ISCO INTERNATIONAL INC
Form 10-K/A
May 04, 2005
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SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

Form 10-K/A

Amendment No. 1

(Mark On)

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

For the fiscal year ended December 31, 2004

or

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

For the transition period from to

Commission File Number 0-22302

ISCO INTERNATIONAL, INC.

(Exact name of registrant as specified in its charter)

Delaware	36-3688459
(State or other jurisdiction of incorporation)	(I.R.S. Employer Identification No.)

1001 Cambridge Drive

Elk Grove Village, Illinois 60007

(847) 391-9400

(Address and telephone number of principal executive offices)

Securities registered pursuant to Section 12(b) of the Act:

Title of Class	Name of Exchange on Which Registered
Common Stock, Par Value $0.001 Per Share and associated Preferred Stock Purchase Rights	**American Stock Exchange**

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

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

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

On June 30, 2004, 160,496,203 shares of the registrant s Common Stock, par value $0.001 per share (the Common Stock) were outstanding. The aggregate market value on June 30, 2004 of the registrant s Common Stock held by non-affiliates of the registrant was $33.7 million, based on the closing price per share of the registrant s common stock as quoted on the American Stock Exchange. This amount excludes more than 67 million shares of common stock held by affiliates . Exclusion of shares held by any person should not be construed to indicate that such person

possesses the power, direct or indirect, to direct or cause the direction of the management or policies of the registrant, or that such person is controlled by or under common control with, the registrant.

DOCUMENTS INCORPORATED BY REFERENCE

None.

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Explanatory Note

Amendment No. 1 to the Registrant s Annual Report on Form 10-K for the fiscal year ended December 31, 2004 (the Annual Report) filed with the Securities and Exchange Commission on March 31, 2005 is being filed to:

1. correct certain typographical errors in the Registrant s Balance Sheet on page 29 of the Annual Report, such corrections having no effect on total liabilities, equity, or assets in the Balance Sheet or elsewhere in the Annual Report;

2. make certain technical corrections to the description of the FASB s SFAS No. 123 (revised 2004) on pages 37-38 of the Annual Report; and

3. delete a reference to a management bonus pool authorized by the Registrant s Board of Directors in December 2002 described in Item 11 on page 54 of the Annual Report that was applicable solely to fiscal year 2003 and thus is no longer being implemented by the Registrant.

As a result of these amendments, the certifications pursuant to Sections 302 and 906 of the Sarbanes-Oxley Act of 2002, filed as exhibits to the original filing, have been re-executed and re-filed as of the date of this Form 10-K/A. In addition, the independent registered public accounting firm has provided an updated consent, also filed as an exhibit. All other items of the Annual Report, are refilled herein for the convenience of reference. No other items of the Annual Report are being amended and this Amendment No. 1 does not reflect any events occurring after the filing on March 31, 2005 of the original Annual Report, except for the amendments described above.

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PART I

Business

The Company develops and sells solutions designed to optimize the RF (Radio Frequency) link within wireless networks, particularly, but not exclusively, on the reverse link. RF link, or Radio link, is the signal between the mobile device (e.g., mobile phone) and the base station (Link). Reverse link is the signal from the mobile device to the base station. Forward link is the signal from the base station to the mobile device. The Company s array of solutions includes its ANF product line (adaptive notch filter, ANF) the RF² product family (radio link radio frequency fidelity, RF²), services and other solutions, all focused on optimizing RF handling.

The benefits of using the Company s solutions include: allowing carriers (channels) to carry traffic in certain circumstances where they otherwise could not, increased cell site capacity and utilization, reduced mobile transmit power and thus improved battery life, improved voice quality and substantial reduction in dropped calls and failed attempts, culminating in more satisfied customers and increased revenues for wireless operators. These benefits have been documented in field trials and commercial deployments with wireless operators involving existing wireless systems.

In addition, the Company believes that current and near-term upgrades of existing wireless networks to allow for data throughput (2.5G systems) and further, by the rollout of the next generation of wireless systems (3G or 3rd Generation), operators will need to manage the RF signal and eliminate interference more effectively in order to meet their performance objectives. The Company believes that with the increased data bit rates required of these systems and the increased usage of these systems with the adoption of wireless internet services, that interference levels will increase substantially while tolerance to interference will decrease substantially, thereby requiring an improved RF signal handling and filtering system in the cell site. Additionally, the difficulty in enabling multiple network standards will require enhancements to the operator s infrastructure. The Company believes that its products can be an effective element of solutions in these areas.

ANF Technology

One of the difficult tasks facing any wireless operator is the need to resolve interference that is from multiple sources, sporadic or quickly moving. Often, sources of interference prove difficult to locate due to their sporadic nature, and other times are beyond the operator s control (such as in the case of border sites). Regardless, in-band interference is a fast-growing problem, one that can substantially reduce the ability of the network to carry traffic.

With the acquisition of the ANF division of Lockheed Martin Canada Corporation during 2000 and subsequent development efforts, the Company owns proprietary technologies that monitor RF spectrum and block spontaneous interference occurring within that spectrum. This allows the Company to offer what it believes to be the only product in the world that locates and suppresses in-band interference in a CDMA carrier dynamically.

The Company has announced the expansion of the ANF platform to support network-wide deployment in metropolitan service areas. The more flexible platform now has the capability to scan and protect any combination of CDMA carriers in either A-band or B-band cellular networks, along with a web-based network management software package to allow operators to remotely monitor and manage large numbers of sites equipped with ANF technology. This web-based reporting feature provides customers a valuable tool for their use in managing their networks, and thus provides a strong competitive advantage to the ANF product line.

Based on customer feedback, the Company has further added to its ANF product line to include an ANF on Wheels . This is a rapidly deployable solution to combat immediate problems that also serves as a state-of-the-art reporting tool. Operators can utilize the reporting features of this product to gain critical information of interference events within their networks.

The Company plans to expand this product family beyond the traditional cellular bands (850 MHz), and into PCS (1900 MHz) and 3G bands. It also plans to significantly improve its platforms to allow for more ubiquitous deployments.

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RF² Technology

The Company launched its RF² product line during September 2003, and received commercial orders during the fourth quarter 2003. New products were added to this family during 2004, with purchase orders for those products received during 2004. The Company entered 2005 with more than $2 million in customer purchase orders for first quarter delivery related to data network requirements.

Designed for network-wide deployment, the RF² drastically reduces the noise figure in a base station, improving the ability of a base station to optimally process wireless signals. The impact of RF² is also felt on handsets in the form of reduced mobile transmit power and increased talk time while improving base station coverage. As a result, operators have fewer dropped calls, fewer connection failures, and most importantly, more satisfied customers. Higher-priced, more exotic solutions exist, such as HTS units (High Temperature Superconductor filters), yet the RF² has been shown to deliver performance generally comparable to HTS-based solutions.

The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the Company believes that the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company s products, particularly its RF² products, are modularly designed to assist in that requirement.

The Company also has the technology and experience in a number of HTS solutions that can be made available for the proper application, but has focused on the RF² as the value leader in the industry.

Professional Services

Over time, the Company has developed expertise in the area of radio link issues, including interference mitigation. This expertise is available to customers in the form of interference audits and analytical tools, thus allowing customers to focus their resources on running their networks instead of focusing on understanding interference problems.

HISTORY

The Company was founded in 1989 by ARCH Development Corporation, an affiliate of the University of Chicago, to commercialize superconductor technologies initially developed by Argonne National Laboratory. The Company was incorporated as Illinois Superconductor Corporation in Illinois on October 18, 1989 and reincorporated in Delaware on September 24, 1993. The Company shifted its focus from that of a superconductive filter provider to a customer-driven interference management company during 2001, changing its name to ISCO International, Inc. More recently, the Company has broadened its view to the optimization of the radio link of wireless networks. The Company s facilities and principal executive offices are located at 1001 Cambridge Drive, Elk Grove Village, Illinois 60007 and its telephone number is (847) 391-9400. The Company maintains a website at *http://www.iscointl.com*. The information contained therein is not incorporated into this annual report.

BUSINESS STRATEGY

The Company s strategic goal is to become the leading supplier of RF management and radio link optimization solutions to wireless operators. ISCO is seeking to accomplish its goal by:

Marketing its products aggressively to leading wireless operators;

Providing customers comprehensive radio link management infrastructure-based solutions for wireless networks;

Continuing to build on its strong intellectual property position and assert its rights therein; and

Outsourcing product manufacturing and reducing product cost.

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The Company is focusing its continuous efforts on winning the support of the world s leading wireless operators for its radio link optimization solutions. The Company believes that its ANF and RF² product families, as well as its professional service support and other products, make it a preeminent radio link management specialist in the market.

The Company currently outsources production for its products. Management believes that it can maintain or achieve targeted product gross margins and minimize capital needs while reducing product costs. Management further believes that offering the lowest product cost will further strengthen the Company s ability to achieve its strategic objectives.

LINK ISSUES, INCLUDING INTERFERENCE, AND WIRELESS SYSTEMS

Link issues are a growing problem limiting cell site coverage, capacity and range, as well as mobile transmit power and related battery-life issues. Link problems cause dropped calls, poor call quality, and other service problems that lead to subscriber dissatisfaction and turnover (churn). Interference enters a carrier s operating frequencies from such sources as: home electronic devices such as portable phones, two-way radios used by commercial enterprises and governmental agencies, air-to-ground radio, police, fire and emergency services radio, military radio, wireless data networking systems, television and radio broadcasts, radar and other cellular networks. Interference is also created by electrical sources used to power cellular base station equipment. Interference may begin within a particular frequency or migrate from another frequency. Increased usage of co-location (multiple providers using the same towers), increased sensitivity of non-voice applications, and the continued surge in wireless traffic result in increasing the impact of interference on wireless networks.

The Company believes the proliferation of wireless devices and high data rate services will exacerbate the amount of interference bombarding carriers operating frequencies. Conventional cellular base station equipment does not effectively cope with interference issues.

In the face of expanding subscriber bases, increased minutes of cell phone use, demand for high data rate services, the ease of customer churn due to number portability, restricted capital budgets and intense competition, the provisioning and optimization of wireless system infrastructure is a major challenge for operators. As a result of these industry conditions, wireless equipment manufacturers, including independent wireless technology companies and large original equipment manufacturers (OEM s) are working intensely to develop technologies that provide operators the tools necessary to monetize the growing demand for wireless services.

Using the Company s solutions to optimize the radio link and other RF aspects of the wireless network, including the mitigation of interference, the Company believes that operators can capture additional capacity and utilization, expand cell site range and coverage as well as reduce dropped calls to a fraction of what they were prior to the addition of the Company s equipment and to drastically improve overall call quality. Further, the addition of data has placed a tremendous strain on wireless networks, and the Company has encountered cases where its products enabled carriers (channels) to carry traffic where they could not do so without the Company s solutions. These issues, capacity and quality, have been presented as critical wireless operator issues in today s environment.

