

ION GEOPHYSICAL CORP

Form 10-K

March 02, 2009

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**UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, DC 20549  
Form 10-K**

(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES  
EXCHANGE ACT OF 1934  
For the Fiscal Year Ended December 31, 2008**

or

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

**Commission file number 1-12691**

**ION Geophysical Corporation**

*(Exact Name of Registrant as Specified in Its Charter)*

**Delaware**

*(State or Other Jurisdiction of  
Incorporation or Organization)*

**22-2286646**

*(I.R.S. Employer  
Identification No.)*

**2105 CityWest Blvd  
Suite 400**

**Houston, Texas 77042-2839**

*(Address of Principal Executive Offices, Including Zip Code)*

**(281) 933-3339**

*(Registrant's Telephone Number, Including Area Code)*

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

<b>Title of Each Class</b>	<b>Name of Each Exchange on Which Registered</b>
Common Stock, \$0.01 par value	New York Stock Exchange
Rights to Purchase Series A Junior Participating Preferred Stock	New York Stock Exchange

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

**None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act Yes  No

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Accelerated filer

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Large accelerated  
filer

Non-accelerated filer   
(Do not check if a smaller reporting  
company)

Smaller reporting  
company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes  No   
As of June 30, 2008 (the last business day of the registrant's second quarter of fiscal 2008), the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was \$1.481 billion based on the closing sale price on such date as reported on the New York Stock Exchange.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date: common stock, \$.01 par value, 99,735,028 shares outstanding as of February 12, 2009.

**DOCUMENTS INCORPORATED BY REFERENCE**

<b>Document</b>	<b>Parts Into Which Incorporated</b>
Portions of the Proxy Statement for the Annual Meeting of Stockholders to be held May 27, 2009	Part III

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**PART I**

***Preliminary Note: This Annual Report on Form 10-K contains forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. Forward-looking statements should be read in conjunction with the cautionary statements and other important factors included in this Form 10-K. See Item 1A. Risk Factors for a description of important factors which could cause actual results to differ materially from those contained in the forward-looking statements.***

In this Annual Report on Form 10-K, ION Geophysical, ION, company, we, our, ours and us refer to ION Geophysical Corporation and its consolidated subsidiaries, except where the context otherwise requires or as otherwise indicated.

**Item 1. Business**

We are a technology-focused seismic solutions company that provides advanced seismic data acquisition equipment, seismic software, and seismic planning, processing, and interpretation services to the global energy industry. Our products, technologies, and services are used by oil and gas exploration and production (E&P) companies and seismic acquisition contractors to generate high-resolution images of the subsurface during exploration, exploitation, and production operations. Our products and services are intended to measure and interpret seismic data about rock and fluid properties within the Earth's subsurface, which enables oil and gas companies to make improved drilling and production decisions. The seismic surveys for our data library business are substantially pre-funded by our customers and we contract with third party seismic data acquisition companies to acquire the data, all of which minimizes our risk exposure. We are able to serve oil and gas companies in all major energy producing regions of the world from strategically located offices in 22 cities on five continents. Our products and services include the following:

- land and marine seismic data acquisition equipment,
- navigation, command & control, and data management software products,
- planning services for survey design and optimization,
- seismic data processing services, and
- seismic data libraries.

Seismic imaging plays a fundamental role in hydrocarbon exploration and reservoir development by delineating structures, rock types, and fluid locations in the subsurface. Geoscientists interpret seismic data to identify new sources of hydrocarbons and pinpoint drilling locations for wells, which can be costly and high risk. As oil and gas reservoirs have become harder to find and more expensive to develop and exploit in recent years, the demand for advanced seismic imaging solutions has grown. In addition, seismic technologies are now being applied more broadly over the entire life cycle of a hydrocarbon reservoir to optimize production. For example, time-lapse seismic images (referred to as 4D or four-dimensional surveys), in which the fourth dimension is time, can be made of producing reservoirs.

ION has been involved in the seismic technology industry for approximately 40 years, starting in the 1960s when we designed and manufactured seismic equipment under our previous company name, Input/Output, Inc. In recent years, we have transformed our business from being solely a manufacturer and seller of seismic equipment to being a provider of a full range of seismic imaging products, technologies, and services. See Item 7 *Management's Discussion and Analysis of Financial Condition and Results of Operations - Executive Summary* for a list of certain developments in our business in 2008 and early 2009.

We operate our company through four business segments. Three of these segments - Land Imaging Systems, Marine Imaging Systems and Data Management Solutions - make up our ION Systems division. The fourth segment is our ION Solutions division.

*Land Imaging Systems* - cable-based, cableless, and radio-controlled seismic data acquisition systems, digital and analog geophone sensors, vibroseis vehicles (i.e. vibrator trucks), and source controllers for detonator and

vibrator energy sources.

*Marine Imaging Systems* towed streamer and redeployable ocean bottom cable seismic data acquisition systems and shipboard recorders, streamer positioning and control systems, and energy sources (such as air guns and air gun controllers).

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*Data Management Solutions* software and related services for navigation and data management involving towed marine streamer and seabed operations.

*ION Solutions* advanced seismic data processing services for marine and land environments, our marine seismic data libraries, and our Integrated Seismic Solutions (ISS) services.

Our executive headquarters are located at 2105 CityWest Boulevard, Suite 400, Houston, Texas 77042-2839. Our telephone number is (281) 933-3339. Our home page on the internet is [www.iongeo.com](http://www.iongeo.com). We make our website content available for information purposes only. It should not be relied upon for investment purposes, nor is it incorporated by reference into this Form 10-K.

In portions of this Form 10-K, we incorporate by reference information from parts of other documents filed with the Securities and Exchange Commission (SEC). The SEC allows us to disclose important information by referring to it in this manner, and you should review this information. We make our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, annual reports, and proxy statements for our stockholders meetings, as well as any amendments to those reports, available free of charge through our website as soon as reasonably practicable after we electronically file those materials with, or furnish them to, the SEC.

You can learn more about us by reviewing our SEC filings on our website. Our SEC reports can be accessed through the Investor Relations section on our website. The SEC also maintains a website at [www.sec.gov](http://www.sec.gov) that contains reports, proxy statements, and other information regarding SEC registrants, including our company.

### **Seismic Industry Overview**

Since the 1930s, oil and gas companies have sought to reduce exploration risk by using seismic data to create an image of the Earth's subsurface. Seismic data is recorded when listening devices placed on the Earth's surface or seabed floor, or carried within a streamer cable on a towed streamer vessel, measure how long it takes for sound vibrations to echo off rock layers underground. For seismic acquisition onshore, the acoustic energy producing the sound vibrations is generated by the detonation of small explosive charges or by large vibroseis (vibrator) vehicles. In marine acquisition, the energy is provided by a series of air guns that deliver highly compressed air into the water column.

The acoustic energy propagates through the subsurface as a spherical wave front, or seismic wave. Interfaces between different types of rocks will both reflect and transmit this wave front. Onshore, the reflected signals return to the surface where they are measured by sensitive receivers that may be either analog coil-spring geophones or digital accelerometers based on MEMS (micro-electro-mechanical systems) technology; offshore, the reflected signals are recorded by either hydrophones towed in an array behind a streamer acquisition vessel or by multicomponent geophones or MEMS sensors that are placed directly on the seabed. Once the recorded seismic energy is processed using advanced algorithms and workflows, images of the subsurface can be created to depict the structure, lithology (rock type), fracture patterns, and fluid content of subsurface horizons, highlighting the most promising places to drill for oil and natural gas. This processing also aids in engineering decisions, such as drilling and completion methods, as well as decisions affecting overall reservoir production.

Typically, an E&P company engages the services of a geophysical acquisition company to prepare site locations, coordinate logistics, and acquire seismic data in a selected area. The E&P company generally relies upon third parties such as ION to provide the contractor with equipment, navigation and data management software, and field support services necessary for data acquisition. After the data is collected, the same geophysical contractor, a third-party data processing company, or the E&P company itself will process the data using proprietary algorithms and workflows to create a series of seismic images. Geoscientists then interpret the data by reviewing the images and integrating the geophysical data with other geological and production information such as well logs or core information.

During the 1960s, digital seismic data acquisition systems (which converted the analog output from the geophones into digital data for recording) and computers for seismic data processing were introduced. Using the new systems and computers, the signals could be recorded on magnetic tape and sent to data processors where they could be adjusted and corrected for known distortions. The final processed data was displayed in a form known as stacked data. Computer filing, storage, database management, and algorithms used to process the raw data quickly grew more sophisticated, dramatically increasing the amount of subsurface seismic information.

Until the early 1980s, the primary commercial seismic imaging technology was two-dimensional, or 2-D, technology. 2-D seismic data is recorded using straight lines of receivers crossing the surface of the Earth. Once processed, 2-D seismic data allows



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geoscientists to see only a thin vertical slice of the Earth. A geoscientist using 2-D seismic technology must speculate on the characteristics of the Earth between the slices and attempt to visualize the true three-dimensional (3-D) structure of the subsurface.

The commercial development of 3-D imaging technology in the early 1980s was an important technological milestone for the seismic industry. Previously, the high cost of 3-D seismic data acquisition techniques and the lack of computing power necessary to process, display, and interpret 3-D data on a commercial basis had slowed its widespread adoption. Today's 3-D seismic techniques record the reflected energy across a series of closely-spaced seismic lines that collectively provide a more holistic, spatially-sampled depiction of geological horizons and, in some cases, rock and fluid properties, within the Earth.

3-D seismic data and the associated computer-based interpretation platforms allowed geoscientists to generate more accurate subsurface maps than could be constructed on the basis of the more widely spaced 2-D seismic lines. In particular, 3-D seismic data provided more detailed information about subsurface structures, including the geometry of bedding layers, salt structures, and fault planes. The improved 3-D seismic images allowed the oil and gas industry to discover new reservoirs, reduce finding and development costs, and lower overall hydrocarbon exploration risk. Driven by faster computers and more sophisticated mathematical equations to process the data, the technology advanced quickly.

As commodity prices decreased and the pace of innovation in 3-D seismic imaging technology slowed in the late 1990s, E&P companies slowed the commissioning of new seismic surveys. Also, business practices employed by geophysical contractors in the 1990s impacted demand for seismic data. In an effort to sustain higher utilization of existing capital assets, geophysical contractors increasingly began to collect speculative seismic data for their own account in the hopes of selling it later to E&P companies. Contractors typically selected an area, acquired data using generic acquisition parameters and generic processing algorithms, capitalized the acquisition costs, and attempted to sell the survey results to multiple E&P companies. These generic, speculative, multi-client surveys were not tailored to meet the unique imaging objectives of individual clients and caused an oversupply of seismic data in many regions. Additionally, since contractors incurred most of the costs of this speculative seismic data at the time of acquisition, contractors lowered prices to recover as much of their fixed investment as possible, which drove operating margins down.

The fundamentals of the oil and gas exploration and production industry and the seismic sector improved markedly beginning in 2004. As commodity prices increased, E&P companies increased their capital investment programs, which drove higher demand for our products and services. In July 2008, oil prices reached an all-time high of nearly \$150 per barrel. Sentiment changed dramatically in September 2008 as adverse global economic conditions began to affect demand for a wide variety of products and services throughout the world, including the demand for both oil (and refined products, such as gasoline) and natural gas. By the end of 2008, oil prices had fallen to roughly \$40 per barrel, and E&P companies began to curtail their investment programs, announcing spending cuts that exceeded 30% in some cases. As a consequence, seismic acquisition contractors began to scale-back their investments in new seismic hardware and software, while E&P companies moved to optimize their spending on seismic data processing services and the purchase of seismic data libraries. See Item 7 *Management's Discussion and Analysis of Financial Condition and Results of Operations* for further information.

**ION Geophysical's Business Strategy**

Beginning in 2004 and continuing until the fourth quarter of 2008, we observed increased spending for seismic services and equipment by E&P companies and seismic contractors, driven in part by an increase in commodity prices. A decline in the number and size of new discoveries, production declines in known reservoirs, and expanded demand for hydrocarbons had increased the pressure on E&P companies to discover additional fields and optimize the recovery of those already on production. Until the fourth quarter of 2008, this increasing exploration activity combined with higher commodity price levels increased the demand for seismic technology and services. Additionally, E&P companies were focusing on hydrocarbon reservoirs located in deeper waters or deeper in the geologic column. These reservoirs are generally more complex or subtle than the reservoirs that were discovered in prior decades and are located in unconventional reservoir types such as tar sand deposits or tight gas locked within hard rock, low permeability shales. As a result, the process of finding and developing these hydrocarbon deposits is

proving to be more challenging, which in turn results in escalating costs and increasing demands for newer and more efficient imaging technologies. Moreover, as E&P companies may increasingly use seismic data to enhance production from known fields by repeating time-lapse seismic surveys over a defined area, we believe that seismic companies such as ION can benefit because the repeat application of seismic extends the utility of subsurface imaging beyond exploration and into production monitoring, which can last for decades.

We also believe that E&P companies will increasingly use seismic technology providers who will collaborate with them to tailor surveys that address specific geophysical problems and to apply advanced digital sensor and imaging technologies to take into account the geologic peculiarities of a specific area. In the future, we expect that these companies will rely less on undifferentiated, mass

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seismic studies created using analog sensors and traditional processing technologies that do not adequately identify geologic complexities.

In 2004, we acquired two companies, which were important in our evolution from being primarily a seismic equipment provider to becoming a broad-based seismic solutions provider:

Our acquisition of Concept Systems Holdings Limited (Concept Systems) and its integrated planning, navigation, command & control, and data management software and solutions for towed streamer and seabed operations; and

Our acquisition of GX Technology Corporation (GXT), and its advanced seismic data imaging solutions services and seismic data libraries for the marine environment.

Additionally, in September 2008, we further expanded our land system offerings through the acquisition of ARAM Systems Ltd. and Canadian Seismic Rentals Inc. (sometimes collectively referred to herein as ARAM ). We acquired ARAM for the purpose of advancing our strategy and market penetration in the land seismic recording system business.

Through these and other acquisitions, along with our research and development efforts, our technologies and services now include seismic data acquisition hardware, command and control software, value-added services associated with seismic survey design, seismic data processing and interpretation, and seismic data libraries.

The dramatic changes that occurred in the fourth quarter of 2008 and continued into 2009 have caused us to re-evaluate and refine our business strategy. During late 2008, disruption in the U.S. financial markets prompted a global economic crisis, which adversely affected economic activity in most regions of the world and led to a tightening of the availability of commercial credit. Many economists are now predicting a prolonged worldwide economic recession and a slow recovery in the credit markets.

Since the global economic crisis began to unfold, crude oil prices have rapidly declined from a peak oil price of \$147 per barrel in July 2008 to approximately \$40 per barrel in December 2008. Hydrocarbon price erosion has caused E&P companies to decrease their capital expenditure plans for exploration and production activities, which, in turn, adversely impacts the demand for many of our products and services. Unlike many other seismic companies, we participate only in the technology side of the business and are mainly involved in the planning, processing and interpretation of data services. We do not provide the actual contracting services, and, as a result, do not have large capital expenditures that are required to fund land and marine seismic crews. Our costs are therefore much more variable than most other seismic companies, which provides greater flexibility in difficult economic times.

During the fourth quarter of 2008 and continuing into 2009, we have been re-evaluating our business strategy to ensure that it remains consistent with the commercial realities of our customers and a market guided by dramatically lower commodity prices. We also have re-evaluated and made necessary reductions in our cost structure to better align with necessary changes in strategy and to adjust to the current levels of demand. For example, we observed a severe slowdown in sales activity for our land acquisition systems in North America and Russia. As a result, we have reduced employee headcount across our company by approximately 13% in December 2008 and January 2009, with the most reduction concentrated within the Land Imaging Systems segment. We believe that our current headcount is sufficient to manage our business and serve our customers' needs during 2009 in all segments, but we may make further adjustments as market conditions and our strategy dictate.

In addition to analyzing employee resources, we have evaluated current and planned internal and external programs, including research and development, to ensure that each program is serving a worthwhile goal in the most efficient manner. We are a technology solutions company and we rely upon our research and development programs to ensure that we offer products capable of solving complex imaging problems around the world efficiently. The recent declines in oil and natural gas prices do not change the universally accepted facts that the oil and gas industry still suffers from declines in the number and size of new discoveries and production declines in known reservoirs. These facts, combined with growing global demographics, support a conclusion of continuing long-term demand for hydrocarbons. In the current difficult economic environment, we believe that our technologies and services are ideal tools for E&P companies seeking ways to be more productive in a lower price environment. As a result, we have focused much of our research and development efforts on strategic programs that are seeking efficient and

cost-effective solutions for the challenges in the current market and also in a recovered economy.

A key element of our business strategy, which started with the acquisition of GXT in 2004, has been to understand the challenges faced by E&P companies in survey planning, acquisition, processing and even interpretation, and to strive to develop and offer technology and services that enable us to work with the E&P companies to solve their challenges. We have found that a collaborative

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relationship with E&P companies, with a goal of better understanding their imaging challenges and then working with them and our contractor customers to assure that the right technologies are properly applied, is the most effective method for meeting our customers' needs. This strategy of being a full solutions provider to solve the most difficult challenges for our customers is an important element of our long term business strategy, and we are implementing this approach globally through local personnel in our regional organizations who possess an intimate understanding of the unique challenges in their areas.

In summary, our business strategy is predicated on successfully executing seven key imperatives:

Continuing to manage our cost structure to reflect current market and economic conditions while keeping key strategic technology programs progressing with an overall goal of enabling E&P companies to solve their complex reservoir problems most efficiently and effectively;

Expanding our ION Solutions business in new regions with new customers and new land and marine service offerings, including proprietary services for owners and operators of oil and gas properties;

Globalizing our ION Solutions data processing business by opening advanced imaging centers in strategic locations, and expanding our presence in the land seismic processing segment, with emphasis on serving the emerging national oil companies;

Developing and introducing our next generation of marine towed streamer products, with a goal of developing markets beyond the new vessel market;

Expanding our seabed imaging solutions business using our VectorSeis<sup>®</sup> Ocean (VSO) acquisition system platform and derivative products to obtain technical and market leadership in what we continue to believe is a very important and expanding market;

Utilizing our recent ARAM acquisition as a framework to increase our market share and profitability in cable-based land acquisition systems; and

Furthering the commercialization of FireFly<sup>®</sup>, our cableless full-wave land data acquisition system, through sales and also through a services/rental model to advance the diffusion rate.

The rapid decline of oil and natural gas prices in late 2008 makes it even more important for the E&P industry to reduce the number of dry holes and to optimize the wells that are successful. E&P companies continue to be interested in technology to increase production and in improving their understanding of targeted reservoirs, in both the exploration and production phases. We believe that our new technologies, such as FireFly, DigiFIN and Orca<sup>®</sup>, will continue to attract interest because they are designed to deliver improvements in image quality within more productive delivery systems. For more information regarding our products and services, see "*Products and Services*" below.

### **Full-Wave Digital**

Our seismic data acquisition products and services are well suited for traditional 2-D, 3-D, and 4-D data collection as well as more advanced multicomponent or full-wave digital seismic data collection techniques.

Conventional geophone sensors are based on a mechanical, coil-spring magnet arrangement. The single component geophone measures ground motion in one direction, even though reflected energy in the Earth travels in multiple directions. This type of geophone can capture only pressure waves (P-waves). P-waves represent only a portion of the full seismic wavefield. Conventional geophones have limitations in collecting shear waves (S-waves), which involve a component of particle motion that is orthogonal to the direction of wave propagation (a more horizontal component of motion). In addition, geophones require accurate placement both vertically and spatially. Inaccurate placement, which can result from poorly planned surveys or human error, can introduce distortions that negatively affect the final subsurface image.

Multicomponent seismic sensors are designed to record the full seismic wavefield by measuring reflected seismic energy in three directions. This vector-based measurement enables multicomponent sensors to record not only P-wave

data, but also to record shear waves. ION's VectorSeis sensor was developed using MEMS accelerometer technology to enable a true vector measurement of all seismic energy reflected in the subsurface. VectorSeis is designed to capture the entire seismic signal and more faithfully record all wavefields traveling within the Earth. By measuring both P-waves and S-waves, the VectorSeis full-wave sensor records a more

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complete and accurate seismic dataset having higher frequency content than conventional sensors. When data recorded by VectorSeis is processed using the advanced imaging techniques offered by our GXT Imaging Solutions group, we are able to deliver higher-definition images of the subsurface to our oil and gas customers, which enables geophysicists to better identify subtle structural, rock, and fluid-oriented features in the Earth. In addition, we believe that full-wave technologies should deliver improved operating efficiencies in field acquisition and reduce cycle times across the seismic workflow, from planning through acquisition and final image rendering.

VectorSeis acquires full-wave seismic data in both land and marine environments using a portfolio of advanced imaging platforms manufactured by ION:

Scorpion® our cable-based land acquisition system that replaced our System Four® system in late 2006;

VectorSeis Ocean (VSO) our redeployable ocean bottom cable system for the seabed; and

FireFly our cableless full-wave land acquisition system.

## **Segment Information**

We operate our company through four business segments. Three of these segments—Land Imaging Systems, Marine Imaging Systems and Data Management Solutions—make up our ION Systems division. The fourth segment is our ION Solutions division.

*Land Imaging Systems*—cable-based, cableless, and radio-controlled seismic data acquisition systems, digital and analog geophone sensors, vibroseis vehicles (i.e. vibrator trucks), and source controllers for detonator and vibrator energy sources.

*Marine Imaging Systems*—towed streamer and redeployable ocean bottom cable seismic data acquisition systems and shipboard recorders, streamer positioning and control systems, and energy sources (such as air guns and air gun controllers).

*Data Management Solutions*—software and related services for navigation and data management involving towed marine streamer and seabed operations.

*ION Solutions*—advanced seismic data processing services for marine and land environments, our marine seismic data libraries, and our Integrated Seismic Solutions (ISS) services.

We measure segment operating results based on income from operations. See further discussion of our segment operating results at Note 14 of *Notes to Consolidated Financial Statements*.

## **Products and Services**

See Item 7—*Management's Discussion and Analysis of Financial Condition and Results of Operations—Executive Summary*—for a list of certain developments in our business in 2008 and early 2009.

### ***ION Systems Division***

#### ***Land Imaging Systems Products***

Products for our Land Imaging Systems business segment include the following:

*Land Acquisition Systems.* Our cable-based Scorpion and ARIES® land acquisition systems consist of a central recording unit and multiple remote ground equipment modules that are connected by cable. The central recording unit is in a transportable enclosure that serves as the control center of each system and is typically mounted within a vehicle or helicopter. The central recording unit receives digitized data, stores the data on storage media for subsequent processing, and displays the data on optional monitoring devices. It also provides calibration, status, and test functionality. The remote ground equipment consists of multiple remote modules and line taps positioned over the survey area. Seismic data is collected by analog geophones or VectorSeis digital sensors.

Our ARIES product line was acquired in connection with our acquisition of ARAM in September 2008. The product line consists of analog cable-based land acquisition systems and related peripherals and equipment. ARIES land system products include remote





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acquisition modules ( RAMs ), which acquire analog seismic data from the geophones and transmit the data digitally to the central processing equipment, and line tap units that interconnect baseline cables from the recording equipment to multiple receiver lines and function to retransmit data from the RAMs to central recording equipment. ARIES products also include system batteries (standard sealed or lithium-ion), central recording equipment (including seismic processing module and ARAM software), baseline cables that connect the central recording equipment with the taps and receiver line cables that connect geophones or hydrophone groups to a RAM.

Scorpion is capable of recording full-wave seismic data. Digital sensors, while more expensive than traditional analog geophones, can provide increased response linearity and bandwidth, which translates into higher resolution images of the subsurface. In addition, one digital sensor can replace a string of six or more analog geophones, providing users with equipment weight reduction and improved operating efficiencies.

Scorpion contains numerous enhancements that are designed to reduce our manufacturing costs, improve system reliability and productivity, and enable higher station count acquisition. During 2007, we delivered 14 Scorpion land acquisition systems to Oil and Natural Gas Corporation Limited, the national oil company of India. Each Scorpion system is capable of recording with digital, full-wave VectorSeis sensors or analog geophones.

We began VectorSeis technology land acquisition field tests in 1999, and since that time VectorSeis technology has been used to acquire seismic data in North America, Europe, Asia, the Pacific Basin region, the Middle East, and the Commonwealth of Independent States. In 2002, we introduced our VectorSeis System Four land acquisition system. In 2004, we announced the introduction of our new hybrid System Four platform, which gave seismic companies the flexibility to use both traditional analog geophone sensors and digital full-wave VectorSeis sensors on the same survey. VectorSeis is also used as the primary sensor device on our FireFly cableless land acquisition system.

In November 2005, we announced our development of FireFly, a cableless system for full-wave land seismic data acquisition. By removing the constraints of cables, geophysicists can custom-design surveys for multiple subsurface targets and increase receiver station density to more fully sample the subsurface. We believe that the cableless design of FireFly will improve field productivity while reducing concerns for health and safety and environmental liability exposure. FireFly's benefits include a decrease in system weight and, we believe, superior operational efficiencies, reduction in operational troubleshooting time, and better defined sampled seismic data. Also, we believe that the data management capabilities of FireFly should reduce the amount of time spent pre-processing the data.

During late 2006 and 2007, we delivered an early version of our FireFly system, which was used by British Petroleum and then Apache Corporation, in field application projects located in Wyoming and northeast Texas, respectively. An advanced version of our FireFly system was successfully deployed in July 2008 on a multi-client survey in northwest Colorado in which Pittsburgh-based E&P operator, East Resources, served as the lead underwriter. This initial deployment of the more advanced version of our FireFly system was called Durham Ranch, after one of the large, privately held ranches in this ecologically sensitive area. In early 2009, ION sold its first commercial FireFly system, which will be used in a producing hydrocarbon basin containing reservoirs that have been difficult to image with conventional seismic techniques.

