



## Security Solutions for Brand and Document Protection

### Snapshot

August 18, 2003

InkSure Technologies Inc. provides covert **authentication** systems designed to protect documents and branded goods from **counterfeiting** and **diversion** ("gray market"). The Company's technologies are based on two proprietary technologies: (1) molecular-sized chemical markers, called **taggants**, that are embedded in commercial inks and printed directly onto product labels, packaging, or documents; and (2) electro-optical readers that illuminate the ink to reveal the **spectral signature** of each taggant. This "lock and key" solution provides a unique code for each manufacturer or brand to determine a product's authenticity and supply chain data. Invisible to the naked eye and virtually impossible to replicate or reverse-engineer, these solutions provide a high degree of security, accuracy, and customization. InkSure's covert security systems are targeted at markets with high rates of counterfeiting, such as tickets, financial documents, consumer packaged goods, and industrial parts.

### Recent Financial Data

Ticker (Exchange)	INKS (OTC.BB)
Recent Price (08/15/03)	\$1.50
52-Week Range	\$2.50-\$1.30
Shares Outstanding	14.4 million
Market Cap. (mm)	\$21.6
Average 3-month vol.	619
Insider +5% Owners	11%
Institutional Owners	34%
EPS (as of 03/31/03)	(\$0.06)
Employees	23



### Key Points

- Estimates of losses from counterfeiting and diversion range from \$500 billion to \$1 trillion annually, and are increasing at a 20% annual rate. Worldwide, counterfeit goods are thought to represent approximately 6-8% of global trade. Sophisticated criminal and terrorist organizations, whether national or multinational, are systematically attacking major brands.
- Due to advances in digital copying, printing, and scanning technologies, counterfeiting and forgery has moved down to the individual level. Furthermore, existing security technologies such as holograms and watermarks are increasingly counterfeited, generating demand for newer, more effective security solutions.
- InkSure's authentication systems are extremely accurate and cost-effective, and represent a new class of covert security solutions. The Company has a strong, patent-pending intellectual property portfolio and world-class research and development (R&D) capabilities. InkSure's technology has been field-tested in a major deployment to prevent bus ticket counterfeiting for a large public transportation authority.
- The success of this transportation project recently led to the announcement of a joint marketing agreement with Sun Chemical, the world's largest producer of printing inks and performance pigments. Sun and InkSure have created the *SunSure* product line to market InkSure's anti-counterfeiting solutions to Sun's global customer base.

<sup>†</sup>**BOLD** WORDS ARE REFERENCED IN GLOSSARY ON PAGE 32.

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## Executive Overview

InkSure Technologies Inc. provides customized authentication systems designed to enhance the security of documents and branded products to meet the growing demand for protection from counterfeiting and diversion (“gray market”). The Company’s products are based on two principal technologies: (1) invisible, molecular-sized chemical markers, called “taggants”, that are embedded in inks/toners and applied to product labels, packaging, or documents; and (2) optical decoders that “read” the chemical signature of each marker to determine a product’s authenticity and supply chain data. InkSure’s core R&D competencies lie in the areas of material science, chemistry, and optic-electronics. Its technology has been developed by a team of world-class scientists in cooperation with the Weizmann Institute, one of the world’s leading centers of optics research.

Through a proprietary understanding of how different chemicals react to various wavelengths of light, InkSure is able to produce a specific set of taggants that have a unique spectral “fingerprint”. Using ink as a carrier, these taggants are applied directly to documents, bills, certificates, product labels, and other media via the normal printing process without any impact or change on layout design. The taggants can only be read by the Company’s proprietary readers, which illuminate the ink to reveal each marker’s unique reflection, or chemical “fingerprint”. The reader essentially provides a **spectral analysis** of each chemical taggant. By combining specific chemicals, inks, and substrates, InkSure is able to offer a unique code to each of its customers, generating a high level of security and customization.

InkSure’s proprietary reader technology is unique in that it provides a full spectral analysis in a handheld device that is equivalent to a **spectrometer** many times its size. This enables remote authentication of products and documents in the field. Each reader contains multiple codes and complex software algorithms to enable document authentication in a high-speed environment like check sorting; adding or deleting credits for multiple-use tickets on a bus or in an amusement park; or multiple readings of different products by one device as in a customs station. InkSure’s taggants can also be applied to existing security features such as **holograms** or **watermarks** to provide an extra layer of security. The Company has applied for three patents relating to its taggant technology and three patents relating to the “**chipless**” **radio frequency (“RF”) technology** are being developed. The Company is also seeking protection under the **Patent Cooperation Treaty** (Intellectual Property/Patents, page 9).

InkSure operates within the “authentication industry,” a market that includes a variety of firms providing technologies and services designed to prevent the counterfeiting and diversion of valuable documents and products. The size of the market is estimated at \$25 billion for product protection and \$8 billion for document protection, and is dominated by large, well-established companies in both markets. The industry has its roots in Europe, where printing houses such as SICPA and De La Rue were founded decades ago, and over time expanded into the security printing and brand protection arenas. Similarly in the U.S., large chemical and paper/packaging firms such as 3M (NYSE:MMM), Sun Chemical and Meadwestvaco (NYSE:MWV), have become the leading players in tamper-resistant devices, security inks, and security labels. InkSure competes with SICPA and De La Rue in the security ink space and with several private companies in the market for chemical markers and readers. More generally, the Company also competes with public companies such as American Bank Note Holographics (OTC.BB:ABHH), which provides hologram technology for document security, and Digimarc (NasdaqNM:DMRC), a provider of digital watermarking solutions for document and online media security (Competition, page 19).

The problems of counterfeiting and diversion continue to grow unabated on a global scale, rising at a 20% annual rate. Estimates of losses by companies and governments from counterfeiting and diversion range from \$500 billion to as high as \$1 trillion annually, and are thought to represent from 6-8% of world trade. As staggering as these figures are, the problems are intensifying for a myriad of reasons, which will ultimately force manufacturers, security printers and brand owners to more aggressively adopt and deploy newer, covert anti-counterfeiting technologies like those from InkSure.

- Counterfeiting has moved beyond luxury goods and videos, to pharmaceuticals, automobile, and aviation parts, where there are real civil and criminal liability issues facing manufacturers.
- Technological advances in digital scanning, copying, and desktop publishing have put counterfeiting and forgery within the grasp of anyone with a scanner, computer, and printer.
- Terrorist organizations increasingly rely on currency, credit card, and passport forgery to finance their operations, frequently supported by the states that harbor them in the Middle East.
- The increasing amount of online data and access has opened the floodgates to identity theft, copyright infringement, and illegal **file swapping**.
- Established authentication technologies such as holograms and watermarks are increasingly being counterfeited, generating demand for newer, covert security solutions.

InkSure is focusing on specific target markets that are subject to heavy counterfeiting and are most likely to adopt newer, more effective solutions to combat the problem. These include ticketing (public transportation, events), financial documents (checks, currency), consumer packaged goods (cigarettes, pharmaceuticals), and industrial products (automotive parts). Because counterfeiting now affects major brand owners in each of these markets, the Company has chosen to work through intermediaries to reach the end user, rather than using a direct sales approach. These intermediaries include large chemical and ink manufacturers, systems integrators, and consultants. InkSure markets through these partners utilizing a “razor/razor blade” approach with respect to the sale of its products, deploying the readers as infrastructure and then selling the tagged ink on a per unit, recurring basis. Recurring revenue streams are provided by both reader and ink sales in the form of product upgrades, add-ons, maintenance contracts, and multi-year consumable (tagged ink) contracts. To illustrate, the Company’s main customer, the Public Transportation Authority of Istanbul, Turkey, last year signed a three-year contract that called for the delivery of 2,700 readers at a cost of \$115 each, and an annual supply of tagged ink sufficient to cover 220 million tickets, at a cost of approximately \$0.008 per ticket. This generated a first year sale of roughly \$1.9 million and recurring revenue of approximately \$1.2 million per year. Pricing levels are set to generate gross margins of 40-60% for the readers and 80-90% for the tagged ink.

The authentication industry has been generally frustrated by the slower-than-expected adoption of newer security solutions, despite the strong interest and seemingly obvious need. Although currency printers have willingly deployed newer technologies such as microprinting, security threads, and optical variable inks (witness the recent changes to the U.S. currency), brand owners, document printers, and others have been more reticent to address the problem. In fact, some of the only changes to brand and document protection have been the introduction of hologram and tamper resistant packaging, and these are 15-20 year old technologies. This reflects the unwillingness of brand owners to fully recognize and admit the size and scope of their counterfeiting problems and the perceived inability of vendors to offer cost-effective solutions with a proven return on investment (ROI).

InkSure has been successful in attracting interest into covert technologies, building strategic relationships, and implementing pilot programs. However, as an early-stage company working through large intermediaries, it has so far had limited sales follow-through and large-scale deployments. The Istanbul bus contract has been by far the Company’s most successful to date (see the Business Model section on page 7 for more detail on this contract), accounting for nearly 75% of the Company’s revenues in 2002. The success of this deployment in preventing the rampant counterfeiting of bus tickets and recovering nearly \$1 million per month in revenues that were previously lost to counterfeiting, may lead to other similar deployments throughout the public transportation sector in Turkey and elsewhere in the world, and was critical in attracting the attention of Sun Chemical, the world’s largest producer of printing inks and performance pigments. Sun and InkSure have formed the “SunSure” product line to market InkSure’s anti-counterfeiting solutions to Sun’s global customer base. Although limited in number, these relationships have served to prove the viability, cost-effectiveness, and ROI potential of InkSure’s products and technologies.

## Corporate History

InkSure was founded in 1996 as an R&D facility for authentication technologies, as part of Supercom Ltd. (NASDAQ: SPRC), its former parent company. Supercom Ltd. produces and markets security solutions for the national identification (I.D.) and commercial smart card market, and created InkSure to build on its technology for application in the anti-counterfeiting markets. Supercom invested \$3 million into InkSure in order to develop a line of covert marking inks and toners, and a line of electro-optical readers, designed to mark and secure documents and products from forgery and counterfeiting.

InkSure assembled a team of scientists with expertise in materials science, chemistry, and optic-electronics, and worked with the Weizmann Institute of Science to develop the technologies. In 1999, InkSure began operations as an independent entity and began to commercialize its security technologies, including commencing its sales and marketing efforts. These efforts resulted in its first licensing agreement in 1999 with Westvaco Brand Security, a subsidiary of Westvaco Corporation, now Meadwestvaco (NYSE: MWV), a \$7 billion provider of packaging, coated and specialty papers, consumer and office products, and specialty chemicals. Mr. Yaron Meerfeld, who was the founder of InkSure while at Supercom, became InkSure's Chief Executive Officer (CEO).