The Company estimates the economic payback to operators as a result of the use of the Company s solutions should occur in less than one year, depending on cell site traffic levels and dynamics. The Company believes that the short economic payback of its equipment compare favorably with other solutions and that the relatively low capital cost of the Company s products make its products the best value of all alternatives to system operators.

The higher data rates of 2.5G systems and 3G systems that are currently coming online (up to 10 to 100 times faster than current 2G networks), will require much cleaner signals to support data transfers and IP protocols (error rates typically 1,000 to 10,000 times better than current 2G specifications). As a result, management believes that system operators will eventually utilize the Company s solutions in a large number of their base stations.

The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company s products are designed to assist in that requirement.

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Target Market

The Company believes demand for its products will be primarily driven by the following factors:

1. Existing 2G networks are straining under heavy traffic. According to the Cellular Telecommunications & Internet Association, minutes per user per month increased from 136 minutes in 1998 to 403 minutes in 2002. The same source indicates that total cell phones in use in the United States increased from 4 million in 1990 to 168 million during 2004. According to industry sources, the worldwide number of subscribers using mobile wireless networks is increased from 308 million in 1998 to 1 billion in 2004, representing an annual compound growth rate of 21%. Regardless of the timing of the introduction of high data rate 2.5G and 3G systems, these trends will drive demand for infrastructure enhancements.

2. As wireless operators install their data-oriented 2.5G overlay networks on top of their existing 2G network, the Company believes data-networks will further strain systems resulting in the need for enhanced infrastructure-based solutions to optimize the radio link in order to achieve data and error rates specified.

3. Interference and coverage issues are primary causes of poor call quality, dropped and lost calls. The Company believes that as a result of increasing use of devices such as cellular phones, wireless data networking equipment, wireless consumer appliances and radar, wireless network operators are coming to view interference and coverage management technologies as necessary to protect against their customer bases migrating to other carriers (churn), an especially sensitive topic since number portability (the ability to retain one s phone number when changing wireless operators historically a barrier to changing providers) went into effect.

4. The Company believes that 3G wireless networks will require smaller operating cells and more base stations than existing cellular networks in order to cover the same geographic area. This is based on the requirement for high data rate transmission capability and cleaner error code criterion for 3G networks as well as the fact that transmissions at higher frequencies utilized by 3G networks (expected to operate in the 2100 MHz range) have shorter transmission waves as compared to lower frequency transmissions. Shorter transmission waves tend to limit the distance transmissions can travel without significant degradation.

5. The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the Company believes that the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company s products are modularly designed to assist in that requirement.

The 3G Opportunity: A True Wireless Internet

Existing wireless networks are based on technical architectures that were standardized in the late 1980s and early 1990s, and are highly optimized for processing voice signals. The guiding principle of 2G systems (including TDMA, GSM, and CDMA) is signal compression to achieve spectrum efficiency. The basic user data-rate in these networks is typically around 10 kb/s, which is adequate for telephony voice traffic.

3G standards are being developed to meet the needs for a true wireless Internet service. There are several competing versions of the 3G standard, including W-CDMA and cdma2000. These standards are broadly similar. They are based on wideband CDMA architecture, and will require the same general ultra-clean interference suppression solutions to achieve optimal performance. These new standards will allow for user data-rates of 500 kb/s and up to 2 MB/s *nearly two hundred times faster than previous 2G networks*. Moreover, 3G networks will have to support traffic patterns characteristic of Internet connectivity (always on service that may generate several hours of connect time per user per day) rather than today s short voice telephony patterns.

The Company believes itself to be a highly competent in differentiated technologies in radio link management and optimization. The Company s goal is to position itself to lead the industry in radio link optimization applications within wireless systems.

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TECHNOLOGY OVERVIEW

A wireless base station is roughly divided into two halves: the digital portion and the so-called RF portion.

The core expertise of ISCO is the application of technology and experience to wireless RF systems. The components in the receiver front-end are designed to acquire the desired information-bearing signal and pass it through to the digital portion of the system, where it is processed digitally and the user information is extracted. Typically, much of the signal is lost as it passes through the RF components. Further, undesired electromagnetic interference (inband and out of band) also leaks into the system due to imperfections in the characteristics of the RF devices.

The use of ISCO solutions for wireless RF systems is based on creating RF components which block or mitigate the impact of interference, optimize signal processing within the radio path while introducing very little signal loss or degradation, and help operators identify and resolve issues impacting performance.

RF² (Radio link Radio Frequency Fidelity)

The RF² product is a radio link low noise RF solution developed out of ISCO s years of experience with radio frequency and wireless base station performance needs. The RF² product is designed and priced for network wide deployment, improving base station coverage integrity and eliminating dead zones. The impact of RF² is also felt on the handset in the form of reduced mobile transmit power and increased talk time while improving base station coverage. As a result, operators have fewer dropped calls, fewer connection failures, and most importantly, more satisfied customers.

The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company s products are designed to assist in that requirement.

The RF² is easy to install, maintenance-free, and a fraction of the cost of more exotic solutions such as HTS. Additionally, it has been shown to deliver results generally comparable to HTS-based solutions without a cryogenic cooler or other moving parts that may degrade reliability. The Company believes that the ease of integration and value compete strongly with these and other solutions.

RF² Competition

OEM competition includes solutions such as adding a carrier to the CDMA cell sites (to increase capacity), cell splitting, or even adding an entirely new base station so as to add capacity and coverage. After-market competition includes repeaters, TMA s, and HTS receiver front ends, as well as duplexers and other non-integrated solutions. As with the OEM-based solutions, these products may generally improve the coverage of the network, but don t offer the value of the Company s fully integrated link management solutions.

Adaptive Notch Filters

The Company offers ANF product solutions that continually scan a segment of RF spectrum for interference and block that interference within milliseconds per carrier (channel). The blocking feature is in place as long as needed for noise suppression. These products are especially useful in dealing with sporadic in-band interference as they adapt the Company s interference-management technology to the dynamic environment. The complementary nature of these products with the Company s RF² solutions offers complete radio link optimization solutions to its customers, rather than force customers to try to isolate the primary cause of problems prior to looking for an effective solution.

ISCO s ANF solutions substantially reduce or eliminate altogether the effects of such in-band interference. Each ANF unit continuously monitors up to all seven available CDMA carriers (or seven 1.25MHz channels) being

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utilized for service, identifying and eliminating narrow-band interferers within the channel whenever and wherever they occur. By dynamically notching out this in-band interference, the coverage integrity and supportable capacity of the cell site are maintained as designed during the network build out. As a direct consequence, the ANF product thereby recovers lost minutes of use, reduces the number of dropped calls and failed call attempts. An entire network of ANF hardware can be managed via the web-based management software that supports the hardware.

The current product is focused on CDMA networks. A product evolution path is planned to extend the range of applications to wide-band CDMA systems (W-CDMA). During 2004, the Company launched an outdoor application of this product. This has expanded the Company s addressable market, as certain base stations are located in outdoor configurations.

ISCO s ANF solution dynamically identifies and eliminates direct in-band interference in the radio link of a wide-band system such as CDMA. When such interference is present without being eliminated, the radio link of such a system will be significantly reduced, often to the point of not allowing any calls on the entire CDMA channel. The ANF unit continuously monitors the power spectral density across the CDMA carriers in use and identifies narrow-band interference in the band of interest. The severity of multiple in-band interferers is prioritized, and the ANF unit dynamically inserts a highly selective notch to eliminate multiple interferers with minimal impact on the desired broadband signal. A single ANF unit supports both the main and diversity paths of a single sector within the cell sites.

ISCO has also developed a network-wide, web-based network management tool (web monitor), allowing its customers to perform management functions for all ANF units throughout the system. This tool with a graphical user interface allows the service provider to control, configure, and monitor the ANF units remotely from the network management center. This includes:

- Remote configuration of parameters within all ANF units
- Remote monitoring of alarm status for all ANF units
- Observe interference and notch activity from all units
- View on-line event data and reports based on measured performance data

ISCO has industry leading expertise in the optimization of CDMA networks. To facilitate rapid penetration of ANF, ISCO is offering professional services to the service providers engineering team to identify and quantify interference, and, its effects on network performance. ISCO has already developed the following custom software and hardware tools to perform interference analysis and interference audit. iSMART (Interference from System Metric Analysis Rules Tool): This software tool enables a service provider to identify potential ANF candidate sectors/cell sites by analyzing the system performance metrics data generated in their CDMA network. Automated Test Equipment, ANF-on-wheels and ANF Web Monitor: This software/hardware combination allows the Company to perform interference audit at cell sites of service providers regardless of the frequency band of operation. This service helps quantify interference and identify new markets (frequency bands) with high interference.

ANF competition

ISCO holds proprietary technology on ANF but there are alternative solutions that can be categorized as either direct or indirect competition. Direct competition is defined as products that directly address the problem of the issue at hand, namely in-band interference. Indirect competition is categorized as other wireless communication products that do not directly solve the problem of in-band interference, but may be perceived as an alternate solution by service providers. Base-station manufacturers are referred to as the OEMs, whereas manufacturers of auxiliary equipment to augment the base station are referred to as After-Market Vendors.

Direct Competition *After-Market Vendors*

Fixed-frequency notch filters are the main form of direct competition. However, these will only work in a static interference environment, and hence do not satisfy the need of dynamic interference detection and elimination as observed in a vast majority of in-band interference scenarios. Smart antennas were also developed with the intent

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of in-band interference mitigation. However, the Company believes these solutions have limited applicability and effectiveness in eliminating in-band interference, particularly in a CDMA-based network, and are typically substantially more expensive (in addition to being less effective) than ISCO s ANF solution.

Direct Competition OEMs

Digital-signal-processing based solutions may be under development by the various OEMs. Even if the manufacturers do develop such a solution for in-band interference, the Company believes that they would have limited dynamic range and hence would only be able to mitigate low-power interference.

Indirect Competition OEMs

Indirect competition does not directly address the problem of in-band interference, but could be viewed as a method for circumventing the problem without addressing the issues at hand. Some of these are based solely on OEM-based hardware, such as adding a carrier to the CDMA cell sites (to increase capacity), cell splitting, or even adding an entirely new base station so as to add capacity and higher signal-to-noise in a particularly problematic location. However, the Company believes these solutions to be very costly, and, while providing more absolute network capacity, do not guarantee increased performance due to the limiting effects of in-band interference.

Indirect Competition After-Market Vendors

Other forms of indirect competition include repeaters, TMA s, and HTS receiver front ends. As with the OEM-based solutions, the Company does not believe these to directly address the problem of in-band interference, but may generally improve the coverage of the network.

Product Benefits

The Company s products are designed to address the high performance RF needs of domestic and international commercial wireless telecommunication systems by providing the following advantages:

Enable Launch of Data Networks. Beginning in 2005, The Company s solutions are being utilized with data network deployments. These launches require upgrades and changes to existing infrastructure. The Company s products have proven effective in helping customers in this area. It is expected that data networks will be widely deployed, in the United States and elsewhere, during 2005 and beyond.

