shifting. The Company's portfolio is not limited to its patents and patent applications, it also includes know-how and trade secrets, which protects certain characteristics of the Company's technology. The Company has secured certain IP rights on discoveries it believes to be commercially useful and in countries where it is worthwhile to seek such protection.

The Company has two areas of patents and patent applications; OTF and nano-optic technology. These two areas are divided further into patent families covering various aspects of our technologies. There are five and eight patent families respectively. The IP includes patents and patent applications for processes as well as apparatus and system technologies. The IP rights include certain non-core technologies which were acquired with the SFU License described below. The Company reviews these from time to time with a view to determining if they can be used for other business applications or sublicensed.

In the OTF patent families the Company owns seven issued patents and 12 published patent applications in four countries. In the nano-optic technology patent families the Company owns or controls eight issued patents and 27 published patent applications. Coverage for these families is in nine jurisdictions including European patent applications which potentially encompass up to 38 European countries.

The Company holds an exclusive license for its principal nano-optic IP pursuant to a License and Commercialization Agreement dated September 14, 2009 with SFU ("SFU License"). In 2014 the Company introduced its products containing this licensed technology to the marketplace and has offered them for sale or use and is now entitled under the SFU License to transfer the registered title of the patents and patent applications to the Company. The Company will continue to be obligated to pay an ongoing 3% royalty to SFU from the gross sales of any products which contain the licensed technology and any "improvements" thereto (as defined in the SFU License) for the life of the patents and any improvements. The royalty is also due on sublicense fees and sales by sub-licensees. A copy of the SFU License is available at www.sedar.com.

The Company believes that there are opportunities to acquire and develop new technologies that could enhance shareholder value. As a result, the Company may acquire complementary patents or applications within its areas of expertise that it believes might materially enhance shareholder value.

The Company is also in the process of securing trademark protection for the exclusive use of KolourOptik<sup>®</sup> and Plasmogram<sup>TM</sup> for use with commercial products.

There can be no certainty that any of the Company's pending patent or trademark applications will ultimately issue as filed, or as amended after filing, if at all. The ability to maintain its current intellectual property rights and develop further IP assets are dependent on the Company's access to specialized human resources, patent and trademark counsel, and capital.

# D. Optic Products

# Nano-optic OVDs

The Company has developed its KolourOptik product platform to market its nano-optic OVDs. The KolourOptik platform currently includes six main products:

1. Bold Singular colours that pop

2. Dynamo Motion

3. Ikon Using a blend of RGB colours to produce photo-like images

4. Kinema Live-action moving images

5. Aspect Three dimensional properties add depth

6. Vista Using light through an image to make colours appear

The Company believes there are many other potential commercial applications for this technology, and assumes that some of the specific products and services which may eventually be offered for sale, are not currently known. The Company believes that it is likely that its initial commercial product offerings will be a combination of custom design and production of nano-optic master wafers for use in creating mass produced nano-optic images for insertion into banknotes.

In general, a master wafer is a stamp or die made of metal or other hard material typically of a few centimetres square in size. The wafers are capable of embossing (imprinting) arrays of nano-scale indentations onto a variety of substrates such as polymer films and metal, often using conventional printing equipment. The embossed indentations capture and refract light to create visual images with intense high definition colours. A typical master wafer will contain inverse nanostructures, i.e. nano-scale pillars, in order to produce nano-scale indentations, when embossed onto substrates.

The Company's nano-optic designs can range from simple shapes, designs, or logos to more complex images. The Company's technical team has developed designs which consist of multi-frame images superimposed on a single die to create the appearance of image animation or motion (e.g. a wheel turning or a figure walking). The Company believes that its nano-optic images reflect a next-generation of image-based security features and that they have a number of advantages over competing technologies such as holograms. These advantages include optically controllable images which are created in a single print (as opposed to multiple overlapping layers for holograms) and are directly embossed onto substrates so will not separate from the surface like some holograms. In addition, the technology produces intense high definition colours (the brightness of LED (light emitting diode)), dramatic colour shifts, colour on-off shifts and apparent motion (animation) effects that have not been achieved to-date with holograms.

The Company's nano-optic technology has been developed by scientists and engineers with high levels of research and technical skills. Three of the Company's employees hold doctorate degrees with special materials knowledge as well as programming skills related to the electron beam machinery. This programmable machinery creates the nano-scale indentations in arrays based on algorithms which determine the shape, colour, image shifts, and other aspects of the desired master wafer. The Company has developed much of this specialized skill internally and its senior technical employees will remain important to its development for the foreseeable future.

The Company's nano-optic technology exploits a property of electro-magnetic waves known in physics as the "surface plasmonic" effect. The plasmonic effect can be induced or seen in several circumstances in the lab and in nature. In the case of the Company's nano-optic technology, it results when light waves strike a surface which has been contoured by embossing comprised of hundreds of millions of nano-scale indentations onto the substrate from a wafer die. These "nano-indentations" are too small for the light-waves to be absorbed but are physically significant enough to manipulate the light-waves. The light-waves striking the nano-indentations refracts due to the plasmonic effect, which presents as vibrant colour combinations formed into discernible shapes and images which scintillate from the surface. This effect is seen in nature on the wings of the Blue Morpho butterfly with its bright deep blue iridescent colour. This blue colour is created without the presence of colour pigments or dyes, but simply by means of the optical properties of the wing surface containing nanostructures. Under electron microscope magnification, the similarity between the Morpho wing and a KolourOptik image surface is obvious (see images on www.nanosecurity.ca).

