

PROSPECTUS

1,837,500 SHARES
OSI SYSTEMS, INC.
COMMON STOCK

Certain of our shareholders (the “Selling Shareholders”) are offering to sell up to 1,837,500 shares of our common stock (the “Shares”). We are not offering or selling any of the Shares. The Selling Shareholders may sell the Shares on the open market at market price in ordinary broker transactions or in negotiated transactions, and they may pay broker commissions in connection with such transactions. We will not receive any of the proceeds of sale of the Shares nor pay any broker commissions in connection with such sales. Our common stock is quoted on the Nasdaq National Market under the symbol “OSIS”. On October 8, 2004, the closing price of our common stock was \$16.20 per share.

You should carefully consider each of the risk factors described under [RISK FACTORS](#) beginning on page 5 of this prospectus.

The Selling Shareholders and any broker-dealer executing selling orders on behalf of or purchasing from the Selling Shareholders may be deemed to be an “underwriter” within the meaning of the Securities Act of 1933. Commissions received by any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act of 1933.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is October 18, 2004

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PROSPECTUS SUMMARY

You should read this summary together with the other information contained in other parts of this prospectus and the documents which are incorporated by reference. Because it is a summary, it does not contain all of the information that you should consider before investing in our common stock. We will provide copies of documents incorporated by reference to you upon request and without cost to you.

Unless the context otherwise requires, the terms “we,” “our,” or “us” as used herein means OSI Systems, Inc., a California corporation, and its subsidiaries.

OSI Systems, Inc. and its subsidiaries is a vertically integrated, worldwide provider of security and inspection systems, medical monitoring and imaging systems, and optoelectronic devices and value-added subsystems. Our company was incorporated in 1987 in California. Our principal office is located at 12525 Chadron Avenue, Hawthorne, California 90250.

We design, manufacture and market security and inspection systems worldwide to end users under trade names including “Rapiscan”, “Ancore”, “PFNA”, “Eagle”, “Metor” and “Secure.” These systems are used to inspect people, baggage, cargo, vehicles and other objects for weapons, explosives, drugs and other contraband. These systems are also used for the safe, accurate and efficient verification of cargo manifests for the purpose of assessing duties and monitoring the export and import of controlled materials.

In March 2004, we significantly enhanced our medical monitoring and imaging systems activities through the acquisition of Spacelabs Medical, Inc. (“Spacelabs Medical”), a global manufacturer and distributor of patient monitoring and clinical information systems for use primarily in hospitals. Spacelabs Medical’s principal products encompass patient monitoring systems, network and connectivity solutions, ambulatory blood pressure monitors and medical data services. As a result, in the medical field, we now design, develop, manufacture and market patient monitoring products, network connectivity solutions, ambulatory blood pressure monitors, and related services under trade names including “Spacelabs”, “Ultracare” and “Ultraview.” We also continue to design, develop, manufacture and market arterial hemoglobin saturation monitors and sensors, including hand-held and wireless monitoring tools under trade names including “Dolphin” and “NuCat”, and peripheral bone densitometers under trade names including “DTX-200” and “DTU-One.”

Our optoelectronic devices and value-added subsystems are used in a broad range of applications, including aerospace and defense electronics, security and inspection systems, medical diagnostics, fiber optics, telecommunications, gaming, office automation, computer peripherals and industrial automation. We design and manufacture optoelectronic devices and value-added subsystems for others through original equipment manufacturer arrangements, as well as for our own security and medical equipment businesses.

In the fiscal year ended June 30, 2004, revenues from the sale of security and inspection systems amounted to \$117.8 million, or approximately 48% of our revenues. Revenues from the sale of medical imaging and monitoring systems amounted to \$60.7 million, or approximately 24% of our revenues. The revenues derived from Spacelabs Medical from March 19, 2004, the date of acquisition, to June 30, 2004, amounted to \$47.2 million. Lastly, revenues from the sale of optoelectronic devices and value-added subsystems amounted to \$68.6 million, or approximately 28% of revenues. Additional information concerning reporting segments is available in Note 14 to our Annual Report on Form 10-K for the fiscal year ended June 30, 2004.