Technology Integration due to Expansion or Consolidation. The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the Company believes that the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company s products are modularly designed to

assist in that requirement.

Greater Network Capacity and Utilization. The Company s solutions can increase capacity and utilization by up to 70% or more. In some cases, capacity increases because channels which were previously unusable due to interference are recovered. In other cases, system utilization increases because of lower levels of blocked or dropped calls, and increases in the ability of the system to permit weak signals to be processed with acceptable call quality. In CDMA systems, increased capacity frequently results from lowering the system s noise floor.

Improved Base Station Range. The Company s RF systems can extend the radio link range of a wireless system by up to 30% or more. Greater range can reduce a service operator s capital expenditure per customer in lower density areas by filling in coverage gaps in existing systems or by reducing the number of required cell sites for new system deployments.

Improved Flexibility in Locating Base Stations. The Company s RF products can allow wireless telecommunications service providers to co-locate base stations near other RF transmitters. The Company s products allow the cell site radio to better tolerate RF interference while reducing out-of band signals that could interfere with other nearby wireless telecommunication operators.

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Improved Call Quality Fewer Dropped Calls and Failed Connection Attempts. The Company s products improve call quality by reducing dropped and blocked calls. During commercial installations, the Company s RF products have demonstrated drastic reduction in dropped calls, by as much as 50% or more. The Company s products similarly reduce the number of ineffective connection attempts and dead zones within networks.

Reduced Mobile Transmit Power. By improving the radio link, reducing the system s noise floor and mitigating the destructive impact of interference, the Company s solutions greatly reduce required mobile transmit power. This improves battery life, among other benefits.

COMPANY HIGHLIGHTS

Sales and Marketing

Until recently, the Company had historically focused its sales and marketing effort on U.S. wireless service providers for retrofit applications. To date, the Company has sold its products to many of the largest cellular operators in the United States as well as to mid-size and smaller U.S. wireless operators.

Recently, the Company has started targeting certain international customers, marketing both its existing products and presenting the benefits of its interference-management technology in the design and early stages of new systems for 2.5G and 3G Systems.

Manufacturing

The Company emphasizes the outsourcing of its manufacturing processes in order to provide predictable product yields and easy expansion to meet increased customer demand. Toward that end, the Company currently produces all of its ANF and RF² products through third party manufacturers. The Company believes there are multiple sources available for manufacturing and foresees no problem continuing to apply its outsourcing strategy. The Company s internal manufacturing capability can be found in Elk Grove Village, IL.

Research and Development

The Company s R&D efforts have been focused on developing and improving RF products for wireless telecommunications systems. As a result of such efforts, product performance has been improved, product size has been reduced, production costs have been lowered, product functionality has been increased, and product packaging has been streamlined. While the Company expects to continue to invest in R&D to further improve and adapt its products to meet and exceed market expectations, and will continue to develop new technology-based solutions, this is expected to require significantly less capital than in the past (prior to 2002) as the combination of application development and technology development is expected to be more efficient than the initial development of products and technologies. The Company also intends to develop related products that are synergistic with its core offerings and which utilize the Company s core technical competencies in the radio link management arena.

The Company s total R&D expenses during 2002, 2003 and 2004 were approximately $2,737,000, $988,000, and $1,119,000, respectively.

Intellectual Property and Patents

The Company regards certain elements of its product design, fabrication technology and manufacturing process as proprietary and protects its rights in them through a combination of patents, trade secrets and non-disclosure agreements. The Company also has obtained exclusive and non-exclusive licenses for technology developed with or by its research partners, Argonne National Laboratory (Argonne) and Northwestern University, and expects to continue to obtain licenses from such research partners and others. The Company believes that its success will depend in part upon the protection of its proprietary information, its patents and licenses of key technologies from third parties, and its ability to operate without infringing on the proprietary rights of others.

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HTS Technology

The Company spent many years developing HTS applications, resulting in a number of products, processes and materials related to HTS. This experience has helped the Company offer its current set of state of the art solid-state solutions, and the underlying technology is being utilized in the marketplace today and may be more fully utilized in the future.

There are two ways of designing an HTS component thin-film and thick-film techniques. The Company has technologies in both aspects that may have application to specific, but currently limited markets. The Company is prepared to address those segments should the opportunity present itself, but currently has chosen to focus on higher value-added, solid state solutions appropriate for the wireless telecommunications application.

Patents

The Company has internally applied for patents and acquired patents, through assignment of a license from the Canadian government, in connection with the purchase of the Adaptive Notch Filtering business unit of Lockheed Martin Canada. One of the Company s patents is jointly owned with Lucent Technologies, Inc. Furthermore, the Company expects to pursue foreign patent rights on certain of its inventions and technologies critical to its products. Please refer to Note 2 of our Financial Statements for a discussion of patent useful lives and amortization.

Government Regulations

Although the Company believes that its wireless telecommunications products themselves are not licensed or governed by approval requirements of the Federal Communications Commission (FCC), the operation of base stations is subject to FCC licensing and the radio equipment into which the Company s products would be incorporated is subject to FCC approval. Base stations and the equipment marketed for use therein must meet specified technical standards. The Company s ability to sell its RF products is dependent on the ability of wireless base station equipment manufacturers and of wireless base station operators to obtain and retain the necessary FCC approvals and licenses. In order to be acceptable to base station equipment manufacturers and to base station operators, the characteristics, quality, and reliability of the Company s base station products must enable them to meet FCC technical standards.

The Company may use certain hazardous materials in its research, development and any manufacturing operations. As a result, the Company may be subject to stringent federal, state and local regulations governing the storage, use and disposal of such materials. It is possible that current or future laws and regulations could require the Company to make substantial expenditures for preventive or remedial action, reduction of chemical exposure, or waste treatment or disposal. The Company believes it is in material compliance with all environmental regulations and to date the Company has not had to incur significant expenditures for preventive or remedial action with respect to the use of hazardous materials.

Employees

As of January 15, 2005, the Company had a total of 23 employees, 6 of whom hold advanced degrees. Of the employees, 2 are engaged in manufacturing and production, 8 are engaged in research, development and engineering, and 7 are engaged in marketing and sales, and 6 are engaged in finance and administration. Additionally, a former employee provides consulting services within the marketing/sales function. The Company also periodically employs other consultants and independent contractors on as as-needed basis. None of the Company s employees are covered by a collective bargaining agreement. The Company believes its relationship with its employees is good.

FORWARD- LOOKING STATEMENTS

Because ISCO International, Inc. (ISCO or ISCO International or Company) wants to provide investors with more meaningful and useful information, this Annual Report on Form 10-K (Form 10-K) contains, and incorporates by reference, certain forward-looking statements that reflect the Company s current expectations regarding its future results of operations, performance and achievements. The Company has tried, wherever

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possible, to identify these forward-looking statements by using words such as anticipates, believes, estimates, expects, designs, plans, in and similar expressions. These statements reflect the Company s current beliefs and are based on information currently available to the Company. Accordingly, these statements are subject to certain risks, uncertainties and contingencies, including the factors set forth under the caption Risk Factors, which could cause the Company s actual results, performance or achievements for 2005 and beyond to differ materially from those expressed in, or implied by, any of these statements. You should not place undue reliance on any forward-looking statements. Except as otherwise required by federal securities laws, the Company undertakes no obligation to release publicly the results of any revisions to any such forward-looking statements that may be made to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

RISK FACTORS

The following factors, in addition to other information contained herein, should be considered carefully in evaluating the Company and its business.

RISKS RELATED TO THE OPERATIONS AND FINANCING OF THE COMPANY

History of Losses Raises Doubts About Ability to Continue as a Going Concern

The Company was founded in October 1989 and through 1996 was engaged principally in research and development, product testing, manufacturing, marketing and sales activities. It has incurred net losses since inception. As of December 31, 2004, the accumulated deficit was approximately $157 million. The Company has only recently begun to generate revenues from the sale of its ANF and RF² products. Accordingly, although management has announced the expectation of improvement during 2005, it is nonetheless possible that the Company may continue to experience net losses and cannot be certain if or when the Company will become profitable.

These conditions raise substantial doubt about the Company s ability to continue as a going concern. The accompanying consolidated financial statements have been prepared assuming the Company will continue as a going concern and do not include any adjustments relating to the recoverability of reported assets or liabilities should the Company be unable to continue as a going concern.

Future Capital Needs

To date, the Company has financed its operations primarily through public and private equity and debt financings, and most recently through financings with affiliates of its two largest shareholders. The Company believes that it has sufficient funds to operate its business as identified herein into the third quarter 2005, and very possibly longer, subject to working capital or other needs. The Company intends to look into augmenting its existing capital position by continuing to evaluate potential short-term and long-term sources of capital whether from debt, equity, hybrid, or other methods.

The Company s continued existence is therefore dependent upon its continued ability to raise funds through the issuance of its securities or borrowings, and its ability to acquire assets or satisfy liabilities by the issuance of stock. Management s plans in this regard are to obtain other debt and equity financing until such time as the Company s profitable operation and positive cash flow are achieved and maintained.

Although management believes, based on the fact that it has raised funds through sales of common stock and from borrowings over the past several years, that it will be able to secure suitable additional financing for the Company s operations, there can be no guarantee that such financing will continue to be available on reasonable terms, or at all. As a result, there is no assurance that the Company will be able to continue as a going concern.

The actual amount of future funding requirements will depend on many factors, including: the amount and timing of future revenues, the level of product marketing and sales efforts to support the Company s commercialization plans, the magnitude of research and product development programs, the ability to improve or maintain product margins, and the costs involved in protecting patents or other intellectual property.

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Limited Experience in Manufacturing, Sales and Marketing and Dependence on Third Party Manufacturers

For the Company to be financially successful, it must either manufacture its products in substantial quantities, at acceptable costs and on a timely basis or enter into an outsourcing arrangement with a qualified manufacturer that will allow it the same. Currently, the Company s manufacturing requirements are met by third party contract manufacturers. The efficient operation of the Company s business will depend, in part, on its ability to have these and other companies manufacture its products in a timely manner, cost effectively and in sufficient volumes while maintaining the required quality. Any manufacturing disruption could impair the Company s ability to fulfill orders and could cause us to lose customers.

In the event that it is unable to enter into a manufacturing arrangement on acceptable terms with a qualified manufacturer, the Company would have to produce the products in commercial quantities in its own facilities. Although to date the Company has produced limited quantities of its products for commercial installations and for use in development and customer field trial programs, production of large quantities of its products at competitive costs presents a number of technological and engineering challenges. The Company may be unable to manufacture such products in sufficient volume. The Company has limited experience in manufacturing, and substantial costs and expenses may be incurred in connection with attempts to manufacture larger quantities of the Company s products. The Company may be unable to make the transition to large-scale commercial production successfully.