In 2001-2002, InkSure's Board decided to turn more of its focus to the North American market, which was seen as a fertile area for anti-counterfeiting and anti-diversion solutions. As part of this effort, InkSure sought to "Americanize" itself by bringing in an American executive to run its North American business, moving its headquarters to New York, and seeking a U.S. public listing. In May 2002, InkSure retained Commonwealth Associates, a New York-based merchant banking and asset management firm, to raise capital and pursue a public listing. In September 2002, InkSure and Commonwealth completed a \$6.7 million private placement and the subsequent reverse merger of the Company into an existing public shell. The private placement consisted of Common Stock and warrants, and represented a sale to investors of 4.2 million shares of Common Stock and warrants to purchase 1.5 million shares of Common Stock, which at the time represented approximately 43% of the outstanding common stock on a fully diluted basis. InkSure has filed a registration statement that covers the underlying shares and warrants in the private placement, which is expected to become effective by the end of August 2003.

In October 2002, InkSure merged with Lil Marc, Inc., a non-operating public company, and was renamed InkSure Technologies Inc. Pursuant to the Merger Agreement, each share of InkSure's common stock outstanding immediately prior to the merger was converted into the right to receive one share of Lil Marc's Common Stock. As a result of the merger, the former stockholders of InkSure held approximately 88.0% of the issued and outstanding shares of the merged entity; the remaining 12.0% of the issued and outstanding shares are held by the former Lil Marc's stockholders. On a fully diluted basis, the former holders of securities of InkSure hold approximately 90.5% of the common shares of InkSure Technologies Inc.

The private placement brought several important strategic investors to InkSure, including the founders and an original board member of Sensormatic, and ICTS International, a public company that is a leading provider of airport security products and technologies. The equity investment from the Sensormatic founders brought an important relationship with a pioneer in the retail security market and a new Board member to the Company. It also enabled InkSure to find and hire Mr. Jamie Assaf as its CEO of North American operations. Jamie Assaf is the son of Mr. Ron Assaf, Sensormatic's founder and ex-CEO, and served as the head of Sensormatic's Business Development and merger and acquisition (M&A) team before its sale to Tyco in 2001.

## Business Description

### Products and Services

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#### Security Inks

InkSure utilizes a wide range of naturally occurring chemicals to produce its marker technology. Through its unique understanding of the way each chemical reflects or absorbs different wavelengths of light, the Company is able to create unique spectral fingerprints that can be used to positively identify a marked product. Using commercial inks or toners as a carrier, these taggants are applied to plastic, paper, or foil substrates used in financial documents, I.D. cards, checks, and product labels. Enhanced security can be achieved by combining the spectral qualities of the taggant, ink, and substrate, resulting in a unique fingerprint that is nearly impossible to breach or reverse-engineer.

#### Electro-Optical Readers

InkSure has developed proprietary electro-optical technologies for reading coded inks and has incorporated them into a line of readers. The readers are equipped with advanced electro-optics and sophisticated algorithms, and come in a variety of configurations, including handheld verifying detectors, stand-alone enclosures, or original equipment manufacturer (OEM) kits that can be integrated into existing card terminals, such as ticket readers or check sorting machines. The readers collect data using spectrum in the infrared (IR), visible, or ultra-violet (UV) ranges, and read the entire spectral curve of the taggant, providing multiple data points and a high measure of precision. Each reader contains memory to support multiple and customizable codes, to support authentication of different products with one reader at a custom's station, or a ticket reader that accepts one-day or multiple-use vouchers. The reader can support authentication in a high-speed environment, such as check sorting machines, where each read takes place in less than two milliseconds. Due to the flexibility upon which the technology is built, InkSure is able to customize its readers to fit customer needs according to size and speed. The Company's current line of readers includes the following:

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Figure 1  
SignaSure™

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Source: InkSure Technologies Inc.

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Figure 2  
TicketSure™

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Source: InkSure Technologies Inc.

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Figure 3  
SortSure™

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Source: InkSure Technologies Inc.

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The **SignaSure™** (Figure 1) series of handheld readers is designed to enable quick authentication and validation of a variety of tickets and entry cards (for sporting events, entertainment, transportation, and prepaid phone cards), by performing the following tasks:

- The reader examines a specific location on a ticket and senses the proprietary InkSure taggant. It then uses software algorithms to compare the code to values stored in its memory, displaying a Pass or Fail indication.
- The reader supports sequential reading for authenticating multiple-use tickets (half/full-day tickets for public transportation or an amusement park).



- The reader supports first level track and trace to verify lot numbers, manufacturer, and distributor information.

**TicketSure™** (Figure 2, page 6) is a self-contained ticket collector/validator that is intended for deployment at entry gates and passage points. The system allows an individual to insert a ticket, which is then read and authenticated. To ensure that the ticket cannot be used again, the reader then deactivates the authentication mark, and returns the ticket to the user.

- The reader is able to handle up to 100 value units including ticket type, time and date stamp, fares, zones, etc.
- The readers are available as either original equipment manufacture (OEM) kits that are integrated into existing terminals or stand-alone enclosures for installation at gates and entry points.

**SortSure™** (Figure 3, page 6) is InkSure's high-speed check sorting system. Supplied as an OEM kit that is embedded in backroom processing units, the system can authenticate checks and other financial documents. Functionality includes:

- Ability to process 50 financial documents per second.
- A reading speed of 400 inches per second and 18 milliseconds between readings.

InkSure's total solution of chemical markers and readers provides a high level of security and is extremely flexible in its ability to adopt its footprint and capability to the needs of the end user. It also provides a cost-effective solution because of its positive cost-performance ratio. In addition, because the Company's readers are designed to detect even trace amounts of the specific chemical markers, its solutions provide a high level of security at reasonable incremental costs to its customers.

## Business Model

As mentioned earlier, the Company's revenue model utilizes a "razor/razor blade" approach with respect to the sale of its readers and inks. The Company seeks to deploy readers as infrastructure and then sell its tagged ink on a per unit basis. Recurring revenue streams are provided by both reader and ink sales, in the form of product upgrades, add-ons, maintenance contracts, and multi-year consumable (tagged ink) contracts. InkSure works with the local ink supplier in each of its markets, either mixing in its taggants with the ink in its own facility, or delivering the taggants to the ink producer for embedding. In this way, the client (public transportation authority, ticket agency, document provider) does not have to alter its method of printing or production in any way to obtain a secured end product.

InkSure's readers are outsourced manufactured and are priced from \$300-\$900, to generate a gross margin of 40-50%. Its marked inks are priced between \$0.001 - \$0.01 per unit printed, to deliver a gross margin of 80-90%. Volume levels obviously affect end user pricing and margins for both the reader and tagged inks. A look at InkSure's contract with ISBAK, the systems integrator for the public bus transportation authority of Istanbul, best illustrates the current business model.

In 2001, ISBAK financed a study to determine the level of counterfeiting of bus tickets in Istanbul, Turkey's largest city, where there are approximately 3,700 public buses. They determined that in addition to the 5,000,000 tickets they thought were being sold monthly, another 10%, or 500,000 tickets, were being counterfeited. At a cost of \$0.50 per ticket, this equated to a monthly loss due to counterfeiting of \$250,000, or \$3 million on an annual basis. Through a public request for proposal (RFP) process to find a suitable security vendor, InkSure was awarded the contract, which called for the delivery of readers and inks.

The initial terms of the contract were as follows: the delivery of 2,700 readers at a cost of \$115 per reader, for \$310,500; and marked ink sufficient to print 50 million tickets, at an average price of \$0.008 per ticket, for \$400,000. On February 1, 2002, the public bus authority in Istanbul officially launched these new marked tickets, announcing through the media that only "new" tickets, purchased at authorized bus

depots, would be accepted on public buses. The results were staggering. In the month of February, 2002, there were nearly 10 million tickets sold and in March nearly eleven million. Since then, monthly ticket sales have normalized at 9-10 million tickets. Thus, the level of ticket counterfeiting was close to 50%, not 10% as originally thought. As a result, ISBAK increased its order for marked ink to cover 200 million tickets, for a price of \$0.008 per ticket, or \$1.6 million. In 2002, InkSure recorded sales of \$1.9 million from the ISBAK contract, and will record recurring sales of approximately \$1.2 million annually for tagged ink over the next two years. In addition to reader and ink sales, InkSure typically receives non-recurring expenses (NRE0 funding from the integrator to customize an authentication solution for the specific end user.

## Sales and Marketing

InkSure relies primarily on intermediaries to market and distribute its products and services. Because the sale of security technologies is a complex one, often involving the CEO, CFO, patent/IP counsel, and CTO of an organization, it's imperative to have a local integrator involved with each product to provide technical support. Examples of intermediaries that the Company seeks to work with are large chemical and ink producers, providers of secure paper for currency and other high-value documents, systems integrators and security consultants. To date, the Company has established key strategic alliances or valuable relationships with end-users in the following market segments:

- *Public Transportation.* InkSure entered into an alliance with ISBAK A.S., the systems integrator for the public transportation authority of Istanbul, Turkey. The contract called for the retrofit of the existing bus ticket acceptors (essentially bins to collect used tickets) to incorporate InkSure's readers, and the delivery of tagged ink sufficient to print 220 million tickets.
- *Packaging.* InkSure recently announced a strategic marketing alliance with Sun Chemical Group B.V., the world's largest manufacturer of printing inks, coatings and pigments used for packaging, publication, commercial and industrial applications. The two companies will offer machine-readable ink-based Brand and Document solutions under the SunSure™ brand name. The two companies will cooperate in joint-marketing activities and related development and customization efforts.
- *Tickets.* InkSure entered into a strategic alliance with ICTS (NasdaqNM:ICTS), a leading global provider of aviation security consulting and services. ICTS is working with InkSure to develop and deploy an anti-counterfeiting solution for tickets and other high-value documents.

## Target Markets

- *Packaging.* The Company's products facilitate brand protection through use in first level (on the product), second level (on the packaging), and third level packaging (labels, stickers, etc.).
- *Games and Entertainment.* Tickets and wrist bands for major sporting events and entertainment venues can be printed using the Company's coded inks and authenticated at the entrance using either handheld or stationary readers.
- *Transportation.* Both national and local transportation authorities issue travel passes, season tickets, and individual trip tickets, all of which are subject to counterfeiting and authentication.
- *Financial Documents.* Historically, checks and other financial documents have incorporated security features in the substrate or the pre-printed form, all in an effort to protect the variable data imprinted on the document. With the Company's technology, the variable data can now be protected directly.
- *Government Identity Documents.* The Company's ability to mark toners, inkjet ink, and thermal transfer ribbons can provide authentication to the variable data on government I.D. documents such as passports, visas, driver's licenses, I.D. cards, and birth certificates.
- *Tax Stamps.* Government issued tax stamps for a variety of taxed items such as tobacco, wine, alcohol, and export tax stamps can utilize InkSure's authentication technologies.



## Intellectual Property

Although the Company's policy is to file patent applications to protect its technology, InkSure generally considers protection of its products, processes, and materials to be more dependent upon proprietary knowledge, know-how and rapid assimilation of innovations than patent protection. The Company has applied for three patents covering various methods of marking documents and products for the purpose of authentication and three patents related to the "chipless" RF technology currently under development. The Company is also seeking protection under the Patent Cooperation Treaty.