Industry Overview

We sell our security and inspection systems and medical monitoring and imaging systems primarily to end-users, while we design and manufacture our optoelectronic devices and value-added subsystems primarily for original equipment manufacturers.

Security and Inspection Systems. A variety of technologies are currently used worldwide in security and inspection applications, including computed tomography systems, single energy x-ray equipment, dual energy x-ray

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equipment, metal detectors, x-ray machines employing backscatter detection technology, trace detection products, and cargo inspection systems using x-rays, gamma rays, or thermal neutron analysis. We believe that the market for security and inspection products will continue to be affected by the threat of terrorist incidents and by new government mandates and appropriations for security and inspection products in the United States and internationally. We also anticipate a growing market for the use of our products in non-security applications such as customs manifest verification and agricultural products inspection.

In the 1970s, principally in response to civilian airline hijackings, the U.S. Government established security standards by setting guidelines for the screening of carry-on baggage for weapons. The United Nations later mandated these standards for adoption by all of its member states. We believe that to date the imposition of these standards has resulted in the installation of over 10,000 x-ray inspection systems in airports worldwide. Additionally, since 1998, the United Kingdom Department of Transport has required that the United Kingdom's commercial airports deploy systems for 100% screening of international checked baggage. The European Civil Aviation Conference, an organization of 41 member states, has also agreed to implement 100% screening of international checked baggage in the future.

In the United States, largely in response to the explosion of Pan Am Flight 103 in December 1988, Congress enacted the Aviation Security Improvement Act of 1990, which, among other initiatives, directed the air transportation regulatory authorities in the U.S. to establish and implement strict security measures and to deploy advanced technologies for the detection of explosives. Then, in July 1996, in response to a White House commission report on aviation safety and security, the U.S. Government enacted additional legislation appropriating \$144 million for the initial deployment of advanced security and inspection technology at major U.S. airports.

The September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon using hijacked airliners has since led to nation-wide shifts in transportation and facilities security policies. Shortly following these attacks, Congress passed the Aviation and Transportation Security Act and integrated many U.S. security-related agencies, including the Federal Aviation Administration, into the U.S. Department of Homeland Security. As a result of these and other changes, sales of our security and inspection products have grown as compared to pre-September 11, 2001 levels.

Worldwide trends toward increased international trade and transportation of goods and people have resulted in a growing demand for cargo, port and border inspection technologies. Projects recently installed or currently underway include system installations in Hong Kong, Jamaica, Mexico, Romania, South Korea, Taiwan, the United Arab Emirates and the United States. These sites contain various cargo inspection product offerings including fixed and relocatable high-energy x-ray, mobile gamma-ray, hybrid x-ray/thermo neutron analysis and pulsed fast neutron analysis scanning systems. We anticipate a growing demand from governments and commercial enterprises for increasingly sophisticated solutions to screening vehicles, trucks, ocean-going cargo and air pallet containers.

Medical Monitoring and Imaging Systems. Though a well established market, healthcare is a rapidly growing sector of the U.S. and European economies. An aging population that is requiring a growing number of critical care beds is, in part, fueling this growth.

Many factors such as a severe nationwide nursing shortage, stricter government requirements affecting the staffing and accountability, and shrinking reimbursements from health insurance organizations are forcing healthcare providers to do more with less—improving patient safety and economic efficiencies with fewer resources. Our medical monitoring and imaging systems group designs, manufactures and markets products that respond to these new economic forces by helping hospitals reduce costs while maintaining or improving the quality of care their physicians and nurses are able to deliver.

In March 2004, we significantly enhanced our medical monitoring and imaging systems activities through the acquisition of Spacelabs Medical, a global manufacturer and distributor of patient monitoring and clinical

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information systems for use primarily in hospitals. As a result of the Spacelabs Medical acquisition, our total number of employees increased from approximately 1,450 to approximately 2,205, or 52%. Our Spacelabs Medical subsidiary designs, manufactures and markets patient monitoring solutions for critical care, emergency and perioperative areas of the hospital, wired and wireless networks and connectivity solutions, ambulatory blood pressure monitors and medical data services, all aimed at providing caregivers with instant patient information. By making critical patient information more readily accessible both inside and outside the hospital, delays in decision-making can be reduced, length of stay can be shortened, and treatment errors can be minimized.