*Geophones.* Geophones are analog sensor devices that measure acoustic energy reflected from rock layers in the Earth's subsurface using a mechanical, coil-spring element. We market a full suite of geophones and geophone test equipment that operate in most environments, including land, transition zone, and downhole. We believe our Sensor group is the leading designer and manufacturer of precision geophones used in seismic data acquisition. Our analog geophones are used in other industries as well.

*Vibrators and Energy Sources.* Vibrators are devices carried by large vibroseis vehicles and, along with dynamite, are used as energy sources for land seismic acquisition. We market and sell the AHV-IV, an articulated tire-based vibrator vehicle, and a tracked vibrator, the XVib®, for use in environmentally sensitive areas such as the Arctic tundra and desert environments.

Our Pelton division is a provider of energy source control and positioning technologies. Pelton's Vib Pro control system provides vibrator vehicles with digital technology for energy control and global positioning system technology for navigation and positioning. Pelton's Shot Pro dynamite firing system, released in 2007, is the equivalent technology for seismic operations using dynamite energy sources.



**Table of Contents*****Marine Imaging Systems Products***

Products for our Marine Imaging Systems business segment include the following:

*Marine Acquisition Systems.* Our traditional marine acquisition system consists of towed marine streamers and shipboard electronics that collect seismic data in water depths greater than 30 meters. Marine streamers, which contain hydrophones, electronic modules and cabling, may measure up to 12,000 meters in length and are towed (up to 20 at a time) behind a towed streamer seismic acquisition vessel. The hydrophones detect acoustical energy transmitted through water from the Earth's subsurface structures. Our first DigiSTREAMER system, our next-generation towed streamer system, was successfully commissioned at the start of the North Sea season in 2008. The second DigiSTREAMER system was delivered during 2008. DigiSTREAMER uses solid streamer and continuous acquisition technology for towed streamer operations.

During 2004, we introduced our VectorSeis Ocean (VSO) system, an advanced system for seismic data acquisition using redeployable ocean bottom cable, and we shipped the first system to Reservoir Exploration Technology, ASA (RXT), a Norwegian seismic contractor. During 2008, we completed the delivery of our fifth VSO system to RXT. We have entered into a multi-year agreement with RXT under which RXT has agreed to purchase a minimum of \$160 million in VSO systems and related equipment from us through 2011. Approximately \$122.0 million in purchase commitments remain under the agreement. The agreement also entitles us to receive a royalty of 2.1% of all revenues generated by RXT through the use of VSO equipment from January 2008 through the end of the term of the agreement. In turn, the agreement grants RXT exclusive rights to this product line through 2011. In 2008, we recognized \$2.4 million of royalty income under this agreement.

*Marine Positioning Systems.* Our DigiCOURSE® marine streamer positioning system includes streamer cable depth control devices, lateral control devices, compasses, acoustic positioning systems, and other auxiliary sensors. This equipment is designed to control the vertical and horizontal positioning of the streamer cables and provides acoustic, compass, and depth measurements to allow processors to tie navigation and location data to geophysical data to determine the location of potential hydrocarbon reserves. DigiFIN, our advanced lateral streamer control system, saw significant acceptance by the industry in 2008 with a total of nine systems delivered during the year. DigiFIN is designed to maintain tighter, more uniform marine streamer separation along the entire length of the streamer cable, which allows for better sampling of seismic data and improved subsurface images. We believe that DigiFIN also enables faster line changes and minimize the requirements for in-fill seismic work.

*Source and Source Control Systems.* We manufacture and sell air guns, which are the primary seismic energy source used in marine environments to initiate the acoustic energy transmitted through the Earth's subsurface. An air gun fires a high compression burst of air underwater to create an energy wave for seismic measurement. We offer a digital source control system (DigiSHOT®), which allows for reliable control of air gun arrays for 4-D exploration activities.

***Data Management Solutions Products and Services***

Through this segment, we supply software systems and services for towed marine streamer and seabed operations. Software developed by our subsidiary, Concept Systems, is installed on towed streamer marine vessels worldwide and is a component of many redeployable and permanent seabed monitoring systems. Products and services for our Data Management Solutions business segment include the following:

*Marine Imaging.* Orca is our next-generation successor software product for towed streamer navigation and integrated data management applications. During 2007 and 2008, Orca made significant inroads into the towed streamer market with several major seismic contractors adopting the technology for their new, high-end seismic vessels. Orca includes modules designed to manage acquisition marine surveys integrating the navigation, source control, and streamer control functions. Orca can manage complex marine surveys such as time-lapse 4-D surveys and WATS (Wide Azimuth Towed Streamer) surveys. WATS is an advanced acquisition technique for imaging complex structures (for example, subsalt) in the marine environment, generally implemented with multiple source vessels that shoot at some distance from the streamer recording vessel. Orca is designed to be compatible with our DigiFIN product, which enables streamer lateral control, and DigiSTREAMER, ION's new marine streamer acquisition system. SPECTRA® is Concept Systems' legacy integrated navigation and survey control software system for towed streamer-based 2-D, 3-D, and 4-D seismic survey operations.

*Seabed Imaging.* Concept Systems also offers GATOR<sup>®</sup>, an integrated navigation and data management software system for multi-vessel ocean bottom cable and transition zone (such as marshlands) operations. The GATOR system is designed to provide real-time, multi-vessel positioning and data management solutions for ocean-bottom, shallow-water, and transition zone crews.

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*Survey Design, Planning and Optimization.* Concept Systems also offers consulting services for planning, designing and supervising complex surveys, including 4D and WATS survey operations. Concept Systems' acquisition expertise and in-field software platforms and development capability are designed to allow their clients to optimize these complex surveys, improving image quality and reducing costs.

*Post-Survey Analysis Tools.* Concept Systems' Command and Control systems such as Orca, SPECTRA and GATOR are designed to integrate with its post-survey tools for processing, analysis, and data quality control. These tools include its SPRINT® navigation processing and quality control software for marine geophysical surveys, and its REFLEX® software for seismic coverage and attribute analysis.

***ION Solutions Division Services***

Services for our ION Solutions business segment include the following:

*Seismic Data Processing Services.* The GXT Imaging Solutions group provides a variety of seismic data processing and imaging services to E&P companies for marine, ocean bottom and land environments. Services include survey planning and design, project oversight of data acquisition operations, advanced signal processing, final image rendering, and geophysical and reservoir analysis.

The GXT Imaging Solutions group offers processing and imaging services through which it develops a series of subsurface images by applying its processing technology to data owned or licensed by its customers. The group also provides support services to its customers, such as data pre-conditioning for imaging and outsourced management of seismic data acquisition and image processing services.

The GXT Imaging Solutions group uses parallel computer clusters to process seismic data by applying advanced proprietary algorithms and workflows that incorporate techniques such as illumination analysis, data conditioning and velocity modeling, and time and depth migration. Pre-stack depth migration involves the application of advanced, computer-intensive processing techniques which convert time-based seismic information to a depth basis. While pre-stack depth migration is not necessary in every imaging situation, it generally provides the most accurate subsurface images in areas of complex geology. It also helps to convert seismic data, which is recorded in the time domain, into a depth domain format that is more readily applied by geologists and reservoir engineers in identifying well locations. Our Reverse Time Migration (RTM) technology was developed to improve imaging in areas where complex structural conditions or steeply dipping subsurface horizons have provided imaging challenges for oil and gas companies.

Our AXIS Geophysics group (AXIS), based in Denver, Colorado, focuses on advanced seismic data processing for stratigraphically complex onshore environments. AXIS has developed a proprietary data processing technique called AZIM that is designed to better account for the anisotropic effects of the Earth (i.e., different layers of geological formations that are not parallel to each other), which tend to distort seismic images. AZIM is designed to correct for these anisotropic effects by producing higher resolution images in areas where the velocity of seismic waves varies with compass direction (or azimuth). The AZIM technique is used to analyze fracture patterns within reservoirs.

We believe that the application of ION's advanced processing technologies and imaging techniques can better identify complex hydrocarbon-bearing structures and deeper exploration prospects. We also believe that the combination of GXT's capabilities in advanced velocity model building and depth imaging, along with AXIS capability in anisotropic imaging, provides an advanced toolkit for maximizing the data measurements obtained by our VectorSeis full-wave sensor.

*Integrated Seismic Solutions (ISS).* ION's ISS services are designed to manage the entire seismic process, from survey planning and design to data acquisition and management, through pre-processing and final subsurface imaging. The ISS group focuses on the technologically intensive components of the image development process, such as survey planning and design and data processing and interpretation, and outsources the logistics component to geophysical logistics contractors. ION offers its ISS services to customers on both a proprietary and multi-client basis. On both bases, the customers pre-fund a majority of the data acquisition costs. With the proprietary service, the customer also pays for the imaging and processing, but has exclusive ownership of the data after it has been processed. For multi-client surveys, we assume some of the processing costs but retain ownership of the data and images and receive on-going license revenue from subsequent data license sales.

*Seismic Data Libraries.* Since 2002, GXT has acquired and processed a growing seismic data library consisting of non-exclusive marine and ocean bottom data from around the world. The majority of the data libraries licensed by GXT consist of ultra-deep 2-D lines that E&P companies use to better evaluate the evolution of petroleum systems at the basin level, including insights into the

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character of source rocks and sediments, migration pathways, and reservoir trapping mechanisms. In many cases, the availability of geoscience data extends beyond seismic information to include magnetic, gravity, well log, and electromagnetic information, which help to provide a more comprehensive picture of the subsurface. Known as

SPANS, these geophysical data libraries currently exist for major basins worldwide, including the northern Gulf of Mexico, in the southern Caribbean, off the northern coast of South America, offshore West Africa, offshore Colombia, offshore India and offshore northern Canada and Alaska. In 2008, we completed the acquisition of our latest basin-scale seismic survey library for the Eastern Java Sea and the Makassar Straits, two prospective areas offshore Indonesia and Malaysia. Data for nearly 10,000 kilometers was acquired during the acquisition phase of this project. Additionally, we successfully completed the acquisition phase of a multi-client seismic imaging project using our FireFly cableless land acquisition system at Durham Ranch in Northwest Colorado. Additional SPANS are planned or under development for other regions of the world.

**Product Research and Development**

Our research and development efforts have focused on improving both the quality of the subsurface image and the seismic data acquisition economics for our customers. Our ability to compete effectively in the manufacture and sale of seismic equipment and data acquisition systems, as well as related processing services, depends principally upon continued technological innovation. Development cycles of most products, from initial conception through commercial introduction, may extend over several years.

In 2008, we principally focused our research and development efforts on commercialization of our FireFly system and on DigiSTREAMER, our solid streamer cable for marine acquisition. FireFly was deployed in July 2008 on a multi-client survey at Durham Ranch, and we delivered the first commercial FireFly system in early 2009. A DigiSTREAMER system was deployed in an open-water test by Fugro, a Netherlands company, early in 2008 and was sold to Fugro shortly thereafter.

As a result of current economic and market conditions, in 2009 we intend to reduce our overall spending on research and development projects. During 2009, we expect that our product development efforts will continue across selective business lines aimed at the development of strategic key products and technologies. Major research and development programs are expected to continue for FireFly, our Digi- line of marine streamer technologies, our cable-based land systems and our land energy source technologies. A key research and development initiative is underway to integrate FireFly with our cable-based land recording systems in order to provide contractors with a hybrid architecture for cabled and cableless recording on the same survey. We also are investing to develop hybrid sensor functionality for both ARIES II and FireFly. The effort on ARIES II involves making the current all-analog system compatible with VectorSeis; the effort on FireFly involves making the current all-digital system compatible with analog geophones. For a summary of our research and development expenditures during the past five years, see Item 6. *Selected Financial Data*.

Because many of these new products are under development, their commercial feasibility or degree of commercial acceptance, if any, is not yet known. No assurance can be given concerning the successful development of any new products or enhancements, the specific timing of their release or their level of acceptance in the marketplace.

**Markets and Customers**

Based on historical revenues, we believe that we are a market leader in numerous product lines, including geophones, full-wave sensors based upon micro-electro magnetic systems (MEMS), navigation and data management software, marine positioning and streamer control systems, cableless land acquisition systems and redeployable seabed recording systems.

Our principal customers are seismic contractors and E&P companies. Seismic contractors purchase our data acquisition systems and related equipment and software to collect data in accordance with their E&P company customers' specifications or for their own seismic data libraries. We also market and sell products and offer services directly to E&P companies, primarily imaging-related processing services and multi-client seismic data libraries from our GXT subsidiary, as well as consulting services from Concept Systems and GXT. During the years ended December 31, 2008, 2007 and 2006, no single customer accounted for 10% or more of our consolidated net revenues.

Until September 2008, worldwide exploration activities had increased in response to increased hydrocarbon demand and diminishing supply from many regions. As a result, the utilization of both land and marine seismic data

acquisition products and services had increased significantly, with seismic contractors expanding their acquisition asset base and retrofitting existing assets with newer, more efficient technologies. Since the global economic crisis began to unfold late in the third quarter of 2008, demand for products and services has fallen in all industrial sectors and in all regions. The E&P industry has been affected by a rapid fall-off in



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prices for both natural gas and crude oil, with the latter falling from a peak of \$147 per barrel in July 2008 to approximately \$40 per barrel in December 2008. Hydrocarbon price erosion has caused E&P companies to revisit their capital investment plans, which, in turn, is reverberating back through the supply chain to affect us both directly and indirectly through our seismic acquisition contractor customers.

Contractors from China and other countries are increasingly active not only in their own countries but also in other international markets. As a result, a significant part of our marketing effort is focused on areas outside of the United States. Foreign sales are subject to special risks inherent in doing business outside of the United States, including the risk of armed conflict, civil disturbances, currency fluctuations, embargo and governmental activities, customer credit risks, and risk of non-compliance with U.S. and foreign laws, including tariff regulations and import/export restrictions.

We sell our products and services through a direct sales force consisting of employees and international third-party sales representatives responsible for key geographic areas. During the years ended December 31, 2008, 2007 and 2006, sales to destinations outside of North America accounted for approximately 60%, 62% and 68% of our consolidated net revenues, respectively. Further, systems sold to domestic customers are frequently deployed internationally and, from time to time, certain foreign sales require export licenses.

We have consolidated our international sales under a new entity operating in Dubai. Dubai is geographically better positioned to ensure that we are close to our customers in the most active oil and gas centers of the world. Associated with this change will be a more effective tax structure that better reflects our global operations and better operational efficiencies for our international customers.

Traditionally, our business has been seasonal, with strongest demand in the fourth quarter of our fiscal year.

For information concerning the geographic breakdown of our net revenues, see Note 14 of *Notes to Consolidated Financial Statements*.

### **Manufacturing Outsourcing and Suppliers**

Since 2003, we have increased the use of contract manufacturers in our Land and Marine Imaging Systems business segments as an alternative to manufacturing our own products. We have outsourced the manufacturing of our vibrator vehicles, our towed marine streamers, our redeployable ocean bottom cables, various components of VectorSeis Ocean and certain electronic and ground components of our land acquisition systems. We may experience supply interruptions, cost escalations, and competitive disadvantages if we do not monitor these relationships properly.

These contract manufacturers purchase a substantial portion of the components used in our systems and products from third-party vendors. Certain items, such as integrated circuits used in our systems, are purchased from sole source vendors. Although we and our contract manufacturers attempt to maintain an adequate inventory of these single source items, the loss of ready access to any of these items could temporarily disrupt our ability to manufacture and sell certain products. Since our components are designed for use with these single source items, replacing the single source items with functional equivalents could require a redesign of our components and costly delays could result.

In 2004, we transferred ownership of our subsidiary, Applied MEMS, Inc., to Colibrys Ltd. (Colibrys), a Swiss MEMS-based technology firm, in exchange for a 10% ownership interest in Colibrys. We also entered into a five-year supply agreement with Colibrys that provides for Colibrys to supply us with products on an exclusive basis in our markets. Colibrys manufactures micro-electro-mechanical system (MEMS) products, including accelerometers, for our VectorSeis sensors, and for other applications, including test and measurement, earthquake and structural monitoring, and defense. While we continue to believe that MEMS-based sensors like our VectorSeis sensors will increasingly be used in seismic imaging, we also believe that improvements in the design and manufacture of MEMS technology will also likely occur, that will require additional financial and human capital to achieve. By outsourcing our MEMS manufacturing operations to a MEMS-based technology firm such as Colibrys, we believe that we are better positioned to leverage the research and development of these products and industries, improve gross margins on our VectorSeis-based products, and reduce our future investment requirements in MEMS technology. We have no further obligations to fund Colibrys with regard to any mandatory assessments or additional capital contribution requirements but we may choose to invest further capital into Colibrys from time to time.



**Table of Contents****Competition**

The market for seismic products and services is highly competitive and is characterized by continual changes in technology. Our principal competitor for land and marine seismic equipment is Societe d Etudes Recherches et Construction Electroniques (Sercel), an affiliate of the French seismic contractor, Compagnie General de Geophysique Veritas (CGGVeritas). Sercel possesses the advantage of being able to sell its products and services to an affiliated seismic contractor that operates both land crews and seismic acquisition vessels, providing it with a greater ability to test new technology in the field and to capture a captive internal market for product sales. Sercel has also demonstrated that it is willing to offer extended financing sales terms to customers in situations where we declined to do so due to credit risk. We also compete with other seismic equipment companies on a product-by-product basis. Our ability to compete effectively in the manufacture and sale of seismic instruments and data acquisition systems depends principally upon continued technological innovation, as well as pricing, system reliability, reputation for quality, and ability to deliver on schedule.

Certain seismic contractors have designed, engineered, and manufactured seismic acquisition technology in-house (or through a controlled network of third-party vendors) in order to achieve differentiation versus their competition. For example, WesternGeco (a wholly-owned subsidiary of Schlumberger Limited, a large integrated oilfield services company) relies heavily on its in-house technology development for designing, engineering, and manufacturing its

Q-Technology platform, which includes seismic acquisition and processing systems. Although this technology competes directly with ION's technology for marine streamer, seabed, and land acquisition, WesternGeco does not provide Q-Technology services to other seismic acquisition contractors. However, the risk exists that other seismic contractors may decide to conduct more of their own seismic technology development, which would put additional pressures on the demand for ION acquisition equipment.

In addition, over the last several years, we have seen both new-build and consolidation activity within the marine towed streamer segment, which could impact our business results in the future. We expect the number of 2-D and 3-D marine streamer vessels, including those in operation, under construction, or announced additions to capacity, to increase to approximately 155 by year-end 2010, compared to approximately 124 at December 31, 2008. In addition, there has been an increase in acquisition activity within the sector, with the major vessel operators Schlumberger, CGGVeritas, and PGS all moving to acquire new market entrants in the last several years. Many of these incumbent operators develop their own marine streamer technologies, such that consolidation in the sector reduces the number of potential customers and vessel outfitting opportunities for us.

Our GXT Imaging Solutions group competes with more than a dozen processing companies that are capable of providing pre-stack depth migration services to E&P companies. While the barriers to entry into this market are relatively low, the barriers to competing at the higher end of the market, which is the advanced pre-stack depth migration market, where our efforts are focused, are significantly higher. At the higher end of this market, CGGVeritas and WesternGeco are ION Solutions division's two primary competitors for advanced imaging services. Both of these companies are larger than ION in terms of revenues, number of processing locations, and sales and marketing resources. In addition, both CGGVeritas and WesternGeco possess an advantage of being part of affiliated seismic contractor companies, providing them with access to customer relationships and seismic datasets that require processing.

Concept Systems provides advanced data integration software and services to seismic contractors acquiring data using either towed streamer vessels or ocean-bottom cable on the seabed. Vessels or ocean-bottom cable crews that do not use Concept Systems software either rely upon manual data integration, reconciliation, and quality control, or develop and maintain their own proprietary software packages. There is evidence of growing competition to Concept Systems' core command and control business from Sercel and other smaller companies. Concept Systems has recently signed long term (between 2 and 5 years) technology partnerships with many of its key clients and will continue to seek to develop key new technologies with these clients. An important competitive factor for companies in the same business as Concept Systems is the ability to provide advanced complex command and control software with a high level of reliability combined with expert systems and project support to ensure operations run cost effectively.

In the land systems market, ION is the second largest provider of cable-based land systems worldwide, trailing only Sercel. In the cableless market, several companies have introduced technologies that compete, directly or

indirectly, with FireFly, including Sercel, Ascend Geo, OYO Geospace, Fairfield, and Wireless Seismic. Each company is attempting to implement a cableless architecture in a slightly different way, with variations related to how the telemetry (data communications backbone) works, whether the system can use digital, full-wave sensors (or only analog geophones), and the amount of integration between the cableless recording unit and other technologies used for survey design, equipment deployment/retrieval, operational command and control, and data management.

**Intellectual Property**

We rely on a combination of patents, copyrights, trademark, trade secrets, confidentiality procedures, and contractual provisions to protect our proprietary technologies. Although our portfolio of patents is considered important to our operations, no one patent is considered essential to our success.

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Our patents, copyrights, and trademarks offer us only limited protection. Our competitors may attempt to copy aspects of our products despite our efforts to protect our proprietary rights, or may design around the proprietary features of our products. Policing unauthorized use of our proprietary rights is difficult, and we are unable to determine the extent to which such use occurs. Our difficulties are compounded in certain foreign countries where the laws do not offer as much protection for proprietary rights as the laws of the United States. From time to time, third parties inquire and claim that we have infringed upon their intellectual property rights and we make similar inquiries and claims to third parties. No material liabilities have resulted from these third party claims to date.

The information contained in this Annual Report on Form 10-K contains references to trademarks, service marks and registered marks of ION and our subsidiaries, as indicated. Except where stated otherwise or unless the context otherwise requires, the terms VectorSeis, VectorSeis System Four, System Four, FireFly, ARIES, DigiSHOT, DigiCOURSE, GATOR, SPECTRA, Orca, Scorpion, SPRINT, and REFLEX refer to our VECTORSEIS, VECTORSEIS SYSTEM FOUR®, SYSTEM FOUR®, FIREFLY®, ARIES®, DIGISHOT®, XVIB®, DIGICOURSE®, GATOR®, SPECTRA®, ORCA®, SCORPION®, SPRINT®, and REFLEX® registered marks, and the terms AZIM, ArcticSPAN, True Digital, DigiRANGE II, DigiSTREAMER, CompassBIRD, SM-24, AHV-IV, Vib Pro, DigiFIN, Autobahn, and SWAT refer to our AZIM, ArcticSPAN, True Digital, DigiRANGE II, DigiSTREAMER, CompassBIRD, SM-24, AHV-IV, Vib Pro, Shot Pro, DigiFIN, Autobahn, and SWAT trademarks and service marks.

**Regulatory Matters**

Our operations are subject to laws, regulations, government policies, and product certification requirements worldwide. Changes in such laws, regulations, policies or requirements could affect the demand for our products or result in the need to modify products, which may involve substantial costs or delays in sales and could have an adverse effect on our future operating results. Our export activities are also subject to extensive and evolving trade regulations. Certain countries are subject to trade restrictions, embargoes, and sanctions imposed by the U.S. government. These restrictions and sanctions prohibit or limit us from participating in certain business activities in those countries.

Our operations are subject to numerous local, state, and federal laws and regulations in the United States and in foreign jurisdictions concerning the containment and disposal of hazardous materials, the remediation of contaminated properties, and the protection of the environment. We do not currently foresee the need for significant expenditures to ensure our continued compliance with current environmental protection laws. Regulations in this area are subject to change, and there can be no assurance that future laws or regulations will not have a material adverse effect on us. Our customers' operations are also significantly impacted by laws and regulations concerning the protection of the environment and endangered species. For instance, many of our marine contractors have been affected by regulations protecting marine mammals in the Gulf of Mexico. To the extent that our customers' operations are disrupted by future laws and regulations, our business and results of operations may be materially adversely affected.

**Employees**

As of December 31, 2008, we had 1,413 regular, full-time employees, 851 of which were located in the U.S. From time to time and on an as-needed basis, we supplement our regular workforce with individuals that we hire temporarily or as independent contractors in order to meet certain internal manufacturing or other business needs. Our U.S. employees are not represented by any collective bargaining agreement, and we have never experienced a labor-related work stoppage. We believe that our employee relations are satisfactory.

In the fourth quarter of 2008, we initiated a restructuring program, which included plans for reducing our headcount by approximately 13%, or 188 positions. As of December 31, 2008, we had reduced our headcount by 83 employees. In the first quarter of 2009, we completed our restructuring program, eliminating the remaining 105 positions. During 2009, we will continue to evaluate our staffing needs and may further reduce our headcount.

**Financial Information by Segment and Geographic Area**

For a discussion of financial information by business segment and geographic area, see Note 14 of *Notes to Consolidated Financial Statements*.

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**Item 1A. Risk Factors**

This report contains or incorporates by reference statements concerning our future results and performance and other matters that are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended ( Securities Act ), and Section 21E of the Securities Exchange Act of 1934, as amended ( Exchange Act ). These statements involve known and unknown risks, uncertainties, and other factors that may cause our or our industry's results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by such forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as may, will, would, should, intend, expect, plan, anticipate, believe, estimate, predict, potential, or continue or the negative of such terms or other common terminology. Examples of other forward-looking statements contained or incorporated by reference in this report include statements regarding:

- our expectations for future financing and the refinancing of our existing indebtedness;
- the expected effects of current and future worldwide economic conditions and demand for oil and natural gas;
- future levels of spending by our customers;
- compliance with our debt financial covenants;
- expected net revenues, income from operations and net income;
- expected gross margins for our products and services;
- future benefits to our customers to be derived from new products and services, such as Scorpion and FireFly;
- future growth rates for certain of our products and services;
- future sales to our significant customers;
- our ability to continue to leverage our costs by growing our revenues and earnings;
- the degree and rate of future market acceptance of our new products and services;
- expectations regarding future mix of business and future asset recoveries;
- the timing of anticipated sales;
- anticipated timing and success of commercialization and capabilities of products and services under development and start-up costs associated with their development;
- expected improved operational efficiencies from our full-wave digital products and services;
- potential future acquisitions;
- future levels of capital expenditures;
- future cash needs and future sources of cash, including availability under our revolving line of credit facility;
- our ability to maintain our costs at consistent percentages of our revenues in the future;

the outcome of pending or threatened disputes and other contingencies;

future demand for seismic equipment and services;

future seismic industry fundamentals;

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the adequacy of our future liquidity and capital resources;

future oil and gas commodity prices;

future opportunities for new products and projected research and development expenses;

success in integrating our acquired businesses;

expectations regarding realization of deferred tax assets; and

anticipated results regarding accounting estimates we make.