The density of nano-indentations created in the substrate materials is approximately 10 times greater than the density of nano-indentations found on the Blue Morpho butterfly. Working through programmable ion-beam machinery in the nano-scale allows for precise tuning of the nano-indentation arrays which ultimately determine the shape of the image along with its colours in the UV, visible, and infrared ranges. This results in optical structures that exhibit "pure iHD" (pure single light colour of intense high definition) colour effects. These effects are unparalleled by other state-of-the-art image printing or holographic technologies.

The Company's nano-optic images are robust and can be seen in very low light conditions. They also have a unique 'image visible/not visible' mode, which eliminates the underlying shadow that is seen in holograms. Other competitive capabilities of the Company's nano-optic technology include: fine motion/animation, colour images appearing on a transparent background, and full colour high resolution portraits and landscapes. In addition to overt features, KolourOptik features can be formulated as machine readable covert features as well as covert forensic features that are detectable only by sophisticated instruments such as electron high resolution microscopes. Metallic coatings such as gold, silver, copper and aluminum can be added for additional plasmonic spectral signals which results in enhanced optic features.

The Company believes that the potential for new products exploiting its nano-optic technology is just beginning to be realized. The Company has received requests to discuss potential collaboration on the development of other possible products. However, these discussions have not culminated in material commercial agreements as of the date of this AIF.

# Optical Thin Film

Optical thin film products the Company produces include:

- 1. multi-layer colour shift technology for use as a windowed security thread;
- 2. ultraviolet (UV) and infrared (IR) responsive materials; and
- 3. multi-layer colour shift technology produced for surface device application in either a cold or hot foil application.

Optical thin film uses three primary raw material components, all of which are readily available from a number of secure sources. Prior to acquisition by the Company, Fortress Optical undertook a development project to substitute the single most expensive component, which was the di-electric material that produces the colour mobility with a less expensive material. Initial test results indicated a simple substitution was possible. The Company is continuing research in this area with a goal to realize potential further savings in material costs.

Core research and development projects for OTF include development work aimed at lowering production costs and research and development on new, innovative optical films for security device applications. The Company's secure Thurso facility has two large vacuum deposition roll coating machines along with converting equipment to produce finished OTF. The facility also has an on-site laboratory for analysis, formulation, and fabrication of security films and devices.

The Company is presently working on the development of next generation OTF including: (i) colour shift with an image or movement; (ii) compressible colour shift; and (iii) two-component colour shift surface applied features. The Company is also working on the development of OTF for incorporation into polymer substrates as well as the development of lower-cost methods for applying colour shift materials as 'patches' or 'stripes' to substrates.

The production process of OTF includes many internally produced and adapted manufacturing processes. These allow for production of a very well controlled and consistent colour shift material. Operations are all housed in the new, state-of-the-art high security facility. All staff at the facility are security-cleared and operate in a controlled access, secured environment.

# E. Tactical's Law Enforcement Equipment Products

The Tactical division designs and manufactures a wide range of sophisticated covert surveillance and officer protection equipment including body wires, eavesdropping and tracking equipment for law enforcement agencies mostly in the United States, but also for use in Australia, United Kingdom, and Canada. The products are made and sold under the *Tactical Technologies* name.

Recent product developments include a digital transmission system allowing federal, state and local law enforcement agencies to correspond with each other over a single frequency using both digital and analog frequencies, as well as the release of a product which converts analog audio signals to digital, enabling secure, wireless smart-phone connectivity.

Tactical Technologies also runs a training academy to provide technical surveillance training to the law enforcement community. Revenues at Tactical Technologies are historically stable at approximately \$2 million annually with a small net income or loss annually. The Company is reinitiating a strategic review of the Tactical division to consider options to further increase shareholder value.

# F. Competitive Conditions

The Company believes that it currently is leading in the field of nano-optic image technologies for use in anti-counterfeiting applications. However, the Company knows from trade conferences and industry sources that competitors are pursuing research in the same or similar nano-optic space. Due to the secrecy surrounding such research it is difficult for the Company to assess the state of competitors' technologies with any degree of certainty.

# i. Nano-optic

At this stage, it is difficult for the Company to accurately evaluate the competitive landscape of its nano-optic products since the technology is nascent and the Company believes it is first-to-market with a product. Currently, image-based authentication solutions are largely supplied by the hologram technology industry in certain markets, therefore, it can be said that companies in this space are competitors. The Company believes that its technology is superior to holograms for several reasons including, (i) because hologram technology requires several more sequential processes to create an image (which increase costs), and (ii) because holograms are more susceptible to counterfeiting and separation from the item onto which it is affixed. In the product authentication area, the Company will compete against other conventional authentication technologies including colour shifting inks, radio frequency identification ("RFID") tags and micro-image tags. The Company cannot yet predict if the business will be cyclical, subject to near-term obsolescence, or if it will be economically dependent on a small number of customers or unusually affected by laws. Potential market applications of nano-optic OVDs are believed to be significant since the technology can either be applied directly onto a finished product, or applied as a tag or label. While the banknote and currency industries remain the target market, other available target markets include, tax-paid stamps, coins, events and lottery tickets, government issued documents, luxury goods, clothing, and pharmaceutical packaging.

#### ii. Optical Thin Film

Colour shifting threads can be produced through various technologies including OTF, colour shifting inks, and other OVDs. Security threads have either a channel to market via the security paper industry or directly to issuing authorities of various countries. The Company competes with various international security thread suppliers that are far larger in size than Nanotech, including De La Rue PLC and Giesecke & Devrient GmbH who sell their products to the banknote paper market, sometimes using an affiliated paper supply company.