The Company s sales and marketing experience to date is very limited. The Company may be required to further develop its marketing and sales force in order to effectively demonstrate the advantages of its products over other products. The Company also may elect to enter into arrangements with third parties regarding the commercialization and marketing of its products. If the Company enters into such agreements or relationships, it will be substantially dependent upon the efforts of others in deriving commercial benefits from its products. The Company may be unable to establish adequate sales and distribution capabilities, it may be unable to enter into marketing arrangements or relationships with third parties on financially acceptable terms, and any such third party may not be successful in marketing the Company s products. There is no guarantee that its sales and marketing effort will be successful.

Management of Growth

Growth may cause a significant strain on the Company s management, operational, financial and other resources. The ability to manage growth effectively may require the Company to implement and improve its operational, financial, manufacturing and management information systems and expand, train, manage and motivate employees. These demands may require the addition of new management personnel and the development of additional expertise by management. Any increase in resources devoted to product development and marketing and sales efforts could have an adverse effect on financial performance in future fiscal quarters. If the Company were to receive substantial orders, it may have to expand current facilities, which could cause an additional strain on the Company s management personnel and development resources. The failure of the management team to effectively manage growth could have a material adverse effect on the Company s business, operating results and financial condition.

RISKS RELATED TO THE COMPANY S COMMON STOCK AND CHARTER PROVISIONS

Volatility of Common Stock Price

The market price of the Company s common stock, like that of many other high-technology companies, has fluctuated significantly and is likely to continue to fluctuate in the future. Since January 1, 1999 and through December 31, 2004, the closing price of its common stock has ranged from a low of $0.10 per share to a high of $39.00 per share, but its common stock has not traded above $1.07 per share during 2004. Announcements by us or others regarding the receipt of customer orders, quarterly variations in operating results, acquisitions or divestitures, additional equity or debt financings, results of customer field trials, scientific discoveries, technological innovations, litigation, product developments, patent or proprietary rights, government regulation and general market conditions may have a significant impact on the market price of the common stock. In addition, fluctuations in the price of the Company s common stock could affect the Company s ability to maintain the listing of its common stock on the American Stock Exchange.

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Risk of Dilution

As of December 31, 2004, the Company had outstanding options to purchase 9.1 million shares of common stock at a weighted average exercise price of $0.40 per share (2.7 million of which have not yet vested) issued to employees, directors and consultants pursuant to the 2003 Equity Incentive Plan and its predecessor 1993 Stock Option Plan, as amended, the merger agreement with Spectral Solutions, and individual agreements with management and directors. In order to attract and retain key personnel, the Company may issue additional securities, including stock options, in connection with or outside the Company s employee benefit plans, or may lower the price of existing stock options.

The exercise of options and warrants for common stock and the issuance of additional shares of common stock and/or rights to purchase common stock at prices below market value would be dilutive to existing stockholders and may have an adverse effect on the market value of the common stock.

Concentration of the Company s Stock Ownership

At the time of this filing, officers, directors and principal stockholders (holding greater than 5% of outstanding shares) together control approximately 40% of the outstanding voting power. Consequently, these stockholders, if they act together, would be able to exert significant influence over all matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. In addition, this concentration of ownership may delay or prevent a change of control of the Company, even if a change may be in the best interests of the Company s stockholders. The interests of these stockholders may not always coincide with the interests of the Company s or the interests of other stockholders. Accordingly, these stockholders could cause the Company to enter into transactions or agreements that it would not otherwise consider.

Anti-Takeover Provisions

There exist certain arrangements which may be deemed to have a potential anti-takeover effect in that such provisions may delay, defer or prevent a change of control of the Company. In February 1996, the Board of Directors adopted a stockholders rights plan. In addition, the Company s Certificate of Incorporation and By-Laws provide that (i) the Board of Directors has authority to issue series of the Company s preferred stock with such voting rights and other powers as the Board of Directors may determine and (ii) prior specified notice must be given by a stockholder making nominations to the Board of Directors or raising business matters at stockholders meetings. The effect of the rights plan and the anti-takeover provisions in charter documents may be to deter business combination transactions not approved by the Company s Board of Directors, including acquisitions that may offer a premium over market price to some or all stockholders. The Company s Board of Directors has expressed the intent to allow this plan to expire by its terms during February 2006.

The Board of Directors also recommended to the shareholders that staggered director terms be eliminated, such that all directors are to be elected annually. The Company s shareholders approved this amendment to the Company s Certificate of Incorporation during the annual meeting of shareholders held during December 2004.

TECHNOLOGY AND MARKET RISKS

The Company is dependent on wireless telecommunications.

The principal target market for the Company s products is wireless telecommunications. The devotion of substantial resources to the wireless telecommunications market creates vulnerability to adverse changes in this market. Adverse developments in the wireless telecommunications market, which could come from a variety of sources, including future competition, new technologies or regulatory decisions, could affect the competitive position of wireless systems. Any adverse developments in the wireless telecommunications market may have a material adverse effect on the Company s business, operating results and financial condition.

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The Company is dependent on the enhancement of existing 2G and 2.5G networks and the build-out of 3G networks, and the capital spending patterns of wireless network operators.

Increased sales of products is dependent on a number of factors, one of which is the build-out of third generation, or 3G, enabled wireless communications networks as well as enhancements of existing infrastructure. Building wireless networks is capital intensive, as is the process of upgrading existing second generation, 2G, equipment. Further, the capital spending patterns of wireless network operators is beyond management s control and depends on a variety of factors, including access to financing, the status of federal, local and foreign government regulation and deregulation, changing standards for wireless technology, the overall demand for wireless services, competitive pressures and general economic conditions. The build-out of 2.5G and 3G enabled networks may take years to complete. The magnitude and timing of capital spending by these operators for constructing, rebuilding or upgrading their systems significantly impacts the demand for the Company s products. Any decrease or delay in capital spending patterns in the wireless communication industry, whether because of a general business slowdown or a reevaluation of the prospective demand for 2.5G and 3G services, would delay the build-out of these networks and may significantly harm business prospects.

The Company s success depends on the market s acceptance of its products.

The Company s RF products, including its ANF and RF² products, have not been sold in very large quantities and a sufficient market may not develop for these products. Customers establish demanding specifications for performance, and although the Company believes it has met or exceeded these specifications to date, there is no guarantee that the wireless service providers will elect to use these solutions to solve their wireless network problems. Although the Company has received several orders from wireless operators for the Company s products over the past year, including a record backlog entering 2005, there is no assurance that it will continue to receive orders from these customers.

Rapid technological change and future competitive technologies could negatively affect operations.

The field of telecommunications is characterized by rapidly advancing technology. The Company s success will depend in large part upon its ability to keep pace with advancing its high performance RF technology and efficient, readily available low cost materials technologies. Rapid changes have occurred, and are likely to continue to occur, in the development of wireless telecommunications. Development efforts may be rendered obsolete by the adoption of alternative solutions to current wireless operator problems or by technological advances made by others.

BUSINESS RISKS

Dependence on a Limited Number of Customers

Sales to three of the Company s customers accounted for 94% and 98% of the Company s total revenues for 2004 and 2003, respectively. During 2004 the top three customers were Verizon Wireless, U.S. Cellular Corporation, and Pelephone Communications Ltd., respectively. In addition, a significant amount of the Company s technical and managerial resources have been focused on working with these and a limited number of other operators and OEMs.

The Company expects that if its products achieve market acceptance, a limited number of wireless service providers and OEMs will account for a substantial portion of revenue during any period. Sales of many of the Company s products depend in significant part upon the decision of prospective customers and current customers to adopt and expand their use of these products. Wireless service providers, wireless equipment OEMs and the Company s other customers are significantly larger than, and are able to exert a high degree of influence over the Company. Customers orders are affected by a variety of factors such as new product introductions, regulatory approvals, end user demand for wireless services, customer budgeting cycles, inventory levels, customer integration requirements, competitive conditions and general economic conditions. The failure to attract new customers would have a material adverse effect on the Company s business, operating results and financial condition.

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Lengthy Sales Cycles

Prior to selling products to customers, the Company may be required to undergo lengthy approval and purchase processes. Technical and business evaluation by potential customers can take up to a year or more for products based on new technologies. The length of the approval process is affected by a number of factors, including, among others, the complexity of the product involved, priorities of the customers, budgets and regulatory issues affecting customers. The Company may not obtain the necessary approvals or ensuing sales of such products may not occur. The length of customers approval process or delays could make the Company s quarterly revenues and earnings inconsistent and difficult to trend.

Dependence on Limited Sources of Supply

Certain parts and components used in the Company s RF products are only available from a limited number of sources. The Company s reliance on these limited source suppliers exposes it to certain risks and uncertainties, including the possibility of a shortage or discontinuation of certain key components and reduced control over delivery schedules, manufacturing capabilities, quality and costs. Any reduced availability of such parts or components when required could materially impair the ability to manufacture and deliver products on a timely basis and result in the cancellation of orders, which could have a material adverse effect on the business, operating results and financial condition.

In addition, the purchase of certain key components involves long lead times and, in the event of unanticipated increases in demand for its products, the Company may be unable to manufacture products in quantities sufficient to meet customers demand in any particular period. The Company has few guaranteed supply arrangements with its limited source suppliers, does not maintain an extensive inventory of parts or components, and customarily purchases parts and components pursuant to actual or anticipated purchase orders placed from time to time in the ordinary course of business.

Related to this topic, the Company produces substantially all of its products through third-party contract manufacturers. Like raw materials, the elimination of any of these entities or delays in the fulfillment process, for whatever reason, may impact the Company s ability to fulfill customer orders on a timely basis and may have a material adverse effect on the Company s business, operating results, or financial condition.

To satisfy customer requirements, the Company may be required to stock certain long lead-time parts and/or finished product in anticipation of future orders, or otherwise commit funds toward future purchase. The failure of such orders to materialize as forecasted could limit resources available for other important purposes or accelerate the requirement for additional funds. In addition, such excess inventory could become obsolete, which would adversely affect financial performance. Business disruption, production shortfalls or financial difficulties of a limited source supplier could materially and adversely affect the Company by increasing product costs or reducing or eliminating the availability of such parts or components. In such events, the inability to develop alternative sources of supply quickly and on a cost-effective basis could materially impair the ability to manufacture and deliver products on a timely basis and could have a material adverse effect on the Company s business, operating results and financial condition.

Dependence on Key Personnel

The Company s success will depend in large part upon its ability to attract and retain highly qualified management, engineering, manufacturing, marketing, sales and R&D personnel. Due to the specialized nature of the Company s business, it may be difficult to locate and hire qualified

personnel. The loss of services of one of the Company s executive officers or other key personnel, or the failure to attract and retain other executive officers or key personnel, could have a material adverse effect on the Company s business, operating results and financial condition.

Failure of products to perform properly might result in significant warranty expenses.

In general, the Company s products carry a warranty of one or two years, limited to replacement of the product or refund of the cost of the product. In addition, the Company offers its customers extended warranties. Repeated or widespread quality problems could result in significant warranty expenses and/or the loss of customer confidence. The occurrence of such quality problems could have a material adverse effect on the Company s business, operating results and financial condition.

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Intense competition, and increasing consolidation in the Company s industry, could create stronger competitors and harm the business.