These forward-looking statements reflect our best judgment about future events and trends based on the information currently available to us. Our results of operations can be affected by inaccurate assumptions we make or by risks and uncertainties known or unknown to us. Therefore, we cannot guarantee the accuracy of the forward-looking statements. Actual events and results of operations may vary materially from our current expectations and assumptions. While we cannot identify all of the factors that may cause actual results to vary from our expectations, we believe the following factors should be considered carefully:

***The current economic and credit environment and lower oil and natural gas prices could have a continuing adverse affect on demand for certain of our products and services, our results of operations, our cash flows, our financial condition, our ability to borrow and our stock price.***

Commencing in late 2008, global market and economic conditions became, and continue to be, disrupted and volatile. Concerns over energy costs, geopolitical issues, the availability and cost of credit, the U.S. mortgage market and a declining residential real estate market in the U.S. have contributed to this increased volatility and diminished expectations for the economy and the markets going forward. These factors, combined with volatile oil prices, declining business and consumer confidence and increased unemployment, have precipitated a global recession. In the past, downturns in the U.S. economy have caused weakened demand and lower prices for oil and natural gas on a worldwide basis, which have tended to reduce the levels of exploration for oil and natural gas. Historically, demand for our products and services has been sensitive to the level of exploration spending by E&P companies and geophysical contractors; the demand for our products and services will be reduced if the level of exploration expenditures is reduced. During periods of reduced levels of exploration for oil and natural gas, there have been oversupplies of seismic data and downward pricing pressures on our seismic products and services, which in turn, have limited our ability to meet sales objectives and maintain profit margins for our products and services. In the past, these then-prevailing industry conditions have had the effect of reducing our revenues and operating margins. The markets for oil and gas historically have been volatile and are likely to continue to be so in the future.

The recent turmoil in the credit markets and its potential impact on the liquidity of major financial institutions may have an adverse effect on our ability to fund our business strategy through borrowings under either existing or new debt facilities in the public or private markets and on terms we believe to be reasonable. Continued weakness in the financial markets could have a material adverse effect on our ability to refinance all or a portion of our indebtedness in connection with the ARAM acquisition and to otherwise fund our operational requirements.

Interest rates have fluctuated recently, have increased the costs of financing and will likely reduce our and our customers' profits and expected returns on investment. Given the current credit environment, particularly the tightening of the credit markets, there can be no assurance that our customers will be able to borrow money on a timely basis or on reasonable terms, which could have a negative impact on their demand for our products and impair their ability to pay us for our products and services on a timely basis, or at all. Our sales are affected by interest rate fluctuations and the availability of liquidity, and we would be adversely affected by increases in interest rates or liquidity constraints. Rising interest rates may also make certain alternative products and services provided by our competitors more attractive to customers, which could lead to a decline in demand for our products and services. This could have a material adverse effect on our business, results of operations, financial condition and cash flows.

It is difficult to predict how long the current economic conditions will persist, whether they will deteriorate further, and which of our products and services will be adversely affected. We may have further impairment losses if events or



changes in circumstances occur which reduce the fair value of an asset below its carrying amount. As a result, these conditions could adversely affect our

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financial condition and results of operations, and we may be subject to increased disputes and litigation because of these events and issues.

Stock markets, in general, have experienced in recent months, and continue to experience, significant price and volume volatility, and the market price of our common stock may continue to be subject to similar market fluctuations unrelated to our operating performance or prospects. This increased volatility, coupled with depressed economic conditions, could continue to have a depressing effect on the market price of our common stock.

***We have a substantial amount of outstanding indebtedness, and we will need to pay or refinance our existing indebtedness or incur additional indebtedness, which may adversely affect our operations.***

As a result of the ARAM acquisition, we have increased our indebtedness significantly. As of December 31, 2008, we had outstanding total indebtedness of approximately \$291.9 million, including capital lease obligations. Total indebtedness on that date included \$120.3 million in borrowings under five-year term indebtedness and \$66.0 million in borrowings under our revolving credit facility, in each case incurred under our amended commercial banking credit facility (the Amended Credit Facility ). We also had as of that date \$40.8 million of indebtedness outstanding under a Bridge Loan Agreement, dated as of December 30, 2008, with Jefferies Finance LLC ( Jefferies ) as administrative agent, sole bookrunner, sole lead arranger and lender (the Bridge Loan Agreement ), which indebtedness matures on January 31, 2010. In addition, we had \$35.0 million of subordinated indebtedness outstanding under an amended and restated subordinated promissory note (the Amended and Restated Subordinated Note ) that we issued to one of ARAM s selling shareholders in exchange for a previous promissory note we had issued to that selling shareholder as part of the purchase price consideration for the acquisition of ARAM.

As of December 31, 2008, we had available \$34.0 million (without giving effect to \$1.2 million of outstanding letters of credit) of additional revolving credit borrowing capacity under our Amended Credit Facility. However, as of February 23, 2009, we had available only \$0.8 million of additional revolving credit borrowing capacity, which can be used only to fund further letters of credit under the Amended Credit Facility.

In January 2009, Standard and Poor s Rating Services downgraded our outlook from stable to negative due to expectations of a weakening seismic market.

Our substantial levels of indebtedness and our other financial obligations increase the possibility that we may be unable to generate cash sufficient to pay, when due, the principal of, interest on or other amounts due, in respect of our outstanding indebtedness. Our substantial debt could also have other significant consequences. For example, it could:

increase our vulnerability to general adverse economic, competitive and industry conditions;

limit our ability to obtain additional financing in the future for working capital, capital expenditures, acquisitions, general corporate purposes or other purposes on satisfactory terms, or at all;

require us to dedicate a substantial portion of our cash flow from operations to the payment of our indebtedness, thereby reducing funds available to us for operations and any future business opportunities;

expose us to the risk of increased interest rates because certain of our borrowings, including borrowings under our Amended Credit Facility, are at variable rates of interest;

restrict us from making strategic acquisitions or cause us to make non-strategic divestitures;

limit our planning flexibility for, or ability to react to, changes in our business and the industries in which we operate;

limit our ability to adjust to changing market conditions; and

place us at a competitive disadvantage to our competitors who may have less indebtedness or greater access to financing.

Although we currently believe we will maintain compliance with our covenants throughout 2009, there are certain scenarios where we could fall out of compliance with our financial covenants under our Amended Credit Facility and our Bridge Loan Agreement.

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See Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations* *Executive Summary* *Our Current Debt Levels* and *Liquidity and Capital Resources* *Sources of Capital* *Meeting our Liquidity Requirements*.

If we fail to make any required payment under our Amended Credit Facility, the Bridge Loan Agreement or the Amended and Restated Subordinated Note, or if we fail to comply with any of the financial and operating covenants included in those debt instruments, we will be in default under their terms. The lenders under such facilities could then accelerate the maturity of the indebtedness and foreclose upon our and our subsidiaries' assets that may secure such indebtedness. Other creditors might then accelerate other indebtedness under the cross-default provisions in those agreements. If our creditors accelerate the maturity of our indebtedness, we may not have sufficient assets to satisfy our debt obligations.

Our ability to obtain any financing, including any additional debt financing, whether through the issuance of new debt securities or otherwise, and the terms of any such financing are dependent on, among other things, our financial condition, financial market conditions within our industry, credit ratings and numerous other factors. There can be no assurance that we will be able to obtain financing on acceptable terms or within an acceptable time, if at all. If we are unable to obtain financing on terms and within a time acceptable to us (or to negotiate extensions with our lenders on terms acceptable to us), it could, in addition to other negative effects, have a material adverse effect on our operations, financial condition, ability to compete or ability to comply with regulatory requirements. Such defaults, if not rescinded or cured, would have a materially adverse effect on our operations, financial condition and cash flows.

***To comply with our indebtedness and other obligations, we will require a significant amount of cash and will be required to satisfy certain debt financial covenants. Our ability to generate cash and satisfy debt covenants depends on many factors beyond our control.***

Our ability to make payments on and to refinance our indebtedness, including our acquisition debt, and to fund our working capital needs and planned capital expenditures, will depend on our ability to generate cash in the future. This, to a certain extent, is subject to general economic, financial, competitive and other factors that are beyond our control.

We cannot assure you that our business will generate sufficient cash flows from operations or that future borrowings will be available to us under the Amended Credit Facility or otherwise in an amount sufficient to enable us to pay our indebtedness, including our acquisition debt, or to fund our other liquidity needs. We will need to refinance all or a portion of our indebtedness, including our acquisition debt, on or before the maturity thereof. We cannot assure you that we will be able to refinance any of such indebtedness on commercially reasonable terms, or at all.

In addition, if for any reason we are unable to meet our debt service obligations, we would be in default under the terms of our agreements governing our outstanding debt. If such a default were to occur, the lenders under the Amended Credit Facility could elect to declare all amounts outstanding under the Amended Credit Facility immediately due and payable, and the lenders would not be obligated to continue to advance funds to us. In addition, if such a default were to occur, our other indebtedness would become immediately due and payable.

The Amended Credit Facility and other outstanding debt instruments to which we are a party impose significant operating and financial restrictions, which may prevent us from capitalizing on business opportunities and taking other actions.

Subject to certain exceptions and qualifications, the Amended Credit Facility contains customary restrictions on our activities, including covenants that restrict us and our restricted subsidiaries from:

incurring additional indebtedness and issuing preferred stock;

creating liens on our assets;

making certain investments or restricted payments;

consolidating or merging with, or acquiring, another business;

selling or otherwise disposing of our assets;



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paying dividends and making other distributions with respect to capital stock, or repurchasing, redeeming or retiring capital stock or subordinated debt; and

entering into transactions with our affiliates.

The Amended Credit Facility also contains covenants that require us to meet certain financial ratios and minimum thresholds. For example, the Amended Credit Facility requires that we and our domestic subsidiaries (a) maintain a minimum fixed charge coverage ratio in an amount equal to 1.50 to 1 for each fiscal quarter beginning in 2009, (b) not exceed a maximum leverage ratio of 2.25 to 1 for each fiscal quarter beginning in 2009, and (c) maintain a minimum tangible net worth of at least 80% of the our tangible net worth as of September 18, 2008 (the date that we completed our acquisition of ARAM), plus 50% of our consolidated net income for each quarter thereafter, and 80% of the proceeds from any mandatorily convertible notes and preferred and common stock issuances for each quarter thereafter.

As of December 31, 2008, we were in compliance with all covenants under the Amended Credit Facility. We believe that, based on our 2009 operating plan and results to date in fiscal 2009, we will remain in compliance with the financial covenants during 2009. As with any operating plan, however, there are risks associated with our ability to execute our 2009 plan. In addition, our ability to remain in compliance with the financial covenants can be affected by events beyond our control, including further declines in E&P company and seismic contractor spending, significant write-downs of accounts receivable, changes in certain exchange rates and other factors. Our failure to comply with such covenants could result in an event of default that, if not cured or waived, could have a material adverse effect on our financial condition, results of operations, and debt service capability. If we were not able to satisfy all of the financial covenants, we would need to seek to amend, or seek one or more waivers of, the covenants under the Amended Credit Facility. If we cannot satisfy the financial covenants and are unable to obtain waivers or amendments, the lenders could declare a default under the Amended Credit Facility. Any default under our Amended Credit Facility would allow the lenders under the facility the option to demand repayment of the indebtedness outstanding under the facility, and would allow certain other lenders to exercise their rights and remedies under cross-default provisions. If these lenders were to exercise their rights to accelerate the indebtedness outstanding, there can be no assurance that we would be able to refinance or otherwise repay any amounts that may become accelerated under the agreements. The acceleration of a significant portion of our indebtedness would have a material adverse effect on our business, liquidity, and financial condition.

The Bridge Loan Agreement contains terms that incorporate many of the same covenants from the Amended Credit Facility. In addition, the Amended and Restated Subordinated Note contains additional restrictions on our ability to incur additional debt. Any additional debt financing we obtain is likely to have similarly restrictive covenants.

The restrictions in the Amended Credit Facility and our other debt instruments may prevent us from taking actions that we believe would be in the best interest of our business, and may make it difficult for us to successfully execute our business strategy or effectively compete with companies that are not similarly restricted. We also may incur future debt obligations that might subject us to additional restrictive covenants that could affect our financial and operational flexibility. We cannot assure you that we will be granted waivers or amendments to these agreements if for any reason we are unable to comply with these agreements, or that we will be able to refinance our debt on terms acceptable to us, or at all. The breach of any of these covenants and restrictions could result in a default under the Amended Credit Facility and our other debt instruments. An event of default under our debt agreements would permit the holders of such indebtedness to declare all amounts borrowed to be due and payable.

***Given the reduced budgets for capital expenditures by E&P companies, demand for our products and services and our results of operations will be adversely affected.***

Demand for our services depends upon the level of spending by E&P companies and seismic contractors for exploration and development activities, and those activities depend in large part on oil and gas prices. Spending on products and services such as those we provide our customers are of a highly discretionary nature and subject to rapid and material change. Any significant decline in oil and gas related spending on behalf of our customers could cause alterations in our capital spending plans, project modifications, delays or cancellations, general business disruptions or delays in payment, or non-payment of amounts that are owed to us and could have a material adverse effect on our financial condition and results of operations and on our ability to continue to satisfy all of the covenants in our loan

agreements. Additionally, increases in oil and gas prices may not increase demand for our services or otherwise have a positive effect on our financial condition or results of operations. Oil and gas companies' willingness to explore, develop and produce depends largely upon prevailing industry conditions that are influenced by numerous factors over which our management has no control, such as:

the supply of and demand for oil and gas;

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the level of prices, and expectations about future prices, of oil and gas;

the cost of exploring for, developing, producing and delivering oil and gas;

the ability of the Organization of Petroleum Exporting Countries ( OPEC ) to set and maintain production levels for oil;

the expected rates of declining current production;

the discovery rates of new oil and gas reserves;

weather conditions, including hurricanes, that can affect oil and gas operations over a wide area, as well as less severe inclement weather that can preclude or delay seismic data acquisition;

domestic and worldwide economic conditions;

political instability in oil and gas producing countries;

technical advances affecting energy consumption;

government policies regarding the exploration, production and development of oil and gas reserves;

the ability of oil and gas producers to raise equity capital and debt financing; and

merger and divestiture activity among oil and gas companies and seismic contractors.

The level of oil and gas exploration and production activity has been volatile in recent years. Previously forecasted trends in oil and gas exploration and development activities may not continue and demand for our products and services may not reflect the level of activity in the industry. Any prolonged substantial reduction in oil and gas prices would likely affect oil and gas production levels and therefore adversely affect demand for the products and services we provide.

***We derive a substantial amount of our revenues from foreign operations and sales, which pose additional risks.***

Sales to customers outside of North America accounted for approximately 60% of our consolidated net revenues for the year ended December 31, 2008, and we believe that export sales will remain a significant percentage of our revenue. U.S. export restrictions affect the types and specifications of products we can export. Additionally, to complete certain sales, U.S. laws may require us to obtain export licenses, and we cannot assure you that we will not experience difficulty in obtaining these licenses.

Like many energy service companies, we have operations in and sales into certain international areas, including parts of the Middle East, West Africa, Latin America, Asia Pacific and the Commonwealth of Independent States, that are subject to risks of war, political disruption, civil disturbance, political corruption, possible economic and legal sanctions (such as possible restrictions against countries that the U.S. government may deem to sponsor terrorism) and changes in global trade policies. Our sales or operations may become restricted or prohibited in any country in which the foregoing risks occur. In particular, the occurrence of any of these risks could result in the following events, which in turn, could materially and adversely impact our results of operations:

disruption of oil and natural gas E&P activities;

restriction of the movement and exchange of funds;

inhibition of our ability to collect receivables;



enactment of additional or stricter U.S. government or international sanctions;

limitation of our access to markets for periods of time;

expropriation and nationalization of our assets;

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political and economic instability, which may include armed conflict and civil disturbance;

currency fluctuations, devaluations, and conversion restrictions;

confiscatory taxation or other adverse tax policies; and

governmental actions that may result in the deprivation of our contractual rights.

Our international operations and sales increase our exposure to other countries restrictive tariff regulations, other import/export restrictions and customer credit risk.

In addition, we are subject to taxation in many jurisdictions and the final determination of our tax liabilities involves the interpretation of the statutes and requirements of taxing authorities worldwide. Our tax returns are subject to routine examination by taxing authorities, and these examinations may result in assessments of additional taxes, penalties and/or interest.

***Our variable rate indebtedness subjects us to interest rate risk, which could cause our debt service obligations to increase significantly.***

Each borrowing under our Amended Credit Facility will bear interest, at our option, at either an alternate base rate or a LIBOR-based rate. As of December 31, 2008, the \$120.3 million in term loan indebtedness under the Amended Credit Facility accrued interest using the LIBOR-based interest rate of 6.02% per annum, while \$66.0 million in total revolving credit indebtedness under the Amended Credit Facility accrued interest using the alternate base rate of 6.88% per annum. The average effective interest rate for the quarter ended December 31, 2008 under the LIBOR-based and alternate based rates was 5.7%.

Assuming that no revolving indebtedness is repaid and that \$66.0 million in revolving loans are outstanding, a 1.00% increase in the floating interest rate on the outstanding principal amount of the term loan indebtedness would result in increased interest expense of \$0.7 million per year. Assuming that no term loan indebtedness is repaid and that \$120.3 million in loans are outstanding, a 1.00% increase in the floating interest rate on the outstanding principal amount of the term loan indebtedness would result in increased interest expense of \$1.2 million per year.

Outstanding borrowings under our Bridge Loan Agreement will bear interest at either the one-month LIBOR rate plus 13.25% per annum or the alternate base rate plus 12.25%, if the LIBOR-based rate cannot be determined. The interest rates shall not be less than 15.0% per annum nor greater than 17.0% per annum. Additionally, we have agreed to pay the lender a non-refundable initial duration fee of 3.0% of the aggregate principal amount of the bridge loans outstanding (if any) on June 30, 2009 and a non-refundable additional duration fee of 2.0% of the aggregate principal amount of the bridge loans outstanding (if any) on September 30, 2009. Inclusive of these additional fees (and an upfront fee previously paid), the effective interest rate was 20.0% as of December 31, 2008. Assuming that no indebtedness under the Bridge Loan Agreement is repaid, a 1.00% increase in the effective floating interest rate on the outstanding principal amount would result in increased interest expense of \$0.4 million per year. As of December 31, 2008, the weighted average interest rate on our outstanding indebtedness of \$291.9 million was 9.6%.

***Due to the international scope of our business activities, our results of operations may be significantly affected by currency fluctuations.***

We derive a significant portion of our consolidated net revenues from international sales, subjecting us to risks relating to fluctuations in currency exchange rates. Currency variations can adversely affect margins on sales of our products in countries outside of the United States and margins on sales of products that include components obtained from suppliers located outside of the United States. Through our subsidiaries, we operate in a wide variety of jurisdictions, including the United Kingdom, Canada, the Netherlands, China, Venezuela, India, Russia, the United Arab Emirates and other countries. Certain of these countries have experienced economic problems and uncertainties from time to time. To the extent that world events or economic conditions negatively affect our future sales to customers in these and other regions of the world, or the collectibility of receivables, our future results of operations, liquidity and financial condition may be adversely affected. We currently require customers in certain higher risk countries to provide their own financing. In some cases, we have assisted our customers in organizing international financing and export-import credit guarantees provided by the United States government. We do not currently extend

long-term credit through notes to companies in countries we consider to be too risky from a credit risk perspective.

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A majority of our foreign net working capital is within the United Kingdom and Canada. The subsidiaries in those countries receive their income and pay their expenses primarily in pounds sterling ( GBP ) and Canadian dollars ( CAD ), respectively. To the extent that transactions of these subsidiaries are settled in GBP or CAD, a devaluation of these currencies versus the U.S. dollar could reduce the contribution from these subsidiaries to our consolidated results of operations as reported in U.S. dollars. For financial reporting purposes, such depreciation will negatively affect our reported results of operations since GBP- and CAD-denominated earnings that are converted to U.S. dollars are stated at a decreased value. In addition, since we participate in competitive bids for sales of certain of our products and services that are denominated in U.S. dollars, a depreciation of the U.S. dollar against the GBP and CAD harms our competitive position against companies whose financial strength bears less correlation to the strength of the U.S. dollar. While we have employed economic cash flow and fair value hedges designed to minimize the risks associated with these exchange rate fluctuations, the hedging activities may be ineffective or may not offset more than a portion of the adverse financial impact resulting from currency variations. Accordingly, we cannot assure you that fluctuations in the values of the currencies of countries in which we operate will not materially adversely affect our future results of operations.

***We may not gain rapid market acceptance for our full-wave digital products, which could materially and adversely affect our results of operations and financial condition.***

We have spent considerable time and capital developing our full-wave equipment product lines that incorporate our VectorSeis, FireFly, Scorpion, and associated technologies. Because these products rely on a new digital sensor, our ability to sell these products will depend on acceptance of our digital sensor and technology solutions by geophysical contractors and E&P companies. If our customers do not believe that our digital sensor delivers higher quality data with greater operational efficiency, our results of operations and financial condition will be materially and adversely affected.

The introduction of new seismic technologies and products has traditionally involved long development cycles. Because our full-wave digital products incorporate new technologies, we have experienced slow market acceptance and market penetration for these products. For these reasons, we have continued to be unable to foresee and accurately predict future sales volumes, revenues, and margins for these new products from period to period with the certainty we have desired. See Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources.*

***Our operating results may fluctuate from period to period, and we are subject to seasonality factors.***

Our operating results are subject to fluctuations from period to period as a result of new product or service introductions, the timing of significant expenses in connection with customer orders, unrealized sales, levels of research and development activities in different periods, the product mix sold, and the seasonality of our business. Because many of our products feature a high sales price and are technologically complex, we generally have experienced long sales cycles for these products and historically incur significant expense at the beginning of these cycles for component parts and other inventory necessary to manufacture a product in anticipation of a future sale, which may not ultimately occur. In addition, the revenues from our sales can vary widely from period to period due to changes in customer requirements. These factors can create fluctuations in our net revenues and results of operations from period to period. Variability in our overall gross margins for any period, which depend on the percentages of higher-margin and lower-margin products and services sold in that period, compounds these uncertainties. As a result, if net revenues or gross margins fall below expectations, our results of operations and financial condition will likely be adversely affected. Additionally, our business can be seasonal in nature, with strongest demand typically in the fourth calendar quarter of each year.

Due to the relatively high sales price of many of our products and seismic data libraries and relatively low unit sales volume, our quarterly operating results have historically fluctuated from period to period due to the timing of orders and shipments and the mix of products and services sold. This uneven pattern makes financial predictions for any given period difficult, increases the risk of unanticipated variations in our quarterly results and financial condition, and places challenges on our inventory management. Delays caused by factors beyond our control, such as the granting of permits for seismic surveys by third parties and the availability and equipping of marine vessels, can affect our ION Solutions division's revenues from its processing and ISS services from period to period. Also, delays

in ordering products or in shipping or delivering products in a given period could significantly affect our results of operations for that period. Fluctuations in our quarterly operating results may cause greater volatility in the market price of our common stock.

*Our outstanding shares of Series D-1 Cumulative Convertible Preferred Stock, Series D-2 Cumulative Convertible Preferred Stock and Series D-3 Cumulative Convertible Preferred Stock are convertible into shares of our common stock. The conversion of these securities would result in substantial dilution to existing stockholders, and sales in the open market of the shares of common stock acquired upon conversion may have the effect of reducing the then-current market prices for our common stock.*

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The conversion of our outstanding shares of Series D-1 Cumulative Convertible Preferred Stock, Series D-2 Cumulative Convertible Preferred Stock and Series D-3 Cumulative Convertible Preferred Stock (together, the Series D Preferred Stock ) into shares of our common stock will dilute the ownership interests of existing stockholders. Sales in the public market of shares of common stock issued upon conversion would likely apply downward pressure on prevailing market prices of our common stock. In addition, the very existence of the outstanding shares of the Series D Preferred Stock represents potential issuances of common stock upon their conversion, and could represent potential sales into the market of our common stock to be acquired on conversion, which could also depress trading prices for our common stock.

***Technologies and businesses that we acquire (including those in connection with the ARAM acquisition) may be difficult to integrate, disrupt our business, dilute stockholder value or divert management attention.***

Our acquisition of ARAM is part of our current business strategy, which is to seek new technologies, products and businesses to broaden the scope of our existing and planned product lines and technologies. This acquisition involves the integration of two companies that previously have operated independently, which is a complex and time consuming process. While we believe that the ARAM acquisition will complement our technologies and our general business strategy, there can be no assurance that we will achieve the expected benefit of the acquisition. This and future acquisitions may result in unexpected costs, expenses, and liabilities, which may have a material adverse effect on our business, financial condition or results of operations.

The ARAM acquisition and future acquisitions expose us to:

increased costs associated with the acquisition and operation of the new businesses or technologies and the management of geographically dispersed operations;

risks associated with the assimilation of new technologies (including incorporating ARAM's land seismic acquisition products with our existing product lines), operations, sites, and personnel;

difficulties in retaining and integrating key technical, sales and marketing personnel and the possible loss of such employees and costs associated with their loss;

difficulties associated with preserving relationships with ARAM's customers, partners and vendors;

risks that any technology we acquire may not perform as well as we had anticipated;

the diversion of management's attention and other resources from existing business concerns;

the potential inability to replicate operating efficiencies in the acquired company's operations;

potential impairments of goodwill and intangible assets;

the inability to generate revenues to offset associated acquisition costs;

the requirement to maintain uniform standards, controls and procedures;

the impairment of relationships with employees and customers as a result of any integration of new and inexperienced management personnel; and

the risk that acquired technologies do not provide us with the benefits we anticipated.