Through our Dolphin Medical Inc. (“Dolphin Medical”) and Osteometer MediTech USA, Inc. (“Osteometer”) subsidiaries, we design, manufacture, and market next-generation pulse oximetry instruments and compatible pulse oximetry sensors as well as x-ray and ultrasound densitometers, which are used to diagnose osteoporosis as well as to provide follow-up bone density measurements. Our pulse oximetry technologies are used to non-invasively monitor oxygenation levels in a patient’s blood.

Optoelectronic Devices and Value-Added Subsystems. Our optoelectronic devices and value-added subsystems are used for a wide variety of applications ranging from complex monitoring, measurement and positioning functions, such as in industrial robotics where our optoelectronic devices and value-added subsystems are used to detect the exact position, motion or size of another object, to simple functions, such as the detection of paper in the print path of a laser printer. Because optoelectronic devices and value-added subsystems can be used in a wide variety of measurement control and monitoring applications, they are used in a broad array of industrial applications and are key components in the telecommunications and fiber optics industries.

We believe that in recent years, advances in technology and reductions in the cost of key components of optoelectronic systems, including computer processing power and memory, have broadened the market by enabling the use of optoelectronic devices in a greater number of applications. In addition, we see a trend among original equipment manufacturers to increasingly outsource the design and manufacture of optoelectronic devices and value-added subsystems to fully-integrated, independent manufacturers, like us, who may have greater specialization, broader expertise, and the flexibility to respond in shorter time periods than most original equipment manufacturers can accomplish in-house. We believe that our level of vertical integration, substantial engineering resources, expertise in the use and application of optoelectronic technology, and low-cost international manufacturing operations enable us to compete effectively in the market for optoelectronic devices and value-added subsystems. Our optoelectronic devices and value-added subsystems are also used in our security and inspection systems and medical monitoring and imaging products.

We have also penetrated several related markets that depend on our optoelectronic device and subsystem technologies. For example, we sell a series of high-speed photodetectors for use in fiber optic systems such as Gigabit Ethernet, Fiber Channel, and other telecommunication and data communication applications. Through system engineering, product development, rapid prototyping, and volume manufacturing, we develop, manufacture and market laser-based weapons simulation systems for the defense industry. Products include tactical engagement simulation systems, man worn laser detectors, small arms transmitters, controller guns and a variety of targeting systems. We also develop, manufacture, and sell laser-based remote sensing devices that are used in agricultural and mapping applications, as well as to detect and classify vehicles in toll and traffic management systems. Finally, our optoelectronic devices and subsystems group recently added “box build” manufacturing services and PC board assembly capabilities utilizing state-of-the-art automated surface mount technology lines for use by customers in the medical electronics, automotive diagnostic electronics, telecommunications, and digital audio systems industries, among others.

Growth Strategy

Our primary objectives are to be a leading provider of security and inspection products, cutting-edge medical monitoring and imaging systems, and specialized optoelectronic products to enhance our position in the

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international inspection and detection marketplace, to capitalize on our research to provide reliable and cost-optimized medical devices, and to leverage our expertise in the optoelectronic technology industry by entering into new markets. Key elements of this strategy include:

- Capitalizing on the growing market for security and inspection systems;
- Developing new security and inspection technologies;
- Improving existing medical diagnostic technologies;
- Leveraging our optoelectronic design and manufacturing expertise to address new applications;
- Acquiring new companies and technologies;
- Capitalizing on vertical integration;
- Capitalizing on global presence; and
- Selectively entering new end markets.

Our business and operations are subject to numerous risks, some of which are described in the *RISK FACTORS* section beginning on page 5 of this prospectus.