The wireless telecommunications equipment market is very competitive. Many of these companies have substantially greater financial resources, larger research and development staffs and greater manufacturing and marketing capabilities than the Company. Its products compete directly with products which embody existing and future competing commercial technologies. Other emerging wireless technologies, may also provide protection from RF interference and offer enhanced range to wireless communication service providers, potentially at lower prices and/or superior performance, and may therefore compete with the Company s products. High performance RF solutions may not become a preferred technology to address the needs of wireless communication service providers. Failure of its products to improve performance sufficiently, reliably, or at an acceptable price or to achieve commercial acceptance or otherwise compete with existing and new technologies, would have a material adverse effect on the Company s business, operating results and financial condition.

LEGAL RISKS

Intellectual Property and Patents

The Company s success will depend in part on its ability to obtain patent protection for its products and processes, to preserve trade secrets and to operate without infringing upon the patent or other proprietary rights of others and without breaching or otherwise losing rights in the technology licenses upon which any of the Company s products are based. The Company has internally applied for patents and acquired patent rights in connection with the purchase of the Adaptive Notch Filtering business unit of Lockheed Martin Canada. One of the patents is jointly owned with Lucent Technologies, Inc. The Company believes there are a large number of patents and patent applications covering RF products and other products and technologies that it is pursuing. Accordingly, the patent positions of companies using RF technologies, including the Company, are uncertain and involve complex legal and factual questions. The patent applications filed by the Company or others may not result in issued patents or the scope and breadth of any claims allowed in any patents issued to the Company or others may not exclude competitors or provide competitive advantages. In addition, patents issued to the Company, its subsidiaries or others may not be held valid if subsequently challenged or others may claim rights in the patents and other proprietary technologies owned or licensed by the Company. Others may have developed or may in the future develop similar products or technologies without violating any of the Company s proprietary rights. Furthermore, the loss of any license to technology that the Company might acquire in the future may have a material adverse effect on the Company s business, operating results and financial condition.

Some of the patents and patent applications owned by us are subject to non-exclusive, royalty-free licenses held by various U.S. governmental units. These licenses permit these U.S. government units to select vendors other than us to produce products for the U.S. Government, which would otherwise infringe the Company s patent rights that are subject to the royalty-free licenses. In addition, the U.S. Government has the right to require us to grant licenses (including exclusive licenses) under such patents and patent applications or other inventions to third parties in certain instances.

Older patent applications in the U.S. are currently maintained in secrecy until patents are issued. In foreign countries and for newer U.S. patent applications, this secrecy is maintained for a period of time after filing. Accordingly, publication of discoveries in the scientific literature or of patents themselves or laying open of patent applications in foreign countries or for newer U.S. patent applications tends to lag behind actual discoveries and filing of related patent applications. Due to this factor and the large number of patents and patent applications related to RF materials and technologies, and other products and technologies that the Company is pursuing, comprehensive patent searches and analyses associated with RF technologies and other products and technologies that the Company is pursuing are often impractical or not cost-effective. As a result, patent and literature searches cannot fully evaluate the patentability of the claims in its patent applications or whether materials or processes used by the Company for its planned products infringe or will infringe upon existing technologies described in U.S. patents or may infringe

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upon claims in patent applications made available in the future. Because of the volume of patents issued and patent applications filed relating to RF technologies and other products and technologies that it is pursuing, the Company believes there is a significant risk that current and potential competitors and other third-parties have filed or will file patent applications for, or have obtained or will obtain, patents or other proprietary rights relating to materials, products or processes used or proposed to be used by the Company. In any such case, to avoid infringement, it would have to either license such technologies or design around any such patents. The Company may be unable to obtain licenses to such technologies or, if obtainable, such licenses may not be available on terms acceptable to the Company or the Company may be unable to successfully design around these third-party patents.

Participation in litigation or patent office proceedings in the U.S. or other countries, which could result in substantial cost to and diversion of effort by the Company, may be necessary to enforce patents issued or licensed to it, to defend itself against infringement claims made by others or to determine the ownership, scope or validity of the proprietary rights of the Company and others. The parties to such litigation may be larger, better capitalized than the Company and better able to support the cost of litigation. An adverse outcome in any such proceedings could subject the Company to significant liabilities to third parties, require it to seek licenses from third parties and/or require it to cease using certain technologies, any of which could have a material adverse effect on the Company s business, operating results and financial condition.

Litigation

The Company has been subject to a number of lawsuits in the past, though none are active as of the date of this filing (March 2005). If the Company is not successful in defending itself against whatever claims and charges may be made against it in the future there may be a material and adverse effect on the Company s business, operating results and financial condition.

Government Regulations

Although the Company believes that its wireless telecommunications products themselves would not be subject to licensing by, or approval requirements of, the FCC, the operation of base stations is subject to FCC licensing and the radio equipment into which the Company s products would be incorporated is subject to FCC approval. Base stations and the equipment marketed for use therein must meet specified technical standards. The ability to sell the Company s wireless telecommunications products is dependent on the ability of wireless base station equipment manufacturers and wireless base station operators to obtain and retain the necessary FCC approvals and licenses. In order for them to be acceptable to base station equipment manufacturers and to base station operators, the characteristics, quality and reliability of the Company s base station products must enable them to meet FCC technical standards. The Company may be subject to similar regulations of the Canadian federal and provincial governments. Any failure to meet such standards or delays by base station equipment manufacturers and wireless base station operators in obtaining the necessary approvals or licenses could have a material adverse effect on the Company s business, operating results and financial condition. In addition, certain RF filters are on the U.S. Department of Commerce s export regulation list. Therefore, exportation of such RF filters to certain countries may be restricted or subject to export licenses.

The Company is subject to governmental labor, safety and discrimination laws and regulations with substantial penalties for violations. In addition, employees and others may bring suit against it for perceived violations of such laws and regulations. Defense against such complaints could result in significant legal costs for us. Although the Company endeavors to comply with all applicable laws and regulations, it may be the subject of complaints in the future, which could have a material adverse effect on the Company s business, operating results and financial condition.

Environmental Liability

Certain hazardous materials may be in research, development and to the extent of any manufacturing operations. As a result, the Company is subject to stringent federal, state and local regulations governing the storage, use and disposal of such materials. It is possible that current or future laws and regulations could require it to make substantial expenditures for preventive or remedial action, reduction of chemical exposure, or waste treatment or disposal. The Company believes it is in material compliance with all environmental regulations and to date has not had to incur significant expenditures for preventive or remedial action with respect to the use of hazardous materials.

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However, the Company s operations, business or assets could be materially and adversely affected by the interpretation and enforcement of current or future environmental laws and regulations. In addition, although the Company believes that its safety procedures for handling and disposing of such materials comply with the standards prescribed by state and federal regulations, there is the risk of accidental contamination or injury from these materials. In the event of an accident, the Company could be held liable for any damages that result. Furthermore, the use and disposal of hazardous materials involves the risk that the Company could incur substantial expenditures for such preventive or remedial actions. The liability in the event of an accident or the costs of such actions could exceed available resources or otherwise have a material adverse effect on the business, results of operations and financial condition. The Company carries property and worker s compensation insurances in full force and effect through nationally known carriers which include pollution cleanup or removal and medical claims for industrial incidents.

RISKS RELATED TO ACQUISITIONS AND BUSINESS EXPANSION

Risks of Future Acquisitions

In the future, the Company may pursue acquisitions to obtain products, services and technologies that it believes will complement or enhance its current product or services offerings. At present, no agreements or other arrangements exist with respect to any such acquisition. An acquisition may not produce the revenue, earnings or business synergies as anticipated and may attach significant unforeseen liabilities, and an acquired product, service or technology might not perform as expected. If an acquisition is pursued, the Company s management could spend a significant amount of time and effort in identifying and completing the acquisition and may be distracted from the operations of the business. In addition, management would probably have to devote a significant amount of resources toward integrating the acquired business with the existing business, and that integration may not be successful.

International Operations

The Company is in discussions and has agreements in place with companies in non-U.S. markets to form manufacturing, product development joint ventures and other marketing, distribution or consulting arrangements. For example, the Company has a relationship with a Canadian manufacturing firm for the production of its ANF product. The Company does not believe that the loss of this manufacturing partner would significantly affect its operations. There are many such entities that exist domestically, and the Company s products were designed to be produced by any such entity, and not tied to one in particular.

The Company believes that non-U.S. markets could provide a substantial source of revenue in the future. However, there are certain risks applicable to doing business in foreign markets that are not applicable to companies doing business solely in the U.S. For example, the Company may be subject to risks related to fluctuations in the exchange rate between the U.S. dollar and foreign currencies in countries in which it does business. In addition, it may be subject to the additional laws and regulations of these foreign jurisdictions, some of which might be substantially more restrictive than similar U.S. ones. Foreign jurisdictions may also provide less patent protection than is available in the U.S., and the Company may be less able to protect its intellectual property from misappropriation and infringement in these foreign markets.

Item 2. Properties

The Company maintains its corporate headquarters in a 15,000 square foot building located in Elk Grove Village, Illinois under a lease which expires in October 2014. This facility houses the Company s manufacturing, research, development, engineering and marketing activities. The

Company believes that this facility is adequate and suitable for its current needs and that additional space would be available on commercial terms as necessary to meet any future needs.

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Item 3. Legal Proceedings

Patent Litigation

In July 2001, the Company filed suit in the United States District Court for the District of Delaware against Conductus, Inc. and Superconductor Technologies, Inc. alleging infringement of U.S. Patent No. 6,263,215, entitled Cryoelectronically Cooled Receiver Front End for Mobile Radio Systems (the 215 patent). This suit alleged that Conductus and Superconductor Technologies base station front-end systems containing cryogenically cooled superconducting filters infringe this patent. The Company sought a permanent injunction enjoining Conductus and Superconductor Technologies from marketing, selling or manufacturing these products, as well as triple damages and attorneys fees. Conductus and Superconductor Technologies denied these allegations and asked the court to enter a judgment that the patent is invalid and not infringed. Conductus and Superconductor Technologies also asserted the defense of inequitable conduct and a counterclaim for a declaration that the patent is unenforceable as well as federal and state law counterclaims, including claims of unfair competition. Conductus and Superconductor Technologies sought both compensatory and punitive damages as well as attorneys fees and costs.

On March 26, 2002, the Company replied to Conductus and Superconductor Technologies Second Amended Answer and Counterclaims and filed counterclaims alleging that Conductus and Superconductor Technologies also infringe U.S. Patent No. 6,104,934 entitled Cryoelectronic Receiver Front End and U.S. Patent No. 6,205,340 B1 entitled Cryoelectronic Receiver Front End For Mobile Radio Systems . On April 17, 2002, the court dismissed these (the Company s) counterclaims without prejudice to the Company s right to assert these counterclaims in a separate action.