Integration of the acquired businesses requires significant efforts from each entity, including coordinating existing business plans and research and development efforts. We may not be able to realize the operating efficiencies, cost savings or other benefits that we expect from the acquisition. The process of combining an acquired business with our business could cause an interruption of, or loss of momentum in, the activities of the combined company's business

and the loss of key personnel and distract management's attention from the day-to-day operation of the combined companies. If we are unable to successfully integrate the operations of acquired businesses, our future results will be negatively impacted.

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ARAM's land data acquisition systems have been a direct competitor of our Scorpion land acquisition systems and their predecessors in recent years. The integration of the Scorpion and the ARAM land acquisition system product lines may prove to be difficult, involving issues concerning marketing strategies, product roadmaps, preservation of the existing bases of installed products and coordination of the different development and engineering teams. No prediction can be made as to the degree of success (if any) we may experience in the timely integration of these product lines.

In addition, while the ARAM acquisition is consistent with our strategy to increase our market share in cable-based land acquisition systems, the acquisition will present challenges for us in terms of a modified roadmap for the further development of our Scorpion land acquisition system.

***Goodwill and other intangible assets that we have recorded in connection with our acquisitions are subject to mandatory annual impairment evaluations and as a result, we could be required to write-off additional goodwill and other intangible assets, which may adversely affect our financial condition and results of operations.***

In accordance with Statement of Financial Accounting Standard (SFAS) 142, *Goodwill and Other Intangible Assets* (SFAS 142), we are required to compare the fair value of our reporting units to their carrying amount on an annual basis to determine if there is potential goodwill impairment. If the fair value of the reporting unit is less than its carrying value, an impairment loss is recorded to the extent that the fair value of the goodwill within the reporting units is less than its carrying value. At December 31, 2008, we evaluated our reporting units for potential impairment. Based upon our evaluation and given the current market conditions, we determined that approximately \$242.2 million of goodwill related to our Land Imaging Systems (including ARAM) and ION Solutions reporting units was impaired. We recorded the expense as of December 31, 2008 and reduced the carrying amount of our goodwill. Any further reduction in or impairment of the value of our goodwill or other intangible assets will result in additional charges against our earnings, which could have a material adverse effect on our reported results of operations and financial position in future periods.

***We are exposed to risks related to complex, highly technical products.***

Our customers often require demanding specifications for product performance and reliability. Because many of our products are complex and often use unique advanced components, processes, technologies, and techniques, undetected errors and design and manufacturing flaws may occur. Even though we attempt to assure that our systems are always reliable in the field, the many technical variables related to their operations can cause a combination of factors that can, and have from time to time, caused performance and service issues with certain of our products. Product defects result in higher product service, warranty, and replacement costs and may affect our customer relationships and industry reputation, all of which may adversely impact our results of operations. Despite our testing and quality assurance programs, undetected errors may not be discovered until the product is purchased and used by a customer in a variety of field conditions. If our customers deploy our new products and they do not work correctly, our relationship with our customers may be materially and adversely affected.

As a result of our systems' advanced and complex nature, we expect to experience occasional operational issues from time to time. Generally, until our products have been tested in the field under a wide variety of operational conditions, we cannot be certain that performance and service problems will not arise. In that case, market acceptance of our new products could be delayed and our results of operations and financial condition could be adversely affected.

***Reservoir Exploration Technology (RXT) has been a significant customer of our Marine Imaging Systems segment. A loss of business from this customer could adversely affect our sales and financial condition if RXT is not replaced by another customer or customers.***

In May 2007, we entered into a multi-year agreement with RXT under which they agreed to purchase a minimum of \$160 million in VectorSeis Ocean (VSO) systems and related equipment through 2011. In addition, this agreement entitles us to receive a royalty of 2.1% of revenues generated by RXT through the use of all VSO equipment commencing in January 2008 until the expiration of the agreement. In turn, RXT has been granted exclusive rights to this product line through 2011.

For the year ended December 31, 2008 and 2007, \$49.0 million, or 7.2%, and \$60.9 million, or 8.5%, respectively, of our consolidated net revenues, were attributable to marine equipment sales to RXT. The loss of RXT as a customer



or a significant reduction in their equipment or systems needs could reduce our sales volumes and revenues and lessen our cash flows, and thereby have a material adverse effect on our results of operations and financial condition. Unless we can broaden our customer base for these marine products, we can give no assurances that the revenues and cash flows from RXT, if lost, can be replaced. To the extent that the

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risks faced by RXT cause it to curtail its business activities or to make timely payments to its suppliers, we are subject to the same risks.

***We rely on highly skilled personnel in our businesses, and if we are unable to retain or motivate key personnel or hire qualified personnel, we may not be able to grow effectively.***

Our performance is largely dependent on the talents and efforts of highly skilled individuals. Our future success depends on our continuing ability to identify, hire, develop, motivate, and retain skilled personnel for all areas of our organization. We require highly skilled personnel to operate and provide technical services and support for our businesses. Competition for qualified personnel required for our data processing operations and our other segments businesses has intensified in recent years. Our growth has presented challenges to us to recruit, train, and retain our employees while managing the impact of potential wage inflation and the lack of available qualified labor in some markets where we operate. A well-trained, motivated and adequately-staffed work force has a positive impact on our ability to attract and retain business. Our continued ability to compete effectively depends on our ability to attract new employees and to retain and motivate our existing employees.

***If we do not effectively manage our transitions into new products and services, our revenues may suffer.***

Products and services for the seismic industry are characterized by rapid technological advances in hardware performance, software functionality and features, frequent introduction of new products and services, and improvement in price characteristics relative to product and service performance. Among the risks associated with the introduction of new products and services are delays in development or manufacturing, variations in costs, delays in customer purchases or reductions in price of existing products in anticipation of new introductions, write-offs or write-downs of the carrying costs of inventory and raw materials associated with prior generation products, difficulty in predicting customer demand for new product and service offerings and effectively managing inventory levels so that they are in line with anticipated demand, risks associated with customer qualification, evaluation of new products, and the risk that new products may have quality or other defects or may not be supported adequately by application software. The introduction of new products and services by our competitors also may result in delays in customer purchases and difficulty in predicting customer demand. If we do not make an effective transition from existing products and services to future offerings, our revenues and margins may decline.

Furthermore, sales of our new products and services may replace sales, or result in discounting of some of our current offerings, offsetting the benefit of a successful introduction. In addition, it may be difficult to ensure performance of new products and services in accordance with our revenue, margin, and cost estimates and to achieve operational efficiencies embedded in our estimates. Given the competitive nature of the seismic industry, if any of these risks materializes, future demand for our products and services, and our future results of operations, may suffer. ***Technological change in the seismic industry requires us to make substantial research and development expenditures.***

The markets for our products and services are characterized by changing technology and new product introductions. We must invest substantial capital to develop and maintain a leading edge in technology, with no assurance that we will receive an adequate rate of return on those investments. If we are unable to develop and produce successfully and timely new and enhanced products and services, we will be unable to compete in the future and our business, our results of operations and our financial condition will be materially and adversely affected.

***We invest significant sums of money in acquiring and processing seismic data for our ION Solutions multi-client data library.***

We invest significant amounts in acquiring and processing new seismic data to add to our ION Solutions multi-client data library. A majority of these investments is funded by our customers, while the remainder is recovered through future data licensing fees. In 2008, we invested \$110.4 million in our multi-client data library. Our customers generally commit to licensing the data prior to our initiating a new data library acquisition program. However, the aggregate amounts of future licensing fees for this data are sometimes uncertain and depend on a variety of factors, including the market prices of oil and gas, customer demand for seismic data in the library, and the availability of similar data from competitors. For example, the rapid decline of oil and natural gas prices in late 2008 could cause E&P companies to significantly delay or reduce their current seismic capital spending budgets. Therefore, we may not be able to recover all of the costs of or earn any return on these investments. In periods in which sales do not meet

original expectations, we may be required to record additional amortization and/or impairment charges to reduce the carrying value of our data library, which charges may be material to our results of operations in any period.

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***The loss of any significant customer could materially and adversely affect our results of operations and financial condition.***

We have traditionally relied on a relatively small number of significant customers. Consequently, our business is exposed to the risks related to customer concentration. No single customer represented 10% or more of our consolidated net revenues for the years ended December 31, 2008, 2007 and 2006; however, our top five customers in total represented approximately 30%, 31% and 29%, respectively, of our consolidated net revenues during those years. The loss of any of our significant customers or deterioration in our relations with any of them could materially and adversely affect our results of operations and financial condition.

Historically, a relatively small number of customers has accounted for the majority of our net revenues in any period. During the last ten years, our traditional seismic contractor customers have been rapidly consolidating, thereby consolidating the demand for our products. The loss of any of our significant customers to further consolidation could materially and adversely affect our results of operations and financial condition.

***Our ION Solutions and Data Management Solutions segments increase our exposure to the risks experienced by more technology-intensive companies.***

The businesses of ION Solutions and Data Management Solutions, being more concentrated in software, processing services, and proprietary technologies than our traditional business, have exposed us to the risks typically encountered by smaller technology companies that are more dependent on proprietary technology protection. These risks include:

future competition from more established companies entering the market;

product obsolescence;

dependence upon continued growth of the market for seismic data processing;

the rate of change in the markets for these segments' technology and services;

research and development efforts not proving sufficient to keep up with changing market demands;

dependence on third-party software for inclusion in these segments' products and services;

misappropriation of these segments' technology by other companies;

alleged or actual infringement of intellectual property rights that could result in substantial additional costs;

difficulties inherent in forecasting sales for newly developed technologies or advancements in technologies;

recruiting, training, and retaining technically skilled personnel that could increase the costs for these segments, or limit their growth; and

the ability to maintain traditional margins for certain of their technology or services.

***We are subject to intense competition, which could limit our ability to maintain or increase our market share or to maintain our prices at profitable levels.***

Many of our sales are obtained through a competitive bidding process, which is standard for our industry. Competitive factors in recent years have included price, technological expertise, and a reputation for quality, safety and dependability. While no single company competes with us in all of our segments, we are subject to intense competition in each of our segments. New entrants in many of the markets in which certain of our products and services are currently strong should be expected. See Item 1. *Business Competition*. We compete with companies that are larger than we are in terms of revenues, number of processing locations and sales and marketing resources. A few of our competitors have a competitive advantage in being part of an affiliated seismic contractor company. In addition,

we compete with major service providers and government-sponsored enterprises and affiliates. Some of our competitors conduct seismic data acquisition operations as part of their regular business, which we do not, and have greater financial and other resources than we do. These and other competitors may be better positioned to withstand and adjust more quickly to volatile market conditions, such as fluctuations in oil and natural gas prices, as well as changes in government regulations. In addition, any excess supply of products and services in the seismic services market could apply downward pressure on prices for our products and

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services. The negative effects of the competitive environment in which we operate could have a material adverse effect on our results of operations.

***Certain of our facilities could be damaged by hurricanes and other natural disasters, which could have an adverse effect on our results of operations and financial condition.***

Certain of our facilities are located in regions of the United States that are susceptible to damage from hurricanes and other weather events, and, during 2005, were impacted by hurricanes or weather events. Our Marine Imaging Systems segment leases 104,000-square feet of facilities located in Harahan, Louisiana, in the greater New Orleans metropolitan area. In late August 2005, we suspended operations at this facility and evacuated and locked down the facility in preparation for Hurricane Katrina. This facility did not experience flooding or significant damage during or after the hurricane. However, because of employee evacuations, power failures and lack of related support services, utilities and infrastructure in the New Orleans area, we were unable to resume full operations at the facility until late September 2005. In September 2008, we lost power and related services for several days at our offices located in the Houston metropolitan area and in Harahan, Louisiana as a result of Hurricane Ike and Hurricane Gustav.

Future hurricanes or similar natural disasters that impact our facilities may negatively affect our financial position and operating results for those periods. These negative effects may include reduced production and product sales; costs associated with resuming production; reduced orders for our products from customers that were similarly affected by these events; lost market share; late deliveries; additional costs to purchase materials and supplies from outside suppliers; uninsured property losses; inadequate business interruption insurance and an inability to retain necessary staff.

***We have outsourcing arrangements with third parties to manufacture some of our products. If these third party suppliers fail to deliver quality products or components at reasonable prices on a timely basis, we may alienate some of our customers and our revenues, profitability, and cash flow may decline. Additionally, the current global economic crisis could have a negative impact on our suppliers, causing a disruption in our vendor supplies. A disruption in vendor supplies may adversely affect our results of operations.***

Our manufacturing processes require a high volume of quality components. We have increased our use of contract manufacturers as an alternative to our own manufacturing of products. We have outsourced the manufacturing of our vibrator vehicles, our towed marine streamers, our redeployable ocean bottom cables, our Applied MEMS components, various components of VectorSeis Ocean, and certain electronic and ground components of our land acquisition systems. Certain components used by us are currently provided by only one supplier. If, in implementing any outsource initiative, we are unable to identify contract manufacturers willing to contract with us on competitive terms and to devote adequate resources to fulfill their obligations to us or if we do not properly manage these relationships, our existing customer relationships may suffer. In addition, by undertaking these activities, we run the risk that the reputation and competitiveness of our products and services may deteriorate as a result of the reduction of our control over quality and delivery schedules. We also may experience supply interruptions, cost escalations, and competitive disadvantages if our contract manufacturers fail to develop, implement, or maintain manufacturing methods appropriate for our products and customers.

Reliance on certain suppliers, as well as industry supply conditions, generally involves several risks, including the possibility of a shortage or a lack of availability of key components, increases in component costs and reduced control over delivery schedules. If any of these risks are realized, our revenues, profitability, and cash flows may decline. In addition, as we come to rely more heavily on contract manufacturers, we may have fewer personnel resources with expertise to manage problems that may arise from these third-party arrangements.

Additionally, our suppliers could be negatively impacted by current global economic conditions. If certain of our suppliers were to experience significant cash flow issues or become insolvent as a result of such conditions, it could result in a reduction or interruption in supplies to us or a significant increase in the price of such supplies and adversely impact our results of operations and cash flows.

***Our outsourcing relationships may require us to purchase inventory when demand for products produced by third-party manufacturers is low.***

Under some of our outsourcing arrangements, our manufacturing outsourcers purchase agreed-upon inventory levels to meet our forecasted demand. Our manufacturing plans and inventory levels are generally based on sales

forecasts. If demand proves to be less than we originally forecasted and we cancel our committed purchase orders, our outsourcers generally will have the right to require us to purchase inventory which they had purchased on our behalf. Should we be required to purchase inventory under these terms, we may be required to hold inventory that we may never utilize.

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Under our five-year supply agreement with Colibrys Ltd., we have committed to purchase a minimum number of MEMS accelerometers with an agreed upon cost of between \$5.0 million to \$8.0 million per year through 2009. If demand for our VectorSeis products, of which MEMS accelerometers are a component, proves to be less than we originally forecasted, we could be required to purchase MEMS accelerometers that we may never utilize.

***We may be unable to obtain broad intellectual property protection for our current and future products and we may become involved in intellectual property disputes.***

We rely on a combination of patent, copyright, and trademark laws, trade secrets, confidentiality procedures, and contractual provisions to protect our proprietary technologies. We believe that the technological and creative skill of our employees, new product developments, frequent product enhancements, name recognition, and reliable product maintenance are the foundations of our competitive advantage. Although we have a considerable portfolio of patents, copyrights, and trademarks, these property rights offer us only limited protection. Our competitors may attempt to copy aspects of our products despite our efforts to protect our proprietary rights, or may design around the proprietary features of our products. Policing unauthorized use of our proprietary rights is difficult, and we are unable to determine the extent to which such use occurs. Our difficulties are compounded in certain foreign countries where the laws do not offer as much protection for proprietary rights as the laws of the United States.

Third parties inquire and claim from time to time that we have infringed upon their intellectual property rights. Any such claims, with or without merit, could be time consuming, result in costly litigation, result in injunctions, require product modifications, cause product shipment delays or require us to enter into royalty or licensing arrangements. Such claims could have a material adverse affect on our results of operations and financial condition. ***Our operations, and the operations of our customers, are subject to numerous government regulations, which could adversely limit our operating flexibility.***

Our operations are subject to laws, regulations, government policies, and product certification requirements worldwide. Changes in such laws, regulations, policies or requirements could affect the demand for our products or result in the need to modify products, which may involve substantial costs or delays in sales and could have an adverse effect on our future operating results. Our export activities are also subject to extensive and evolving trade regulations. Certain countries are subject to restrictions, sanctions, and embargoes imposed by the United States government. These restrictions, sanctions, and embargoes also prohibit or limit us from participating in certain business activities in those countries. Our operations are subject to numerous local, state, and federal laws and regulations in the United States and in foreign jurisdictions concerning the containment and disposal of hazardous materials, the remediation of contaminated properties, and the protection of the environment. These laws have been changed frequently in the past, and there can be no assurance that future changes will not have a material adverse effect on us. In addition, our customers' operations are also significantly impacted by laws and regulations concerning the protection of the environment and endangered species. Consequently, changes in governmental regulations applicable to our customers may reduce demand for our products. For instance, regulations regarding the protection of marine mammals in the Gulf of Mexico may reduce demand for our air guns and other marine products. To the extent that our customers' operations are disrupted by future laws and regulations, our business and results of operations may be materially and adversely affected.

***If we, our option holders or our existing stockholders holding registration rights sell additional shares of our common stock in the future, the market price of our common stock could decline.***

The market price of our common stock could decline as a result of sales of a large number of shares of common stock in the market in the future, or the perception that such sales could occur. These sales and the possibility that these sales may occur, could make it more difficult for us to sell equity securities in the future at a time and at prices that we deem appropriate.

At December 31, 2008, we had outstanding stock options to purchase up to 7,893,275 shares of our common stock. In addition, at that date there were 876,542 shares of common stock reserved for issuance under outstanding restricted stock awards.

In addition, under our agreement dated February 15, 2005 with Fletcher International, Ltd. ( Fletcher ), Fletcher has the ability to sell up to 9,669,434 shares of our common stock that may be issued to it upon conversion of our Series D Preferred Stock. See Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations*





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Shares of our common stock are also subject to piggyback registration rights held by Laitram, L.L.C. We also may enter into additional registration rights agreements in the future in connection with any subsequent acquisitions or securities transactions we may undertake. Any sales of our common stock under these registration rights arrangements with Laitram or other stockholders could be negatively perceived in the trading markets and negatively affect the price of our common stock. Sales of a substantial number of our shares of common stock in the public market under these arrangements, or the expectation of such sales, could cause the market price of our common stock to decline.

***Our certificate of incorporation and bylaws, Delaware law, our stockholders rights plan, the terms of our Series D Preferred Stock and contractual requirements under our agreement with Fletcher contain provisions that could discourage another company from acquiring us.***

Provisions of our certificate of incorporation and bylaws, Delaware law, our stockholders rights plan, the terms of our Series D Preferred Stock and our agreement with Fletcher may discourage, delay or prevent a merger or acquisition that our stockholders may consider favorable, including transactions in which you might otherwise receive a premium for shares of our common stock. These provisions include:

authorizing the issuance of blank check preferred stock without any need for action by stockholders;

providing for a dividend on our common stock, commonly referred to as a poison pill, which can be triggered after a person or group acquires, obtains the right to acquire or commences a tender or exchange offer to acquire, 20% or more of our outstanding common stock;

providing for a classified board of directors with staggered terms;

requiring supermajority stockholder voting to effect certain amendments to our certificate of incorporation and by-laws;

eliminating the ability of stockholders to call special meetings of stockholders;

prohibiting stockholder action by written consent;

establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings; and

requiring an acquiring party to assume all of our obligations under our agreement with Fletcher and the terms of the Series D Preferred Stock set forth in our certificates of rights and designations for those series, including the dividend, liquidation, conversion, voting and share registration provisions.

***Note: The foregoing factors pursuant to the Private Securities Litigation Reform Act of 1995 should not be construed as exhaustive. In addition to the foregoing, we wish to refer readers to other factors discussed elsewhere in this report as well as other filings and reports with the SEC for a further discussion of risks and uncertainties that could cause actual results to differ materially from those contained in forward-looking statements. We undertake no obligation to publicly release the result of any revisions to any such forward-looking statements, which may be made to reflect the events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.***

***Item 1B. Unresolved Staff Comments***

None.

**Table of Contents****Item 2. Properties**

Our principal operating facilities at December 31, 2008 were as follows:

<b>Operating Facilities</b>	<b>Square Footage</b>	<b>Segment</b>
Stafford, Texas	281,000	Land and Marine Imaging Systems
Calgary, Canada	131,000	Land Imaging Systems and ION Solutions
Houston, Texas	106,000	Global Headquarters and ION Solutions
Harahan, Louisiana	104,000	Marine Imaging Systems
Lacombe, Louisiana	87,000	Marine Imaging Systems
Jebel Ali, Dubai, United Arab Emirates	47,000	International Sales Headquarters and Land Imaging Systems
Denver, Colorado	29,000	ION Solutions
Voorschoten, The Netherlands	29,000	Land Imaging Systems
Edinburgh, Scotland	15,000	Data Management Solutions
	829,000	

Each of these operating facilities is leased by us under a long-term lease agreement. These lease agreements have terms that expire ranging from 2009 to 2018. See Note 16 of *Notes to Consolidated Financial Statements*.

In addition, we lease offices in Cranleigh and Norwich, England; Bahrain; Aberdeen, Scotland; Calgary, Canada; Beijing, China; and Moscow, Russia to support our global sales force. We also lease offices for our seismic data processing centers in Egham, England; Port Harcourt, Nigeria; Luanda, Angola; Moscow, Russia; Cairo, Egypt; and in Port of Spain, Trinidad. Our executive headquarters (utilizing approximately 23,100 square feet) is located at 2105 CityWest Boulevard, Suite 400, Houston, Texas. The machinery, equipment, buildings, and other facilities owned and leased by us are considered by our management to be sufficiently maintained and adequate for our current operations.

**Item 3. Legal Proceedings**

We have been named in various lawsuits or threatened actions that are incidental to our ordinary business. Such lawsuits and actions could increase in number as our business has expanded and we have grown larger. Litigation is inherently unpredictable. Any claims against us, whether meritorious or not, could be time consuming, cause us to incur costs and expenses, require significant amounts of management time and result in the diversion of significant operational resources. The results of these lawsuits and actions cannot be predicted with certainty. We currently believe that the ultimate resolution of these matters will not have a material adverse impact on our financial condition, results of operations or liquidity.

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

Not applicable.

**Table of Contents****PART II****Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

Our common stock trades on the New York Stock Exchange (NYSE) under the symbol IO. The following table sets forth the high and low sales prices of the common stock for the periods indicated, as reported in NYSE composite tape transactions.

<b>Period</b>	<b>Price Range</b>	
	<b>High</b>	<b>Low</b>
Year ended December 31, 2008:		
Fourth Quarter	\$13.95	\$ 2.14
Third Quarter	17.61	12.64
Second Quarter	18.26	13.82
First Quarter	16.05	11.04
Year ended December 31, 2007:		
Fourth Quarter	\$16.85	\$13.28
Third Quarter	17.02	11.86
Second Quarter	17.30	13.32
First Quarter	14.82	11.47

We have not historically paid, and do not intend to pay in the foreseeable future, cash dividends on our common stock. We presently intend to retain cash from operations for use in our business, with any future decision to pay cash dividends on our common stock dependent upon our growth, profitability, financial condition and other factors our board of directors consider relevant. In addition, the terms of our Amended Credit Facility prohibit us from paying dividends on or repurchasing shares of our common stock without the prior consent of the lenders.

Additionally, the terms of our Amended Credit Facility contain covenants that restrict us, subject to certain exceptions, from paying cash dividends on our common stock and repurchasing and acquiring shares of our common stock unless (i) there is no event of default under the Amended Credit Facility and (ii) the amount of cash used for cash dividends, repurchases and acquisitions does not, in the aggregate, exceed an amount equal to the excess of 30% of ION's domestic consolidated net income for our most recently completed fiscal year over \$15.0 million. See Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources.*

On December 31, 2008, there were 417 holders of record of our common stock.

During the three months ended December 31, 2008, we withheld and subsequently cancelled shares of our common stock to satisfy minimum statutory income tax withholding obligations on the vesting of restricted stock for employees. The date of cancellation, number of shares and average effective acquisition price per share, were as follows:

	(d) Maximum Number (or Approximate Dollar
(c) Total Number of Shares Purchased	Value) of Shares That

<b>Period</b>	<b>(a) Total Number of Shares Acquired</b>	<b>(b) Average Price Paid Per Share</b>	<b>as Part of Publicly Announced Plans or Program</b>	<b>May Yet Be Purchased Under the Plans or Program</b>
October 1, 2008 to October 31, 2008		\$	Not applicable	Not applicable
November 1, 2008 to November 30, 2008		\$	Not applicable	Not applicable
December 1, 2008 to December 31, 2008	23,145	\$ 2.81	Not applicable	Not applicable
Total	23,145	\$ 2.81		

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**Table of Contents****Item 6. Selected Financial Data**

The selected consolidated financial data set forth below with respect to our consolidated statements of operations for the years ended December 31, 2008, 2007, 2006, 2005 and 2004, and with respect to our consolidated balance sheets at December 31, 2008, 2007, 2006, 2005 and 2004 have been derived from our audited consolidated financial statements. Our results of operations and financial condition have been affected by acquisitions of companies and impairments of assets during the periods presented, which may affect the comparability of the financial information. In particular, the selected financial data set forth below reflects our acquisitions of GXT in June 2004 and ARAM in September 2008. Our results of operations for the year ended December 31, 2008 were negatively impacted from the impairment of our goodwill and intangibles assets totaling \$252.3 million and from the beneficial conversion charge of \$68.8 million associated with our outstanding convertible preferred stock. This information should not be considered as being necessarily indicative of future operations, and should be read in conjunction with Item 7.