The three patent filings that cover the Company's authentication technologies do not include any reference to the electro-optical reader technology, since InkSure wanted to keep this a trade secret. The patents cover the covert tagging technology and the concept of utilizing photo-luminescent materials in a specific sequence to generate a unique "code". They provide for the use of marked ink that contains chemical taggants that are invisible to the naked eye, but can be detected using a variety of techniques, including spectrophotometric, RF, magnetic, or NMR. The patents also cover the ability to embed the Company's taggants in a variety of commercial inks and printing processes, including laser and inkjet toners, **thermal printing**, thermal transfer printing, and screen printing.

Table 1

InkSure Technologies Inc.

### PATENT FILINGS IN BRAND/DOCUMENT PROTECTION AND "CHIPLESS" RFID TAGS

Status	Filing Date	Title & Description	Commercial Significance
PCT	Dec-00	Security documents with visible and invisible markings (Int'l)	The invention relates to the personalization of documents for the purpose of authentication and to means for revealing their presence in personalized documents (for I.D. cards, passports, and other security documents).
PCT	Jul-01	Marketed, difficult to counterfeit documents (Int'l)	The invention relates to the marking of documents for the purpose of authentication and means for revealing the presence of the marks in documents (for I.D. cards, passports).
PCT	Oct-02	Chipless RF Tags (U.S.)	This invention relates generally to the field of radiofrequency (RF) identification technology and chipless RF tags. The RF tag may be used for identification and/or security marking in various applications such as garments, tickets, and I.D. cards.
Filed	Mar-03	A method of marking an article to enable its authentication (Provisional, U.S.)	the present invention provides novel methods for marking, authenticating, and identifying articles that make use of photoluminescent materials. The marking method of the invention comprises applying to the article a unique sequence of patterns.
Filed	Apr-03	RF data carrier and system for reading data stored therein (Provisional, U.S.)	The main idea of the invention consists of providing an RF tag formed with plurality of RF elements activated by an external alternating magnetic field. In accordance with a predetermined sequence, this provides a unique sequence of RF responses indicative of predetermined information code.
Filed	May-03	RF data carrier and I.D. method and system using thereof (Provisional, U.S.)	The RF tag of the present invention comprises a substrate layer patterned to define one or more diffraction elements having a dimension of the order of a wavelength of RF electromagnetic radiation. The invention uses a "passive RF tag," which signifies a tag that does not generate energy, but responds to radiation by transmitting, reflecting, or scattering.

Source: InkSure Technologies Inc.

The patent filings (Table 1, page 9) related to the “chipless” RFID technology cover an invention that is in development, and likely to be one to two years away from commercialization. Chipless RFID tags are printed labels or bar codes that contain chemical elements that respond to light or electromagnetic radiation, and contain no power source. They are intended as an anti-counterfeiting/anti-theft solution for retailers and manufacturers. As compared to “physical” RFID tags, chipless tags have much lower prices, are thinner and more flexible, work over a wider temperature range and are less susceptible to electrical interference. Manufacturers could literally “print” authentication and security tags right onto their products through printed bar codes or labels.

According to InkSure’s patent filings, the chipless RFID tag provides for a method of identification and/or security marking, which incorporates into an article (document, product packaging) a coating of a voltage sensitive fluorescent dye (VSFD), which then creates a conductive path. When the VSFD layer is illuminated, the fluorescent radiation from the VSFD layer is transferred into an electrical signal, which is then read and serves to identify the authenticity of the document or product. The VSFD layers are applied in the normal printing process as with any kind of printing method.

Like optical bar code systems, RFID systems use a reader and tags, but use radio frequencies instead of light for identification. Unlike optical bar code systems, RFID systems do not require line-of-sight and therefore can be located inside of a package, inside of a product, or on the packaging label. The allure of RFID tagging systems for warehousing and distribution applications is promising, and has led to the development of the Auto-ID Center at the Massachusetts Institute of Technology (MIT). This research project is focused on developing industry standards for RF communication protocols and data management, and is creating the Electronic Product Code (EPC) to ultimately replace the Universal Product Code (UPC). Partners in the Auto-ID Center include Gillette (NYSE: G), Proctor & Gamble (NYSE: PG), Sun Microsystems (NasdaqNM: SUNW), Unilever (NYSE: UN), and Wal-Mart (NYSE: WMT), all of which have begun field trials.

Large retailers have embraced the potential of RFID tagging technology due to its ability to improve the efficiency and visibility of the supply chain. Wal-Mart is said to have set a date of January 2005 for some of its suppliers to equip pallets and cases coming into certain stores. Gillette recently ordered 500 million RFID tags from Alien Technology (a leading private RFID vendor) to tag high-value, mass-produced items like razor blades. RFID technology has existed for many years but has never achieved mass adoption due to tag prices that were impractically high. Improved production technologies have brought prices down, and as RF standards are implemented, demand should improve.

InkSure’s development efforts in the chipless RFID market are a natural extension of its ink and reader-based security technologies. Eventually, the Company may also add an improved “track-and-trace” capability to its existing anti-counterfeiting and anti-diversion solutions.

## Management and Board of Directors

Table 2 provides a snapshot of InkSure's key management, followed by detailed biographies.

Table 2		
InkSure Technologies Inc.		
MANAGEMENT AND BOARD OF DIRECTORS		
Name	Age	Position with InkSure Technologies
Elie Housman	63	Chairman of the Board, Director
Yaron Meerfeld	42	Chief Executive Officer, Director
James Assaf	43	Chief Executive Officer, North American Operations
Shlomo Dukler	66	Vice President, R&D, Chief Technology Officer
Eyal Bigon	37	Vice President, Chief Financial Officer
Dana Kaplan	31	Vice President, Marketing and Business Development
James Lineberger	66	Director
Ezra Harel	53	Director
Albert Attias	73	Director
T. Lee Provow	46	Director

*Source: InkSure Technologies Inc.*

*Mr. Elie Housman* joined the Company in February 2002 as Chairman and also serves as a director of the Company. Mr. Housman was a Principal at Charterhouse Group International, a privately held merchant bank, from 1989 until June 2001. At Charterhouse, Mr. Housman was involved in the acquisition of a number of companies with total sales of several hundred million dollars. Prior to Charterhouse, he was co-owner of AP Parts, a \$250 million automotive parts manufacturer. Mr. Housman was also the Chairman of Novo Plc. in London, a leading company in the broadcast storage and services industry. At present, Mr. Housman is a director of a number of public and privately held companies in the U.S.

*Mr. Yaron Meerfeld* joined the Company in November 2001 as CEO and also serves as a director of the Company. During the prior seven years, Mr. Meerfeld developed expertise in authentication and multi-layered security systems for documents, passports, I.D. cards, and smart cards as Managing Director of Kromotek, Inc. and as the Vice President for Sales and Marketing at Supercom. Prior to this, he served as V.P. for Sales and Marketing at APPLItec Ltd., Director of International Sales and Marketing at IIS Ltd. and in senior sales positions at Eichut Microcomputers, Ltd. Mr. Meerfeld holds a B.Sc. in Economics & Business from Bar Ilan University and an M.B.A. from Tel Aviv University in Israel.

*Mr. James Assaf*, CEO of North American Operations, joined the Company in September 2002. Prior to joining the Company, he was the Director of Business Development, M&A, of Sensormatic Electronics Corporation. Mr. Assaf's 15-year career at Sensormatic Electronics Corporation, the world's leading producer of retail security systems, was marked by key contributions in a variety of positions, including corporate attorney and business development manager. During his tenure, he helped build Sensormatic's turnover to more than \$1 billion per year, and engineered numerous M&A transactions prior to Sensormatic's acquisition by Tyco International in late 2001.

*Dr. Shlomo Dukler*, CTO and Vice President of R&D, joined the Company in June 2001. He has extensive experience working with photoluminescence, pigments, organic/inorganic fluorescent compounds, spectroscopy, printing inks, and security printing inks. Prior to joining the Company, he worked for the Israeli government for over 27 years, serving at the “Plantex” Pharmaceutical plant, as Head of the Chemistry Department of the Government of Israel Laboratories, and a consultant to the Department of Neurobiology and the Department of Organic Chemistry of the Government of Israel Laboratories. Dr. Dukler has a PhD in Physical and Organic Chemistry from the Weizmann Institute of Science, Israel, and he is an R&D Research Fellow in Medicinal Chemistry at the Weizmann Institute.

*Mr. Eyal Bigon*, C.P.A., joined the Company in January 2002 as Vice President and Chief Financial Officer. During the prior five years, he was the Chief Financial Officer of RiT Technologies (NASDAQ: RITT), a leading provider of integrated network management solutions for the communications market. Prior to joining RiT, Mr. Bigon held financial positions at Tadiran and IBM. Mr. Bigon has a B.A. in Accounting and Economics and an M.B.A. from Tel-Aviv University.

*Ms. Dana Kaplan* is Vice President of Marketing and Business Development. Prior to joining the Company, she served in commercial marketing management at Bagir Ltd. and in international marketing, planning, and management for other Israeli companies operating in the global market. Ms. Kaplan’s technical background involves experience as an R&D chemist at Avco Chem (pigments and dyestuffs). Ms. Kaplan has degrees in Textile Chemistry Engineering (B.Tech) and Global Marketing.

*Mr. James Lineberger*, Director, joined InkSure in September 2002. Since 1969, Mr. Lineberger has been the Managing Member of Lineberger & Co., LLC, a private investment company specializing in leveraged buyouts and venture capital. He was a Director of Sensormatic Electronics Corp. from 1969 until 2001, and also served as Chairman of the Executive Committee and Co-Chief Executive Officer. Sensormatic is the leading global supplier of electronic article surveillance equipment and systems. From 1986 until 1999, he also served as Chairman of the Board of Hilite Industries, a manufacturer of highly engineered parts for the automotive industry.

*Mr. Ezra Harel*, Director, joined the Company in September 2002. Mr. Harel founded ICTS International, N.V., a leading publicly traded aviation security company. From 1989 to 1992, he served as Chairman of the Board of Dash200+, a company involved in the conversion of Boeing 747 aircraft from passenger to cargo use. In 1993, he took ownership and control of Tuffy Associates, an automotive service franchise company with approximately 450 locations.

*Mr. Albert Attias*, Director, joined the Company in March 2002. Mr. Attias joined The El-Ad Group, Ltd. as President in September 1996 and currently serves as a Director. The El-Ad Group is a member of El-Ad Ink LLC, which currently holds 1,312,785 shares of Convertible Preferred Stock. Prior to 1996, Mr. Attias was Deputy General Manager in the Mercantile Discount Bank, Ltd. in Tel Aviv for 12 years. Previously, Mr. Attias worked at Barclays Bank.

*Mr. T. Lee Provow*, Director, joined the Company in September 2002. Mr. Provow is currently the Chairman of the Board of Comdial Corporation, a provider of sophisticated voice communications solutions for small to medium-sized businesses. Mr. Provow previously served as President and CEO of Intelispan, a provider of secure communications solutions, until the Company was sold to McLeod USA. From May 1998 to December 1999, Mr. Provow served as the Chief Operating Officer of Slingshot Networks LLC, a provider of digital media storage, until the Company was purchased by Qwest Communications. From June 1995 to May 1998, Mr. Provow served as the Executive Vice President and COO of GridNet International, a provider of enhanced data communications services, which Mr. Provow founded and was purchased by MCI WorldCom in July 1997.