On February 10, 2003, the court disposed of various motions for summary judgment filed by each party. The court denied Superconductor Technologies motion for summary judgment of invalidity of the 215 patent as well as Conductus motion for summary judgment limiting computation of damages to a reasonable royalty for sales to Dobson Communications, Inc. On Superconductor Technologies motion for summary judgment of non-infringement, the court granted the motion with respect to claim 13 of the 215 patent and otherwise denied the motion with respect to each of the other asserted claims. With regard to Conductus motion for summary judgment of non-infringement, the court granted the motion with respect to claim 13 of the 215 patent and otherwise denied the motion with respect to each of the other asserted claims. In addition, the court denied Conductus motion for summary judgment of invalidity of all asserted claims for causes of action existing prior to the date of issuance of the certificate of correction and of invalidity of claim 13. The court also denied the Company s motions for summary judgment that Superconductor Technologies internal projects are not prior art to the 215 patent and to dismiss the defendants counterclaims alleging unfair competition and interference with business relations.

On April 3, 2003, the jury returned with its verdict. The jury rejected the Company s positions and determined its patent to be invalid. Additionally, the jury determined that inequitable conduct had occurred and subsequently awarded defendants $3.87 million in damages from the Company. The Company was severely disappointed by this verdict and it engaged in the post-trial motion process to overturn it. On August 21, 2003, the court issued its ruling on the post-trial motions. The court overturned the jury s determination of unfair competition on the part of the Company and denied all requests for damages, including the $3.87 million jury award cited above. The court did not, however, overturn the jury determinations of patent invalidity and unenforceability based on inequitable conduct and denied the Company s motion for a new trial.

During September 2003, the Company filed an appeal of this verdict requesting the reinstatement of its patent and the rights inherent within that patent, and Superconductor Technologies, Inc. filed a cross-appeal requesting reinstatement of the jury award and attorney s fees. Each side filed various legal briefs during 2004, and ultimately participated in an in-person hearing on December 6, 2004.

On February 3, 2005, the Appellate Court issued its ruling. It did not find adequate grounds for reversal of the Trial Court decision, and thus maintained the verdict in favor of the defendant in allowing the patent to remain invalid and unenforceable and in favor of the Company in denying counterclaims for damages raised by the defendant. The Appellate Court s ruling concludes this matter.

In November 2001, the Company filed suit against Dobson Communications, Inc. for allegedly infringing this patent. The action was stayed, per agreement between the parties, until resolution of the matter between the

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Company and Conductus and Superconductor Technologies. The parties agreed that Dobson Communications will be bound by any and all final, non-appealable determinations, holdings or findings with respect to all liability issues in the Company s case against Conductus. The Appellate Court s ruling concludes the Dobson matter as well.

Item 4. Submission of Matters to a Vote of Security Holders

At our annual meeting of shareholders held on December 14, 2004, the following proposals were approved by the margins indicated:

		Voted For	Number of Shares	Withheld
1.	To elect two (2) Class II Directors, serve for three years subject to the term limitations inherent in proposal #2, and until a successor is elected and qualified:			
	Dr. Amr Abdelmonem	151,742,260		1,842,694
	Mr. Tom Powers	151,701,168		1,883,786

			Number of Shares	
		Voted For	Against	Withheld
2.	To approve an amendment to the Company s Certificate of Incorporation to eliminate the classification of directors	151,675,952	1,310,212	598,790
3.	To ratify the appointment of Grant Thornton LLP as the independent auditors of the Company s financial statements for the fiscal year ending December 31, 2004.	152,334,218	686,478	564,258

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PART II

Item 5. Market for Registrant s Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

The Common Stock has been quoted since June 2002 on the American Stock Exchange under the symbol ISO. Prior to that, and until April 1999, the stock had been quoted on the OTC Bulletin Board under the symbol ISCO. From 1993 until April 1999, the Common Stock was quoted on the NASDAQ National Market. The following table shows, for the periods indicated, the reported high and low sale prices for the Common Stock. Such prices reflect prices between dealers, without retail mark up, mark down, or commissions and may or may not reflect actual transactions.

	High	Low
FISCAL YEAR ENDING DECEMBER 31, 2003		
First Quarter	$ 0.46	$ 0.30
Second Quarter	$ 0.43	$ 0.11
Third Quarter	$ 0.62	$ 0.22
Fourth Quarter	$ 0.68	$ 0.18
FISCAL YEAR ENDING DECEMBER 31, 2004		
First Quarter	$ 1.07	$ 0.41
Second Quarter	$ 0.68	$ 0.25
Third Quarter	$ 0.40	$ 0.21
Fourth Quarter	$ 0.50	$ 0.23

On December 31, 2004, there were approximately 300 holders of record of the Common Stock. On such date the closing bid price for the Company s common stock as reported on the American Stock Exchange was $0.36.

Information regarding the Company s equity compensation plans is incorporated by reference to Item 12 of this Form 10K, which incorporates by reference the information set forth in the section entitled Equity Compensation Plan Information which is included in this document.

The Company has never paid cash dividends on the Common Stock and the Company does not expect to pay any dividends on its Common Stock in the foreseeable future.

There were no Recent Sales of Unregistered Securities

Item 6. Selected Financial Data

The following table presents selected consolidated financial data with respect to the Company as of and for the years ended December 31, 2000, 2001, 2002, 2003 and 2004. The selected consolidated financial data for each of the years in the five-year period ended December 31, 2004 have

been derived from the audited consolidated financial statements of the Company. The information set forth below should be read in conjunction with Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations and Item 8. Financial Statements and Supplementary Data.

	2000	2001	2002	2003	2004
CONSOLIDATED STATEMENT OF OPERATIONS DATA:					
Net sales	$ 495,885	$ 1,981,001	$ 3,662,805	$ 3,238,402	$ 2,621,933
Costs and expenses:					
Cost of sales	2,672,578	3,978,368	3,565,140	1,639,540	1,527,554
Research and development	3,187,768	7,131,654	2,737,084	988,425	1,119,406

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Selling and marketing	1,239,959	3,263,813	2,201,195	959,798	1,164,830
General and administrative	5,967,631	7,738,458	7,972,948	5,614,492	4,757,935
Goodwill amortization	704,165	2,009,974			
Operating loss	(13,276,216)	(22,141,266)	(12,813,562)	(5,963,853)	(5,947,792)
Other income (expense):					
Interest income	174,919	138,696	62,954	5,087	8,660
Interest expense	(5,650,572)	(229,568)	(327,224)	(1,197,309)	(1,028,169)
Other income (expense), net	(16,017)	(5,957,465)			
	(5,491,670)	(6,048,337)	(264,270)	(1,192,222)	(1,019,509)
Loss before extraordinary item	(18,767,886)	(28,189,603)	(13,077,832)	(7,156,075)	(6,967,301)
Extraordinary item-debt extinguishment	(28,297)				
Net loss	$ (18,796,183)	$ (28,189,603)	$ (13,077,832)	$ (7,156,075)	$ (6,967,301)
Basic and diluted loss per common share	$ (0.57)	$ (0.26)	$ (0.09)	$ (0.05)	$ (0.04)
Weighted average number of common shares outstanding	33,037,106	107,829,453	142,884,921	148,080,749	158,977,249
CONSOLIDATED BALANCE SHEET DATA:					
Cash and cash equivalents	$ 2,453,845	$ 1,720,697	$ 216,119	$ 346,409	$ 402,391
Working capital	3,096,173	658,661	1,333,827	735,840	992,925
Total assets	23,750,073	20,927,095	19,183,000	17,723,035	16,986,004
Long-term debt/capital lease obligations, less current portion	198	9,425,000	2,000,000	5,000,000	7,500,000
Stockholders equity (net capital deficiency)	21,644,211	7,975,219	15,380,306	10,943,247	7,247,635

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The Company settled the Siegler litigation during 2001 for a charge to Other Expense of $4.9 million. During 2000 the Company merged with two entities: Spectral Solutions, Inc. and the ANF division of Lockheed Martin Canada. Those mergers primarily increased the intellectual property of the Company, and generated financial results including the goodwill amortization shown during 2000 and 2001, as well as a majority of the approximately $1 million in restructuring costs shown in Other Expense during 2001. Beyond the integration of intellectual property and related matters, these mergers had a substantial impact on operating cost and total loss attributable through 2001, but little impact on the comparability of 2002, 2003 and 2004.

Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations

A NOTE CONCERNING FORWARD-LOOKING STATEMENTS

The discussion below contains certain forward-looking statements that reflect our current expectations regarding the Company s future results of operations, performance and achievements. Please see the discussion of such forward-looking statements under Forward Looking Statements in Item 1 above.

Overview

The Company has shifted from manufacturing in-house to an outsourced manufacturing model wherein the Company supplies raw materials to external parties and products are then completed. This system allows for the Company to outsource procurement in the future if it chooses to do so. Manufacturing partners then produce to specification with Company personnel on hand to assist with quality control. The Company s products are designed for efficient production in this manner, emphasizing solid-state electronics over mechanical devices with moving parts. The decrease in cost associated with these developments, coupled with enhanced product functionality, has allowed the Company to realize improved margins and significantly reduced overhead costs. Extensions of developed technology, based on substantial input from customers, have allowed the Company to launch the RF² product family and consider additional solutions while controlling total R&D cost.

The Company has announced several significant recent events, both during 2004 and early 2005, such as the resolution of the patent litigation, increased sales order quantities entering 2005, and the extension of its credit line debt maturity date from April 2005 to April 2006. Despite these improvements, the wireless telecommunications industry is subject to risks beyond the Company s control that can negatively impact customer capital spending budgets (as occurred during 2003) and/or spending patterns (as occurred during 2004). For these and other reasons, the Company s financial statements have been prepared assuming the Company will continue as a going concern.

As an after-market vendor, the Company s revenue has been sporadic, consistent with buying patterns of planning processes within wireless telecommunications carriers. In the past there has been a fourth quarter effect , wherein operators were forced to spend remaining budget or lose it going forward. With the advent of significant projects such as data networks, funds are often reallocated between periods and thus diminish the pool of funds available for normal activities. The Company s objective is to be included in these projects, and thus realize a higher, more stable revenue stream.

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Results of Operations

Years Ended December 31, 2004 and 2003

The Company s net sales decreased $616,000, or 19%, from $3,238,000 in 2003 to $2,622,000 in 2004, as a result of an industry-wide reduction in capital expenditures, particularly during the first half of 2004, in favor of next generation systems generally to be deployed during 2005 and beyond. Consistent with this event, the Company announced more than $2 million in orders received during 2004 that are scheduled for delivery during the first quarter 2005. The Company anticipates its net sales to increase during 2005, as compared to 2004, based on existing and/or anticipated customer orders. The Company announced the receipt of more customer orders for 2005 delivery by February 2005 than for all of 2004.