*Management's Discussion and Analysis of Financial Condition and Results of Operations* and the consolidated financial statements and the notes thereto included elsewhere in this Form 10-K.

	<b>Years Ended December 31,</b>				
	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
	<b>(In thousands, except for per share data)</b>				
<b>Statement of Operations Data:</b>					
Product revenues	\$ 417,511	\$ 537,691	\$ 354,258	\$ 237,359	\$ 194,978
Service revenues	262,012	175,420	149,298	125,323	45,663
Net revenues	679,523	713,111	503,556	362,682	240,641
Cost of products	289,795	386,849	252,647	163,575	130,615
Cost of services	181,980	119,679	91,592	86,619	40,075
Gross profit	207,748	206,583	159,317	112,488	69,951
Operating expenses (income):					
Research, development and engineering	49,541	49,965	37,853	26,379	23,870
Marketing and sales	47,854	43,877	40,651	33,167	23,491
General and administrative	70,776	49,100	40,807	28,227	29,748
Impairment of goodwill and intangible assets	252,283				
(Gain) loss on sale of assets	117	(253)	58	99	(3,980)
Total operating expenses	420,571	142,689	119,369	87,872	73,129
Income (loss) from operations	(212,823)	63,894	39,948	24,616	(3,178)
Interest expense	(12,723)	(6,283)	(5,770)	(6,134)	(6,231)
Interest income	1,439	1,848	2,040	843	1,276
Loss on debt conversion		(2,902)			
Fair value adjustment of preferred stock redemption features	1,215				
Other income (expense)	2,985	(1,090)	(2,161)	820	220

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Income (loss) before income taxes and change in accounting principle	(219,907)	55,467	34,057	20,145	(7,913)
Income tax expense	1,131	12,823	5,114	1,366	701
Net income (loss) before change in accounting principle	(221,038)	42,644	28,943	18,779	(8,614)
Cumulative effect of change in accounting principle			398		
Net income (loss)	(221,038)	42,644	29,341	18,779	(8,614)
Preferred stock dividends and accretion	3,889	2,388	2,429	1,635	
Preferred stock beneficial conversion charge	68,786				
Net income (loss) applicable to common shares	\$ (293,713)	\$ 40,256	\$ 26,912	\$ 17,144	\$ (8,614)
Net income (loss) per basic share before change in accounting principle	\$ (3.06)	\$ 0.49	\$ 0.33	\$ 0.22	\$ (0.13)
Cumulative effect of change in accounting principle			0.01		
Net income (loss) per basic share	\$ (3.06)	\$ 0.49	\$ 0.34	\$ 0.22	\$ (0.13)
Net income (loss) per diluted share before change in accounting principle	\$ (3.06)	\$ 0.45	\$ 0.32	\$ 0.21	\$ (0.13)
Cumulative effect of change in accounting principle			0.01		
Net income (loss) per diluted share	\$ (3.06)	\$ 0.45	\$ 0.33	\$ 0.21	\$ (0.13)

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	<b>Years Ended December 31,</b>				
	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
	<b>(In thousands, except for per share data)</b>				
Weighted average number of common shares outstanding	95,887	81,941	79,497	78,600	65,759
Weighted average number of diluted shares outstanding	95,887	97,321	95,182	79,842	65,759
<b>Balance Sheet Data (end of year):</b>					
Working capital	\$ 267,155	\$ 220,522	\$ 170,342	\$ 153,761	\$ 101,121
Total assets	861,431	709,149	655,136	537,861	486,094
Notes payable and long-term debt	291,909	24,713	77,540	75,946	85,951
Stockholders' equity	325,070	476,240	369,668	327,545	308,760
<b>Other Data:</b>					
Capital expenditures	\$ 17,539	\$ 11,375	\$ 13,704	\$ 5,304	\$ 5,022
Investment in multi-client library	110,362	64,279	39,087	19,678	4,168
Depreciation and amortization (other than multi-client library)	33,052	26,767	22,036	23,497	18,345
Amortization of multi-client library	80,532	37,662	25,011	10,707	5,870

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

*Note: The following should be read in conjunction with our Consolidated Financial Statements and related notes that appear elsewhere in this Annual Report on Form 10-K.*

**Executive Summary**

*Our Business.* We are a technology-focused seismic solutions company that provides advanced seismic data acquisition equipment, seismic software and seismic planning, processing and interpretation services to the global energy industry. Our products, technologies and services are used by oil and gas exploration and production (E&P) companies and seismic contractors to generate high-resolution images of the Earth's subsurface for exploration, exploitation and production operations.

We operate our company through four business segments. Three of our business segments—Land Imaging Systems, Marine Imaging Systems and Data Management Solutions—make up our ION Systems division. Our fourth business segment is our ION Solutions division.

*Land Imaging Systems*—cable-based, cableless and radio-controlled seismic data acquisition systems, digital and analog geophone sensors, vibroseis vehicles (i.e., vibrator trucks) and source controllers for detonator and vibrator energy sources.

*Marine Imaging Systems*—towed streamer and redeployable ocean bottom cable seismic data acquisition systems and shipboard recorders, streamer positioning and control systems and energy sources (such as air guns and air gun controllers).

*Data Management Solutions*—software systems and related services for navigation and data management involving towed marine streamer and seabed operations.



*ION Solutions* advanced seismic data processing services for marine and land environments, seismic data libraries, and Integrated Seismic Solutions ( ISS ) services.

Our current business strategy is predicated on successfully executing seven key imperatives:

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Continuing to manage our cost structure to reflect current market and economic conditions while keeping key strategic technology programs progressing with an overall goal of enabling E&P companies to solve their complex reservoir problems most efficiently and effectively;

Expanding our ION Solutions business in new regions with new customers and new land and marine service offerings, including proprietary services for owners and operators of oil and gas properties;

Globalizing our ION Solutions data processing business by opening advanced imaging centers in new strategic locations, and expanding our presence in the land seismic processing segment, with emphasis on serving the emerging national oil companies;

Developing and introducing our next generation of marine towed streamer products, with a goal of developing markets beyond the new vessel market;

Expanding our seabed imaging solutions business using our VectorSeis<sup>®</sup> Ocean (VSO) acquisition system platform and derivative products to obtain technical and market leadership in what we continue to believe is a very important and expanding market;

Utilizing our recent ARAM acquisition as a framework to increase our market share and profitability in cable-based land acquisition systems; and

Furthering the commercialization of FireFly<sup>®</sup>, our cableless full-wave land data acquisition system, through sales and also through a services/rental model to advance the diffusion rate.

*Our Current Debt Levels.* As a result of the ARAM acquisition, we have increased our indebtedness significantly. As of December 31, 2008, we had outstanding total indebtedness of approximately \$291.9 million, including capital lease obligations. Total indebtedness on that date included \$120.3 million in borrowings under five-year term indebtedness and \$66.0 million in borrowings under our revolving credit facility, in each case incurred under our amended commercial banking credit facility (the Amended Credit Facility ). We also had as of that date \$40.8 million of indebtedness outstanding under a Bridge Loan Agreement, dated as of December 30, 2008, with Jefferies Finance LLC ( Jefferies ) as administrative agent, sole bookrunner, sole lead arranger and lender (the Bridge Loan Agreement ), which indebtedness matures on January 31, 2010. In addition, we had \$35.0 million of subordinated indebtedness outstanding under an amended and restated subordinated promissory note (the Amended and Restated Subordinated Note ) that we issued to one of ARAM 's selling shareholders in exchange for a previous promissory note we had issued to that selling shareholder as part of the purchase price consideration for the acquisition of ARAM.

As of December 31, 2008, we had available \$34.0 million (without giving effect to \$1.2 million of outstanding letters of credit) of additional revolving credit borrowing capacity under our Amended Credit Facility. However, as of February 23, 2009, we had available only \$0.8 million of additional revolving credit borrowing capacity, which can be used only to fund further letters of credit under the Amended Credit Facility. Our cash and cash equivalents as of February 23, 2009 were approximately \$48.3 million compared to \$35.2 million at December 31, 2008.

We intend to pay or refinance the indebtedness that we borrowed to complete the ARAM acquisition, which includes the Bridge Loan Agreement scheduled to mature on January 31, 2010 and the Amended and Restated Subordinated Seller Note scheduled to mature on September 17, 2013 (see further discussion at Note 11 *Notes Payable, Long-Term Debt and Lease Obligations* of the Notes to the Consolidated Financial Statements), and are continuing to explore methods to accomplish this. Our ability to obtain any refinancing, including any additional debt financing, whether through the issuance of new debt securities or otherwise, and the terms of any such financing are dependent on, among other things, our financial condition, financial market conditions within our industry, credit ratings and numerous other factors. There can be no assurance that we will be able to obtain financing on acceptable terms or within an acceptable time, if at all. If we are unable to obtain financing on terms and within a timeframe acceptable to us and we are unable to pay the debts as they become due, we could be in default under our debt

instruments and agreements, which could have a material adverse effect on our operations, financial condition, ability to compete or ability to comply with regulatory requirements. Any such defaults, if not rescinded or cured, would have a materially adverse effect on our operations, financial condition and cash flows. See *Liquidity and Capital Resources Sources of Capital* below and Item 1A *Risk Factors* above.

In January 2009, Standard and Poor's Rating Services downgraded our outlook from stable to negative due to expectations of a weakening seismic market.

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At December 31, 2008, we were in compliance with all covenants under the Amended Credit Facility and the Bridge Loan Agreement. We believe that, based on our 2009 operating plan, we will remain in compliance with the financial covenants during 2009. As discussed in Item 1A *Risk Factors* of this Annual Report on Form 10-K, however, there are scenarios under which we could fall out of compliance with the financial covenants contained in the Amended Credit Facility and the Bridge Loan Agreement. Our failure to comply with these covenants could result in an event of default that, if not cured or waived, could have a material adverse effect on our financial condition, results of operations, and debt service capability. If we were not able to satisfy all of the financial covenants, we would need to seek to amend, or seek one or more waivers of, the covenants under the Amended Credit Facility and the Bridge Loan Agreement. There can be no assurance that we would be able to obtain any such waivers or amendments, in which case we would likely seek to obtain new secured debt, unsecured debt or equity financing. However, there also can be no assurance that such debt or equity financing would be available on terms acceptable to us or at all. In the event that we would need to amend the Amended Credit Facility and the Bridge Loan Agreement, or obtain new financing, we would likely incur substantial up front fees and higher interest costs, and other terms in the amendment would likely be less favorable than those currently in the Amended Credit Facility or the Bridge Loan Agreement.

*Economic and Credit Market Conditions.* Demand for our products and services is cyclical and substantially dependent upon activity levels in the oil and gas industry, particularly our customers' willingness to expend their capital for oil and natural gas exploration and development projects. This demand is highly sensitive to current and expected future oil and natural gas prices.

The current global financial crisis, which has contributed, among other things, to significant reductions in available capital and liquidity from banks and other providers of credit, has resulted in the worldwide economy entering into a recessionary period, which may be prolonged and severe. During 2008, oil prices were highly volatile, increasing to record levels in the second quarter of 2008 and then sharply declining thereafter. Falling crude oil prices have prompted the Organization of Petroleum Exporting Countries (OPEC) to announce reductions in oil production quotas. U.S. inventory levels for natural gas rose higher than expected during 2008, and North American natural gas prices (NYMEX) have fallen from the \$13.00 per Mcf level during the summer of 2008 to below \$5.00 per Mcf. The uncertainty surrounding future economic activity levels and the tightening of credit availability has resulted in decreased activity levels for most of our businesses. Our land seismic businesses in North America and Russia have been particularly adversely affected. We expect that exploration and production expenditures will be constrained to the extent E&P companies and seismic contractors are limited in their access to the credit markets as a result of further disruptions in, or a more conservative lending practices in, the credit markets. There is significant uncertainty about future activity levels and the impact on our businesses.

We believe that we are in a down cycle for our products and services that will likely last for at least one year, with an expected recovery starting sometime in 2010, depending on the depth and length of the current downturn. Furthermore, we understand that both our seismic contractor customers and the E&P companies that are users of our products, services and technology have reduced their capital spending.

While the current global recession and the decline in oil and gas prices have slowed demand in the near term, we believe that overcoming the long-term decline rates in oil and gas production, compared to the discoveries of new oil and gas reserves, will prove to be difficult. We believe that technology that adds a competitive advantage through cost reductions or improvements in productivity will continue to be valued in our marketplace, even in 2009. For example, we believe that our new technologies, such as FireFly, DigiFIN and Orca, will continue to attract interest because they are designed to deliver improvements in image quality and more productive delivery systems. We are re-assigning much of our sales efforts for our ARIES land seismic systems from North America to international sales channels (other than Russia). In late 2008, we announced the commercialization of our ARIES II system, which we believe will provide more flexibility for users.

While it is difficult to determine the length and severity of the downturn, we believe the long-term prospects for the exploration and production industry and our company are still fundamentally positive. International oil companies (IOCs) continue to have difficulty accessing new sources of supply, partially as a result of the growth of national oil companies. This situation is also affected by increasing environmental issues, particularly in North America, where

companies may be temporarily or permanently denied access to some of the most promising exploration opportunities both onshore and offshore. It is estimated that approximately 85% -90% of the world's reserves are controlled by national oil companies, which increasingly prefer to develop resources on their own or by working directly with the oil field services and equipment providers. These dynamics often prevent capital, technology and project management capabilities from being optimally deployed on the best exploration and production opportunities, which results in global supply capacity being less than it otherwise might be. As a consequence, the pace of new supply additions may be insufficient to keep up with demand once the global recession ends.

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In response to this downturn, we have taken measures to further reduce costs in our businesses, and particularly in our land seismic business in connection with our integration of ARAM into our legacy land product lines. We expect that 2009 will prove to be a challenging year for our North America and Russia land systems and vibroseis truck sales. In addition, we slowed our capital spending, including investments for our multi-client data library, during the fourth quarter of 2008 and are projecting capital expenditures for 2009 at \$65 million to \$85 million compared with \$128.0 million for 2008. Of that total, we expect to spend approximately \$60 million to \$75 million on investments in our multi-client data library during 2009, and we anticipate that a majority of this investment will be underwritten by our customers. To the extent our customers' commitments do not reach an acceptable level of pre-funding, the amount of our anticipated investment could significantly decline. The remaining sums are anticipated to be funded from internally generated cash.

Through a variety of other resources, we are exploring ways to reduce our cost structure. We have taken a deliberate approach to identifying the weaknesses in our business and, in light of the tight credit markets, plan to take a more conservative approach in making extended financing terms available to our customers. The most significant cost reduction to date related to a 13% headcount reduction in the fourth quarter of 2008 and the first quarter of 2009 to adjust to the expected lower levels of activity, resulting in an expected savings of \$12.6 million per year. We plan to reduce our research and development spending but will continue to fund strategic programs to position ourselves for the expected rebound in economic activity. Overall, we will give priority to generating cash flow and taking steps to reduce our cost structure while maintaining our long-term commitment to continued technology development.

*2008 Developments.* The year 2008 was a year of contrasts for the oil and gas industry as a whole and for our company. In July 2008, oil prices reached an all-time high of nearly \$150 per barrel. Market conditions changed dramatically commencing in September 2008 as disruption in the U.S. financial markets prompted a global economic crisis, resulting in a dramatic decrease in demand for a wide variety of products and services throughout the world, including the demand for oil and natural gas. By the end of 2008, oil prices had fallen to approximately \$40 per barrel and continued at such low prices into 2009. The sharp decline in commodity prices, combined with a severe credit shortfall and increasing costs of credit, resulted in E&P companies decreasing, and in some cases halting, their E&P capital and expenditure plans.

Since 2004, we have grown at a rapid pace, and through the beginning of the fourth quarter of 2008, were poised to continue that success. In late 2008, however, economic conditions began to have a material impact on our industry and the demand for our products, particularly in our Land Imaging Systems segment. In our Land Imaging Systems segment, revenues for the fiscal year 2008 declined by 38.3% compared to this segment's revenues for the same period in 2007. This decrease was principally due to the decline in business activity during the fourth quarter of 2008 resulting from the decline of the global economy, coupled with the fact that significant revenue events that occurred during 2007 were not duplicated in 2008, including: (i) the shipment of 14 land seismic acquisition systems ordered by Oil and Natural Gas Corporation Limited (ONGC), the Indian national oil company, and (ii) the sale of the initial FireFly system. During the fiscal year 2008, our Marine Imaging Systems and ION Solutions segments experienced significant percentage increases in revenues compared to their revenues for the fiscal year ended December 31, 2007. Our Data Management Solutions segment's revenues remained relatively stable with a \$0.4 million decline compared to the prior year.

Our overall total net revenues of \$679.5 million for the fiscal year ended December 31, 2008 decreased \$33.6 million, or 4.7%, compared to total net revenues for 2007. Our overall gross margin percentage for the twelve months of 2008 improved to 30.6% compared to 29.0% for 2007. However, the economic developments in the fourth quarter of 2008 resulted in significantly lower revenues during what has historically been our strongest quarter. In the fourth quarter of 2008, we recorded a loss from operations of (\$274.4) million compared to \$29.6 million income from operations for fiscal 2007, mainly due to the impairment of goodwill and intangible assets of \$252.3 million. Developments during 2008 and early 2009 include the following:

On September 18, 2008, we acquired ARAM. See further discussion below at *ARAM Acquisition* of this Item 2.

In March 2008, we completed acquisition of a basin-scale seismic survey library that provides a new regional 2D seismic framework of the Eastern Java Sea and the Makassar Straits, two prospective areas offshore Indonesia and Malaysia. Data for nearly 10,000 kilometers were acquired during the acquisition phase of this project.

We experienced strong sales of our new DigiFIN advanced streamer command and control systems as market demand continued to be strong for this new product.

In June 2008, our first DigiSTREAMER solid streamer acquisition system was successfully deployed in a commercial acquisition program in the North Sea.

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On July 3, 2008, we entered into a \$100.0 million amended and restated revolving credit facility. In September and December 2008, we amended this facility to add a new \$125 million term loan sub-facility to finance our acquisition of ARAM, to permit us to implement a shareholder rights plan and to accommodate the terms of our refinancing transactions on December 30, 2008. See *Liquidity and Capital Resources Sources of Capital Revolving Line of Credit and Term Facilities* below.

In August 2008, we successfully completed the acquisition phase of a multi-client seismic imaging project using our FireFly cableless land acquisition system at Durham Ranch in Northwest Colorado. More than 6,000 VectorSeis-enabled FireFly stations were deployed with 10,500 receiver points of full-wave seismic data acquired.

In October 2008, we announced that we had been awarded a multi-year, marine multi-component processing contract by Mobil Producing Nigeria (MPN) Unlimited, operator of a joint venture with Nigeria National Petroleum Corporation. The contract was the largest data processing project in our history and consisted of providing advanced imaging services for a series of seabed seismic surveys to be acquired over the next several years.

In November 2008, we announced the completion of our basin-scale ArcticSPAN. This new data complements the original 6,700 kilometers of ArcticSPAN data acquired during 2006. In total, more than 12,000 km of ultra-deep, basin-scale 2D data, imaged with advanced processing and depth imaging techniques from our ION Solutions segment, are currently available.

In November 2008, after successful field trials with Conquest Seismic Services, Inc. in North Dakota, we announced the commercialization of our cable-based ARIES II seismic recording platform. ARIES II builds upon the market success of ARIES I, but implements a new system architecture that is designed to improve channel capacity, efficient equipment deployment and system performance.

In November 2008, we were awarded a fleet-wide contract in excess of \$25 million by The Polarcus Group of Companies to equip their vessels with four streamer positioning and control technologies. These technologies include DigiFIN, CompassBIRD, DigiRANGE II and Orca command and control systems.

In January 2009, we announced our first commercial delivery of a multi-thousand station FireFly system equipped with digital, full-wave VectorSeis sensors. The deployment of ION's first commercialized FireFly system is taking place in a producing hydrocarbon basin containing reservoirs that have proven difficult to image with conventional seismic techniques.

*Key Financial Metrics.* The following table provides an overview of key financial metrics for our company as a whole and our four business segments during the twelve months ended December 31, 2008, compared to those for fiscal 2007 and 2006 (in thousands, except per share amounts):

	<b>Years Ended December 31,</b>		
	<b>2008</b>	<b>2007</b>	<b>2006</b>
Net revenues:			
ION Systems Division:			
Land Imaging Systems	\$ 200,493	\$ 325,037	\$ 205,779
Marine Imaging Systems	182,710	177,685	127,927
Data Management Solutions	37,240	37,660	23,198
Total ION Systems Division	420,443	540,382	356,904



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ION Solutions Division	259,080	172,729	146,652
Total	\$ 679,523	\$ 713,111	\$ 503,556
Income (loss) from operations:			
ION Systems Division:			
Land Imaging Systems	\$ (13,662)	\$ 28,681	\$ 13,463
Marine Imaging Systems	52,624	44,727	30,258
Data Management Solutions	22,298	17,290	7,461
Total ION Systems Division	61,260	90,698	51,182
ION Solutions Division	40,534	21,646	28,648
Corporate	(62,334)	(48,450)	(39,882)
Impairment of goodwill and intangible assets	(252,283)		
Total	\$ (212,823)	\$ 63,894	\$ 39,948

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	<b>Years Ended December 31,</b>		
	<b>2008</b>	<b>2007</b>	<b>2006</b>
Net income (loss) applicable to common shares	\$ (293,713)	\$ 40,256	\$ 26,912
Basic net income (loss) per common share	\$ (3.06)	\$ 0.49	\$ 0.34
Diluted net income per (loss) common share	\$ (3.06)	\$ 0.45	\$ 0.33

We intend that the discussion of our financial condition and results of operations that follows will provide information that will assist in understanding our consolidated financial statements, the changes in certain key items in those financial statements from year to year, and the primary factors that accounted for those changes.

For a discussion of factors that could impact our future operating results and financial condition, see Item 1A. *Risk Factors* above.

**ARAM Acquisition**

In July 2008, we signed a purchase agreement to acquire all of the outstanding shares of ARAM Systems Ltd., a Canadian-based provider of cable-based land seismic recording systems, and its affiliated company, Canadian Seismic Rentals Inc. (sometimes collectively referred to herein as *ARAM*), from their shareholders (the *Sellers*). Founded in 1971, ARAM designs, manufactures, sells and leases land seismic data acquisition systems, specializing in analog cabled systems. Over the last several years, we believe that ARAM has demonstrated an ability to gain presence in an expanding global market for cable-based land seismic recording systems. ARAM's ARIES recording systems, known for reliability and ease of use, have been increasingly used by North American contractors. We believe the scope and scale of the combined entity will offer our customers expanded and accelerated access to a broader range of instrumentation options and enable our consolidated land business to grow and deliver bottom-line results more effectively than either company could on its own. In addition to synergies associated with the consolidation of products and technical and operations personnel, we believe we have an opportunity to leverage each other's customer base as well as incorporating ARAM's ability to design and manufacture high-margin land imaging systems within ION.

On September 17, 2008, we, ARAM and the Sellers entered into an Amended and Restated Share Purchase Agreement (the *Amended Purchase Agreement*), that amended the terms of the original share purchase agreement executed in July 2008. On September 18, 2008, we, through our acquisition subsidiary, 3226509 Nova Scotia Company ( *ION Sub* ) (see Note 2 *ARAM Acquisition* of the *Notes to Consolidated Financial Statements*), completed the acquisition of the outstanding shares of ARAM in accordance with the terms of the Amended Purchase Agreement.

In exchange for the shares of ARAM, we, through ION Sub, (i) paid the Sellers aggregate cash consideration of \$236 million (which amount was net of certain purchase price adjustments made at the closing), (ii) issued to one of the Sellers 3,629,211 shares of our common stock and (iii) issued to one of the Sellers an unsecured senior promissory note in the original principal amount of \$35.0 million (the *Senior Seller Note*) and an unsecured subordinated promissory note (the *Subordinated Seller Note*) in the original principal amount of \$10.0 million.

In connection with our acquisition of ARAM, in July 2008, we, ION International S.à r.l. ( *ION Sàrl* ) and certain of our domestic and other foreign subsidiaries (as guarantors) entered into a \$100.0 million amended and restated revolving credit facility under the terms of an Amended and Restated Credit Agreement dated July 3, 2008, as amended to date, (the *Credit Agreement*), with HSBC Bank USA, N.A., as administrative agent, joint lead arranger and joint bookrunner, ABN AMRO Incorporated, as joint lead arranger and joint bookrunner, CitiBank, N.A., as syndication agent, and the lenders party thereto. On September 17, 2008, we, ION Sàrl and certain of our domestic and other foreign subsidiary guarantors amended the terms of the Credit Agreement by entering into a first amendment to the Credit Agreement, which added a new \$125.0 million term loan sub-facility. In December 2008, we, ION Sàrl and certain of our domestic and other foreign subsidiary guarantors entered into two additional amendments to the Credit Agreement that further modified its terms. Our commercial banking credit facility, as

amended to the date of this filing, is referred to as the Amended Credit Facility. See *Liquidity and Capital Resources Sources of Capital Revolving Line of Credit and Term Facilities* below.

We financed the cash portion of the purchase price for ARAM with (i) \$72.0 million of revolving credit borrowings and \$125 million of five-year term loan indebtedness under our Amended Credit Facility (see *Liquidity and Capital Resources Sources of Capital Revolving Line of Credit and Term Facilities* below), and (ii) \$40.0 million in gross proceeds evidenced by a Senior Increasing Rate Note that we issued to Jefferies Finance CP Funding LLC at the completion of the ARAM acquisition (see *Liquidity and Capital Resources Sources of Capital Bridge Loan* below).