#### G. Environmental

There are no material environmental specific aspects to the Company's business. Production of nano-optic OVDs is carried out wholly within a stamping or printing facility. Production of OTF involves vacuum deposition of vaporized metallic compounds; however, this process takes place within highly controlled, pressure resistant chambers in specialized equipment so the environmental risk is considered low.

# 6. RISK FACTORS

The Company is subject to certain risks and uncertainties that can significantly affect its business, financial condition, and future financial performance. The Company seeks to identify, manage, and mitigate risk, wherever possible. The risk factors in the 2016 Annual MD&A can be found at www.sedar.com.

# 7. DIVIDENDS AND DISTRIBUTIONS

The Company has never paid a cash dividend or other distribution nor does it intend to do so in the foreseeable future. Any return on an investment in Nanotech's common shares will depend on any future appreciation in their value.

# 8. SHARE CAPITAL

The Company's share capital consists of an unlimited number of common shares and an unlimited number of preferred shares. As at December 13, 2016, the Company had an aggregate of 53,871,286 issued and outstanding common shares and no issued and outstanding preferred shares. The Company also has an aggregate of 2,481,500 share purchase options granted with an exercise price of \$0.80 to \$1.75 per share, which have expiry dates up to five years, 451,030 restricted share units that vest over the next three years, and 1,327,500 warrants with an exercise price of \$1.50 per share which have an expiry date of February 26, 2017.

Each common share entitles the holder thereof to one vote at all meetings of shareholders, other than meetings of the holders of another class of shares. The common shares carry no special rights or restrictions. There are no constraints imposed on the ownership of the securities of the Company nor does the Company have any required minimum level of Canadian resident ownership. The Company's securities are not rated.

# 9. MARKET FOR SECURITIES

# A. Trading Price and Volume

The Company's shares are traded on the TSX Venture Exchange ("TSXV") under the ticker symbol NTS and is listed on the OTCQX marketplace in the United States under the ticker symbol NTSFF. The following table sets forth the TSXV monthly share prices (in Canadian dollars) and volumes of trading of the common shares for the most recently completed financial year.

Month	High	Low	Volume
November 2016	\$1.48	\$1.17	912,700
October 2016	\$1.34	\$1.02	846,000
September 2016	\$1.15	\$0.95	584,100
August 2016	\$1.18	\$0.99	386,800
July 2016	\$1.21	\$1.08	425,100
June 2016	\$1.20	\$1.00	1,538,700
May 2016	\$1.32	\$1.08	2,619,300
April 2016	\$1.35	\$1.19	610,700
March 2016	\$1.29	\$1.09	756,700
February 2016	\$1.25	\$1.01	383,300
January 2016	\$1.29	\$1.07	453,400
December 2015	\$1.44	\$1.16	1,092,900
November 2015	\$1.45	\$1.08	2,246,000
October 2015	\$1.33	\$1.14	1,041,900

#### **B.** Convertible Debenture

On June 9, 2016, the Company completed an initial tranche of a non-brokered private placement of unsecured subordinated convertible debentures (the "Debentures") in the amount of \$2,505,000 with a second and final tranche closing on June 21, 2016 in the amount of \$1,680,000 for total gross proceeds of \$4,185,000. The Company issued an aggregate of 4,185 Debentures at a price of \$1,000 per Debenture which are due to be repaid, if not earlier converted, upon maturity on May 31, 2018.

The Debentures accrue interest at a rate of 12% per annum payable quarterly in arrears and are convertible into common shares of the Company at a price of \$1.25 per share. The Debentures are redeemable for shares at the Company's option, at a price equal to their principal amount provided the Company's common shares trade and close on the TSX Venture Exchange at or above \$2.00 for ten consecutive trading days.

Directors and officers who participated in the Debenture offering include:

Participant	Amount
Doug Blakeway	\$100,000
Bernhard Zinkhofer	\$100,000
Bozena Kaminska	\$50,000
Troy Bullock	\$50,000
Dickson Hall	\$50,000

# 10. DIRECTORS AND OFFICERS

# A. Security Holdings

The following disclosure sets out the names of the Company's directors and officers as at December 13, 2016, the period during which each has been a director and/or officer of the Company, and the principal occupation in the past five years: As a group, the Company's directors and officers beneficially owned, directly or indirectly, or controlled 11,668,964 common shares, which is 21.7% of issued and outstanding common shares.

Position with the Company Province and Country of Residence	Period as a Director or Officer of the Company	Principal Occupation in the Past Five Years
Ron Barbaro <sup>(2)</sup> Director Ontario, Canada	Since March 29, 2016	January 2016 to Present – Director of Bardya Brokerage Services Inc. 2013 to Present – Chairman of the Board of Smart Employee Benefits Inc. 2004 to 2012 – Chairman of the Brick Group
Douglas H. Blakeway Chief Executive Officer, Chairman, and Director British Columbia, Canada	Since May 4, 1984	June 2009 to Present – CEO, Nanotech Security Corp. Sept. 2006 to June 2012 - Managing Director, G4S Justice Services (Canada) Inc.
Brian F. Causey <sup>(1)</sup> Director British Columbia, Canada	Since October 27, 2009	August 2015 to Present – Principal, BFC Financial Consulting 2001 to August 2015 – VP, Project Finance, Hunter Dickinson Inc.
Dickson Hall <sup>(2)</sup> Director British Columbia, Canada	Since July 14, 2015	2016 to Present – Partner, Valuestone Advisors Ltd. 2005 to 2016 – Senior VP, Corporate Development, Hunter Dickinson Inc. 2000 to Present – President, Dickson Hall & Associates