## Industry Overview

Currency and high-value documents have historically been subject to counterfeiting and forgery, and continue to be today. In the last 15 years, the counterfeiting of goods has increased significantly on a global basis and has become a major threat to brand owners in most industries. Major brands, whether national or multinational, are being systematically attacked by sophisticated criminal and terrorist organizations whose counterfeiting operations are often significant and global (Table 3). Furthermore, counterfeiting and forgery has moved down to the individual level, due to the availability of digital scanning and copying technologies. The United States Customs Service, the government agency charged with defending the nation's borders, reported that during 2002 it conducted over 7,500 seizures in which it confiscated counterfeit merchandise worth approximately \$99.2 million, up from \$57.5 million seized in 2001. This number merely reflects counterfeit merchandise actually seized during attempted delivery, whether by sea, air, or land, to the United States and does not reflect counterfeit merchandise originating in the United States or that which was undetected.

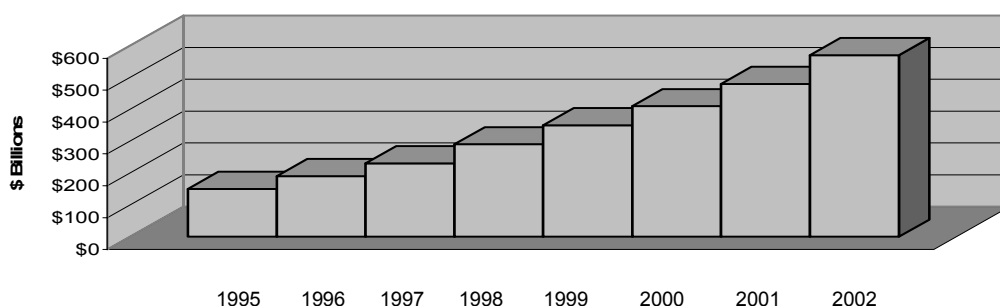
Table 3  
SEIZURES OF COUNTERFEITED GOODS

Commodity	Domestic Value (\$mm)	% of Total Value	Country of Origin	Domestic Value (\$mm)	% of Total Value
Cigarettes	\$37.6	38%	China	\$48.6	49%
Media	\$28.4	29%	Taiwan	\$26.5	27%
Wearing Apparel	\$9.3	9%	Hong Kong	\$4.0	4%
Consumer Electronics	\$5.3	5%	Pakistan	\$2.4	2%
Watches/Parts	\$3.9	4%	Korea	\$1.8	2%
Handbags/Wallets	\$3.0	3%	Indonesia	\$1.4	1%
Toys/Electronic Games	\$2.2	2%	Switzerland	\$1.3	1%
Sunglasses	\$1.1	1%	France	\$0.8	1%
Headwear	\$1.1	1%	Malaysia	\$0.7	1%
Other	\$7.3	7%	Other	\$11.7	12%
<b>Total</b>	<b>\$99.2</b>	<b>100%</b>	<b>Total</b>	<b>\$99.2</b>	<b>100%</b>

Source: International Anticounterfeiting Coalition (IACC).

Losses by companies and governments from counterfeiting and diversion range from \$500 billion to as high as \$1 trillion annually. The IACC estimates losses of over \$600 billion in 2002, up from \$150 billion in 1995. The exact size of the problem is difficult to pinpoint since, by definition, the activity is a covert criminal activity and no official data is collected.

Figure 4  
ANNUAL VOLUME OF COUNTERFEITED GOODS (\$bn)



Source: International Anticounterfeiting Coalition (IACC).

### **Economic losses from counterfeiting and diversion are significant**

- The computer software industry as a whole is losing between \$12-\$16 billion per year because of rampant counterfeiting and piracy. This amounts to more than 40% of all software industry revenues. As the chart above illustrates, China is the primary country of origin.
- U.S. automobile manufacturers and suppliers are losing \$12 billion per year in revenue worldwide because of the sale of counterfeit parts, affecting both new and spare parts. Counterfeiters are producing fake holograms and packaging that emulates new product packaging but contains counterfeited products.
- Counterfeit pharmaceuticals are estimated to cost the industry \$21 billion per year. The World Health Organization (WHO) estimates that counterfeit drugs account for 10% of global pharmaceutical trade.
- Counterfeiting is estimated to cost the state of California more than \$7.5 billion per year and 25,000 jobs.
- Document fraud is estimated to cost the U.S. approximately \$20 billion annually. Check fraud in the country accounts for \$10 billion per year, and it is estimated that up to 3% of all corporate checks are forged.

For brand owners, counterfeiting and the linked problem of diversion cause financial loss and brand dilution. In the pharmaceuticals, automotive, and aerospace industries, where consumer safety is vital, counterfeiting also dramatically increases liability concerns, and the world has seen a dramatic increase in counterfeiting in these markets. While revenue losses from the counterfeit goods can impact a company's bottom line, civil and criminal liabilities can be devastating. It seems likely that it is only a matter of time before the courts will decide that pharmaceutical manufacturers, for example, do bear responsibility for fake products and the damage they can cause. The following points illustrate the growing problem of consumer and industrial product counterfeiting in just the last two years:

- Counterfeit vials of Amgen's drug Epogen have been discovered in the U.S. The counterfeit vials contained the active ingredient but at a level 20 times lower than the genuine drug.
- Counterfeits of the AIDS treatment Serostim were discovered circulating in California, Ohio, Kentucky, Michigan, New Jersey, Florida, and Missouri. Two other medicines on sale in the U.S. were also found to have been counterfeited: Nutropin AQ (somatropin) and Neupogen.
- In India, a drug used to fight antibodies in Rh-D negative mothers is found counterfeited. The drug is used immediately after childbirth in cases where the newborn's blood group is Rh.
- At least 60 people died in Estonia after drinking illicit vodka. The vodka contained poisonous methyl alcohol and was sold in refilled half-liter plastic bottles.
- Italian police smashed a counterfeit airline parts ring that used falsified papers to sell substandard parts. Many of the substandard parts were bought from a Sicilian scrap yard and had undergone cosmetic changes in order to dupe airlines.
- Counterfeit drugs were seized in East Delhi, India. The haul included 10,000 vials of an antibiotic called Netromycin. Machines used to make vials are considerably more costly than those used to produce tablets and represent a step-up in investment by the counterfeiters.
- NUMAST, the seafarers union, expressed increasing concern over counterfeit marine spare parts, which it said have caused major equipment failures and endanger the lives of its members.
- In Thailand a banned substance was discovered in fake acne cream. The cream contained the prohibited chemical hydroquinone, which can cause numerous serious side effects. The cream was being manufactured in a five-story shop/house in the Bang Kholaem district of Bangkok.



## Factors Driving Growth in Counterfeiting

- *Advances in cheaper and higher-quality copiers and scanners*

Technological advances in digital scanning, copying, and desktop publishing have put counterfeiting within the grasp of anyone with a scanner, computer, and printer. From currency to corporate checks, stock certificates, driver's licenses, and passports, document forgery and counterfeiting is no longer only within the realm of organized crime. Even overt security features such as watermarks, enlarged off-center portraits, and micro-printing are being replicated. The two rounds of changes to incorporate new security features on the U.S. currency is a direct result of these security breaches.

- *Proliferation of online media, trade and access*

The Internet has been a boon to piracy and copyright infringement, particularly in the areas of music, books, pictures, and other online media. **Peer-to-peer** and file swapping services have caused great economic damage to music producers, with estimates of 2 to 3 billion music files being illegally downloaded each month. Online e-books are frequently pirated, particularly among in-demand titles such as Harry Potter and John Grisham novels. Illegal online sales of pharmaceuticals have become rampant.

- *Increased counterfeiting of low-margin, mass-produced goods*

Trends indicate that counterfeiters are increasingly targeting low-margin, mass-produced goods rather than the traditional high-margin, luxury goods. The belief is that fake mass-produced goods are less likely to be scrutinized at border controls.

- *The trend towards manufacturing in low-cost emerging markets has loosened the control over the manufacture and distribution of such products*

The preeminence of China and East Asia as the lowest cost manufacturing sites in the world has also made China into the number one source of counterfeited goods. The problem is not only counterfeiting but diversion, where genuine goods are manufactured in China but distributed to lower-income areas where they are sold at below-market prices. China has also become the leading source of hologram replication, where low-quality holograms are placed on the packages of fake goods to deceive the consumer into believing that the item is genuine.

- *Counterfeiting and document forgery have become a main source of funding for terrorist groups*

The global center of terrorist counterfeiting is the Middle East, where groups like Hezbollah engage in what amounts to state-sponsored counterfeiting of passports, visas, driver's licenses, and currency. Due to their significant resources, these organizations bypass "desktop" counterfeiting by purchasing the actual Intaglio printing presses and security paper used to print major currencies.

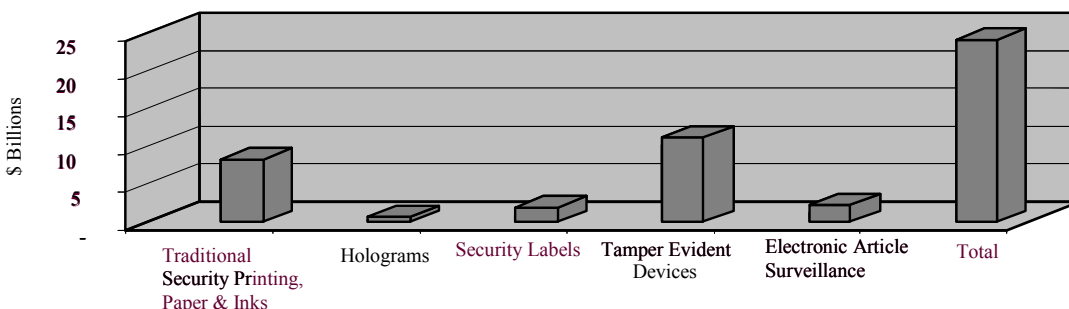
- *Paper-based documents are increasingly being stored and processed in digital form*

Corporate and personal checks, stamps, money orders, and money transfers are more frequently being filed and processed online. This requires security solutions that survive in both a digital and paper form, such as digital watermarks and "smart" bar codes. The Bank Industry Technology Secretariat, a screening committee for the banking industry, is currently evaluating new security features for checks that can survive image capture, storage in digital archives and provide protection for all participants in the value chain of check transactions.

## Authentication Industry: Market Size, Technologies, and Competition

The market size of countermeasures for tampering, theft, diversion, and counterfeiting—i.e., the money that companies and governments spend to protect their products and revenues—is substantial, but still far smaller than the estimated losses resulting from such illicit activities. Security Solution Consultancy reported in 1999 that its research had revealed a market of approximately \$25 billion for product protection—a mere 5-6% of the total estimated losses due to counterfeiting. As for the document protection market, one estimate puts the traditional high security print market (e.g., bank notes, checks, travelers checks, passports, lottery tickets, and vouchers) at over \$8 billion in 2000.<sup>1</sup> Not only is the growth potential in the market for effective countermeasures apparent from the disparity between the estimated losses due to counterfeiting and the current size of the market for countermeasures, the growth potential in the market of countermeasures for tampering, theft, diversion, and counterfeiting is also evident from the market growth rates. While the estimated worldwide losses due to counterfeiting are growing at an average of 20% annually, the amount spent by brand owners on solutions to prevent counterfeiting is growing at about 7% a year. The problem is escalating at a rate nearly three times faster than the solution.<sup>2</sup>

Figure 5  
SALES VOLUME BY INDUSTRY SECTOR (\$bn)



Source: International Anticounterfeiting Coalition (IACC).