The Offering

This prospectus concerns an offering of up to 1,837,500 Shares by the Selling Shareholders. We are not offering or selling any of the Shares. We have registered this offering in compliance with registration rights which we granted to the Selling Shareholders when we sold the Shares to them. The Selling Shareholders are not required to sell the Shares; sales of the Shares are entirely at the discretion of each Selling Shareholder. The Shares consists of 1,500,000 shares of common stock purchased by the Selling Shareholders in a private transaction on June 1, 2004, together with 337,500 additional shares of our common stock issuable to the Selling Shareholders pursuant to warrants purchased by them contemporaneously with their purchase of such common stock. The warrants have a 7-year term and are exercisable at a price of \$27.73 per share. Under the terms of the warrants, the holders thereof may not exercise the warrants to the extent such exercise would cause any such holder, together with its affiliates, to have acquired a number of shares of common stock that would exceed either 4.999% or 9.999% of our then outstanding common stock, including for purposes of such determination shares of common stock issuable upon exercise of the warrants. The restriction that prevents such holders, together with its affiliates, from acquiring a number of shares of common stock that would exceed 4.999% of our then outstanding common stock may be waived by the holder of the warrant as to itself upon not less than 61 days notice to us. The Selling Shareholders may sell the Shares either on the open market at market price in ordinary broker transactions or in negotiated transactions, and they may pay broker commissions in connection with such transactions. We will not receive any of the proceeds of sale of the Shares nor pay any broker commissions in connection with such sales. Our common stock is quoted on the Nasdaq National Market under the symbol "OSIS." On October 8, 2004, the closing price for our stock was \$16.20 per share. We will pay the costs of registering the offer and sale of the Shares with the Securities and Exchange Commission (the "SEC") and any required state securities agencies.

Common Stock Offered by the Selling Shareholders	1,837,500 Shares
Nasdaq National Market Symbol	OSIS

Deepak Chopra
President and Chief Executive Officer
OSI Systems, Inc.
12525 Chadron Avenue
Hawthorne, California 90250
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RISK FACTORS

Investing in our common stock involves a significant degree of risk. You should carefully consider the following risk factors and all the other information contained in this prospectus or incorporated by reference before investing in our common stock. If any of the following risks actually occurs, our business, financial condition and results of operations could suffer, in which case the trading price of our common stock may decline.

Risks Related To Our Business

Fluctuations in our operating results may cause our stock price to decline.

Given the nature of the markets in which we participate, we cannot reliably predict future revenues and profitability. Changes in competitive, market and economic conditions may cause us to adjust our operations. A high proportion of our costs are fixed, due in part to our significant sales, research and development and manufacturing costs. Thus, small declines in revenue could disproportionately affect our operating results. Factors that may affect our operating results and the market price of our common stock include:

- demand for and market acceptance of our products;
- competitive pressures resulting in lower selling prices;
- adverse changes in the level of economic activity in regions in which we do business;
- adverse changes in industries, such as semiconductors and electronics, on which we are particularly dependent;
- changes in the portions of our revenue represented by various products and customers;
- delays or problems in the introduction of new products;
- the announcement or introduction of new products, services or technological innovations by our competitors;
- variations in our product mix;
- the timing and amount of our expenditures in anticipation of future sales;
- increased costs of raw materials or supplies; and
- changes in the volume or timing of product orders.

We face aggressive competition in many areas of business. If we do not compete effectively, our business will be harmed.

We encounter aggressive competition from numerous competitors in many areas of our business. In the security and inspection and medical monitoring and imaging systems markets, competition is based primarily on such factors as product performance, functionality and quality, cost, prior customer relationships, technological capabilities of the product, price, certification by government authorities, local market presence, and breadth of sales and service organization. In the optoelectronic devices and value-added subsystems market competition is based primarily on factors such as expertise in the design and development of optoelectronic devices, product quality, timeliness of delivery, price, customer technical support, and on the ability to provide fully-integrated services from application development and design through volume subsystem production. We may not be able to compete effectively with all of our competitors. To remain competitive, we must develop new products and enhance our existing products in a timely manner. We anticipate that we may have to adjust prices of many of our products to stay competitive. In addition, new competitors may emerge, and entire product lines may be threatened by new technologies or market trends that reduce the value of these product lines.