Position with the Company Province and Country of Residence	Period as a Director or Officer of the Company	Principal Occupation in the Past Five Years
Bozena Kaminska <sup>(1)</sup> Director British Columbia, Canada	Since March 23, 2011	2005 to Present – Professor, Simon Fraser University
Kenneth R. Tolmie <sup>(1)(2)</sup> Director British Columbia, Canada	Since April 15, 1987	September 2004 to Present – part- time Chief Financial Officer, Aprio Inc. Semi-retired businessman.
Bernhard J. Zinkhofer Director British Columbia, Canada	From April 15, 1993 to July 23, 2004 and since February 15, 2007	1991 to Present – Partner, McMillan LLP, lawyers
Troy Bullock President, Chief Financial Officer, and Corporate Secretary British Columbia, Canada	Since June 25, 2014	October 2016 to Present – President, Nanotech Security Corp. June 2014 to Present – CFO, Nanotech Security Corp. December 2010 to September 2013 – CEO, Stormtech Performance Apparel Ltd.
Clint Landrock Chief Technology Officer British Columbia, Canada	Since March 23, 2011	May 2015 to Present – Chief Technology Officer, Nanotech Security Corp. April 2013 to May 2015 – VP, Products, Nanotech Security Corp. October 2012 to April 2013 - Chief Technology Officer, IDME Technologies Corp. September 2007 to September 2009 – Consultant, self-employed
Iginatius LeRoux Chief Business Development Officer Virginia, United States of America	Since September 16, 2014	September 2014 to Present – Chief Development Officer, Nanotech Security Corp. July 2011 to September 2014 – Chief Executive Officer, Fortress Optical Features Ltd. January 2001 to July 2011 – Technical Director, Secura Monde International
Ron Ridley Vice President, Operations Ontario, Canada	Since September 16, 2014	September 2014 to Present – VP, Operations, Nanotech Security Corp. July 2011 to September 2014 – Chief Operating Officer, Fortress Optical Features Ltd. 1998 to July 2011 – Assistant Director, Currency OSM Team, Bank of Canada

Note: The information as to principal occupation, business or employment, and shares beneficially owned or controlled is not within the knowledge of management of the Company and has been furnished by the respective directors/officers.

- (1) Member of the Audit Committee.
- (2) Member of the Compensation Committee.

# **B.** Biographical Information

#### Ron Barbaro - Director

Mr. Barbaro is a corporate director and advisor. He is Chairman of the Board of Smart Employee Benefits Inc. since 2013 and a director of Bardya Brokerage Services Inc. since January 2016. Over the years Mr. Barbaro has held many director positions including Chairman and CEO of the Ontario Lottery and Gaming Corporation (1998-2003), Chairman of The Brick Group (2004-2012), President, The Prudential Insurance Company of America (worldwide operations) (1990-1993), and Special Advisor and Chairman of the Premier of Ontario's Economic Recovery Team (2003-2005).

# Douglas H. Blakeway - Chief Executive Officer, Chairman, and Director

Mr. Blakeway is the Company's Chairman and Chief Executive Officer. He has over 40 years of experience in executive management in technology business development. He founded the Company in 1984. From September 2006 until June 2012 he was a consultant providing product manufacturing management services to G4S Justice Services (Canada) Inc., which purchased the Company's previous business in 2006.

Mr. Blakeway is a member of Simon Fraser University Surrey – Business Advisory Council and is an Entrepreneur in Residence SFU Venture Connection. He is a member of Canadian Listed Company Association, TEC (The Executive Committee), an international organization for CEOs, and CMC Microsystems Inc., a government body operating through the National Science and Engineering Research Council of Canada (NSERC). Since 1982, he has been a director of several public companies listed on the TSX Venture Exchange.

# Brian F. Causey CPA, CA – Director

Mr. Causey has been a Director since October 2009 and Chief Financial Officer of the Company from October 2009 to June 2014. He has held a number of senior executive positions with Hunter Dickinson Inc., and specialized in and was principally involved with financings, corporate reorganizations, and specialized tax planning initiatives. While with Hunter Dickinson Inc., he was Chief Financial Officer of Curis Resources Ltd. He is currently the principal of BFC Financial Consulting and is a Chartered Professional Accountant and a Chartered Accountant.

He was formerly a director of Cascadero Copper Corporation from 2012 to 2014, Quartz Mountain Resources Ltd. from 2003 to 2011, and was a director and Chief Financial Officer of Yaletown Capital Corp. from 2007 to 2010.

#### Dickson Hall - Director

Mr. Hall a partner in Valuestone Advisors Ltd., sole advisor to Valuestone Global Resource Fund 1, a private equity mining fund established in partnership with Jiangxi Copper Corporation and China Construction Bank International. He is a director of MEC Advisory Ltd., sole manager of Can-China Global Resources Fund, a resource fund backed by the Export-Import Bank of China. He is also director of Newport Concept Corp., a special situations investment company linking Asia and North America, and chairman/director of Kona Bay Technologies (TSX-V: KCB). From 2005 – 2016 he directed business development efforts in Asia for Hunter Dickinson Inc., a Canadian-based resource group.

#### Bozena Kaminska – Director

Dr. Kaminska is a prolific inventor with major contributions to science and innovation. She is currently a Professor at SFU's School of Engineering Science, and a Canada Research Chair (Tier 1). She holds

multiple patents and has authored hundreds of peer-reviewed publications in top scientific journals. Throughout her thirty-year research career, Dr. Kaminska has actively worked on the commercialization of her laboratory research and has successfully developed five ventures from her scientific work. She serves on the board of numerous organizations and companies in Canada and the US, including as a Chair of CMC Microsystems, and is President of NanoMedia Solutions Inc.