As illustrated in Figure 5, the vast majority of dollars spent on anti-counterfeiting, theft, and diversion solutions, remains in the traditional areas of security paper and ink, tamper-resistant packaging, and electronic article surveillance.

In general, brand owners that are victims of counterfeiting do not publicize their losses, nor do they publish their expenditures related to controlling the problem. In a survey conducted by the IACC in the year 2000, Fortune 500 companies reported that they spend an average of between \$2-\$4 million per year to combat counterfeiting. Some reported spending up to \$10 million. A few companies, such as Microsoft Corporation, do quantify and publicize their estimated losses and the numbers are staggering. In 1999, Microsoft published an estimate that it had lost over \$12 billion due to counterfeiting and pirating of its software.<sup>3</sup> Microsoft has also estimated that the cost of its anti-counterfeiting activities, including authentication features, investigation and prosecution, is repaid 10 times over in reclaimed sales and legal damages.

### Traditional Authentication Technologies

Technologies used to authenticate and protect products and documents can be divided into two general categories: overt and covert. Overt technologies are visible to the naked eye and are typically used by the consumer to identify the product or document as genuine. Holograms, graphic design, and color changing inks are among the most common overt security features used in both products and documents.

<sup>1</sup> Commercial Market Report prepared by Security Solutions Consultancy Limited, UK, September, 1999.

<sup>2</sup> Mike Fairley - Worldwide Security Exchange Ltd. U.K.

<sup>3</sup> Statistics published by Microsoft Corporation.

Covert technologies are invisible and, historically, designed to be used by investigators, customs officials, and other law enforcement agents to verify authenticity. There are numerous covert technologies currently in use in the market, including specialty substrates (e.g., papers with security fibers or magnetic threads) and in-product marking (e.g., tracers placed in fuels). However, one of the most frequently used features for product and document security is specialty ink for the obvious reason that ink is the carrier for printing on documents, packaging, and labels.

The rapid rise in counterfeiting and diversion has led to the need for increasingly sophisticated security techniques for companies and organizations to mark and protect high-value products and documents. Accordingly, the market for countermeasures to counterfeiting and diversion is characterized by a constant inflow and introduction of new authentication techniques as a result of rapid technological progress. Complex new technologies that are difficult for counterfeiters to circumvent are in demand.

Typically, currency and high value documents incorporate more than one security feature (high denominations of United States currency have up to 20 security features). Brand owners are increasingly adopting this same strategy and are using several security features simultaneously to make reproducing the document or packaging increasingly difficult and costly for the counterfeiter. In addition, layered security features provide continued protection for products in the market even if one feature is compromised.

### Holograms

Concerns over counterfeiting and copying have led to an increased use of holograms on documents of value, such as currency, checks, gift certificates, stamps, tickets, and other financial instruments. Holograms first achieved mass-market penetration in the U.S. in the mid-1980s when credit card companies adopted the technology for security against card counterfeiting. In the 1990s, holograms began to appear on European banknotes and have increasingly been used for “on-product” and “on-package” marking of consumer products such as software and music CDs. While holograms have always been marketed as a security technology, the increasing rate of hologram counterfeiting (particularly in China, where counterfeit holograms are mass-produced) has morphed the hologram into more of a psychological, marketing-oriented security feature.

Holographic products for paper documents of value include holographic threads, holographic ribbons, and holographic patches. A holographic thread is a security device made up of a narrow-strip hologram, approximately two to five millimeters wide, and is typically incorporated into the paper substrate at the security papermill. This holographic product offers both visual and covert security features and helps raise the recognition and perceived value of the document it is applied to. A holographic ribbon is an anti-counterfeiting device that can be used on documents of value, including checks and currency. The system is comprised of a narrow-strip hologram made of hot-stamp foil and slit into ribbons that are applied on bank note paper by either the paper maker or the printer. A holographic patch is created by embossing a hologram onto hot-stamp foil and is used for authenticating currency and other secure documents. It is machine-applied for registered placement and quality. Depending on the design of the document, patches can be created to meet specific size, shape, creative, and security requirements, and can utilize numerous security techniques to deter simulation attempts. A holographic patch is applied with heat and pressure forming a distinctly recognizable, security component of the document.

### Digital Watermarks

Digital watermarking is a technology for embedding various types of information into digital content. In general, information for protecting copyrights and proving the validity of data is embedded as a watermark. From a security perspective, watermarks are used to protect against unauthorized copying or counterfeiting of documents, currency, and pictures—if such media is improperly or illegally reproduced, a watermark will appear on the printed document. Watermarks are best employed in materials that have a high redundancy level, such as color still images, animation, and audio data. However, it is difficult to embed watermarks in material with a low redundancy level, such as black-and-white images.

Watermarks have historically been used on currency and other high-value documents. However, the Internet has been a huge boon to the watermarking industry, as the amount of online media has exploded. All the information handled on the Internet is provided as digital content, which can be easily copied in a way that makes the new file indistinguishable from the original. Applying digital watermarks to digital content can prove its origin, thereby protecting copyright. A watermark also discourages piracy by silently and psychologically deterring criminals from making illegal copies.

#### Optical Variable Ink (OVI)

This ink, which is reserved for high-security applications, is applied by either intaglio or silk-screen printing techniques to produce interference layers within the printed service, resulting in iridescent patterns on the bill when viewed from different angles.

#### Microprinting

Microtext or micropatterns are an added deterrent that requires some kind of assistance for the human eye to detect, through either magnification or machine-readable verification. Microtext is usually printed above the 300- to 600-dpi resolutions used by most commercial scanners and copiers. The letters themselves are only 0.2 to 0.3 mm in height, therefore appearing as dots to most commercial copying machines. The delicate nature of this printing technique guards against alteration of the original document in addition to counterfeiting. Attempts to change the original printing or erase a signature on a check will be revealed when the micropatterns or text is closely reviewed.

#### Security Threads

Security threads are polyester or plastic bands that are embedded into the paper. Threads generally are just beneath the surface of the sheet. This restricts visibility in reflected light while permitting good visibility in transmitted light. Security threads offer protection against photocopying because copiers and scanners see documents in reflected light. Security threads resist copying and scanning most effectively when they are mini or micro printed as the printed message is most often illegible on the copy. Security threads are an excellent overt feature. The presence of the thread in a document will provide for easy authentication.

There are many optional features that can be added to threads to enhance their security. In some cases, threads can be made to serpentine from the middle of a sheet to the surface and back to the middle. Threads of this nature are referred to as windowed threads. Security threads can be miniprinted (legible without magnification) or microprinted (legible with magnification). They may be metalized to create a bright metallic appearance or they may be magnetic responsive. Security threads can also be created with a hologram effect, or in fluorescent colors to make them react to ultra violet light.

The placement of the security thread has also been used by some countries to prevent counterfeiting. By placing the security strip in different areas of the note for each denomination they stop counterfeiters from raising the note. Raising of a note is the process of bleaching or chemically treating a note to remove the ink and then printing a higher denomination on genuine paper. This will be the case on the new U.S. currency; each denomination will have the security strip placed in different areas of the note.

## Competition

The market for protection from counterfeiting, diversion, theft, and forgery is dominated by large, well-established companies, particularly for traditional overt security technologies, such as those described above. This is due to the fact that security printing for currency production began in Europe over a century ago, leading to the establishment of old-line security printers who have branched out into brand and product protection as well. In the U.S., brand protection products, such as tamper-resistant packaging, security labels, and anti-theft devices are also mainly provided by larger established firms. Newer companies, such as InkSure and its direct competitors have only recently come into the market as a result of the demand for more sophisticated, covert security technologies. Vendors can be segregated into the groupings below:

- *Security ink manufacturers*, which are generally well established companies, whose core business is printing. Companies here include De La Rue and Sun Chemical.
- *System Integrators*, which have often evolved from other sectors in the printing industry, mainly security print manufacturers, technology providers, or packaging and label manufacturers. These companies offer a wide range of security solutions, enabling them to offer a complete suite tailored to the customer's specific needs. Companies here include Genuone, SICPA, and 3M.
- *Security Consultancy groups*, which offer a range of technologies from several technology providers and tailor a specific solution to end-customers.
- *Traditional authentication technology providers*, such as American Banknote Holographics and Digimarc, which provide holograms and digital watermarking, respectively.
- *Next-generation technology providers*. InkSure falls into this group along with several private companies highlighted in the following section. Biocode, Isotag, and Genuone, in particular, provide on-product and in-product tagging technologies that compete directly in several of InkSure's target markets. InkSure also competes with the brand protection division of SICPA.

### Publicly Traded Companies

#### **Digimarc (NasdaqNM: DMRC)**

Price (08/18/03):	\$15.87	FY	Sales		P/E
52-Week Range:	\$16.90 - \$7.60	<u>Dec.</u>	<u>(\$mm)</u>	<u>EPS</u>	<u>Ratio</u>
Indicated Dividend/Yield:	Nil/Nil	1999	\$6.9	(\$0.78)	NM
Shares Outstanding (mm):	17.7	2000	\$11.9	(\$1.16)	NM
Market Capitalization (\$mm):	\$280.9	2001	\$14.9	(\$1.15)	NM
L T Debt/Capital:	0%	2002	\$86.6	(\$0.50)	NM
Total Cash (\$mm):	\$34.0				

Digimarc Corporation, incorporated in January 1995, is a provider of patented digital watermarking technologies that allow imperceptible digital code to be embedded in the printed or digital versions of media content, such as commercial and consumer photographs, movies, music, magazine advertisements, catalogs, product packages, and valuable documents, including identification documents, financial instruments and event tickets. In addition to a code that can be embedded within various types of media content, the Company's technologies include reader software, which, as a resident application on personal computers (PCs) and other devices, enables the recognition of these embedded codes.

Since the introduction of its first watermarking product in 1996, the Company has built a broad technology platform. Digimarc's initial products allowed copyright owners to deter the unintentional use of professional digital imaging tools in producing unauthorized copies of their images. The Company later

developed image commerce applications that allowed customers to persistently identify their protected properties and locate these properties across the Internet, which further discourages their unauthorized distribution and use. Subsequent to that, Digimarc developed the Digimarc MediaBridge system, which is intended to enable an imperceptible digital code to be embedded within print media, such as magazine advertisements and articles, direct mail, coupons, product packaging, stationery, envelopes, trading cards, catalogs, credit cards, bank cards, and business cards. When recognized by PC cameras enabled by the Company's patented reader technology, that code will automatically launch the user directly to the specific Internet destination chosen by the producer of the print media.