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The terms of the Amended Purchase Agreement had required us to deposit \$35.0 million cash (representing a portion of the cash purchase price for the acquisition) into escrow on a date after closing to secure the parties obligations to each other for indemnification liabilities and post-closing purchase price adjustments. Additionally, the terms of the Senior Seller Note provided that when the Senior Seller Note was repaid, proceeds from that repayment were to be applied to fund the escrow account. We also entered into guarantees dated September 18, 2008 to guarantee the obligations of ION Sub under the Senior Seller Note and the Subordinated Seller Note.

We had expected to repay the indebtedness under the Senior Increasing Rate Note, the Senior Seller Note and the Subordinated Seller Note and pay down \$72.0 million in revolving credit indebtedness under our Amended Credit Facility by issuing additional long-term debt before the end of 2008. In that regard, we had entered into a commitment letter dated September 18, 2008 (the Commitment Letter), with Jefferies Funding LLC (Jefferies Funding), pursuant to which Jefferies Funding agreed, subject to the terms and upon satisfaction of the conditions contained in the Commitment Letter, to act in the capacities of sole advisor, sole administrative agent, sole collateral agent (if applicable), sole book-runner, sole lead arranger and sole syndication agent in connection with a proposed US\$150.0 million senior bridge loan facility. This proposed senior bridge loan facility was to be drawn upon in the event that certain other long-term indebtedness that we would attempt to raise, including high-yield unsecured notes, was not successful. The Commitment Letter was to terminate by its terms on December 31, 2008.

On November 14, 2008, we issued a press release to announce our intention to offer and sell, subject to market and other conditions, \$175.0 million aggregate principal amount of unsecured senior notes due 2013 in transactions exempt from registration under the Securities Act (including pursuant to Rule 144A under the Securities Act). However, prevailing credit market conditions prevented us from successfully completing any issuance of the senior notes. In December 2008, marketing efforts for the senior notes offering ceased. In December 2008, we repaid the \$72.0 million revolving credit indebtedness under the Amended Credit Facility from internally-generated cash. On December 30, 2008, we further amended our Amended Credit Facility and refinanced our Senior Increasing Rate Note. See *Liquidity and Capital Resources* below.

*Refinancing ION's Obligations to the Sellers.* As part of the refinancing transactions that closed on December 30, 2008, the terms of the Senior Seller Note were amended and restated, and new subordination provisions were added, by ION Sub's issuing an Amended and Restated Subordinated Note in replacement of and exchange for the Senior Seller Note. The Amended and Restated Subordinated Note was issued to the same Seller holding the Senior Seller Note, Maison Mazel Ltd. (formerly known as 1236929 Alberta Ltd.) (Maison Mazel). The principal amount of the Amended and Restated Subordinated Note remained at \$35.0 million and the new maturity date under the Amended and Restated Subordinated Note was extended from September 17, 2009 to September 17, 2013. Interest on the outstanding principal amount under the note is payable quarterly. We also entered into an Amended and Restated Guaranty dated December 30, 2008, evidencing our guaranty obligations with respect to the liabilities of ION Sub under the Amended and Restated Subordinated Note.

Also, in connection with the refinancing transactions, ION, ION Sub, ARAM and Maison Mazel entered into an Assignment Agreement dated as of December 30, 2008, under which ION, ION Sub and ARAM assigned to Maison Mazel their rights to an expected Canadian federal income tax refund (the Refund Claim), in exchange for the termination, satisfaction and cancellation by Maison Mazel of the Subordinated Seller Note, and our guaranty of the Subordinated Seller Note. However, based upon relevant accounting literature, while legally extinguished, the liability under the Subordinated Seller Note was not extinguished on the balance sheet as of December 31, 2008 and was included as short-term debt. The income tax refund is also reflected on our balance sheet (netted against our income taxes payable) at December 31, 2008. As of February 20, 2009, approximately \$7.0 million of the Refund Claim had been received by ARAM and applied against this liability.

We, ION Sub, ARAM and Maison Mazel also entered into a Release Agreement dated as of December 30, 2008, whereby the parties agreed to:

terminate the \$35.0 million purchase price escrow arrangements they had agreed to in the Amended Purchase Agreement, and

release Maison Mazel and the other Sellers from their obligations under the Amended Purchase Agreement to indemnify us, ION Sub and other ION-related indemnified persons for breaches by the Sellers of certain of their representations and warranties contained in the Amended Purchase Agreement.

In addition, the parties agreed to certain procedural changes regarding the timing of and the process for the final purchase price adjustments. It is expected that all of the purchase price adjustments under the Amended Purchase Agreement will be completed

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during the first half of 2009, following the date that all of the Canadian income tax refund pursuant to the Refund Claim is received. For further information regarding our additional debt financing, see *Liquidity and Capital Resources* below.

Our results of operations and financial condition as of and for the twelve months ended December 31, 2008 were affected by our acquisition of ARAM on September 18, 2008, which may affect the comparability of certain of the other financial information contained in this Form 10-K.

**Results of Operations*****Year Ended December 31, 2008 Compared to Year Ended December 31, 2007***

*Net Revenues.* Net revenues of \$679.5 million for the year ended December 31, 2008 decreased \$33.6 million, compared to the corresponding period of 2007, principally due to the sharp decline in the global economy, which caused decreased activity and demand for seismic services, most notably in our Land Imaging Systems segment. Land Imaging Systems net revenues decreased by \$124.5 million, to \$200.5 million compared to \$325.0 million during the twelve months ended December 31, 2007. Despite the inclusion of ARAM's operating results, the division was strongly impacted by the market decline, which resulted in reduced sales of both land systems and vibroseis trucks. This decrease was also made more pronounced by the inclusion of several large 2007 sales of our land acquisition systems that were not duplicated in 2008, including the sale of 14 land acquisition systems to ONGC, the sale of our initial version of FireFly and significantly increased vibrator truck sales in 2007. Marine Imaging Systems net revenues increased \$5.0 million to \$182.7 million, compared to \$177.7 million during the year ended December 31, 2007, principally due to stronger sales of our marine positioning products, including sales related to the full commercialization of our DigiFIN advanced streamer command and control system, the first two commercial sales of our DigiSTREAMER system and stronger sales of our marine seismic data acquisition products. We delivered to RXT the fifth VSO system in 2008; however, VSO system sales decreased compared to 2007 mainly due to the timing of the sales. Our Data Management Solutions net revenues decreased slightly by \$0.5 million, to \$37.2 million compared to \$37.7 million in 2007. This change primarily reflects continued energy industry demand for marine seismic work, slightly offset by the impact of foreign currency exchange rates between the GBP and the U.S. Dollar in 2008.

ION Solutions net revenues increased \$86.4 million, to \$259.1 million, or 50%, compared to \$172.7 million in 2007. This increase was due to larger demand related to higher proprietary processing revenues, pre-funded multi-client seismic surveys primarily off the coasts of Alaska and South America and sales of off-the-shelf seismic data sales. Sales of our pre-funded multi-client seismic surveys and of off-the-shelf seismic data increased approximately 60% in 2008 compared to 2007.

*Gross Profit and Gross Profit Percentage.* Gross profit of \$207.7 million for the year ended December 31, 2008 increased \$1.1 million compared to the prior year. Gross profit percentage for the twelve months ended December 31, 2008 was 31% compared to 29% in the prior year. The 2% improvement in our gross margin percentage was primarily due to the mix of business, including an increase in system sales as well as higher margin sales from our Data Management Solutions segment, including significantly increased sales of our Orca software. This increase was partially offset by slightly lower margins in our Land Imaging System division relating to inventory write downs directly related to the integration activities of ARAM into our current operating segment and in our ION Solutions segment due to the change in product mix with higher levels of proprietary processing sales. During 2008, we also wrote down the carrying values of certain of our mature analog land systems and related equipment inventory, resulting in a \$10.1 million charge.

*Research, Development and Engineering.* Research, development and engineering expense was \$49.5 million, or 7.3% of net revenues, for the year ended December 31, 2008, a decrease of \$0.5 million compared to \$50.0 million, or 7.0% of net revenues, for the corresponding period last year. We expect to continue to incur research, development and engineering expenses in 2009 at a more conservative rate than in prior years, as we continue to invest in our next generation of seismic acquisition products and services. For a discussion of our product research and development programs in 2008, see Item 1. *Business Product Research and Development.*

*Marketing and Sales.* Marketing and sales expense of \$47.9 million, or 7.0% of net revenues, for the year ended December 31, 2008 increased \$4.0 million compared to \$43.9 million, or 6.2% of net revenues, for the corresponding period last year. The increase in our sales and marketing expenditures reflects the hiring of additional sales personnel,

increased exhibit and convention costs and increased travel associated with our global marketing efforts. This increase was partially offset by a decrease in our corporate branding expenses in 2008, due to the higher expenses in 2007 associated with our name change that year.

*General and Administrative.* General and administrative expense of \$70.8 million for the year ended December 31, 2008 increased \$21.7 million compared to \$49.1 million in the prior year. General and administrative expenses as a percentage of net revenues for the

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years ended December 31, 2008 and 2007 were 10.4% and 6.9%, respectively. The increase in expenditures was primarily due to increases in our bad debt reserves of \$4.6 million, in our professional fees relating to our financing efforts of \$5.7 million, in salaries and related expenses of \$8.7 million due to the hiring of additional personnel and an increase in general office expenses related to our acquisition of ARAM. This increase was partially offset by a decrease in bonus expense due to the lower operating performance compared to 2007's operating performance.

*Impairment of Goodwill and Intangible Assets.* At December 31, 2008, we evaluated our reporting units for potential impairment. Based upon our evaluation and given the current market conditions, we determined that approximately \$252.3 million of goodwill and intangible assets related to our Land Imaging Systems, ARAM Systems and ION Solutions reporting units were impaired. We recorded the expense as of December 31, 2008 and reduced the carrying amount of our goodwill and intangible assets.

*Income Tax Expense.* Income tax expense for the year ended December 31, 2008 was \$1.1 million compared to income tax expense of \$12.8 million for the twelve months ended December 31, 2007. The decrease in tax expense during 2008 primarily relates to reduced consolidated income from operations and changes to the valuation allowance on U.S. deferred tax assets. This decrease was partially offset by deferred taxes on the utilization of acquired net operating losses. We continue to maintain a valuation allowance for a significant portion of our U.S. net deferred tax assets. Our effective tax rate for the year ended December 31, 2008 was (0.5%) as compared to 23.1% for the similar period during 2007. The decreased effective tax rate for 2008 relates primarily to the impairment of goodwill, which has no tax benefit, and a reduction in the valuation allowance on U.S. deferred tax assets offset by deferred tax expense related to the utilization of acquired net operating losses of \$3.5 million. The 2007 and 2008 effective tax rates were lower than the statutory rate due to the goodwill impairment in 2008 and to the utilization of previously reserved U.S. deferred tax assets in both 2007 and 2008.

*Preferred Stock Dividends and Accretion.* The preferred stock dividend relates to our Series D Preferred Stock that we issued in February 2005, December 2007 and February 2008. Quarterly dividends must be paid in cash. Dividends are paid at a rate equal to the greater of (i) 5% per annum or (ii) the three month LIBOR rate on the last day of the immediately preceding calendar quarter plus 2<sup>1</sup>/<sub>2</sub>% per annum. All dividends paid to date on the Series D Preferred Stock have been paid in cash. The Series D Preferred Stock dividend rate was 6.55% at December 31, 2008.

*Adjustments from Preferred Stock Redemption and Conversion Features.* Our results of operations for 2008 reflected additional credits to and charges against our earnings resulting from our outstanding Series D-1 Cumulative Convertible Preferred Stock (the Series D-1 Preferred Stock), Series D-2 Cumulative Convertible Preferred Stock (the Series D-2 Preferred Stock) and Series D-3 Cumulative Convertible Preferred Stock (the Series D-3 Preferred Stock and together with the Series D-1 Preferred Stock and the Series D-2 Preferred Stock, the Series D Preferred Stock).

On November 28, 2008, we delivered a notice (the Reset Notice) to Fletcher International, Ltd. (Fletcher) of our election to reset the conversion prices on our outstanding shares of Series D Preferred Stock. See *Liquidity and Capital Resources - Sources of Capital - Cumulative Convertible Preferred Stock*. Fletcher is the holder of all of the outstanding shares of our Series D Preferred Stock. By delivering the Reset Notice to Fletcher, we reset the conversion prices on all of our Series D Preferred Stock to \$4.4517 per share, in accordance with the terms of our agreement with Fletcher dated as of February 15, 2005 (as amended, the Fletcher Agreement). Under the Fletcher Agreement, if a 20-day volume-weighted average trading price per share of our common stock fell below \$4.4517 (the Minimum Price), we would be required to (i) thereafter pay all dividends on shares of Series D Preferred Stock only in cash and (ii) elect to either (a) satisfy future redemption obligations by distributing only cash (or a combination of cash and common stock), or (b) reset the conversion prices of all of outstanding shares of Series D Preferred Stock to the Minimum Price, in which event the Series D Preferred Stock holder would have no further rights to call for the redemption of those shares.

We had originally classified the preferred stock outside of stockholders' equity on the balance sheet below total liabilities. However, with the termination of the redemption rights, there are no other provisions that require cash redemption. Therefore, in the fourth quarter of 2008, we reclassified the preferred stock to stockholders' equity.

*Fair Value Adjustment of Preferred Stock Redemption Features.* The redemption features of our outstanding Series D-2 Preferred Stock and Series D-3 Preferred Stock had been considered embedded derivatives that were required to be bifurcated and accounted for separately at their fair value during 2008. These features had been



bifurcated as a separate line item in the liabilities section of our consolidated balance sheet. For each quarter during 2008, these redemption features had been re-measured at quarter-end at their fair value with any resulting gain or loss recognized below income from operations and reflected in earnings for the period. As a result of the election we made under the Reset Notice, Fletcher is no longer permitted to redeem any shares of our Series D Preferred Stock and the original value of the redemption features of \$1.2 million was credited to our earnings in the fourth quarter of 2008.

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*Preferred Stock Beneficial Conversion Charge.* As a result of the Reset Notice and the adjustment in November 2008 of the conversion prices for the Series D Preferred Stock to the Minimum Price of \$4.4517 per share under the Fletcher Agreement, we recognized in the fourth quarter of 2008 a contingent beneficial conversion feature of the Series D Preferred Stock as a non-cash charge to earnings in the amount of \$68.8 million. Under applicable financial accounting guidance, the adjustment of reducing the conversion price was deemed to be equivalent to value being transferred to the holder of the Series D Preferred Stock, with such holder thereby realizing enhanced economic value compared to the holders of other ION securities that did not hold a beneficial conversion feature. This feature was calculated at its intrinsic value at the original commitment date, and the amount of the charge was limited to the amount of proceeds allocated to the convertible instruments (i.e. the Series D Preferred Stock).

***Year Ended December 31, 2007 Compared to Year Ended December 31, 2006***

*Net Revenues.* Net revenues of \$713.1 million for the year ended December 31, 2007 increased \$209.5 million, compared to the corresponding period last year, principally due to increased activity and demand for seismic services. Land Imaging Systems net revenues increased by \$119.2 million, to \$325.0 million compared to \$205.8 million during the twelve months ended December 31, 2006. This increase was due to an increase in sales of our land acquisition systems, including the 2007 sale of 14 land acquisition systems to ONGC, the recognition of our FireFly sale in the first quarter of 2007 and significantly increased vibrator truck sales compared to 2006. Marine Imaging Systems net revenues increased \$49.8 million to \$177.7 million, compared to \$127.9 million during the year ended December 31, 2006 principally due to stronger sales of our marine positioning products, including the first sale of our DigiFIN advanced streamer command and control system, greater demand for our DigiCOURSE positioning and source products and an increase in VectorSeis Ocean (VSO) and source product sales. We delivered to RXT the fourth VSO system in December 2007 and expect to begin delivering the next VSO system in 2008. Our Data Management Solutions net revenues increased \$14.5 million, to \$37.7 million compared to \$23.2 million in 2006. This increase primarily reflects increased energy industry demand for marine seismic work and sales from our newly launched Orca towed streamer navigation and data management applications product line.

ION Solutions (Seismic Imaging Solutions) net revenues increased \$26.0 million, to \$172.7 million compared to \$146.7 million in 2006. This increase was due to larger demand related to higher proprietary processing revenues, pre-funded multi-client seismic surveys primarily off the coasts of Alaska, Africa and Indonesia and sales of off-the-shelf seismic data sales. Sales showed significant improvement compared to 2006, which included a one-time, \$11.2 million multi-client seismic library sale that was not duplicated in 2007.

*Gross Profit and Gross Profit Percentage.* Gross profit of \$206.6 million for the year ended December 31, 2007 increased \$47.3 million compared to the prior year. Gross profit percentage for the twelve months ended December 31, 2007 was 29% compared to 32% in the prior year. The 3% reduction in our gross margin percentage was primarily due to the recognition of the sale in 2007 of our first FireFly system (which, as a newly-developed system, had relatively high built-in costs of sale) and the mix of business, including an increase in sales of lower margin Vibroseis trucks by Land Imaging Systems, the impact of lower than average margins related to the ONGC sale and the sale of a low-margin pre-funded multi-client survey by ION Solutions. This decrease was partially offset by stronger margins from our Marine Imaging Systems due to increased sales of our source and seabed product lines. We also had an increase in higher margin sales from our Data Management Solutions segment due to product mix, including significantly increased sales of our Orca software.

*Research, Development and Engineering.* Research, development and engineering expense was \$50.0 million, or 7.0% of net revenues, for the year ended December 31, 2007, an increase of \$12.1 million compared to \$37.9 million, or 7.5% of net revenues, for the corresponding period last year. We expect to continue to incur significant research, development and engineering expenses in 2008 at or above these levels on an absolute dollar basis, as we continue to invest heavily in our next generation of seismic acquisition products and services, including products such as FireFly and DigiSTREAMER. For a discussion of our product research and development programs in 2008, see Item 1.

***Business Product Research and Development.***

*Marketing and Sales.* Marketing and sales expense of \$43.9 million, or 6.2% of net revenues, for the year ended December 31, 2007 increased \$3.2 million compared to \$40.7 million, or 8.1% of net revenues, for the corresponding period last year. The reduction in marketing and sales expense as a percentage of net revenues reflects our focus on

leveraging our marketing and sales costs with our sales growth. The increase in our sales and marketing expenditures reflects the hiring of additional sales personnel as well as increased travel associated with our global marketing efforts. This increase was partially offset by a decrease in our sales commissions, which reflects more effective utilization of our internal sales force. We intend to continue investing significant sums in our marketing efforts as we seek to penetrate markets with our new products.

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*General and Administrative.* General and administrative expense of \$49.1 million for the year ended December 31, 2007 increased \$8.3 million compared to \$40.8 million in the prior year. General and administrative expenses as a percentage of net revenues for the years ended December 31, 2007 and 2006 were 6.9% and 8.1%, respectively. The increase in expenditures was primarily due to higher payroll costs associated with an increase in management and corporate personnel and an increase in travel associated with our global solutions corporate strategy. This increase was partially offset by a decrease in professional accounting and consulting fees compared to 2006.

*Loss on Debt Conversion.* In November 2007, \$52.8 million of our \$60.0 million 5.5% convertible senior notes indebtedness was converted into approximately 12.2 million shares of our common stock, in accordance with the terms of the notes. The conversion arrangement included a one-time charge of \$2.9 million that represented the present value of future interest payments through the converted notes' original date of maturity of December 15, 2008.

*Income Tax Expense.* Income tax expense for the year ended December 31, 2007 was \$12.8 million compared to income tax expense of \$5.1 million for the twelve months ended December 31, 2006. The increase in tax expense during 2007 primarily relates to improved results of our foreign operations, U.S. alternative minimum taxes and deferred taxes on the utilization of acquired net operating losses. We continue to maintain a valuation allowance for substantially all of our net deferred tax assets. The Company's effective tax rate for the year ended December 31, 2007 was 23.1% as compared to 15.0% for the similar period during 2006. The increased effective tax rate for 2007 relates to improved results of operations of our foreign divisions and deferred tax expense related to the utilization of acquired net operating losses of \$3.6 million. The 2006 and 2007 effective tax rates were lower than the statutory rate due to the utilization of previously reserved U.S. deferred tax assets.

*Preferred Stock Dividends and Accretion.* Preferred stock dividends and accretion of \$2.4 million for the year ended December 31, 2007 relate to our Series D-1 Preferred Stock that we issued in 2005 and the Series D-2 Preferred Stock that we issued in December 2007. Dividends are paid at a rate equal to the greater of (i) five percent per annum or (ii) the three month LIBOR rate on the last day of the immediately preceding calendar quarter plus two and one-half percent per annum. All dividends paid on the Series D-1 and Series D-2 Preferred Stock have been paid in cash. The preferred stock dividend rate was 7.73% at December 31, 2007.

**Liquidity and Capital Resources****Sources of Capital**

Our cash requirements include our working capital requirements, debt service payments, dividend payments on our preferred stock, acquisitions and capital expenditures. In recent years, our primary sources of funds have been cash flow from operations, existing cash balances, equity issuances and our revolving credit facility (see *Revolving Line of Credit and Term Facilities* below).

During the latter half of 2008, we amended our credit facilities and incurred additional debt in connection with the ARAM acquisition. As of December 31, 2008, these credit facilities and debt consisted of:

Our Amended Credit Facility, comprised of:

An amended revolving line of credit sub-facility; and

A \$125.0 million term loan;

A bridge loan agreement with Jefferies Finance LLC ( Jefferies ); and

The Amended and Restated Subordinated Promissory Note.

In addition, as of December 31, 2008, the indebtedness under the Subordinated Seller Note was shown on our consolidated balance sheet although our liabilities under this note had been legally extinguished. See *Subordinated Seller Note* below.

*Revolving Line of Credit and Term Facilities.* In July 2008, we, ION Sàrl, and certain of our domestic and other foreign subsidiaries (as guarantors) entered into a \$100 million amended and restated revolving credit facility under the terms of the Credit

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Agreement. This amended and restated revolving credit facility provided us with additional flexibility for our international capital needs by not only permitting borrowings by ION Sàrl under the facility but also providing us and ION Sàrl the ability to borrow in alternative currencies.

Under the Credit Agreement, \$60.0 million (or its equivalent in foreign currencies) is available for borrowings by ION Sàrl and \$75.0 million is available for borrowings by us; however, the total availability under the revolving credit facility is \$100.0 million and total outstanding revolving credit borrowings under this facility may not exceed this amount. The Credit Agreement includes provisions for an accordion feature, under which the total lenders commitments under the Credit Agreement could be increased by up to \$50.0 million, subject to the satisfaction of certain conditions.

On September 17, 2008, we, ION Sàrl and certain of our domestic and other foreign subsidiary guarantors amended the terms of the Credit Agreement by entering into a first amendment to the Credit Agreement, which added a new \$125.0 million term loan sub-facility. We borrowed \$125.0 million in term loan indebtedness and \$72.0 million under the revolving credit sub-facility, to fund a portion of the cash consideration for the ARAM acquisition. See *ARAM Acquisition* above.

In December 2008, we, ION Sàrl and certain of our domestic and other foreign subsidiary guarantors entered into two additional amendments to the Credit Agreement that further modified its terms. The amendments were entered into principally to permit the refinancing of certain indebtedness and related financial arrangements that we had entered into in September 2008 in connection with our acquisition of ARAM. The amendments were also entered into to permit us to implement a stockholder rights plan without violating the terms of the Amended Credit Facility, and to permit us to obtain certain sale/leaseback financing in order to finance leases of land seismic data acquisition systems and related equipment to our customers.

The interest rate on borrowings under our Amended Credit Facility is, at our option, (i) an alternate base rate (either the prime rate of HSBC Bank USA, N.A., or a federal funds effective rate plus 0.50%, plus an applicable interest margin) or (ii) for eurodollar borrowings and borrowings in euros, pounds sterling or Canadian dollars, a LIBOR-based rate, plus an applicable interest margin. The amount of the applicable interest margin is determined by reference to a leverage ratio of total funded debt to consolidated EBITDA for the four most recent trailing fiscal quarters. The interest rate margins range from 2.875% to 4.0% for alternate base rate borrowings, and from 3.875% to 5.0% for eurodollar borrowings. As of December 31, 2008, \$120.3 million in term loan indebtedness under the Amended Credit Facility accrued interest using the LIBOR-based interest rate of 6.02% per annum, while \$66.0 million in total revolving credit indebtedness under the Amended Credit Facility accrued interest using the alternate-based interest rate of 6.88% per annum. The average effective interest rate for the quarter ended December 31, 2008 under the LIBOR-based and prime-based rate was 5.7%.

The Credit Agreement contains covenants that restrict us, subject to certain exceptions, from:

Incurring additional indebtedness (including capital lease obligations), granting or incurring additional liens on our properties, pledging shares of our subsidiaries, entering into certain merger or other similar transactions, entering into transactions with affiliates, making certain sales or other dispositions of assets, making certain investments, acquiring other businesses and entering into certain sale-leaseback transactions with respect to certain of our properties;

Paying cash dividends on our common stock and repurchasing and acquiring shares of our common stock unless (i) there is no event of default under the Amended Credit Facility and (ii) the amount of cash used for cash dividends, repurchases and acquisitions does not, in the aggregate, exceed an amount equal to the excess of 30% of ION's domestic consolidated net income for our most recently completed fiscal year over \$15.0 million.

The Amended Credit Facility requires us to be in compliance with certain financial covenants, including requirements for us and our domestic subsidiaries to:

maintain a minimum fixed charge coverage ratio in an amount equal to 1.50 to 1 for each fiscal quarter beginning in 2009;

not exceed a maximum leverage ratio of 2.25 to 1 for each fiscal quarter beginning in 2009; and

maintain a minimum tangible net worth of at least 80% of the our tangible net worth as of September 18, 2008 (the date that we completed our acquisition of ARAM), plus 50% of our consolidated net income for each quarter thereafter, and 80% of the proceeds from any mandatorily convertible notes and preferred and common stock issuances for each quarter thereafter.