Dr. Kaminska was the recipient of the British Columbia Innovation Council's Entrepreneurship Fellow Award in 2010. Recently, she has been elected to the American Institute for Medical and Biological Engineering (AIMBE) College of Fellows for her distinguished achievements in innovation and discovery.

#### Kenneth R. Tolmie - Director

Mr. Tolmie is the Chief Financial Officer, principal shareholder, and a director of APRIO Inc., a privately held governance information software company. He is presently a director and officer of a number of private companies and he has, in the past, held various senior executive and financial positions with Hastings West Investment Ltd., The Beacon Group of Companies, Premier Diagnostic Health Services Inc., a CNSX listed issuer, and other junior companies in technology, film, and other industries.

### Bernhard J. Zinkhofer – Director

Mr. Zinkhofer is a practicing lawyer and partner in the Vancouver office of McMillan LLP. He holds a BComm (Calgary, 1977) an LL.B. (Victoria, 1983) and is an accredited CPA. Mr. Zinkhofer has served as a director of Nanotech and its predecessors for the preceding 12 years and he has served as a director of a number of public and private companies. His extensive legal experience is recognized in Chambers and Lexpert peer review directories.

# Troy Bullock, CPA, CA - President, Chief Financial Officer, and Corporate Secretary

Mr. Bullock is a senior finance and operations professional with more than 20 years of international experience with both public and private companies, including manufacturing, restructuring and corporate finance responsibilities. He was formerly Chief Financial Officer at Norsat International Inc. and Ascalade Communications Inc. as well as previously holding the position of Chief Executive Officer at Stormtech Performance Apparel Ltd. and in an advisory capacity at KPMG and Deloitte. Mr. Bullock is a Chartered Professional Accountant and a Chartered Accountant.

# Clint Landrock - Chief Technology Officer

Mr. Landrock serves as the Chief Technology Officer for the Company, and is one of the co-inventors of the Company's nano-optic technology. He is a leading scientist in the study of nano-technologies and currently holds a number patents and over a dozen publications in this area. Mr. Landrock completed his bachelor's degree in aerospace engineering at Ryerson University in Toronto and his Masters of Applied Sciences at SFU where his research centered on nano-optics and its applications.

# Iginatius LeRoux - Chief Business Development Officer

Mr. LeRoux has 25 years of experience in the banknote industry where his career evolved from product research and development and industry consulting into business development. He has worked in some of the most notable companies in the banknote industry. Mr. LeRoux has been instrumental in the successful development and commercialization of emerging technologies and businesses in the banknote industry.

# Ron Ridley - Vice President, Operations

Mr. Ridley has been involved in the security device industry for over 20 years in both public sector and private sector companies in various engineering, research & development, and management roles. He has

experience in project management, operations, and manufacturing. Mr. Ridley completed his bachelor's degree in mechanical engineering at Carleton University in Ottawa and earned a master's degree in business administration at the University of Ottawa.

# C. Cease Trade Orders and Bankruptcies

Mr. Zinkhofer served as a director of Austral-Pacific Energy Ltd., an oil and gas company, which went into receivership and ceased operations in 2009 on account of loans and oil hedging agreements entered into prior to the time when Mr. Zinkhofer was a director. Two companies in which Mr. Zinkhofer served as a non-insider corporate secretary as part of his legal services also ceased operations due to insolvency; Inviro Medical Inc. (2010) and Great Basin Gold Inc. (2012).

Mr. Tolmie served as a director of Premier Diagnostic Health Services Inc., a Canadian company which provides advanced medical diagnostic tools. On January 31, 2012, the British Columbia Securities Commission issued a management cease trade order in connection with the delay in filing of its September 30, 2011 audited annual financial statements. The cease trade order was lifted on March 2, 2012 when the overdue statements were filed.

Mr. Hall served as a director of CY Oriental Holdings Ltd. On April 30, 2008, the British Columbia Securities Commission issued a management cease trade order in connection with CY Oriental's failure to file its December 31, 2007 audited financial statements. On July 3, 2008, July 18, 2008, and October 3, 2008 the British Columbia Securities Commission, the Ontario Securities Commission, and the Alberta Securities Commission respectively issued cease trade orders in connection with CY Oriental's failure to file annual financial statements for its fiscal year ended December 31, 2007 and interim financial statements for the financial period ended March 31, 2008. Mr. Hall ceased to be a director on March 30, 2009.

Mr. Bullock, the Company's Chief Financial Officer served as the Chief Financial Officer and a director of Ascalade Communications Inc. a Canadian company which provided the design and manufacturing of wireless communication devices. Ascalade filed for creditor protection in 2008, restructured its business and returned \$0.16 per share to its common shareholders in late 2009.

Except as set out above and within the last 10 years, no director or executive officer of the Company was a director or executive officer of any company (including the Company in respect of which this Annual Information Form is prepared) that was:

- (a) subject to a cease trade or similar order or an order denying the relevant company access to any exemptions under securities legislation, for more than 30 consecutive days;
- (b) subject to an event that resulted, after the director or executive officer ceased to be a director or executive officer, in the company being the subject of a cease trade or similar order or an order that denied the relevant company access to any exemption under the securities legislation, for a period of more than 30 consecutive days;
- (c) within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets; or has become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the proposed director;

- (d) subject to any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or
- (e) subject to any other penalties or sanctions imposed by a court or a regulatory body that would likely be considered important to a reasonable security holder in deciding whether to vote for a proposed director.