The September 11, 2001 terrorist attacks and the creation of the U.S. Department of Homeland Security have increased financial expectations that may not materialize.

The September 11, 2001 terrorist attacks and the subsequent creation of the U.S. Department of Homeland Security have created increased interest in our security and detection products; however, we are not certain whether the level of demand will continue to be as high as anticipated. We do not know what solutions will continue to be adopted by the U.S. Department of Homeland Security as a result of the terrorism and whether our products will be a part of the solution. Additionally, should our products be considered as a part of the future security solution, it is unclear what the level may be and how quickly funding to purchase our products may be made available. These factors may adversely impact us and create unpredictability in revenues and operating results.

Our revenues are dependent on orders in the security and inspection products, which have lengthy and unpredictable sales cycles.

Sales of security and inspection products depend in significant part upon the decision of governmental agencies to upgrade or expand existing airports, border crossing inspection sites, seaport inspection sites, and other security installations. Accordingly, a portion of our sales of security inspection and detection products is often subject to delays associated with the lengthy approval processes that typically accompany such capital expenditures. During these approval periods, we expend significant financial and management resources in anticipation of future orders that may not occur. If we fail to receive an order after expending such resources, such failure could have a material adverse effect on our business, financial condition and results of operations.

If we do not introduce new products in a timely manner, our products could become obsolete and our operating results would suffer.

We sell many of our products in industries characterized by rapid technological changes, frequent new product and service introductions and evolving industry standards. Without the timely introduction of new products and enhancements, our products could become technologically obsolete over time, in which case our revenue and operating results would suffer. The success of our new product offerings will depend upon several factors, including our ability to:

- accurately anticipate customer needs;
- innovate and develop new technologies and applications;
- successfully commercialize new technologies in a timely manner;
- price our products competitively and manufacture and deliver our products in sufficient volumes and on time; and
- differentiate our offerings from our competitors' offerings.

Some of our products are used by our customers to develop, test, and manufacture their products. We therefore must anticipate industry trends and develop products in advance of the commercialization of our customers' products. In developing any new product, we may be required to make a substantial investment before we can determine the commercial viability of the new product. If we fail to accurately foresee our customers' needs and future activities, we may invest heavily in research and development of products that do not lead to significant revenues.

Interruptions in our ability to purchase raw materials and components may adversely affect our profitability.

We purchase certain raw materials and subcomponents from third parties pursuant to purchase orders placed from time to time. Purchase order terms range from three months to one year at fixed costs, but we do not have guaranteed long-term supply arrangements with our suppliers. Any material interruption in our ability to purchase necessary raw materials or subcomponents could have a material adverse effect on our business, financial condition and results of operations.

We may not be able to successfully implement our acquisitions strategy, integrate acquired businesses into our existing business or make acquired businesses profitable.

One of our strategies is to supplement our internal growth by acquiring businesses and technologies that complement or augment our existing product lines. This growth has placed, and may continue to place, significant demands on our management, working capital and financial resources. We may be unable to identify or complete promising acquisitions for many reasons, including:

- competition among buyers;
- the need for regulatory approvals, including antitrust approvals; and
- the high valuations of businesses.

Some of the businesses we may seek to acquire may be marginally profitable or unprofitable. For these acquired businesses to achieve acceptable levels of profitability, we must improve their management, operations, products and market penetration. We may not be successful in this regard and may encounter other difficulties in integrating acquired businesses into our existing operations.

To finance our acquisitions, we may have to raise additional funds, through either public or private financings. We may be unable to obtain such funds or may be able to do so only on unfavorable terms.

Our acquisition and alliance activities could disrupt our ongoing business.