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The \$125.0 million original principal amount of term loan indebtedness borrowed under the Amended Credit Facility is subject to scheduled quarterly amortization payments of \$4.7 million per quarter until December 31, 2010. On that date, the quarterly principal amortization increases to \$6.3 million per quarter until December 31, 2012, when the quarterly principal amortization amount increases to \$9.4 million for each quarter until maturity on September 17, 2013. The term loan indebtedness matures on September 17, 2013, but the administrative agent under the Amended Credit Facility may accelerate the maturity date to a date that is six months prior to the maturity date of certain additional debt financing that we may incur to refinance certain indebtedness incurred in connection with the ARAM acquisition, by giving us written notice of such acceleration between September 17, 2012 and October 17, 2012.

The Amended Credit Facility contains customary event of default provisions (including an event of default upon any change of control event affecting us), the occurrence of which could lead to an acceleration of ION's obligations under the Amended Credit Facility.

Revolving credit borrowings under the Amended Credit Facility are available to fund our working capital needs, to finance acquisitions, investments and share repurchases and for general corporate purposes. In addition, the Credit Facility includes a \$35.0 million sub-limit for the issuance of documentary and stand-by letters of credit, of which \$1.2 million was outstanding at December 31, 2008. Borrowings under the Amended Credit Facility may be prepaid without penalty. As of December 31, 2008, \$120.3 million in term loan indebtedness and \$66.0 million in revolving credit indebtedness were outstanding under the Credit Facility. As of that date, including the \$1.2 million of outstanding stand-by letters of credit, we had available \$32.0 million of additional revolving credit borrowing capacity under our Amended Credit Facility. However, as of February 23, 2009, we had available only \$0.8 million of additional revolving credit borrowing capacity, which can be used only to fund additional letters of credit under the Amended Credit Facility. Our cash and cash equivalents as of February 23, 2009 were approximately \$48.3 million compared to \$35.2 million at December 31, 2008.

Borrowings under the revolving credit sub-facility are not subject to a borrowing base. The Amended Credit Facility includes an accordion feature under which the total commitments under the Amended Credit Agreement could be increased by up to \$50.0 million, subject to the satisfaction of certain conditions.

Our obligations under the Amended Credit Facility are guaranteed by certain of our domestic subsidiaries that are parties to the Credit Agreement, and the obligations of ION Sàrl under the Amended Credit Facility are guaranteed by us and by certain of our domestic and foreign subsidiaries that are parties to the Credit Agreement. Our obligations and the guarantees of our domestic guarantors are secured by security interests in 100% of the stock of all of the domestic guarantors and 65% of the stock of certain first-tier foreign subsidiaries, and by substantially all of our other assets and those of our domestic guarantors. The obligations of ION Sàrl and the foreign guarantors are secured by security interests in 100% of the stock of the foreign guarantors and the domestic guarantors, and substantially all of our assets and the other assets of the foreign guarantors and the domestic guarantors.

*Bridge Loan.* On December 30, 2008, we and certain of our domestic subsidiaries (as guarantors) entered into a Bridge Loan Agreement with Jefferies as administrative agent, sole bookrunner, sole lead arranger and lender. Under the Bridge Loan Agreement, we borrowed \$40.8 million (the Bridge Loan) to refinance outstanding short-term indebtedness (that had been scheduled to mature on December 31, 2008), which we had borrowed from Jefferies Finance CP Funding LLC, an affiliate of Jefferies, under the Senior Increasing Rate Note in connection with the completion of the ARAM acquisition in September 2008.

The maturity date of the Bridge Loan is January 31, 2010. The Bridge Loan Agreement provides that any lender can assign its interests under the Bridge Loan or sell participations in the Bridge Loan, provided that certain conditions are first met.

Under the Bridge Loan Agreement, we paid Jefferies as administrative agent a non-refundable upfront fee of \$2.041 million, representing 5.0% of the principal amount of the Bridge Loan. In addition, we agreed in the Bridge Loan Agreement to pay the lenders thereunder (i) on June 30, 2009, a non-refundable initial duration fee in an amount equal to 3.0% of the total principal amount of the Bridge Loan outstanding (if any) on such date, and (ii) on September 30, 2009, a non-refundable additional duration fee in an amount equal to 2.0% of the total principal amount of the Bridge Loan outstanding (if any) on such date. Interest on the Bridge Loan is payable monthly on the last day of each month that the Bridge Loan remains outstanding, and at the maturity date of the Bridge Loan. The Bridge Loan bears interest at a rate equal to the sum of (i) the one-month LIBO rate plus (ii) 13.25% per annum; the LIBO rate is

defined as the London interbank rate appearing on the Reuters BBA Libor Rates Page 3750 or 1.75%, whichever is greater. If the LIBO rate cannot then be determined or otherwise is unavailable, the interest rate will be equal to the sum of (x) the alternate base rate plus (y) 12.25%; the alternate base rate will be equal to the greatest of the prime rate of (a) HSBC Bank USA, N.A., (b) a federal funds rate plus  $\frac{1}{2}$  of 1% and (c) 2.75%. Unless the Bridge Loan is in default, the interest rate on the Bridge Loan shall neither



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be less than 15.0% nor greater than 17.0% per annum. If the Bridge Loan is in default, default interest will accrue (and be payable on demand) at a rate of 4.0% above the then-current interest rate in effect under the Bridge Loan.

The Bridge Loan can be prepaid at any time without penalty or premium upon three business days' written notice.

The Bridge Loan Agreement contains provisions that will require us, upon the occurrence of a Change of Control (as that term is defined in the Credit Agreement), to offer to the holder(s) of the Bridge Loan to repay the Bridge Loan at a price equal to 101% of the principal amount thereof, plus all accrued fees and all accrued and unpaid interest to the date of repayment.

Our representations and warranties, affirmative covenants, negative covenants and financial covenants and the events of default contained in the Bridge Loan Agreement are substantially the same as those contained in the Credit Agreement.

In connection with the Bridge Loan Agreement, we and Jefferies also entered into an agreement to terminate and release the respective obligations of the parties and their respective affiliates under the Commitment Letter and related fee and engagement letter agreements we entered into with Jefferies and its affiliates in September 2008.

*Amended and Restated Subordinated Seller Note.* As part of the purchase price for the ARAM acquisition, ION Sub issued the Senior Seller Note to 1236929 Alberta Ltd., one of the selling shareholders of ARAM. The outstanding principal and accrued interest under the Senior Seller Note was to be due and payable upon the earlier to occur of (x) September 18, 2009 and (y) the date that a cash amount equal to \$35.0 million, plus a specified amount of interest was deposited into an escrow account established for the purpose of funding certain post-closing purchase price adjustments and indemnities related to the acquisition.

On December 30, 2008, in connection with the other refinancing transactions described above, the terms of the Senior Seller Note were amended and restated and subordination provisions were added, by ION Sub's issuing an Amended and Restated Subordinated Promissory Note dated December 30, 2008 (the Amended and Restated Subordinated Note) to the same selling shareholder of ARAM (which had changed its corporate name to Maison Mazel Ltd.). The principal amount of the Amended and Restated Subordinated Note remained at \$35.0 million and the maturity date was extended from September 17, 2009 to September 17, 2013. We also entered into an amended and restated guaranty dated December 30, 2008, whereby we guaranteed on a subordinated basis ION Sub's repayment obligations under the Amended and Restated Subordinated Note. Interest on the outstanding principal amount under the Amended and Restated Subordinated Note accrues at the rate of fifteen percent (15%) per annum, and is payable quarterly, commencing March 31, 2009.

The Amended and Restated Subordinated Note contains covenants that restrict us and our subsidiaries from incurring or assuming certain additional indebtedness. The terms of the Amended and Restated Subordinated Note provide that the particular covenant contained in the Credit Agreement (or in any successor agreement or instrument) that restricts our ability to incur additional indebtedness will be incorporated into the Amended and Restated Subordinated Note. However, Maison Mazel or any other holder of the Amended and Restated Subordinated Note will not have a separate right to consent to or approve any amendment or waiver of the covenant as contained in the Amended Credit Facility.

In addition, ION Sub agreed that if it incurs indebtedness under any financing that:

qualifies as Long Term Junior Financing (as defined in the Amended Credit Agreement),

results from a refinancing or replacement of the Amended Credit Facility such that the aggregate principal indebtedness (including revolving commitments) thereunder would be in excess of \$275.0 million, or

qualifies as unsecured indebtedness for borrowed money that is evidenced by notes or debentures, has a maturity date of at least five years after the date of its issuance and results in total gross cash proceeds to us of not less than \$45.0 million (\$40.0 million after the Bridge Loan has been paid in full),

then ION Sub will repay in full from the total proceeds from such financing the then-outstanding principal of and interest on the Amended and Restated Subordinated Note. However, in those circumstances, any indebtedness outstanding under the Bridge Loan must also be paid in full, either prior to or contemporaneously with the repayment of the Amended and Restated Subordinated Note.



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The indebtedness under the Amended and Restated Subordinated Note is subordinated to the prior payment in full of our Senior Obligations, which are defined in the Amended and Restated Subordinated Note as the principal, premium (if any), interest and other amounts that become due in connection with:

our obligations under the Amended Credit Facility,

our obligations under the Bridge Loan Agreement,

our liabilities with respect to capital leases and obligations under our facility sale-leaseback facility that qualify as a Sale/Leaseback Agreement (as that term is defined in the Credit Agreement),

guarantees of the indebtedness described above, and

debentures, notes or other evidences of indebtedness issued in exchange for, or in the refinancing of, the Senior Obligations described above, or any indebtedness arising from the payment and satisfaction of any Senior Obligations by a guarantor.

*Subordinated Seller Note.* As part of the purchase price for the ARAM acquisition, ION Sub issued to one of the Sellers the \$10.0 million original principal amount unsecured Subordinated Seller Note. In connection with the refinancing transactions in December 2008, our obligations and those of ION Sub under the Subordinated Seller Note and related guaranty were terminated and extinguished in exchange for our assignment to the Seller of our rights to the Refund Claim. However, based upon relevant accounting literature, while legally extinguished, the liability could not be extinguished on the balance sheet as of December 31, 2008 and is subsequently included as short-term debt. The income tax refund is also reflected on our balance sheet (netted against our income taxes payable) at December 31, 2008. As of February 20, 2009, approximately \$7.0 million of the Refund Claim had been received and used to repay the Subordinated Seller Note. See *ARAM Acquisition* above.

*Cumulative Convertible Preferred Stock.* During 2005, we entered into the Fletcher Agreement and issued to Fletcher 30,000 shares of our Series D-1 Preferred Stock in a privately-negotiated transaction, receiving \$29.8 million in net proceeds. The Fletcher Agreement also provided to Fletcher an option to purchase up to an additional 40,000 shares of additional series of preferred stock from time to time, with each series having a conversion price that would be equal to 122% of an average daily volume-weighted market price of our common stock over a trailing period of days at the time of issuance of that series. In 2007 and 2008, Fletcher exercised this option and purchased 5,000 shares of Series D-2 Preferred Stock for \$5.0 million (in December 2007) and the remaining 35,000 shares of Series D-3 Preferred Stock for \$35.0 million (in February 2008). Fletcher remains the sole holder of all of our outstanding shares of Series D Preferred Stock.

Until November 2008, all shares of Series D Preferred Stock had substantially similar terms, except for their conversion prices, which were as follows:

The conversion price for the Series D-1 Preferred Stock was \$7.869 per share;

The conversion price for the Series D-2 Preferred Stock was \$16.0429 per share; and

The conversion price for the Series D-3 Preferred Stock was \$14.7981 per share.

The terms of the Series D Preferred Stock had provided that the shares could be redeemed for cash or in shares of common stock, calculated based upon the prevailing market price of our common stock at the time of redemption. Dividends on the shares of Series D Preferred Stock could be payable, at our election, in cash or in shares of our common stock. To date, all dividends paid on the Series D Preferred Stock have been paid in cash.

Under the Fletcher Agreement, if a 20-day volume-weighted average trading price per share of our common stock fell below the Minimum Price, we were required to deliver the Reset Notice to Fletcher and elect to either

satisfy all future redemption obligations by distributing only cash, or a combination of cash and common stock,  
or

reset the conversion prices of all of the outstanding shares of Series D Preferred Stock to the Minimum Price, in which event Fletcher would have no further rights to redeem its shares of Series D Preferred Stock.

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In addition, the Fletcher Agreement provided that upon our delivery of the Reset Notice, we would thereafter be required to pay all future dividends on shares of Series D Preferred Stock in cash.

On November 28, 2008, the 20-day volume-weighted average trading price per share of our common stock on the New York Stock Exchange for the previous 20 trading days was calculated to be \$4.328, and we delivered the Reset Notice to Fletcher in accordance with the terms of the Fletcher Agreement. In the Reset Notice, we elected to reset the conversion prices for the Series D Preferred Stock to the Minimum Price (\$4.4517 per share), and Fletcher's redemption rights were terminated. The adjusted conversion price resulting from this election was effective on November 28, 2008.

In addition, under the Fletcher Agreement, the aggregate number of shares of common stock issued or issuable to Fletcher upon conversion or redemption of, or as dividends paid on, the Series D Preferred Stock could not exceed a designated maximum number of shares (the Maximum Number), and such Maximum Number could be increased by Fletcher providing us with a 65-day notice of increase, but under no circumstance could the total number of shares of common stock issued or issuable to Fletcher with respect to the Series D Preferred Stock ever exceed 15,724,306 shares. The Fletcher Agreement had designated 7,669,434 shares as the original Maximum Number. On November 28, 2008, Fletcher delivered a notice to us to increase the Maximum Number to 9,669,434 shares, effective February 1, 2009.

The new Maximum Number represents approximately 9.7% of our total outstanding shares of common stock as of February 12, 2009 (calculated in accordance with Rule 13d-3(d)(1) under the Securities Exchange Act of 1934). Prior to adjusting the conversion prices for the Series D Preferred Stock to the Minimum Price, the total outstanding shares of Series D Preferred Stock would have been convertible into 6,489,260 shares of common stock, or approximately 6.5% of our total outstanding shares of common stock as of February 12, 2009.

As a result of these elections and notices:

Fletcher is no longer permitted to redeem its shares of Series D Preferred Stock,

we are required to pay all future dividends on the Series D Preferred Stock in cash and may not pay such dividends in shares of our common stock, and

the Maximum Number of shares of common stock into which the shares of Series D Preferred Stock may be converted is 9,669,434 shares.

The conversion prices and number of shares of common stock to be acquired upon conversion are also subject to customary anti-dilution adjustments. Converting the shares of Series D Preferred Stock at one time could result in significant dilution to our stockholders that could limit our ability to raise additional capital. See Item 1A. *Risk Factors.*

*Meeting our Liquidity Requirements.* Based on our forecasts and our liquidity requirements for the near term future, we believe that the combination of our projected internally generated cash and our working capital (including our cash and cash equivalents on hand) will be sufficient to fund our operational needs and our liquidity requirements for at least the next twelve months. However, the present global credit crisis, market volatility, economic downturn and forecasted reduced demand for oil and natural gas all present special challenges for us regarding our ability to satisfy our liquidity needs, at least for the foreseeable future. See Item 1A *Risk Factors* above in this Form 10-K. As of December 31, 2008, we had approximately \$154.1 million in contractual obligations to pay in 2009. See *Future Contractual Obligations* below.

At December 31, 2008, we were in compliance with all of the financial covenants under our principal debt agreements. We believe that, based on our 2009 operating plan, we will remain in compliance with these financial covenants during 2009 and have sufficient liquidity to fund our operations throughout 2009. We also believe that we have the ability to make additional cost reductions in order to mitigate the impact that a decrease in revenues from our operating plan could have on our covenants compliance. However, even though not currently considered likely, there are certain scenarios and events beyond our control, such as further declines in E&P company and seismic contractor spending, significant write-downs of accounts receivable, changes in certain exchange rates and other factors, that could cause us to fall out of compliance with certain financial covenants contained in the Amended Credit Facility and the Bridge Loan Agreement. Our failure to comply with such covenants could result in an event of default that, if not

cured or waived, could have a material adverse effect on our financial condition, results of operations, and debt service capabilities. If we were not able to satisfy all of these covenants, we would need to seek to amend, or seek one or more waivers of, those covenants under the Amended Credit Facility and the Bridge Loan Agreement. There can be no assurance that we would be able to obtain any such waivers or amendments, in which case we would likely seek to obtain new secured debt, unsecured debt or equity financing. However, there also

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can be no assurance that such debt or equity financing would be available on terms acceptable to us or at all. In the event that we would need to amend the Amended Credit Facility and the Bridge Loan Agreement, or obtain new financing, we would likely incur up front fees and higher interest costs, and other terms in the amendments would likely be significantly less favorable to us than those currently provided under the Amended Credit Facility and the Bridge Loan Agreement.

Although we are still evaluating the impact of the current credit crisis and decline in commodity prices on us, we expect that our capital expenditures in 2009 will be reduced from 2008 levels, other than our undertaking any opportunistic acquisitions or expansion projects. If there is a significant lessening in demand for our products and services as a result of any prolonged declines in the long-term expected price of oil and natural gas, we may see a further reduction in our own capital expenditures and lesser requirements for working capital, which could generate operating cash flows and liquidity compared to the prior period and offset reduced cash generated from operations (excluding working capital changes). We are currently projecting our capital expenditures for 2009 to be in the range of \$65 million to \$85 million. Of that amount, we are estimating that approximately \$60 million to \$75 million will be spent on investments in our multi-client data library, but are anticipating that most of these investments will be underwritten by our customers.

***Cash Flows from Operations***

We have historically financed our operations from internally generated cash and funds from equity and debt financings. Cash and cash equivalents were \$35.2 million at December 31, 2008, a decrease of \$1.2 million compared to December 31, 2007. Net cash provided by operating activities was \$111.7 million for the year ended December 31, 2008, compared to \$93.8 million for the year ended December 31, 2007. The increase in net cash provided in our operating activities was primarily due to increased accrued liabilities and accounts payable as well as decreased accounts receivable resulting from increased collections in 2008. This increase was partially offset by increased investment in our inventories. We have adjusted our manufacturing and purchasing plans in order that we can focus on making sales from this inventory in order to reduce our current levels of inventory. During 2008, we wrote down the carrying values of certain of our mature analog land systems and related equipment inventory, resulting in a \$10.1 million charge.

***Cash Flows from Investing Activities***

Net cash flow used in investing activities was \$354.6 million for the year ended December 31, 2008, compared to \$76.0 million for the year ended December 31, 2007. The principal uses of our cash for investing activities during the year ended December 31, 2008 were \$242.8 million expended to acquire ARAM in September 2008, \$17.5 million of equipment and rental equipment purchases and a \$110.4 million investment in our multi-client data library. This was partially offset by \$10.7 million of cash we acquired in the ARAM acquisition and proceeds from the sale of assets and rental assets of \$5.4 million.

***Cash Flows from Financing Activities***

Net cash flow provided by financing activities was \$244.3 million for the year ended December 31, 2008, compared to \$0.8 million for the year ended December 31, 2007. The net cash flow provided by financing activities during 2008 was primarily related to \$160.3 million of net proceeds from acquisition debt we borrowed to purchase ARAM, \$66.0 million of net borrowings on our revolving credit facility, \$35.0 million in proceeds from the issuance and sale of our Series D-3 Preferred Stock in February 2008 and \$6.3 million in proceeds related to the exercise of stock options and stock purchases by our employees under our employee plans. This cash inflow was partially offset by scheduled principal payments of \$18.1 million on our notes payable and capital lease obligations and \$3.9 million in cash dividends paid on our outstanding Series D-1, Series D-2 and Series D-3 Preferred Stock.

***Inflation and Seasonality***

Inflation in recent years has not had a material effect on our costs of goods or labor, or the prices for our products or services. Traditionally, our business has been seasonal, with strongest demand in the fourth quarter of our fiscal year.

***Future Contractual Obligations***

The following table sets forth estimates of future payments of our consolidated contractual obligations, as of December 31, 2008 (in thousands):





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<b>Contractual Obligations</b>	<b>Total</b>	<b>Less Than 1 Year</b>	<b>1-3 Years</b>	<b>3-5 Years</b>	<b>More Than 5 Years</b>
Notes payable and long-term debt	\$ 278,909	\$ 31,353	\$ 87,260	\$ 158,796	\$ 1,500
Interest on notes payable and long-term debt obligations	59,040	21,222	23,047	14,628	143
Equipment capital lease obligations	13,000	7,046	5,954		
Operating leases	50,269	11,487	19,723	9,678	9,381
Product warranty	10,526	10,526			
Purchase obligations	72,607	72,450	157		
<b>Total</b>	<b>\$ 484,351</b>	<b>\$ 154,084</b>	<b>\$ 136,141</b>	<b>\$ 183,102</b>	<b>\$ 11,024</b>

The long-term debt and lease obligations at December 31, 2008 included \$66.0 million of revolving credit indebtedness and \$120.3 million under our five-year term loan, in each case incurred under our Amended Credit Facility and maturing in 2013 and \$40.8 million under our Bridge Loan Agreement due January 2010. The remaining amount of these obligations consists of \$35.0 million under our Amended and Restated Subordinated Note, \$10.0 million under our Subordinated Seller Note, \$4.6 million indebtedness related to our sale-leaseback arrangement and \$2.2 million of short-term notes payable. The \$13.0 million of capital lease obligations relates to ARAM and GXT's financing of computer equipment purchases. Because we may repay our outstanding indebtedness under the Amended Credit Facility at any time, the interest expense is not included in the above table. However, if the outstanding principal of \$66.0 million as of December 31, 2008 was not repaid in 2009, the interest expense would be \$4.5 million using the interest rate as of December 31, 2008. For further discussion of our notes payable, long-term debt and capital lease obligations, see Note 11 *Notes Payable, Long-term Debt and Lease Obligations* of *Notes to Consolidated Financial Statements*.

The operating lease commitments at December 31, 2008 relate to our leases for certain equipment, offices, processing centers, and warehouse space under non-cancelable operating leases.

The liability for product warranties at December 31, 2008 relate to the estimated future warranty expenditures associated with our products. Our warranty periods generally range from 30 days to three years from the date of original purchase, depending on the product. We record an accrual for product warranties and other contingencies at the time of sale, which is when the estimated future expenditures associated with those contingencies become probable and the amounts can be reasonably estimated. We generally receive warranty support from our suppliers regarding equipment they manufactured. Our purchase obligations primarily relate to our committed inventory purchase orders for which deliveries are scheduled to be made in 2008.

The original terms regarding our Series D Preferred Stock had provided that the shares of Series D Preferred Stock could be redeemed in cash or in stock or converted into stock, and that dividends could be paid in cash or in stock. As a result of our election to reset the conversion prices on our Series D Preferred Stock in November 2008, these shares of preferred stock are no longer redeemable at the option of the holder, but remain convertible into shares of our common stock. Therefore, the preferred stock was excluded from the above table. However, dividends are payable quarterly and must be paid in cash. The dividend rate was 6.55% at December 31, 2008. See *Liquidity and Capital Resources* above.

**Critical Accounting Policies and Estimates**

The preparation of consolidated financial statements in conformity with generally accepted accounting principles in the United States requires management to make choices between acceptable methods of accounting and to use judgment in making estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities, and the reported amounts of revenue and expenses. The following accounting policies are based on, among other things, judgments and assumptions made by management that include inherent risk and uncertainties. Management's estimates are based on the relevant information available at the end of each period. We

believe that all of the judgments and estimates used to prepare our financial statements were reasonable at the time we made them, but circumstances may change requiring us to revise our estimates in ways that could be materially adverse to our results of operations and financial condition. Management has discussed these critical accounting estimates with the Audit Committee of our Board of Directors and the Audit Committee has reviewed our disclosures relating to the estimates in this Management's Discussion and Analysis.

*Revenue Recognition and Product Warranty* We derive revenue from the sale and rental of (i) acquisition systems and other seismic equipment within our Land Imaging Systems and Marine Imaging Systems segments; (ii) imaging services, multi-client surveys and licenses of off-the-shelf data libraries within our ION Solutions segment; and (iii) navigation, survey and quality control software systems within our Data Management Solutions segment.

For the sales of acquisition systems and other seismic equipment, we follow the requirements of Staff Accounting Bulletin No. 104 *Revenue Recognition* and recognize revenue when (a) evidence of an arrangement exists; (b) the price to the customer is fixed

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and determinable; (c) collectibility is reasonably assured; and (d) the acquisition system or other seismic equipment is delivered to the customer and risk of ownership has passed to the customer, or, in the limited case where a substantive customer-specified acceptance clause exists in the contract, the later of delivery or when the customer-specified acceptance is obtained.

Our Land Imaging Systems segment receives rental income from the rental of seismic equipment. The rental is in the form of operating leases as the lease terms range from a couple of days to several months. Rental revenue is recognized on a straight line basis over the term of the operating lease.

Revenues from all imaging and other services are recognized when persuasive evidence of an arrangement exists, the price is fixed or determinable, and collectibility is reasonably assured. Revenues from contract services performed on a day-rate basis are recognized as the service is performed.

Revenues from multi-client surveys are recognized as the seismic data is acquired and/or processed on a proportionate basis as work is performed. Under this method, we recognize revenues based upon quantifiable measures of progress, such as kilometers acquired or days processed. Upon completion of a multi-client seismic survey, the survey data is considered off-the-shelf and licenses to the survey data are sold to customers on a non-exclusive basis. The license of a completed multi-client survey is represented by the license of one standard set of data. Revenues on licenses of completed multi-client data surveys are recognized when a signed final master geophysical data license agreement and accompanying supplemental license agreement are returned by the customer, the purchase price for the license is fixed or determinable, delivery or performance has occurred, and no significant uncertainty exists as to the customer's obligation, willingness or ability to pay. In limited situations, we have provided the customer with a right to exchange seismic data for another specific seismic data set. In these limited situations, we recognize revenue at the earlier of the customer exercising its exchange right or the expiration of the customer's exchange right.