Cost of products sold decreased $112,000, or 7% from $1,640,000 in 2003 to $1,528,000 in 2004. This decrease is less than the decrease in revenue during the period, reflecting inefficiencies realized due to lower unit volumes. The cost of products sold for 2004 and 2003 consisted of direct material, labor and overhead costs associated with the products that were shipped during the period, as well as other costs consisting primarily of allocated overhead costs. The Company expects the cost of products sold as a percentage of revenue to decrease during 2005 due to anticipated revenue increases and related efficiencies, certain cost control initiatives including supply chain management, and primarily due to the continued emphasis on outsourcing the manufacture of its products. In absolute terms, the Company expects the total cost of products sold expense to increase during 2005 due to the expectation of higher revenues.

The Company s internally funded research and development expenses increased by $131,000, or 13%, from $988,000 in 2003 to $1,119,000 during 2004. This increase was due to the need to deploy resources in order to launch new products, particularly within the RF² product family, and broadly to support new product and next generation development for future release. The Company expects these costs to increase slightly during 2005 in connection with the development of new products.

Selling and marketing expenses increased $205,000, or 21%, from $960,000 during 2003 to $1,165,000 during 2004. This increase was due to the addition of additional resources in this area, as well as the expansion of marketing programs. The Company expects these costs to increase during 2005, consistent with expected increases in revenue.

General and administrative expenses decreased $856,000, or 15%, from $5,614,000 in 2003 to $4,758,000 during 2004. This decrease was due to the reduction in expenses in the patent litigation as described elsewhere in this report, as well as the classification of $350,000 in legal settlement expenses during 2003 that did not exist during 2004. The Company expects general and administrative expenses to decrease further during 2005 due to reduced litigation expenses.

Interest income increased $4,000, or 80%, from $5,000 in 2003 to $9,000 during 2004. This increase was due to the timing of payments and funding from the credit line. While operating under its uncommitted line of credit from October 2002 and beyond, the Company has not maintained, and does not expect to maintain, significant amounts of cash on which interest may be earned.

Interest and warrant expense decreased $169,000, or 14%, from $1,197,000 in 2003 to $1,028,000 during 2004. The Company borrowed $2 million during the fourth quarter of 2002 under an uncommitted line of credit with entities affiliated with its two largest shareholders. The Company borrowed additional monies under this line and related supplements during 2003 and 2004. As a result of the borrowings on this line

during 2002, 10 million warrants were issued. These warrants were ultimately converted into 10 million shares of the Company s common stock during February 2004. The interest expense recorded during 2004 includes $250,000 of non-cash expense related to these warrants.

The Company has reclassified into General and Administrative costs a previously reported Other Expense item of $350,000 that was accrued as of December 31, 2003 as a contingent liability for the Laves litigation settlement. This settlement was negotiated and entered into during February 2004.

Years Ended December 31, 2003 and 2002

The Company s net sales decreased $425,000, or 12%, from $3,663,000 in 2002 to $3,238,000 in 2003, as a result of a focus on more profitable business and due to an industry-wide reduction in capital expenditures during the first half of 2003. Sales of the Company s HTS products were substantially reduced, while revenues from its ANF products increased and revenues began to be realized on its RF² products during the fourth quarter 2003, shortly after the September 2003 product launch.

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Cost of products sold decreased $1,925,000, or 54% from $3,565,000 in 2002 to $1,640,000 in 2003. This occurred despite only a 12% decrease in revenue, as a result of various cost control measures adopted during the preceding two years, including the continued emphasis on outsourcing manufacturing processes and the focus on profitable business, and the nature and value of products sold (i.e., the reduced sales of HTS products and increased sales of ANF and RF² products). The cost of products sold for 2003 and 2002 consisted of direct material, labor and overhead costs associated with the products that were shipped during the period, as well as other costs consisting primarily of allocated overhead costs.

The Company s internally funded research and development expenses decreased by $1,749,000, or 64%, from $2,737,000 in 2002 to $988,000 during 2003. These reductions were primarily due to the shift from initial development to product improvement and related product expansion as the focus of development efforts. The emphasis on new products with a greater probability of profitable near-term commercial sales also was significant in this reduction.

Selling and marketing expenses decreased $1,241,000, or 56%, from $2,201,000 during 2002 to $960,000 during 2003. This decrease was due to cost reductions implemented during the past year, including the reduction of certain personnel and the redeployment of resources into more targeted, direct marketing and selling campaigns.

General and administrative expenses decreased $2,359,000, or 30%, from $7,973,000 in 2002 to $5,614,000 during 2003. This decrease was due to the reduction in expenses in the patent litigation as described elsewhere in this report, which more than offset an increase in non-cash employee compensation and the settlement of the Laves litigation during 2003.

Interest income decreased $58,000, or 92%, from $63,000 in 2002 to $5,000 during 2003. This decrease was due to the timing of the credit line (October 2002). The Company became infused with cash during February 2002 after its Shareholder Rights Offering, increasing interest income during 2002. While operating under its uncommitted line of credit from October 2002 and beyond, the Company has not maintained, and does not expect to maintain, significant amounts of cash on which interest may be earned.

Interest and warrant expense increased $870,000, or 266%, from $327,000 in 2002 to $1,197,000 during 2003. During February 2002, shareholder notes of $9,425,000, plus accrued interest, were repaid following the Shareholder Rights Offering, both of which are described elsewhere in this document. The Company borrowed $2 million during the fourth quarter of 2002 under an uncommitted line of credit with entities affiliated with its two largest shareholders. The Company borrowed an additional $3 million under this line and a related supplement during 2003. As a result of the borrowings on this line, 10 million warrants were issued. The interest expense recorded during 2003 includes $862,000 of non-cash expense related to these warrants.

Other Comparative Results:

During 2001 the Company recorded $6 million of Other Expense . This amount was comprised of a litigation settlement in the Siegler case of $4.9 million as well as approximately $1 million from certain restructuring costs from the consolidation of facilities.

Liquidity and Capital Resources

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 3 to the financial statements, the Company incurred a net loss of $7 million during the year ended December 31, 2004, and, as of that date, the Company s accumulated deficit is $157 million. In addition, the Company has consistently used, rather than provided, cash in its operations. These factors, among others, as discussed in Note 3 to the financial statements, raise substantial doubt about the Company s ability to continue as a going concern. The Company has been engaged in developing new solutions, and toward that end development spending has preceded sales revenues. Management s plans in regard to these matters include the focusing of development efforts on products with a greater probably of commercial sales, reducing professional fees and discretionary expenditures and increased efficiencies and reduced overhead costs associated with its outsourced production model, all of which are also described in Note 3. The financial statements do not include any adjustments, including any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classification of liabilities that might result from the outcome of this uncertainty. Significant uses of cash during 2004 include personnel costs, the cost to produce inventory, legal costs primarily related to the patent appeal, facility related costs, and other uses. Significant sources of cash during 2004 include sales and the resulting realization of customer receivables, the draw of $2.5 million on the credit line, and the exercise of $2 million in warrants.

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In view of the matters described in the preceding paragraph, recoverability of a major portion of the recorded asset amounts shown in the accompanying balance sheet is dependent upon continued operations of the Company, which in turn is dependent upon the Company s ability to meet its financing requirements on a continuing basis, to maintain present financing, and to succeed in its future operations.

At December 31, 2004, the Company s cash and cash equivalents, excluding restricted certificates of deposit, were $402,000, an increase of $56,000 from the December 31, 2003 balance of $346,000.

The continuing development of, and expansion in, sales of the Company s RF product lines, as well as the continued defense of its intellectual property, may require a commitment of funds to undertake product line development and to market and sell its RF front-end products. The actual amount of the Company s future funding requirements will depend on many factors, including: the amount and timing of future revenues, the level of product marketing and sales efforts to support the Company s commercialization plans, the magnitude of its research and product development programs, the ability of the Company to improve or maintain product margins, and the costs involved in protecting the Company s patents or other intellectual property.

As of the date of this filing, the Company believes that it has sufficient funds to operate its business as identified herein without the need for substantial future capital sources into the third quarter 2005, and very possibly longer, subject to working capital and other requirements. The Company intends to look into augmenting its existing capital position potentially through other sources of capital. For example, the Company regularly reviews the capital markets for appropriate debt, equity and hybrid instruments in search of both adequate operating capital and the best available capital structure.

Uncommitted Line of Credit

As of the reporting date, the Company had drawn $7.5 million of debt financing under a credit line, as described below. Subsequent to the reporting date, during January 2005, the Company drew the remaining $1 million on the line for a total debt of $8.5 million. During October 2002, the Company entered into an Uncommitted Line of Credit with its two largest shareholders, an affiliate of Elliott Associates, L.P. (Manchester Securities Corporation) and Alexander Finance, L.P. This line provided up to $4 million to the Company. This line was uncommitted, such that each new borrowing under the facility would be subject to the approval of the lenders. Borrowings on this line bore an interest rate of 9.5% and collateralized by all the assets of the Company. Outstanding loans under this agreement would be required to be repaid on a priority basis should the Company receive new funding from other sources. Additionally, the lenders were entitled to receive warrants to the extent funds were drawn down on the line. The warrants bore a strike price of $0.20 per share of common stock and were to expire on April 15, 2004. The credit line was to mature and be due, including accrued interest thereon, on March 31, 2004. Due to an agreement between the parties that did not provide warrants with respect to the more recent $2 million in borrowings, thus 10 million warrants were issued as a result of this transaction. During February 2004, the warrant holders exercised all of their warrants, contributing $2 million to the Company in exchange for 10 million shares of common stock.

According to existing accounting pronouncements and SEC guidelines, the Company allocated the proceeds of these borrowings between their debt and equity components. As a result of these borrowings during 2002, the Company recorded a non-cash charge of $1.2 million through the outstanding term of the warrants (April, 2004). The final $250,000 of that amount was recorded during 2004.

During October 2003 the Company entered into an agreement with its lenders to supplement the credit line with an additional $2 million, $1 million of which was drawn immediately and $1 million available to be drawn upon the Company s request and subject to the approval of the lenders. This supplemental facility bore a 14% rate of interest and was due October 31, 2004. Unlike the previous credit line, the supplemental

facility did not include any stock warrants. The term of the previous credit line were not affected by this supplement, and as such the $4 million borrowed under that line, plus accrued interest, remained due March 31, 2004.

During February 2004, these credit lines were extended to a due date of April 2005, with interest after the initial periods to be charged at 14%. No warrants or other inducements were issued with respect to these extensions. Additionally, lenders exercised their 10 million warrants during February 2004, agreeing to let the Company use the funds for general purposes as opposed to repaying debt.

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During July 2004, the Company and its lenders agreed to increase the aggregate loan commitments under the credit line from $6,000,000 to $6,500,000. Simultaneously, the Company drew the remaining $1,500,000 of the financing.

During November 2004, the Company and its lenders agreed to increase the line of credit to up to an additional $2 million to an aggregate loan commitment of $8,500,000, $1 million of which was drawn immediately by the Company with the remaining $1 million available to be drawn upon the Company s request and subject to the approval of the lenders. The remaining $1 million was subsequently drawn down in January 2005.

During February 2005, the consolidated credit line was extended to a due date of April 2006, with interest for the extension period set at 9%. No warrants or other inducements were issued with respect to this extension.