#### **D.** Conflicts of Interest

There are no known conflicts of interest between the Company and its directors.

Dr. Kaminska, in her capacity as a professor at SFU and as principal of a private company, NanoMedia Solutions Ltd., is engaged in researching and developing various optical and imaging aspects of nanotechnology. NanoMedia and the Company signed a letter of intent dated March 31, 2016 ("LOI") to resolve the possibility of potential conflicts of interest which might arise given both companies are active in a similar field of nanotechnology. The LOI provides that either party may obtain an independent patent opinion if it believes the other party is infringing its IP. If the independent opinion confirms a party is infringing the other's IP, then a determination will be made if the infringement is in a party's "core applications. For the Company, core applications are the use of nanotechnology in banknote and document security features and branded commercial product anti-counterfeiting protection. For NanoMedia, core applications are commercial art and graphics and some product brand protection applications where the Company is not active.

The LOI also provides a mechanism to share future IP developments. If NanoMedia develops or serendipitously discovers nanotechnology applications which are IP improvements to the Company's core applications, then NanoMedia will notify the Company so that the Company can elect to secure either an exclusive or non-exclusive license to the IP improvements to such core applications. If the Company agrees to fund NanoMedia's research and development costs related to the improvement IP, the Company will be entitled to an exclusive license to the improvement IP by paying a 6% royalty on the value of the licensed improvement IP included in commercial products and services which would otherwise infringe on NanoMedia's improvement IP. If Nanotech does not elect to fund NanoMedia's projected R&D costs related to developing the improvement IP, the Company will be entitled to an exclusive license on the improvement IP for a 7% royalty.

Nanotech can at any time acquire a non-exclusive license to any NanoMedia improvement IP in Nanotech's core applications by paying a 3% royalty on such sales. NanoMedia may obtain a non-exclusive license to Nanotech improvement IP in NanoMedia's core applications for a 3% royalty payable to Nanotech. Existing agreements between NanoMedia and any third parties such as Simon Fraser University is not affected by the LOI. The LOI does not derogate or diminish Dr. Kaminska's confidentiality and fiduciary obligations to Nanotech. As of the date hereof the parties and their respective counsel are in the process of negotiation of a binding definitive agreement to replace the letter of intent.

#### E. Audit Committee

#### Audit Committee Mandate

The Board, through the Audit Committee, is responsible for the integrity of the internal control and management information systems of the Company. The Audit Committee meets at least quarterly to review quarterly financial statements and management's discussion and analysis and meets at least twice annually with the Company's external auditor. The Audit Committee discusses, among other things, the annual audit, the adequacy and effectiveness of the Company's internal control and management information systems and management's discussion and analysis and reviews the annual financial statements with the external auditor.

The Audit Committee's mandate and responsibilities are detailed in its Audit Committee Charter, and include:

- (a) assisting in the identification of the principal risks of the Company's business and, with the assistance of management, establishing procedures to ensure that these risks are monitored;
- (b) overseeing the work of external auditors engaged for the purpose of preparing or issuing an audit report or related work;
- (c) recommending to the Board the nomination and compensation of the external auditors;
- (d) approving all non-audit services to be provided by the external auditors; and
- (e) reviewing the Company's financial statements, MD&A and earnings press releases before the Company publicly discloses this information and satisfying itself that all regulatory compliance matters have been considered in the preparation of the financial statements of the Company.

A copy of the Audit Committee Charter is attached as Schedule "A" to this AIF.

#### Composition of the Audit Committee

The Audit Committee is comprised of three directors; Kenneth R. Tolmie (Chairman), Bozena Kaminska and Brian Causey. Each of Mr. Tolmie and Dr. Kaminska are considered independent. Mr. Causey is considered non-Independent due to his past role as the Company's Chief Financial Officer, which he resigned from in June 2014.

#### Relevant Education and Experience of Audit Committee

The current members of the Audit Committee either have post-secondary education or extensive business and financial experience. One member holds professional accounting accreditation. See heading "Biographies of Nominated Directors" in the most recently filed information circular available at www.sedar.com. In particular, each of the members of the Audit Committee has:

- an understanding of the accounting principles used by the Company to prepare its financial statements, and the ability to assess the general application of those principles in connection with estimates, accruals and reserves;
- experience preparing, auditing, analyzing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can reasonably be expected to be raised by the issuer's financial statements, or experience actively supervising individuals engaged in such activities; and
- an understanding of internal controls and procedures for financial reporting.

The Board has determined that each member of the Audit Committee is "financially literate", has "accounting or related financial management expertise" and that Mr. Causey, through his Chartered Accountant designation, is an "audit committee financial expert" as defined by applicable securities laws.

### Audit, Audit Related and Non-audit Services

All requests for non-prohibited audit, audit related, and non-audit services provided to the Company by its Auditor, KPMG LLP and its affiliates are required to be pre-approved by the Audit Committee. To enable this, the Company has implemented a process by which all requests for services involving the Auditor are reviewed by the Chief Financial Officer to ensure that the requested service is a non-prohibited service and to verify that there is a compelling business reason for the request. If the request passes this review, it is then presented to the Audit Committee for its review, evaluation and pre-approval or denial at its next scheduled quarterly meeting. If the timing of the request is urgent, it is provided to the Audit Committee Chair for his review, evaluation and pre-approval or denial on behalf of the Audit Committee (with the full committee's review at the next scheduled quarterly meeting). Throughout the year, the Audit Committee monitors the actual versus approved expenditure for each of the approved requests.