On December 21, 2001, Digimarc acquired the United States government identification systems business and the foreign government digital identification systems business of Polaroid Corporation, Polaroid ID Systems, Inc., and certain other affiliated entities of Polaroid Corporation (collectively, Large Government Program Identification Business [LGP]). LGP provides secure identification card systems to the majority of State Motor Vehicles divisions, as well as to various international government agencies. The Company's wholly owned subsidiary, Digimarc ID Systems, LLC (DIDS), and its wholly owned subsidiaries, operate LGP. With this acquisition, Digimarc became a provider of identification card systems to government agencies, which include driver's licenses, voter I.D. cards, and other similar programs. The Company acquired this business to gain access to an additional platform in which it can further deploy and demonstrate the capabilities of its watermarking technology.

The Company's products are grouped along three lines of business: Secure Documents, Media Commerce, and Digimarc MediaBridge. Each product line offers systems generally including embedder software to place Digimarc's digital watermarks into content, and reader technology that is incorporated into digital devices to detect, read, and respond to the embedded code.

#### **American Bank Note Holographics (OTC.BB: ABHH)**

Price (08/18/03):	\$1.19	FY	Sales		P/E
52-Week Range:	\$1.65 - \$0.55	<u>Dec.</u>	<u>(\$mm)</u>	<u>EPS</u>	<u>Ratio</u>
Indicated Dividend/Yield:	Nil/Nil	1999	\$21.7	(\$0.79)	NM
Shares Outstanding (mm):	18.5	2000	\$19.5	(\$0.12)	NM
Market Capitalization (\$mm):	\$22.0	2001	\$20.5	\$0.03	NM
L T Debt/Capital:	0%	2002	\$19.2	(\$0.44)	NM
Total Cash (\$mm):	\$9.5				

American Bank Note Holographics, Inc. (ABNH), incorporated in August 1985, originates, produces, and markets holograms. The Company's holograms are used primarily for security applications, such as counterfeiting protection and authentication of transaction cards, identification cards, documents of value, and consumer products. The Company's products are used by over 150 companies worldwide, including MasterCard, VISA, American Express, Discover, Diners Club, Quaker State, and Eli Lilly, as well as agencies of the United States government and certain foreign governments. ABNH also produces non-secure holograms for packaging and promotional applications.

ABNH provides its secure holograms for use as an important fraud prevention device on credit cards and other transaction cards. They are also commonly used to enhance the brand image of a transaction card issuer. The Company's products include Holographic Hot-Stamp Foil, HoloCard, and HoloMag.

The Company's largest source of revenue since its inception has been security holograms embossed onto hot-stamp foil for credit card authentication. Holographic hot-stamp foil can also enhance the design and branding of a card. Its customers in this market include the issuers or printers of MasterCard, Visa, American Express, Europay, Discover, and Diner's Club cards.

HoloCard incorporates a hologram on a card's entire face, creating a customized marketing tool and a counterfeit deterrent. A full-faced hologram can support brand recognition, product enhancement campaigns, customer retention, and overall product differentiation efforts. In addition, HoloCard can be



designed to include security features such as hidden images and codes, micro imaging of lettering or logos, and microscopic coding viewable with high-powered magnification.

HoloMag is ABNH's patented technology for combining a hologram with the magnetic stripe on a card. HoloMag not only enables efficient utilization of real estate on the card with imagery on the magnetic stripe, but it significantly enhances card security.

#### De La Rue (LSE: DLAR)

Price (08/18/03):	£2.58	FY	SALES		P/E
52-Week Range:	£5.10 -£1.80	<u>Dec.</u>	<u>(£Mils)</u>	<u>EPS</u>	<u>Ratio</u>
Indicated Divident/Yield:	Nil/Nil	1999	£526.2	-£0.45	NM
Shares Outstanding (Mils):	205.6	2000	£518.9	-£0.47	NM
Market Capitalization (£Mils):	£492.5	2001	£517.4	-£0.52	NM
L T Debt/Capital:	0%	2002	£641.7	-£0.63	NM
Total Cash (£Mils):					

De La Rue is a UK public company that is the world's largest commercial security printer. The Company is involved in the production of over 150 national currencies and a wide range of security documents such as bank notes, traveler's cheques, vouchers, tax stamps, and postage stamps. Started in the early 1800s, the Company employs over 6,500 people across 31 countries, and is a leading provider of cash handling equipment and software solutions to banks and retailers worldwide, assisting them in reducing the cost of handling cash. With the increasing proliferation of color copying, scanning, and printing technologies, the Company is developing anti-counterfeit solutions such as wide threads and holographic devices to counter these threats. These security technologies are used in passports, driver's licenses, and government IDs.

De La Rue is located in the UK and is listed on the London Stock Exchange. Sales for the 2002 fiscal year were £582.7 million, with pretax profits of £48.1million. The Company pursued an aggressive acquisition program over the last two years, including the purchase of the Bank of England's bank note printing operation, and has purchased companies in the printing of driver's licenses and voting forms.

#### Intellicheck (AMEX: IDN)

Price (08/18/03):	\$9.50	FY	Sales		P/E
52-Week Range:	\$9.87 - \$7.14	<u>Dec.</u>	<u>(\$mm)</u>	<u>EPS</u>	<u>Ratio</u>
Indicated Dividend/Yield:	Nil/Nil	1999	\$0.0	(\$0.45)	NM
Shares Outstanding (mm):	9.0	2000	\$0.3	(\$0.47)	NM
Market Capitalization (\$mm):	\$85.5	2001	\$0.9	(\$0.52)	NM
L T Debt/Capital:	0%	2002	\$1.1	(\$0.63)	NM
Total Cash (\$mm):	\$3.8				

Intelli-Check, Inc., incorporated in 1994, develops, manufactures, and markets an advanced document verification system to enable a retailer to help prevent economic loss through various frauds. The Company's product is designed (1) to prevent frauds (such as identity theft), (2) to increase security and deter terrorism at airports, military installations, and other sites where security is a concern, and (3) to determine whether purchasers of age-restricted products meet the minimum age requirements for the sale. This helps reduce the risk to the retailer of substantial monetary fines, criminal penalties, and license revocation for the sale of age-restricted products to minors.

The Company developed the software technology that is included in the advanced document verification system terminal, ID-Check. The ID-Check terminal, in which Intelli-Check's patented software is loaded, was designed to offer convenient and reliable document and age verification. ID-Check reads, analyzes,

and displays the encoded information contained on driver's licenses and other forms of accepted government-issued identification where permitted by law. In addition, the ID-Check terminal is capable of being upgraded to accommodate changes made by the governmental issuers of driver's licenses and ID cards. The ID-Check terminal requires a quick swipe or scan of the driver's license or ID card by the user, displays a valid, expired, tampered, or other customized display, and, where permitted by law, creates a record of transactions to protect the merchant against fraudulent transactions and unauthorized access, while also creating proof that the retailer has used proper due diligence in the sale of age-restricted products.

During 2001 and 2002, the Company developed additional software products that utilize its patented software technology. C-Link runs on a personal computer (PC) and was created to work in conjunction with the ID-Check unit that allows the retailer to instantly view the data for further verification, analyze data, and generate various reports where permitted by law. Intelli-Check also has developed software that can be integrated onto a Windows platform.

In December 2001, Intelli-Check acquired the assets of the IDentiScan Company, LLC, which has developed a product that helps determine whether a purchaser of age-restricted products meets the minimum age requirements for sale in a less sophisticated method than the Company's ID-Check terminal. The IDentiScan products are targeted to the age verification market and they have broadened the Company's product line to better penetrate that market. IDentiScan has been selected to be the exclusive provider of age verification terminals to Sunoco, Inc.

#### **Macrovision (NasdaqNM: MVSN)**

Price (08/18/03):	\$19.09	FY	Sales		P/E
52-Week Range:	\$20.70 - \$8.98	<u>Dec.</u>	<u>(\$mm)</u>	<u>EPS</u>	<u>Ratio</u>
Indicated Dividend/Yield:	Nil/Nil	1999	\$52.1	\$0.35	NM
Shares Outstanding (mm):	48.6	2000	\$80.1	\$0.28	NM
Market Capitalization (\$mm):	\$927.8	2001	\$98.8	\$0.49	NM
L T Debt/Capital:	0%	2002	\$102.3	\$0.50	NM
Total Cash (\$mm):	\$140.8				

Macrovision Corporation, founded in 1983, develops and licenses rights management and copy protection technologies. The Company's customers include Hollywood studios, independent video producers, enterprise and consumer software vendors, digital set-top box manufacturers, and digital pay-per-view (PPV) network operators. Macrovision provides content owners with the means to market, distribute, manage, and protect video, software, and audio content. The Company is also in the business of consumer software copy protection. Macrovision offers CD-ROM copy protection and rights management technologies to a variety of software publishers in the PC games, home education, information publishing, and desktop applications software markets.

The Company's technology has been used to copy-protect over 3.4 billion videocassettes worldwide since 1985. In 1997, Macrovision expanded the application of its copy protection technology into the DVD platform. Most Motion Picture Association of America studios use the Company's video copy protection technology to protect some or all movie releases on videocassette or DVD. Customers include Disney, Paramount, Twentieth Century Fox, Universal Studios, Warner Brothers, and DreamWorks.

Because of Macrovision's August 2000 acquisition of GLOBETROTTER Software, Inc. (GLOBETROTTER), the Company added a suite of electronic license delivery (ELD) and electronic license management (ELM) technologies to its product portfolio. These products encompass the areas of electronic license management, software asset management, and electronic license distribution.

The Company has built, and continues to add to, a large patent portfolio that helps differentiate its products and is important to its license driven business model. Macrovision generates recurring revenues from a variety of sources. In its video copy protection business, the Company receives unit-based

royalties on videocassettes, DVDs, and set-top boxes. The Company obtains transaction or use-based royalties for PPV movies, and license fees from a range of hardware manufacturers, digital satellite, and cable network operators. In its software businesses, Macrovision receives unit-based royalties on CD-ROMs, a combination of time-based licenses and perpetual licenses for its ELM technology and recurring fees for maintenance.

In December 2002, the Company acquired the assets of Midbar Technologies, Ltd., which provides Macrovision with additional technologies and intellectual capital in order to develop a "best-of-breed" digital rights management solution for the music industry. Also in December 2002, the Company formed a Music Technology Division. In May 2003, the Company acquired the copy protection and digital rights management assets of TTR Technologies, Inc., a designer and developer of digital security technologies.

### Privately-Held Companies

#### **SICPA**

SICPA is a 70-year old Swiss company that markets security inks for many applications, with a leading position in providing security inks for banknotes and other high-value documents. The company has 3,700 employees and a global presence over five continents, with estimated sales of over 1.1 billion Swiss francs. A global leader in security inks for banknotes and value documents, the SICPA Group has developed a solid international position as creator of innovative security solutions and manufacturer of high quality printing inks for packaging and other industries. SICPA supplies ink systems to a wide range of market sectors including labels, tobacco applications, flexible packaging, paper, and board packaging. The SICPA Group is organized in two global business units. The Security Division groups all operations related to security inks and security solutions. This division continually develops systems of technically advanced inks and complementary security technologies that effectively impede product and document fraud and counterfeiting. The Commercial Division consists of a global network of affiliates and a world-wide organization offering a comprehensive range of inks, and ranks as a world class specialist in packaging inks.