Critical Accounting Policies

The discussion and analysis of the Company s financial condition and results of operations are based upon the Company s consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires the Company to make estimates and judgments that affect the reported amount of assets and liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities at the date of the Company s financial statements. Actual results may differ from these estimates under different assumptions or conditions.

Critical accounting policies are defined as those that are reflective of significant judgments and uncertainties, and potentially result in materially different results under different assumptions and conditions. The Company believes that its critical accounting policies are limited to those described below. For a detailed discussion on the application of these and other accounting policies, see Note 2 in the notes to the consolidated financial statements.

Revenue Recognition

Revenues from product sales are generally recognized at the time of shipment and are recorded net of estimated returns and allowances. Revenues from services are generally recognized upon substantial completion of the service and acceptance by the customer. The Company has, under certain conditions, granted customers the right to return product during a specified period of time after shipment. In these situations, the Company establishes a liability for estimated returns and allowances at the time of shipment and makes the appropriate adjustment in revenue recognized for accounting purposes. During 2004, no revenue was recognized on products that included a right to return or otherwise required customer acceptance after December 31, 2004. The Company has established a program which, in certain situations, allows customers or prospective customers to field test the Company s products for a specified period of time. Revenues from field test arrangements are recognized upon customer acceptance of the products.

The Company warrants its products against defects in materials and workmanship typically for a 1-2 year period from the date of shipment, though these terms may be negotiated on a case by case basis. A provision for estimated future costs related to warranty expenses is recorded when revenues are recognized. At December 31, 2004 and 2003, respectively, the Company accrued $34,000 and $100,000 for warranty costs. This warranty reserve is based on the cost to replace a percentage of products in the field at a given point, adjusted by actual experience. Returns and allowances were not significant in any period reported, and form a data point in establishing the reserve. Should this warranty reserve estimate be deemed insufficient, by new information, experience, or otherwise, an increase to warranty expense would be required.

Goodwill and Intangible Assets

During October of 2004, the Company completed the process of evaluating goodwill and other intangible assets for impairment under SFAS No. 142. As the fair value of the enterprise, using quoted market prices for the Company s common stock, exceeded the carrying amount, the goodwill was determined to be not impaired. We assess the potential for impairment of the identifiable intangible assets and goodwill annually, or more frequently if events or changes in circumstances indicate that the asset might be impaired. If we determine that the value of the intangible assets and goodwill may not be recoverable from future cash flows or otherwise, a write-down of the value of the assets may be required. We estimate the useful lives of our intangible assets and amortize the value over the estimated life. If the actual useful life is shorter than our estimated useful life, we will amortize the remaining book value over the remaining useful life or the asset may be deemed to be impaired and, accordingly, a write-down of the value of the asset may be required.

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Allowance for Doubtful Receivables

An allowance for doubtful receivables may be maintained for potential credit losses. Management specifically analyzes accounts receivable, on a client by client basis, when evaluating the adequacy of our allowance for doubtful receivables including customer credit worthiness and current economic trends and records any necessary bad debt expense based on the best estimate of the facts known to date. Alternatives to this approach include applying a fixed and/or empirical rate of bad debts to receivables. As bad debts have historically been very low (less than 1% of revenue), such an empirical approach would have little impact on the reserve at December 31, 2004. Further, the Company believes its current method to be less arbitrary and more reliable than the alternatives as described. Should the facts regarding the collectability of receivables change, the resulting change in the allowance would be charged or credited to income in the period such determination is made. Such a change could materially impact our financial position and results of operations.

Stock-Based Compensation

The Company accounts for stock-based compensation using the intrinsic value method prescribed in Accounting Principles Board (APB) Opinion No. 25, Accounting for Stock Issued to Employees, and related interpretations. Compensation costs for employee stock options is measured as the excess, if any, of the quoted market price of the Company s common stock at the date of grant over the amount an employee must pay to acquire the stock.

Off Balance Sheet Arrangements

No such arrangements existed as of December 31, 2004, except for leases as described and the minimum lease payments as detailed in this document.

Contractual Obligations	Payments Due by Period				
Year	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Long Term Debt Obligations					
Capital Lease Obligations					
Operating Lease Obligations	$ 1,739,000	$ 156,000	$ 330,000	$ 360,000	$ 893,000
Purchase Obligations					
Other Long Term Liabilities Reflect on the Registrant s Balance Sheet under GAAP					
Total	$ 1,739,000	$ 156,000	$ 330,000	$ 360,000	$ 893,000

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

The Company does not have any material market risk sensitive instruments.

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Item 8. Financial Statements and Supplementary Data

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors

ISCO International, Inc.

We have audited the accompanying consolidated balance sheets of ISCO International, Inc. (a Delaware corporation) and subsidiaries, as of December 31, 2004 and 2003, and the related consolidated statements of operations, shareholders equity, and cash flows for each of the three years ended December 31, 2004. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of ISCO International, Inc. and subsidiaries as of December 31, 2004 and 2003, and the consolidated results of their operations and their cash flows for each of the three years ended December 31, 2004, in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 3, the Company incurred a net loss of $6,967,301 during the year ended December 31, 2004, and, as of that date, the Company s accumulated deficit is $157,063,406. In addition, the Company has consistently used, rather than provided, cash in its operations. These factors, among others, as discussed in Note 3 to the financial statements, raise substantial doubt about the Company s ability to continue as a going concern. Management s plans in regard to these matters are also described in Note 3. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Grant Thornton LLP

Chicago, Illinois

January 30, 2005

(except Notes 8 and 12 for which the date is February 24, 2005)

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ISCO INTERNATIONAL

CONSOLIDATED BALANCE SHEETS

	December 31,	
	2004	2003
ASSETS		
Current assets:		
Cash and cash equivalents	$ 402,391	$ 346,409
Inventories	969,048	678,361
Accounts receivable, net of allowance for doubtful accounts of none and $4,000 at December 31, 2004 and 2003, respectively	122,460	1,169,711
Prepaid expenses and other	594,488	321,147
Total current assets	2,088,387	2,515,628
Property and equipment:		
Property and Equipment	824,238	8,957,866
Less: Accumulated depreciation	638,968	8,256,489
	185,270	701,377
Restricted certificates of deposit	291,027	40,527
Goodwill	13,370,000	13,370,000
Intangible assets, net	1,051,320	1,095,503
Total assets	$ 16,986,004	$ 17,723,035

	December 31,	
	2004	2003
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 202,613	$ 243,647
Employee-related accrued liabilities	112,393	84,157
Accrued professional services	431,491	448,725
Other Accrued liabilities	348,964	638,259
Total current liabilities	1,095,461	1,414,788
Notes and related accrued interest with related parties	8,642,908	5,365,000
Stockholders equity:		
Preferred Stock; 300,000 shares authorized; No shares issued and outstanding at December 31, 2004 and 2003, respectively		
Common stock ($.001 par value); 250,000,000 and 250,000,000 shares authorized and 161,213,703 and 150,149,927 shares issued and outstanding at December 31, 2004 and 2003, respectively	161,214	150,150
Additional paid-in capital (net of unearned comp.)	164,149,827	160,889,202
Accumulated deficit	(157,063,406)	(150,096,105)
Total stockholders equity	7,247,635	10,943,247

Total liabilities and stockholders equity	$ 16,986,004	$ 17,723,035

See the accompanying Notes which are an integral part of the financial statements.

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ISCO INTERNATIONAL

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2004	2003	2002
Net sales	$ 2,621,933	$ 3,238,402	$ 3,662,805
Costs and expenses:			
Cost of sales	1,527,554	1,639,540	3,565,140
Research and development	1,119,406	988,425	2,737,084
Selling and marketing	1,164,830	959,798	2,201,195
General and administrative	4,757,935	5,614,492	7,972,948
Total costs and expenses	8,569,725	9,202,255	16,476,367
Operating loss	(5,947,792)	(5,963,853)	(12,813,562)
Other income and (expense):			
Interest income	8,660	5,087	62,954
Non-cash warrant expense	(250,297)	(861,871)	(128,423)
Other interest expense	(777,872)	(335,438)	(198,801)
	(1,019,509)	(1,192,222)	(264,270)
Net loss	$ (6,967,301)	$ (7,156,075)	$ (13,077,832)
Basic and diluted loss per common share	$ (0.04)	$ (0.05)	$ (0.09)
Weighted average number of common shares outstanding	158,977,249	148,080,749	142,884,921

See the accompanying Notes which are an integral part of the financial statements.

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ISCO INTERNATIONAL

CONSOLIDATED STATEMENTS OF STOCKHOLDERS EQUITY

Years Ended December 31, 2002, 2003, and 2004

	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Accumulated Deficit	Unearned Compensation	Total
Balance as of December 31, 2001	107,905,231	$ 107,905	$ 138,612,160	$ (129,862,198)	$ (882,648)	$ 7,975,219
Exercise of stock options and vested DSU s; $0.00 to $0.18 per share	109,725	110	201			311
Rights Offering proceeds received, net	39,929,971	39,930	19,725,055			19,764,985
Deferred Stock Unit Amortization					382,800	382,800
Compensation Expense for Non- Employee Options			26,400			26,400
Compensation Expense for Discount on Employee Options			180,000			180,000
Issuance of Warrants, net			128,423			128,423
Net Loss				(13,077,832)		(13,077,832)
Balance as of December 31, 2002	147,944,927	$ 147,945	$ 158,672,239	$ (142,940,030)	$ (499,848)	$ 15,380,306
Exercise of stock options and vested DSU s; $0.00 to $0.11 per share	1,205,000	1,205	128,045			129,250
Shares Issued in vendor resolution	1,000,000	1,000	499,000			500,000
Deferred Stock Unit Amortization			(308,448)		499,848	191,400
Compensation Expense for Employee Options			1,036,495			1,036,495
Issuance of Warrants, net			861,871			861,871
Net Loss				(7,156,075)		(7,156,075)
Balance as of December 31, 2003	150,149,927	$ 150,150	$ 160,889,202	$ (150,096,105)		10,943,247
Exercise of Stock Options	1,063,776	1,064	140,676			141,740
Exercise of Warrants	10,000,000	10,000	1,990,000			2,000,000
Compensation Expense for Discount on Employee Stock Options/Variable Accounting for Stock Options			879,652			879,652
Non-cash Warrant Expense			250,297			250,297
Net Loss				(6,967,301)		(6,967,301)
Balance as of December 31, 2004	161,213,703	161,214	164,149,827	(157,063,406)		7,247,635

See the accompanying Notes which are an integral part of the financial statements.

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ISCO INTERNATIONAL

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,		
	2004	2003	2002
OPERATING ACTIVITIES			
Net loss	$ (6,967,301)	$ (7,156,075)	$ (13,077,832)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	633,794	793,200	744,188
Amortization	50,325	38,368	83,656
Issuance of common stock in connection with vendor settlement		500,000	
Non-cash compensation charges	879,651	1,227,895	589,200
Non-cash warrant issuance-related expense	250,297	861,871	128,423
Disposition of fixed assets			