#### Auditor Service Fees

The following table is a summary of billing by KPMG LLP as auditors of the Company, during the period from October 1, to September 30:

Nature of Services	2016 Total Fees	2015 Total Fees
Audit Fees <sup>(1)</sup>	\$154,000	\$168,000
Audit-Related Fees <sup>(2)</sup>	Nil	Nil
Tax Fees <sup>(3)</sup>	\$51,014	\$39,610
All Other Fees <sup>(4)</sup>	Nil	Nil
Total	\$205,014	\$207,610

#### Notes:

- (1) "Audit Fees" include fees necessary to perform the annual audit and quarterly reviews of the Company's consolidated financial statements. Audit Fees include fees for review of tax provisions and for accounting consultations on matters reflected in the financial statements. Audit Fees also include audit or other attest services required by legislation or regulation, such as comfort letters, consents, reviews of securities filings and statutory audits. During fiscal 2015 and 2016 the Audit Committee engaged the Auditor to perform additional services of reviewing the Company's second and third quarters in anticipation of a potential financing.
- (2) "Audit-Related Fees" include services that are traditionally performed by the auditor. These audit-related services include employee benefit audits, due diligence assistance, accounting consultations on proposed transactions, internal control reviews and audit or attest services not required by legislation or regulation.
- (3) "Tax Fees" include fees for all tax services other than those included in "Audit Fees" and "Audit-Related Fees". This category includes fees for tax compliance, tax planning and tax advice. Tax planning and tax advice includes assistance with tax audits and appeals, tax advice related to mergers and acquisitions, and requests for rulings or technical advice from tax authorities.
- (4) "All Other Fees" include all other non-audit services.

#### 11. LEGAL AND REGULATORY MATTERS

The Company is not currently subject to any material legal proceedings or regulatory actions nor are any threatened or believed to be pending.

# 12. INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

On September 27, 2013, pursuant to a share exchange agreement for a combined transaction, the Company completed the acquisition of controlling interests in two privately held British Columbia corporations, IDIT and IDME, from whom the Company had sublicensed its anti-counterfeiting technology. As consideration, the Company agreed to issue a total of 3,940,000 common shares in exchange for 100% of the issued and outstanding common shares of IDIT and 95% of the issued and outstanding common shares of IDME. The fair value of the equity shares issued was based on the market value of the Company's traded shares on September 27, 2013, the acquisition date.

Mr. Blakeway, Dr. Kaminska and Mr. Landrock had a financial interest in IDME and IDIT and were among the vendors of 3,740,000 common shares. Also, Dr. Kaminska was owed \$108,500 and Mr. Blakeway and his management company, Geni D Ventures Inc., was owed \$336,490 by the acquired companies, debts which the Company assumed on acquisition.

Additional details on this transaction can be found in the Company's Annual Information Form dated April 26, 2016 and its Information Circular dated March 31, 2014. Both documents are available at www.sedar.com.

Mr. Zinkhofer, one of the directors, is a partner of McMillan LLP which serves as legal counsel to the Company. Legal fees, disbursements and taxes charged by McMillan to the Company were: \$137,059, (2015 - \$156,836), and (2014 - \$464,695). Mr. Zinkhofer does not receive any director's fees for serving on the Board of Directors but McMillan bills for his time spent.

# 13. TRANSFER AGENT AND REGISTRAR

The Company's registrar and transfer agent for its common shares is Computershare Investor Services Inc. at its principal office 510 Burrard Street, Vancouver, British Columbia, V6C 3B9. The Company maintains its own register for the convertible debentures.

# 14. INTERESTS OF EXPERTS

The Company's Auditor, KPMG LLP, has prepared the Auditor's Report with respect to the consolidated financial statements of the Company for the year ended September 30, 2016. KPMG has advised that it is independent of the Company within the meaning of the Rules of Professional Conduct of the Chartered Professional Accountants of British Columbia.

# 15. MATERIAL CONTRACTS

As described in Item 5 under "Intellectual Property", the Company is subject to a License and Commercialization agreement dated September 14, 2009 with Simon Fraser University under which the Company is obligated to pay a royalty of 3% to SFU from the gross sales of any products which incorporate certain nanotechnology. The license agreement also provides for the transfer of the intellectual property, which is currently in the name of SFU, into the name of the Company.

As described in Item 9 under "Convertible Debentures", the Company completed a non-brokered private placement of Debentures for total gross proceeds of \$4,185,000, entering into 35 Convertible Debenture Agreements with the participants, and issuing an aggregate of 4,185 Debentures which mature on May

31, 2018. A form of the agreement is available at <a href="www.sedar.com">www.sedar.com</a>. Certain directors and officers of the Company participated in the private placement for an aggregate of 350 Debentures.

# 16. ADDITIONAL INFORMATION

This AIF is qualified by the additional information which is available about the Company and its public record located at www.sedar.com. This public record includes annual audited financial statements as well as quarterly unaudited financial information, in each case together with management's discussion and analysis for that most recently completed fiscal quarter. Additional information regarding directors' and officers' remuneration and securities granted under equity compensation plans is contained in the Company's information circular for the annual general meeting held on March 29, 2016, which can be found at www.sedar.com.

#### **SCHEDULE A**

# AUDIT COMMITTEE CHARTER NANOTECH SECURITY CORP.

(the "Company")

#### **MANDATE**

The audit committee will assist the board of directors (the "Board") in fulfilling its financial oversight responsibilities. The audit committee will review and consider in consultation with the auditors the financial reporting process, the system of internal control and the audit process. In performing its duties, the committee will maintain effective working relationships with the Board, management, and the external auditors. To effectively perform his or her role, each committee member must obtain an understanding of the principal responsibilities of committee membership as well and the Company's business, operations and risks.