#### **Genuone**

GenuOne is a Boston-based provider of technologies and solutions that enable companies to protect their brands and products from counterfeiting, grey market diversion, and intellectual property theft in the physical world and on the Internet. GenuOne's GenuGuard™ product marking technologies combine secure authentication for any product, packaging or content, with security software systems to authenticate and track items from manufacturing through to the market. This range of advanced product marking technologies includes molecularly and optically modified inks, infrared and ultraviolet photoluminescent dyes, spot metallization, and authenticable holograms.

The Company couples these technologies with authentication and tracking software, as well as handheld readers to create flexible, modular brand protection systems. These systems allow companies to selectively embed effective solutions into their existing facilities and to seamlessly integrate their manufacturing processes and information systems. Together, the systems allow clients to mark products with authenticable, traceable technology, carefully monitored with covert, field-verifiable characteristics.

#### **Biocode**

Biocode is a 10-year old, UK-based company with operations in the U.S., which provides brand protection and anti-counterfeiting solutions for consumer and industrial products. The Company was founded in 1992 based on its core "in-product" marker solution that is used in liquids, fuels, and chemicals for authentication and supply chain tracking. This solution, which is based on molecular binding pairs and antibody technologies, can also be used for "on-product" marking of consumer products. The Company provides its fuel tagging and fiscal recovery services throughout the world.

### **Isotag**

Isotag is a Texas-based company that provides authentication solutions designed to prevent counterfeiting and gray market activities. The molecular market technologies behind the Company's solution originated at the Los Alamos National Laboratory and Eastman Chemical Company. The Company's market technology provides a unique fingerprint that is completely invisible and only detectable by Isotag's proprietary readers. Isotag's technology can mark a variety of products, from packaged goods to cosmetics and pharmaceuticals. Isotag also provides track-and-trace capabilities and are web-enabled to provide real-time access to field results.

### **MediaSec**

MediaSec Technologies LLC was established in 1996 in Providence, R.I. as a spin-off of the Fraunhofer Institute for Computer Graphics (IGD), Darmstadt, Germany. MediaSec's patented and world leading watermarking technology was originally developed at the Fraunhofer Institute between 1993 and 1997 by Dr. Eckhard Koch and Dr. Jian Zhao. MediaSec Technologies GmbH in Essen, Germany was established in 1999 to focus on the European market.

The Company develops and commercializes products and solutions in the areas of patented data-hiding and digital watermarking technology for the protection of intellectual property rights, privacy, integrity, authenticity, and confidentiality of multimedia content. The Company's target markets are bank notes, identity cards, credit cards, digital images, and videos.

### **Flying Null**

Flying Null Ltd. is a spin-out from the international consulting and investment group, Generics Ltd., headquartered in Cambridge UK. The Company's primary technology, FN tags, are magnetically neutral barcode tags, which can be coded with information, applied onto a product and/or its packaging, and then read with a simple hand-held scanner. These tags are designed to provide authentication and supply chain tracking capability. Because of their magnetic nature, they can be read without line-of-sight, and as such, they can be completely hidden within products or packaging. FN tags are also extremely resilient to high and low temperatures, high pressure, water, chemicals, dirt, and other damaging substances commonly found in the supply chain. This not only makes them resistant to harsh operating environments, but it also allows them to be integrated during the manufacturing processes of many products where other solutions would be destroyed or damaged.

## Risks

Some of the information in this report relates to future events or future business and financial performance. Such statements can be only predictions and the actual events or results may differ from those discussed due to, among other things, the risks described in Inksure Technologies Inc.'s reports on Forms 10-K, 10-Q, 8-K and other forms filed from time to time. The content of this report with respect to Inksure Technologies Inc. has been compiled primarily from information available to the public released by Inksure Technologies Inc. through news releases, SEC filings, and other public documents. Inksure Technologies Inc. has affirmed the accuracy of the information as it pertains to Inksure Technologies Inc. Information on other products and companies within this report has been prepared by Crystal Research Associates from publicly available information and has not been independently verified. [Certain summaries of scientific activities and outcomes have been condensed to aid the reader in gaining a general understanding.] For more complete information about Inksure Technologies Inc., please refer to the Company's website at [www.inksure.com](http://www.inksure.com).

### **InkSure has a limited operating history**

InkSure was formed in May 2000, and has a limited operating history on which to base an evaluation of its business and prospects. An investor must consider the risks, uncertainties, expenses, and difficulties frequently encountered by companies in their early stages of development, particularly companies with limited capital in new and rapidly evolving markets

### **The Company relies on one major customer for most of its current revenues**

For the fiscal year ended December 31, 2002, the relationship with ISBAK A.S. accounted for approximately 74% of InkSure's revenue. Although the Company anticipates that revenues from ISBAK will comprise a smaller portion of total revenues in fiscal year 2003, the loss of such a customer, or any other customer that accounts for a significant portion of revenues, could adversely affect the business, operating results, and financial condition.

### **There is no assurance of broad market acceptance of InkSure's product offerings**

The Company generates all of its revenue from sales and licensing of products relating to the "authentication industry". The market for providing these products and services is highly competitive and is affected by the introduction of new products and services that compete with the products and services offered by InkSure. Demand for these products and services could be affected by numerous factors outside the Company's control, including, among others, market acceptance by prospective customers, the introduction of new or superior competing technologies, or products and services that are available on more favorable pricing terms than those being offered by the Company, and the general condition of the economy.

### **The Company's ability to compete is dependent on proprietary technology**

The Company regards protection of its proprietary rights as critical to its success, and relies on patent, trademark and copyright law, trade secret protection, and confidentiality and/or license agreements with employees, customers, partners, and others to protect its proprietary rights. There can be no assurance that a patent will be issued with respect to any patent application filed or that the scope of any claims granted in any patent will provide meaningful proprietary protection or a competitive advantage to the Company. There can be no assurance that the validity or enforceability of patents, which may be issued or licensed will not be challenged by others or, if challenged, will be upheld by a court. In addition, there can be no assurance that competitors will not be able to circumvent any patents that may be issued or licensed.

### **InkSure faces competition from larger, and better-financed, companies**

The market for the Company's products and services is highly competitive. Many competitors have far greater financial, human, and other resources. Barriers to entry are relatively insubstantial and companies with substantially greater financial, technical, marketing, manufacturing, and human resources, as well as those with far greater name recognition may also attempt to enter the market.

### **InkSure is a co-defendant in litigation, the outcome of which is uncertain**

On December 12, 1999, Secu-Systems filed a lawsuit with the District Court in Tel Aviv-Jaffa against Supercom Ltd. (InkSure Delaware's former parent company) and InkSure Ltd. seeking a permanent injunction and damages. The plaintiff asserted in its suit that the printing method applied to certain products that have been developed by InkSure Ltd. constitutes inter alia: (a) breach of a confidentiality agreement between the plaintiff and Supercom; (b) unjust enrichment of Supercom and InkSure Ltd.; (c) breach of fiduciary duties owed to the plaintiff by Supercom and InkSure Ltd.; and (d) a tort of misappropriation of trade secret and damage to plaintiff's property. Secu-Systems seeks, among other things, an injunction and a 50% share of profits from the printing method at issue. Supercom and InkSure Ltd. received a letter, dated February 14, 2002, from the law firm of Yossi Avraham & Co., which states that, based on the facts provided to it by Supercom and InkSure Ltd., the chances are good that a court would not grant the permanent injunction or award damages of a substantial amount in connection with the litigation.

### **Conditions in Israel**

InkSure Ltd., the Company's principal operating subsidiary, is incorporated under Israeli law and its principal office, manufacturing facility and R&D facility are located in Israel. Political, economic, and military conditions in Israel directly affect InkSure's operations. Since the establishment of the State of Israel in 1948, a number of armed conflicts have taken place between Israel and its Arab neighbors and a state of hostility, varying in degree and intensity, has led to security and economic problems for Israel. Any future armed conflict, political instability, continued violence in the region or restrictions could have a material adverse effect on the Company's business, operating results and financial condition.

### **Operations could be disrupted due to obligations of management or key personnel to perform military service**

Generally, all male adult citizens and permanent residents of Israel under the age of 45 are, unless exempt, obligated to perform up to 36 days of military reserve duty annually. Additionally, all Israeli residents of this age are subject to being called to active duty at any time under emergency circumstances. Some of the officers and employees of InkSure are currently obligated to perform annual reserve duty. The Company's operations could be disrupted by the absence for a significant period of one or more of InkSure's officers or key employees due to military service. Any such disruption could affect the Company's business, results, and financial condition.

### **ICTS International, N.V., beneficially owns, as of March 28, 2003, 4.1 million shares of InkSure's common stock**

This represents approximately 34.3% of the outstanding Common Stock and gives ICTS substantial influence over the outcome of all matters submitted to stockholders, including the election of directors.



## Key Points to Consider

- **Corporate losses from counterfeiting and diversion continue to grow worldwide.** Estimates of losses range from \$500 billion to \$1 trillion annually and are rising by 20% per year. Increased funding from terrorist groups and greater sophistication among counterfeiters is exacerbating the problem. Major brand owners can no longer afford to absorb or ignore the mounting losses from counterfeiting and diversion.
- **Advances in digital copying and scanning technologies have brought counterfeiting and forgery to the desktop.** As such, it is becoming increasingly difficult to identify and combat the problem. Additionally, existing security technologies, such as holograms and digital watermarks, are being increasingly counterfeited. These issues are forcing brand owners and document printers to seek newer, more effective security solutions.
- **The market for authentication solutions is estimated at \$25 billion for brand protection and \$8 billion for document protection, and is growing at 7% per year.** While large firms dominate the industry on a global basis, many newer vendors with next-generation solutions are entering the market.
- **InkSure's covert security systems offer an extremely reliable and cost-effective solution.** InkSure offers its tagged ink at less than one penny per application and its lower-end readers are priced below \$200. These pricing levels provide for an attractive ROI to the end-user, and remove one of the primary constraints to market growth.
- **InkSure's systems have been successfully field-tested in a major transportation project.** In 2002, InkSure won the bid to provide an anti-counterfeiting ticket solution for the public transportation authority of Istanbul, Turkey, Europe's largest city. The system has been deployed in approximately 3,000 public buses and has accurately marked and read more than 100 million bus tickets. The success of this project is being used as a platform to enter the transportation markets in other cities.
- **InkSure has a strong IP portfolio and world-class R&D capabilities.** The Company has filed three patents relating to its core authentication technologies, and three more relating to its "chipless" RFID technology. InkSure's R&D team is comprised of leading scientists in the chemistry, materials sciences and electro-optics fields, and has a close affiliation with the Weizmann Institute, one of the world's leading centers of optics research.
- **InkSure's recently announce agreement with Sun Chemical partners InkSure with the world's leading ink producer.** This announcement validates the Company's technology and provides a critical strategic partner for the Company. InkSure and Sun have created the *SunSure* product line, which will market anti-counterfeiting solutions to Sun's global customer base.
- **InkSure has a solid and experienced management team and Board of Directors.** The latest addition of Mr. James Assaf as CEO of North American operations brought an experienced industry veteran to the Company and a strategic partner in Sensormatic Electronics. ICTS International, a leading global provider of aviation and airport security services, is represented on the Board and has a significant equity interest in the Company.