When separate elements (such as an acquisition system, other seismic equipment and/or imaging services) are contained in a single sales arrangement, or in related arrangements with the same customer, we follow the requirements of Emerging Issues Task Force (EITF) 00-21 *Accounting for Multiple-Element Revenue Arrangement*, and allocate revenue to each element based upon its vendor-specific objective evidence of fair value, so long as each such element meets the criteria for treatment as a separate unit of accounting. We limit the amount of revenue recognized for delivered elements to the amount that is not contingent on the future delivery of products or services. We generally do not grant return or refund privileges to our customers. When undelivered elements, such as training courses and engineering services, are inconsequential or perfunctory and not essential to the functionality of the delivered elements, we recognize revenue on the total contract and make a provision for the costs of the incomplete elements.

For the sales of navigation, survey and quality control software systems, we follow the requirements of SOP 97-2 *Software Revenue Recognition*, because in those systems the software is more than incidental to the arrangement as a whole. Following the requirements of EITF 03-05 *Applicability of AICPA Statement of Position 97-2 to Non-Software Deliverables in an Arrangement Containing More-Than-Incidental Software*, we consider the hardware within these systems to be a software-related item because the software is essential to the hardware's functionality. As a result, we recognize revenue from sales of navigation, survey and quality control software systems when (a) evidence of an arrangement exists; (b) the price to the customer is fixed and determinable; (c) collectibility is reasonably assured; and (d) the software and software-related hardware is delivered to the customer and risk of ownership has passed to the customer, or, in the limited case where a substantive customer-specified acceptance clause exists in the contract, the later of delivery or when the customer-specified acceptance is obtained. These arrangements generally include us providing related services, such as training courses, engineering services and annual software maintenance. We allocate revenue to each element of the arrangement based upon vendor-specific objective evidence of fair value of the element or, if vendor-specific objective evidence is not available for the delivered element, we apply the residual method.

Even though a majority of our software arrangements are licensed on a perpetual basis, we do offer certain time-based software licenses. For these time-based licenses, we recognize revenue ratably over the contract term, which is generally two to three years.

We generally warrant that our manufactured equipment will be free from defects in workmanship, material and parts. Warranty periods generally range from 30 days to three years from the date of original purchase, depending on the product. We provide for estimated warranty as a charge to costs of sales at the time of sale.

*Multi-Client Data Library* Our multi-client data library consists of seismic surveys that are offered for licensing to customers on a non-exclusive basis. The capitalized costs include the costs paid to third parties for the acquisition of data and related activities associated with the data creation activity and direct internal processing costs, such as salaries, benefits, computer-related

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expenses, and other costs incurred for seismic data project design and management. For the years ended December 31, 2008, 2007 and 2006, we capitalized, as part of our multi-client data library, \$5.4 million, \$4.3 million, and \$3.1 million, respectively, of direct internal processing costs.

Our method of amortizing the costs of a multi-client data library available for commercial sale is the greater of (i) the percentage of actual revenue to the total estimated revenue multiplied by the total cost of the project (the sales forecast method) or (ii) the straight-line basis over a four-year period. The sales forecast method is our primary method of calculating amortization. The total amortization period of four years represents the minimum period over which benefits from these surveys are expected to be derived. We have determined the amortization period of four years based upon our historical experience that indicates that the majority of our revenues from multi-client surveys are derived during the acquisition and processing phases and during four years subsequent to survey completion.

Estimated sales are determined based upon discussions with our customers, our experience, and our knowledge of industry trends. Changes in sales estimates may have the effect of changing the percentage relationship of cost of services to revenue. In applying the sales forecast method, an increase in the projected sales of a survey will result in lower cost of services as a percentage of revenue, and higher earnings when revenue associated with that particular survey is recognized, while a decrease in projected sales will have the opposite effect. Assuming that the overall volume of sales mix of surveys generating revenue in the period was held constant in 2008, an increase in 10% in the sales forecasts of all surveys would have decreased our amortization expense by approximately \$9.6 million.

We estimate the ultimate revenue expected to be derived from a particular seismic data survey over its estimated useful economic life to determine the costs to amortize, if greater than straight-line amortization. That estimate is made by us at the project's initiation. For a completed multi-client survey, we review the estimate quarterly. If during any such review, we determine that the ultimate revenue for a survey is expected to be more or less than the original estimate of total revenue for such survey, we decrease or increase (as the case may be) the amortization rate attributable to the future revenue from such survey. In addition, in connection with such reviews, we evaluate the recoverability of the multi-client data library, and if required under Statement of Financial Accounting Standards (SFAS) 144 *Accounting for the Impairment and Disposal of Long-Lived Assets*, record an impairment charge with respect to such data. There were no significant impairment charges during 2008 and 2007.

*Reserve for Excess and Obsolete Inventories* Our reserve for excess and obsolete inventories is based on historical sales trends and various other assumptions and judgments, including future demand for our inventory and the timing of market acceptance of our new products. Should these assumptions and judgments not be realized for reasons such as delayed market acceptance of our new products, our valuation allowance would be adjusted to reflect actual results. Our industry is subject to technological change and new product development that could result in obsolete inventory. Our valuation reserve for inventory at December 31, 2008 was \$24.1 million compared to \$11.5 million at December 31, 2007. The increase in our reserves for excess and obsolete inventories primarily relates to our analog land acquisition systems. As a result of the planned integration of ARAM into our Land Imaging Systems segment, we evaluated and determined that market values of certain of our mature analog products were lower than their then-current book values. As a result, we wrote down the inventory to its expected market value, which resulted in a charge to cost of products of approximately \$10.1 million.

*Goodwill and Other Intangible Assets* For purposes of performing the impairment test for goodwill as required by SFAS 142, we established the following reporting units: Land Imaging Systems, ARAM Systems, Sensor Geophone, Marine Imaging Systems, Data Management Solutions, and ION Solutions. To determine the fair value of our reporting units, we use a discounted future returns valuation method. If we had established different reporting units or utilized different valuation methodologies, our impairment test results could differ.

SFAS 142 requires us to compare the fair value of our reporting units to their carrying amount on an annual basis to determine if there is potential goodwill impairment. If the fair value of the reporting unit is less than its carrying value, an impairment loss is recorded to the extent that the fair value of the goodwill within the reporting units is less than its carrying value.

We completed our annual goodwill impairment testing as of December 31, 2008 and determined that all of the goodwill within our Land Imaging Systems, ARAM Systems and ION Solutions reporting units were impaired. As a result, we recorded a goodwill impairment charge of \$242.2 million. The decrease in these reporting units' fair value was primarily driven by the overall economic and financial crisis and the decrease in the current demand for our land analog acquisition products, especially within North America and Russia. In making this assessment we rely on a number of factors including operating results, business plans, internal and external economic projections, anticipated future cash flows and external market data.

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Our remaining goodwill of \$49.8 million relates to our Marine Imaging Systems and Data Management Solutions reporting units. Our annual impairment test indicated that the fair value of these two reporting units significantly exceeded their carrying values. However, if our estimates or related projections associated with the reporting units significantly change in the future, we may be required to record further impairment charges.

Our intangible assets other than goodwill relate to proprietary technology, patents, customer relationships, trade names and non-compete agreements that are amortized over the estimated periods of benefit (ranging from 4 to 20 years). Following the guidance of SFAS 144, we review the carrying values of these intangible assets for impairment if events or changes in the facts and circumstances indicate that their carrying value may not be recoverable. Any impairment determined is recorded in the current period and is measured by comparing the fair value of the related asset to its carrying value. For the year ended December 31, 2008, we determined that certain of the intangible assets (customer relationships, trade names and non-compete agreements) associated with our ARAM acquisition were impaired and recorded an impairment charge of \$10.1 million.

Similar to our treatment of goodwill, in making these assessments we rely on a number of factors including operating results, business plans, internal and external economic projections, anticipated future cash flows and external market data. However, if our estimates or related projections associated with the reporting units significantly change in the future, we may be required to record further impairment charges.

*Accounts and Notes Receivable Collectibility* We consider current information and circumstances regarding our customers' ability to repay their obligations, such as the length of time the receivable balance is outstanding, the customers' credit worthiness and historical experience, and consider an account or note impaired when it is probable that we will be unable to collect all amounts due. When we consider an account or note as impaired, we measure the amount of the impairment based on the present value of expected future cash flows or the fair value of collateral. We include impairment losses (recoveries) in our allowance for doubtful accounts and notes through an increase (decrease) in bad debt expense.

We record interest income on investments in notes receivable on the accrual basis of accounting. We do not accrue interest on impaired loans where collection of interest according to the contractual terms is considered doubtful.

Among the factors we consider in making an evaluation of the collectibility of interest are: (i) the status of the loan; (ii) the fair value of the underlying collateral; (iii) the financial condition of the borrower; and (iv) anticipated future events.

*Stock-Based Compensation* We account for stock based compensation under the recognition provisions of SFAS 123R *Share-Based Payment*. We estimate the value of stock option awards on the date of grant using the Black-Scholes option pricing model. The determination of the fair value of stock-based payment awards on the date of grant using an option-pricing model is affected by our stock price as well as assumptions regarding a number of subjective variables. These variables include, but are not limited to, our expected stock price volatility over the term of the awards, actual and projected employee stock option exercise behaviors, risk-free interest rate, and expected dividends.

In 2008, 2007 and 2006, we recognized \$8.3 million, \$6.9 million and \$6.1 million, respectively, of stock-based compensation expense related to our employees' outstanding stock-based awards. The total expense in 2008 was comprised of \$1.2 million reflected in cost of sales, \$0.9 million in research and development expense, \$1.9 million in marketing and sales expense, and \$4.3 million in general and administrative expense. In addition to the share-based compensation expense related to the Company's plans, we recorded \$0.2 million of share-based compensation expense in 2008 related to employee stock appreciation rights. Pursuant to SFAS 123R, the stock appreciation rights are considered liability awards and, as such, these amounts are accrued in the liability section of the balance sheet.

**Recent Accounting Pronouncements**

In October 2008, the Financial Accounting Standards Board (FASB) issued Staff Position (FSP) FSP FAS No. 157-3, *Determining the Fair Value of a Financial Asset When the Market for That Asset Is Not Active* (FSP 157-3). FSP 157-3 was effective on issuance and provided further guidance and clarity to SFAS 157 as it specifically relates to assets with inactive markets. The literature also amends some examples in SFAS 157 to better illustrate the determination of fair value in these assets. The adoption of FSP 157-3 did not have a material impact on our financial position, results of operations or cash flows.

In September 2008, the FASB issued EITF No. 07-5, *Determining Whether an Instrument (or Embedded Feature) is Indexed to a Entity's Own Stock* (EITF 07-5). EITF 07-5 re-evaluates the scope exceptions in SFAS 133 for purposes of determining if an



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instrument or embedded feature is considered indexed to its own stock and thus qualifies for a scope exception. The provisions for EITF 07-5 are effective for fiscal years beginning after December 15, 2008 with earlier adoption prohibited. We do not anticipate the adoption of EITF 07-5 will have a material impact to our financial position, results of operation or cash flows.

In September 2008, the FASB issued Staff Position (FSP) EITF 03-6-1, *Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities* (FSP EITF 03-6-1), which is effective for fiscal years beginning after December 15, 2008. This FSP would require unvested share-based payment awards containing non-forfeitable rights to dividends or dividend equivalents (whether paid or unpaid) to be included in the computation of basic earnings per share according to the two-class method. We have determined that the adoption of FSP EITF 03-6-1 will not have a material impact on our earnings per share computation.

In March 2008, the FASB issued SFAS No. 161, *Disclosures about Derivative Instruments and Hedging Activities*, (SFAS 161). SFAS 161 provides more guidance on disclosure criteria and requires more enhanced disclosures about a company's derivative and hedging activities. The provisions for SFAS 161 are effective for fiscal years beginning after November 15, 2008 with earlier adoption allowed. We will adopt SFAS 161 upon its effective date. We do not anticipate the adoption of SFAS 161 will have a material impact on our financial position, results of operations or cash flows.

In December 2007, the FASB issued SFAS No. 141(R), *Business Combinations* (SFAS 141(R)). The new standard will significantly change the financial accounting and reporting of business combination transactions in the consolidated financial statements. It will require an acquirer to recognize, at the acquisition date, the assets acquired, the liabilities assumed, and any non-controlling interest in the acquiree at their full fair values as of that date. In a business combination achieved in stages (step acquisitions), the acquirer will be required to remeasure its previously held equity interest in the acquiree at its acquisition-date fair value and recognize the resulting gain or loss in earnings. The acquisition-related transaction and restructuring costs will no longer be included as part of the capitalized cost of the acquired entity but will be required to be accounted for separately in accordance with applicable GAAP in the U.S. SFAS 141(R) applies prospectively to business combinations for which the acquisition date is on or after January 1, 2009.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities* (SFAS 159). SFAS 159 allows companies the option to report certain financial assets and liabilities at fair value, establishes presentation and disclosure requirements and requires additional disclosure surrounding the valuation of the financial assets and liabilities presented at fair value on the balance sheet. The provisions of SFAS 159 became effective for fiscal years beginning after November 15, 2007. We did not elect the fair value option for any of our financial assets or liabilities, and therefore, the adoption of SFAS 159 had no impact on our consolidated financial position, results of operations or cash flows.

**Credit and Sales Risks**

No single customer represented 10% or more of our consolidated net revenues for the years ended December 31, 2008, 2007 and 2006; however, our top five customers in total represented approximately 30%, 31% and 29%, respectively of our consolidated net revenues. The loss of any significant customers or deterioration in our relationship with either customer could have a material adverse effect on our results of operations and financial condition.

For the twelve months ended December 31, 2008, we recognized \$202.2 million of sales to customers in Europe, \$57.5 million of sales to customers in Asia Pacific, \$31.7 million of sales to customers in Africa, \$32.9 million of sales to customers in the Middle East, \$52.7 million of sales to customers in Latin American countries, and \$30.1 million of sales to customers in the Commonwealth of Independent States, or former Soviet Union (CIS). The majority of our foreign sales are denominated in U.S. dollars. For the years ended December 31, 2008 and 2007, international sales comprised 60% and 62%, respectively, of total net revenues. In recent years, the CIS and certain Latin American countries have experienced economic problems and uncertainties. However, given the recent market downturn, more countries and areas of the world have also begun to experience economic problems and uncertainties. To the extent that world events or economic conditions negatively affect our future sales to customers in these and other regions of the world or the collectibility of our existing receivables, our future results of operations, liquidity, and financial condition may be adversely affected. We currently require customers in these higher risk countries to

provide their own financing and in some cases assist the customer in organizing international financing and Export-Import credit guarantees provided by the United States government. We do not currently extend long-term credit through notes to companies in countries we consider to be inappropriate for credit risk purposes.

**Table of Contents****Certain Relationships and Related Party Transactions**

James M. Lapeyre, Jr. is chairman of our board of directors. He is also the chairman and a significant equity owner of Laitram, L.L.C. (Laitram) and has served as president of Laitram and its predecessors since 1989. Laitram is a privately-owned, New Orleans-based manufacturer of food processing equipment and modular conveyor belts. Mr. Lapeyre and Laitram together owned approximately 9.4% of our outstanding common stock as of February 20, 2009.

We acquired DigiCourse, Inc., our marine positioning products business, from Laitram in 1998 and have renamed it I/O Marine Systems, Inc. In connection with that acquisition, we entered into a Continued Services Agreement with Laitram under which Laitram agreed to provide us certain accounting, software, manufacturing, and maintenance services. Manufacturing services consist primarily of machining of parts for our marine positioning systems. The term of this agreement expired in September 2001 but we continue to operate under its terms. In addition, when we have requested, the legal staff of Laitram has advised us on certain intellectual property matters with regard to our marine positioning systems. Under a lease of commercial property dated February 1, 2006, between Lapeyre Properties L.L.C. (an affiliate of Laitram) and ION, we agreed to lease certain office and warehouse space from Lapeyre Properties until January 2011. During 2008, we paid Laitram a total of approximately \$4.3 million, which consisted of approximately \$3.4 million for manufacturing services, \$0.8 million for rent and other pass-through third party facilities charges, and \$0.1 million for other services. For the 2007 and 2006 fiscal years, we paid Laitram a total of approximately \$4.9 million and \$3.6 million for these services. In the opinion of our management, the terms of these services are fair and reasonable and as favorable to us as those that could have been obtained from unrelated third parties at the time of their performance.

**Off-Balance Sheet Arrangements**

As part of our ongoing business, we do not participate in transactions that generate material relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities (SPEs) that would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. As a result, we have no material off-balance sheet arrangements.

**Indemnification**

In the ordinary course of our business, we enter into contractual arrangements with our customers, suppliers, and other parties under which we may agree to indemnify the other party to such arrangement from certain losses it incurs relating to our products or services or for losses arising from certain events as defined within the particular contract. Some of these indemnification obligations may not be subject to maximum loss limitations. Historically, payments we have made related to these indemnification obligations have been immaterial.

**Item 7A. *Quantitative and Qualitative Disclosures about Market Risk***

Market risk is the risk of loss from adverse changes in market prices and rates. Our primary market risks include risks related to interest rates and to foreign currency exchange rates.

**Interest Rate Risk**

On December 31, 2008, we had outstanding total indebtedness of approximately \$291.9 million, including capital lease obligations. Of that indebtedness, approximately \$227.1 million accrues interest under rates that fluctuate based upon market rates plus an applicable margin. Approximately \$120.3 million in term loan indebtedness and \$66.0 million in total revolving credit indebtedness were outstanding under the Amended Credit Facility at December 31, 2008. The \$120.3 million term loan accrued interest using a LIBOR-based interest rate of 6.02% per annum. The average effective interest rate for the quarter ended December 31, 2008 under the LIBOR-based rate was 5.7%. As of December 31, 2008, the \$66.0 million of outstanding revolving credit facility indebtedness accrued interest under the alternate base interest rate (using the prime-based rate) at a rate of 6.88% per annum. The average effective interest rate for the quarter ended December 31, 2008 under the alternate base interest rate was 5.7%. Each 100 basis point increase in the interest rate would have the effect of increasing the annual amount of interest to be paid in total by approximately \$1.9 million. As of December 31, 2008, the interest rate relating to our \$40.8 million Bridge Loan entered into on December 30, 2008 was 15.0%, excluding additional fees. Each 100 basis point increase in the interest rate on the Bridge Loan would have the effect of increasing the annual amount of interest to be paid in total by approximately \$0.4 million.



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With respect to our fixed-rate long-term debt outstanding, the fair market value of our outstanding notes payable and long-term debt was \$26.4 million at December 31, 2007. Approximately \$272.1 million of our total outstanding indebtedness was re-negotiated on December 30, 2008 and was thus held at fair market value as of December 31, 2008. The value assigned to the remaining \$19.8 million of indebtedness out of the total \$291.9 million indebtedness at December 31, 2008 has not materially changed and is also thus stated at its fair value.

**Foreign Currency Exchange Rate Risk**

Our operations are conducted in various countries around the world, and we receive revenue from these operations in a number of different currencies with the most significant of our international operations using Canadian dollars (CAD). As such, our earnings are subject to movements in foreign currency exchange rates when transactions are denominated in currencies other than the U.S. dollar, which is our functional currency, or the functional currency of many of our subsidiaries, which is not necessarily the U.S. dollar. To the extent that transactions of these subsidiaries are settled in currencies other than the U.S. dollar, a devaluation of these currencies versus the U.S. dollar could reduce the contribution from these subsidiaries to our consolidated results of operations as reported in U.S. dollars.

Through our subsidiaries, we operate in a wide variety of jurisdictions, including United Kingdom, Canada, the Netherlands, China, Venezuela, India, Russia, the United Arab Emirates, and other countries. Our financial results may be affected by changes in foreign currency exchange rates. Our consolidated balance sheet at December 31, 2008 reflected approximately \$60.1 million of net working capital related to our foreign subsidiaries. A majority of our foreign net working capital is within Canada and the United Kingdom. The subsidiaries in those countries receive their income and pay their expenses primarily in Canadian dollars (CDN) and pounds sterling (GBP), respectively. To the extent that transactions of these subsidiaries are settled in CDN or GBP, a devaluation of these currencies versus the U.S. dollar could reduce the contribution from these subsidiaries to our consolidated results of operations as reported in U.S. dollars.

**Item 8. Financial Statements and Supplementary Data**

The financial statements required by this item begin at page F-1 hereof.

**Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure**

Not applicable.

**Item 9A. Controls and Procedures**

(a) *Evaluation of Disclosure Controls and Procedures.* Disclosure controls and procedures are designed to ensure that information required to be disclosed by us in reports filed or submitted under the Exchange Act, is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed under the Exchange Act is accumulated and communicated to management, including the principal executive officer and the principal financial officer, as appropriate to allow timely decisions regarding required disclosure. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives.

Our management carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) as of December 31, 2008. Based upon that evaluation, our principal executive officer and our principal financial officer believe that our disclosure controls and procedures were effective as of December 31, 2008.

(b) *Management's Report on Internal Control Over Financial Reporting.* Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) under the Exchange Act. Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that:

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- (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;
- (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of our management and directors; and
- (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Under Rule 12b-2 under the Exchange Act, a material weakness is defined as a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis.

We have excluded from the scope of our assessment of internal control over financial reporting the operations and related assets of ARAM Systems, Ltd., which we acquired on September 18, 2008. At December 31, 2008 and for the period from September 18 through December 31, 2008, total assets, total liabilities and total revenues subject to ARAM's internal control over financial reporting represented 9.5%, 2.5% and 3.2% of ION's consolidated total assets, total liabilities and total revenues, respectively, as of and for the year ended December 31, 2008.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we assessed the effectiveness of our internal control over financial reporting as of December 31, 2008 based upon criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Management's assessment concluded that our internal control over financial reporting was effective as of December 31, 2008.

Our independent registered public accounting firm has issued an audit report on our internal control over financial reporting. This report appears below.

(c) *Changes in Internal Control.* There was not any change in our internal control over financial reporting that occurred during the fourth quarter of fiscal 2008 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders of ION Geophysical Corporation

We have audited ION Geophysical Corporation's internal control over financial reporting as of December 31, 2008, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). ION Geophysical Corporation's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit 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 effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the

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maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As indicated in the accompanying Management's Report on Internal Control Over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of ARAM Systems, Ltd., which is included in the 2008 consolidated financial statements of ION Geophysical Corporation and constituted 9.5% and 2.5% of total assets and liabilities, respectively, as of December 31, 2008 and 3.2% of revenues, for the year then ended. Our audit of internal control over financial reporting of ION Geophysical Corporation also did not include an evaluation of the internal control over financial reporting of ARAM Systems, Ltd.

In our opinion, ION Geophysical Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2008, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of ION Geophysical Corporation and subsidiaries as of December 31, 2008 and 2007 and the related consolidated statements of operations, stockholders' equity and comprehensive income (loss), and cash flows for each of the three years in the period ended December 31, 2008 and our report dated February 27, 2009 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Houston, Texas  
February 27, 2009

**Item 9B. Other Information**

Not applicable.

**PART III**

**Item 10. Directors, Executive Officers and Corporate Governance**

Reference is made to the information appearing in the definitive proxy statement, under *Item 1 Election of Directors*, for our annual meeting of stockholders to be held on May 27, 2009 (the 2009 Proxy Statement) to be filed with the SEC with respect to Directors, Executive Officers and Corporate Governance, which is incorporated herein by reference and made a part hereof in response to the information required by Item 10.

**Item 11. Executive Compensation**

Reference is made to the information appearing in the 2009 Proxy Statement, under *Executive Compensation*, to be filed with the SEC with respect to Executive Compensation, which is incorporated herein by reference and made a part hereof in response to the information required by Item 11.



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**Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters**

Reference is made to the information appearing in the 2009 Proxy Statement, under *Item 1 Section 16(a) Beneficial Ownership Reporting Compliance*, to be filed with the SEC with respect to Security Ownership of Certain Beneficial Owners, and Management and Related Stockholder Matters, which is incorporated herein by reference and made a part hereof in response to the information required by Item 12.

**Item 13. Certain Relationships and Related Transactions, and Director Independence**

Reference is made to the information appearing in the 2009 Proxy Statement, under *Item 1 Certain Transactions and Relationships*, to be filed with the SEC with respect to Certain Relationships and Related Transactions and Director Independence, which is incorporated herein by reference and made a part hereof in response to the information required by Item 13.

**Item 14. Principal Accountant Fees and Services**

Reference is made to the information appearing in the 2009 Proxy Statement, under *Principal Auditor Fees and Services*, to be filed with the SEC with respect to Principal Accountant Fees and Services, which is incorporated herein by reference and made a part hereof in response to the information required by Item 14.

**PART IV**

**Item 15. Exhibits and Financial Statement Schedules**

(a) *List of Documents Filed*

(1) *Financial Statements*

The financial statements filed as part of this report are listed in the *Index to Consolidated Financial Statements* on page F-1 hereof.

(2) *Financial Statement Schedules*

The following financial statement schedule is listed in the *Index to Consolidated Financial Statements* on page F-1 hereof, and is included as part of this Annual Report on Form 10-K:

Schedule II *Valuation and Qualifying Accounts*

All other schedules are omitted because they are not applicable or the requested information is shown in the financial statements or noted therein.

(3) *Exhibits*

- 3.1 Restated Certificate of Incorporation dated September 24, 2007 filed on September 24, 2007 as Exhibit 3.4 to the Company's Current Report on Form 8-K and incorporated herein by reference.
- 3.2 Amended and Restated Bylaws of ION Geophysical Corporation filed on September 24, 2007 as Exhibit 3.5 to the Company's Current Report on Form 8-K and incorporated herein by reference.
- 3.3