#### COMPOSITION

The Board will appoint from among their membership an audit committee after each annual general meeting of the shareholders of the Company. The audit committee will consist of a minimum of three directors. A majority of the members of the audit committee must not be officers, employees or control persons of the Company.

#### **MEETINGS**

The audit committee shall meet in accordance with a schedule established each year by the Board, and at other times that the audit committee may determine. The audit committee shall meet at least annually with the Company's Chief Financial Officer and external auditors in separate executive sessions.

#### ROLES AND RESPONSIBILITIES

The audit committee shall fulfill the following roles and discharge the following responsibilities:

#### 1. External Audit

The audit committee shall be directly responsible for overseeing the work of the external auditors in preparing or issuing the auditor's report, including the resolution of disagreements between management and the external auditors regarding financial reporting and audit scope or procedures. In carrying out this duty, the audit committee shall:

- (a) recommend to the Board the external auditor to be nominated by the shareholders for the purpose of preparing or issuing an auditor's report or performing other audit, review or attest services for the Company;
- (b) review (by discussion and enquiry) the external auditors' proposed audit scope and approach;
- (c) review the performance of the external auditors and recommend to the Board the appointment or discharge of the external auditors;
- (d) review and recommend to the Board the compensation to be paid to the external auditors; and
- (e) review and confirm the independence of the external auditors by reviewing the non-audit services provided and the external auditors' assertion of their independence in accordance with professional standards.

#### 2. Internal Control

The audit committee shall consider whether adequate controls are in place over annual and interim financial reporting as well as controls over assets, transactions and the creation of obligations, commitments and liabilities of the Company. In carrying out this duty, the audit committee shall:

- (a) evaluate the adequacy and effectiveness of management's system of internal controls over the accounting and financial reporting system within the Company; and
- (b) ensure that the external auditors discuss with the audit committee any event or matter which suggests the possibility of fraud, illegal acts or deficiencies in internal controls.

#### 3. Financial Reporting

The audit committee shall review the financial statements and financial information prior to its release to the public. In carrying out this duty, the audit committee shall:

#### General

- (a) review significant accounting and financial reporting issues, especially complex, unusual and related party transactions; and
- (b) review and ensure that the accounting principles selected by management in preparing financial statements are appropriate.

#### Annual Financial Statements

- (c) review the draft annual financial statements and provide a recommendation to the Board with respect to the approval of the financial statements;
- (d) meet with management and the external auditors to review the financial statements and the results of the audit, including any difficulties encountered; and
- (e) review management's discussion & analysis respecting the annual reporting period prior to its release to the public.

#### Interim Financial Statements

- (f) review and approve the interim financial statements prior to their release to the public; and
- (g) review management's discussion & analysis respecting the interim reporting period prior to its release to the public.

#### Release of Financial Information

(h) where reasonably possible, review and approve all public disclosure, including news releases, containing financial information, prior to its release to the public.

#### 4. Non-Audit Services

All non-audit services (being services other than services rendered for the audit and review of the financial statements or services that are normally provided by the external auditor in connection with statutory and regulatory filings or engagements) which are proposed to be provided by the external auditors to the Company or any subsidiary of the Company shall be subject to the prior approval of the audit committee.

#### Delegation of Authority

(a) The audit committee may delegate to one or more independent members of the audit committee the authority to approve non-audit services, provided any non-audit services approved in this manner must be presented to the audit committee at its next scheduled meeting.

#### De-Minimis Non-Audit Services

- (b) The audit committee may satisfy the requirement for the pre-approval of non-audit services if:
  - (i) the aggregate amount of all non-audit services that were not pre-approved is reasonably expected to constitute no more than five per cent of the total amount of fees paid by the Company and its subsidiaries to the external auditor during the fiscal year in which the services are provided; or
  - (ii) the services are brought to the attention of the audit committee and approved, prior to the completion of the audit, by the audit committee or by one or more of its members to whom authority to grant such approvals has been delegated.

### Pre-Approval Policies and Procedures

- (c) The audit committee may also satisfy the requirement for the pre-approval of non-audit services by adopting specific policies and procedures for the engagement of non-audit services, if:
  - (i) the pre-approval policies and procedures are detailed as to the particular service;
  - (ii) the audit committee is informed of each non-audit service; and
  - (iii) the procedures do not include delegation of the audit committee's responsibilities to management.

#### 5. Other Responsibilities

The audit committee shall:

- (a) establish procedures for the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls, or auditing matters;
- (b) establish procedures for the confidential, anonymous submission by employees of the Company of concerns regarding questionable accounting or auditing matters;
- (c) ensure that significant findings and recommendations made by management and external auditor are received and discussed on a timely basis;
- (d) review the policies and procedures in effect for considering officers' expenses and perquisites;

- (e) perform other oversight functions as requested by the Board; and
- (f) review and update this Charter and receive approval of changes to this Charter from the Board.

#### 6. Reporting Responsibilities

The audit committee shall regularly update the Board about committee activities and make appropriate recommendations.

#### RESOURCES AND AUTHORITY

The audit committee shall have the resources and the authority appropriate to discharge its responsibilities, including the authority to:

- (a) engage independent counsel and other advisors as it determines necessary to carry out its duties;
- (b) set and pay the compensation for any advisors employed by the audit committee; and
- (c) communicate directly with the internal and external auditors.