## Recent Events

**06/12/03**—InkSure Technologies and Sun Chemical form a strategic marketing alliance for groundbreaking authentication systems under the brand name *SunSure*. Sun Chemical, which is the world's largest ink manufacturer, will jointly market InkSure's brand and document authentication systems to its global customer base to slash losses from counterfeiting and diversion.

**03/31/03**—InkSure reported results for the year ended December 31, 2002. Revenues for the year were \$2.7 million, as compared to \$1.8 million in 2001, an increase of 52%. The net loss was \$0.6 million, or (\$0.08) per share, as compared to a net loss of \$0.7 million, or (\$0.14) per share in 2001.

**01/20/03**—InkSure announces the appointment of Mr. Christopher Brown as its Senior Vice President of Sales for the U.S. and Canada. Prior to joining InkSure, Mr. Brown spent nearly 15 years at Sensormatic Electronics Corporation in a variety of senior sales positions, including Director of Source Tagging Sales, where he won the industry standard for security technology in the music and video sectors. Most recently, he was the Director of RFID Sales.

**01/20/03**—InkSure announces the relocation of its headquarters to Manhattan. The Company's headquarters were previously located in Tenaflly, N.J. The Company's new address is 32 Broadway, Suite 1314, New York, N.Y. 10004.

**11/07/02**—InkSure Technologies and Lil Marc complete their previously announced merger. Upon the merger, InkSure became a public company trading under the symbol "INKS".

**10/15/02**—InkSure Technologies completes a \$6.7 million equity financing. The private placement was led by Commonwealth Associates, a merchant banking firm in New York. Lead investors in the round included the founders of Sensormatic Corporation, and ICTS International, a public company that is a leader in aviation security services.

**10/15/02**—InkSure recruits R. James Assaf as CEO of its North American operations. Prior to joining InkSure, Mr. Assaf was the Director of Business Development, M&A, for Sensormatic Electronics Corporation. Mr. Assaf is a veteran of the security industry and brings a wealth of industry experience and an extensive network of contacts to InkSure.

**08/20/02**—InkSure reports the successful testing of a high-speed authentication system for **check clearance sorters**. This system will allow banks to identify counterfeited corporate checks within the normal check sorting and clearing process.

**06/01/03**—InkSure announces the appointment of Ms. Dana Kaplan as Vice President of Marketing and Business Development. Ms. Kaplan has extensive experience in international marketing and a technical background, which includes experience as an R&D chemist for pigments and dyestuffs at Avco Chemical.

**05/01/02**—InkSure announces the successful implementation of its anti-counterfeiting solution for a mass transportation system in Istanbul, Turkey. The system was deployed to prevent the rampant counterfeiting of public bus tickets. Since implementation, the Istanbul Public Transportation Authority has doubled its monthly sales of bus tickets and achieved a full return of its initial investment.

## Historical Financial Data

Tables 4, 5, and 6 provide a snapshot of InkSure's historical financial statements, including its income statement, balance sheet, and cash flow statement.

Table 4  
InkSure Technologies Inc.  
INCOME STATEMENT (2000-2002)

Years Ended December 31,	2000	2001	2002
(\$ mils, except per share data)			
Revenue	\$139	\$1,770	\$2,693
Gross Profit	139	1,727	2,291
COSTS AND EXPENSES:			
Research & development	665	874	809
Sales & marketing	764	751	1,641
General and administrative	<u>434</u>	<u>573</u>	<u>488</u>
Total Operating Expenses	1,863	2,198	2,938
Net loss from continuing operations	1,724	400	621
Net loss from discontinued operations	<u>216</u>	<u>300</u>	<u>0</u>
Net loss	2,081	700	621
Redeemable Preferred A shares dividend	<u>0</u>	<u>0</u>	<u>200</u>
Net loss applicable to common stock	\$2,081	\$700	\$821
Per share loss from continuing operations	\$0.37	(\$0.08)	(\$0.08)
Per share loss from discontinued operations	<u>\$0.04</u>	<u>(\$0.06)</u>	<u>\$0.00</u>
Per share net loss	\$0.42	(\$0.14)	(\$0.08)
Weighted average number of shares outstanding	5,000	5,061	7,921

Source: InkSure Technologies Inc.

Table 5  
InkSure Technologies Inc.  
BALANCE SHEET (2001-2002)

December 31,	2001	2002
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$2	\$213
Short term deposits	\$0	4,063
Trade receivables	312	730
Other accounts receivable and prepaid expenses	208	226
Inventories	213	88
<b>Total current assets</b>	<b>735</b>	<b>5,320</b>
Property, plant and equipment - net	399	356
Technology	219	147
Goodwill	271	271
Severance pay fund	68	71
	<b>\$1,692</b>	<b>\$6,165</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)</b>		
Current liabilities:		
Accounts payable	326	470
Short-term bank credit	410	0
Employees and payroll accruals	192	110
Accrued expenses and other liabilities	515	280
<b>Total current liabilities</b>	<b>1,443</b>	<b>860</b>
Long-term loan from related party	1,730	0
Accrued severance pay	85	75
<b>Total liabilities</b>	<b>3,258</b>	<b>935</b>
Commitments and contingencies		
Stockholders' equity (deficit):		
Common Stock - par value .01 per share, authorized		
45,000,000 shares, issued 11,982,166	57	119
Additional paid-in capital	1,997	9,741
Receipts on account of stocks	250	0
Deferred stock compensation	(61)	0
Accumulated other comprehensive income	118	118
Accumulated deficit	(3,927)	(4,748)
<b>Total stockholders' equity (deficit)</b>	<b>(1,566)</b>	<b>5,230</b>
	<b>\$1,692</b>	<b>\$6,165</b>

Source: InkSure Technologies Inc.

Table 6  
InkSure Technologies Inc.  
CASH FLOW STATEMENT (2000-2002)

Years Ended December 31,	2000	2001	2002
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>			
Net loss	(\$2,081)	(\$700)	(\$621)
Adjustments to reconcile net loss to net cash used by operating activities:			
Depreciation and amortization	17	42	147
Accrued severance pay, net	3	11	(13)
Increase in trade receivables	0	(312)	(418)
Increase in other accounts receivable	(34)	(164)	(18)
Decrease (increase) in inventories	0	(213)	125
Increase in trade payables	102	177	144
Increase (decrease) in employees and payroll accruals	88	75	(82)
Increase (decrease) in accrued expenses and other liabilities	637	(133)	(235)
Accumulated interest on short-term deposits	0	0	(63)
Cash contributed to discontinued operations	(2)	300	0
<b>Net cash used for operating activities</b>	<b>(1,270)</b>	<b>(917)</b>	<b>(1,034)</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>			
Purchase of property and equipment	(81)	(129)	(32)
Investment in short-term deposits	0	0	(4,000)
<b>Net cash used in investing activities</b>	<b>(81)</b>	<b>(129)</b>	<b>(4,032)</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>			
Short-term bank credit, net	(36)	410	(410)
Proceeds from long-term loans from related party	1,325	225	0
Proceeds from issuance of common stock and warrants	0	7	5,770
Receipts on account of stocks	0	250	0
Principal payment of long-term loan from related party	0	0	(250)
Cash received in conjunction with reverse acquisition	0	0	167
<b>Net cash provided by financing activities</b>	<b>1,289</b>	<b>892</b>	<b>5,277</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>156</b>	<b>(154)</b>	<b>211</b>
<b>Cash and cash equivalents at beginning of period</b>	<b>0</b>	<b>156</b>	<b>2</b>
<b>Cash and cash equivalents at end of period</b>	<b>156</b>	<b>2</b>	<b>213</b>
<b>SUPPLEMENTAL CASH FLOW INFORMATION:</b>			
Net cash from discontinued operations	218	0	0

Source: InkSure Technologies Inc.

## Glossary of Terms

**Authentication**—The analysis of a document, I.D. card or product to determine whether such object is genuine and valid.

**Chipless RFID**—Printed labels or bar codes that contain chemical elements that respond to light or electromagnetic radiation, and contain no power source. They are intended as an anti-counterfeiting/anti-theft solution for retailers and manufacturers.

**Counterfeit**—Imitation items that are offered as genuine with the intent to deceive or defraud.

**Diversion**—Also called “parallel trading” or “gray market commerce”, this involves the selling of goods in a geographic market where both wholesale and retail prices are high while falsely purchasing them for another market where wholesale prices are lower, thus taking advantage of the price disparity.

**File Swapping**—The downloading and uploading of online content between computer users. When copyrighted content is shared without any remuneration to the owner, file swapping becomes an illegal activity.

**Holograms**—Holography is a three-dimensional imaging technique. It uses laser light to record the patterns of light waves reflected from an object onto the emulsion of light sensitive film (or glass plates). When that film is developed, and re-exposed to laser light (or normal incandescent light like most holograms today), it re-creates -- in space -- all the points of light that originally came from the object. Holograms are commonly used as a security marker for credit cards, currency and CDs.

**Patent Cooperation Treaty**—The treaty makes it possible to seek patent protection for an invention simultaneously in each of a large number of countries by filing an “international” patent application. Such an application may be filed by anyone who is a national or resident of a contracting State. It may generally be filed with the national patent office of the contracting state of which the applicant is a national or resident or, at the applicant's option, with the International Bureau of WIPO in Geneva.

**Peer-to-peer**—A system for sharing the computing power of disparate computers in order to create a more powerful computing capability.

**Spectrometer**—An instrument used for measuring wavelengths of light spectra; any of various analytical instruments in which an emission (as of particles or radiation) is dispersed according to some property (as mass or energy) of the emission and the amount of dispersion is measured.

**Spectral Analysis**—The analysis of the way in which any material absorbs or reflects light.

**Taggant**—A molecular-sized chemical that is embedded in ink and illuminated by a light source in order to provide a means to authenticate products and documents.

**Thermal Printing**—In thermal printers, a head that contains resistive elements in a linear array heats ink-coated films (ribbons). The head is in direct contact with the uncoated side of the ribbon and the ink-coated side of the ribbon is in direct contact with the disc's printing surface. The ink is heated, causing it to melt and adhere to the printing surface and finally to transfer to the printing surface.

**Watermark**—Digital watermarking is a technology for embedding various types of information into digital content. In general, information for protecting copyrights and proving the validity of data is embedded as a watermark. From a security perspective, watermarks are used to protect against unauthorized copying or counterfeiting of documents, currency, and pictures—if such media is improperly or illegally reproduced, a watermark will appear on the printed document.



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**Scott L. Greiper, Jeffrey J. Kraws, or Karen B. Feinberg**

**Phone: 609-395-7626**

**Fax: 609-395-9339**

**Email: [eio@crystalra.com](mailto:eio@crystalra.com)**

**Web: [www.crystalra.com](http://www.crystalra.com)**

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