We intend to continue to make investments in companies, products, and technologies, either through acquisitions or investments or alliances. For example, we completed the acquisition of Spacelabs Medical this past year, a global manufacturer and distributor of patient monitoring and clinical information systems for use primarily in hospitals. Acquisitions and alliance activities often involve risks, including: (i) difficulty in assimilating the acquired operations and employees; (ii) difficulty in managing product co-development activities with our alliance partners; (iii) retaining the key employees of the acquired operation; (iv) disruption of our ongoing business; (v) inability to successfully integrate the acquired technologies and operations into our businesses and maintain uniform standards, controls, policies and procedures; and (vi) lacking the experience necessary to enter into new product or technology markets. In addition, from time to time, our competitors acquire or enter into exclusive arrangements with companies with whom we do business or may do business in the future. Reductions in the number of partners with whom we may do business in a particular context may reduce our ability to enter into critical alliances on attractive terms or at all, and the termination of an existing alliance by a business partner may disrupt our operations.

Economic, political, and other risks associated with international sales and operations could adversely affect our sales.

In fiscal year 2002, revenues from shipments made outside of the United States accounted for approximately 52% of our revenues, 51% in fiscal year 2003 and 41% in fiscal year 2004. Of the revenues generated during fiscal year 2004 from shipments made to customers outside of the United States, 17% represented sales from the U.S. to foreign customers, and the balance represented sales generated by our foreign subsidiaries. Since we sell our products worldwide, our businesses are subject to risks associated with doing business internationally. We anticipate that revenues from international operations will continue to represent a substantial portion of our total revenue. In addition, many of our manufacturing facilities, employees and suppliers are located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including:

- changes in foreign currency exchange rates;
- changes in a country's or region's political or economic conditions, particularly in developing or emerging markets;
- longer payment cycles of foreign customers and difficulty of collecting receivables in foreign jurisdictions;
- trade protection measures and import or export licensing requirements;

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- differing tax laws and changes in those laws;
- difficulty in staffing and managing widespread operations;
- differing labor laws and changes in those laws;
- differing protection of intellectual property and changes in that protection; and
- differing regulatory requirements and changes in those requirements.

Our failure to protect our intellectual property could impair our competitive position.

While we own certain patents and trademarks, some aspects of our business cannot be protected by patents or trademarks. Accordingly, in these areas there are few legal barriers that prevent potential competitors from copying certain of our products, processes and technologies or from otherwise entering into operations in direct competition with us.

Our products may infringe on the intellectual property rights of others, and resulting claims against us could be costly and prevent us from making or selling certain products.

Third parties may seek to claim that our products and operations infringe their patent or other intellectual property rights. We may incur significant expense in any legal proceedings to protect our proprietary rights or to defend infringement claims by third parties. In addition, claims of third parties against us could result in awards of substantial damages or court orders that could effectively prevent us from making, using or selling our products in the U.S. or abroad.

A claim for damages could materially and adversely affect our financial condition and results of operations.

Our business exposes us to potential product liability risks, particularly with respect to our security and inspection products. There are many factors beyond our control that could lead to liability claims, including the failure of the products in which our subsystems are installed, the reliability of the customers' operators of the inspection equipment, and the maintenance of the inspection units by the customers. There can be no assurance that the amount of product liability insurance that we carry will be sufficient to protect us from product liability claims. A product liability claim in excess of the amount of insurance we carry could have a material adverse effect on our business, financial condition and results of operations.

Our ongoing success is dependent upon the continued availability of certain key employees.

We are dependent in our operations on the continued availability of the services of our employees, many of whom are individually key to our current and future success, and the availability of new employees to implement our growth plans. In particular, we are dependent upon the services of Deepak Chopra, our Chairman of the Board of Directors, President and Chief Executive Officer. We have entered into a 5-year employment agreement with Mr. Chopra, which expires April 1, 2007 and we maintain a \$13.0 million policy of key man life insurance on the life of Mr. Chopra. The market for skilled employees is highly competitive, especially for employees in technical fields. While our compensation programs are intended to attract and retain the employees required for it to be successful, there can be no assurance that we will be able to retain the services of all of our key employees or a sufficient number to execute on our plans, nor can there be any assurances that we will be able to continue to attract new employees as required.

Our failure to comply with environmental regulations may create significant environmental liabilities and force us to modify our manufacturing processes.

We are subject to various federal, state and local environmental laws, ordinances and regulations relating to the use, storage, handling and disposal of certain hazardous substances and wastes used or generated in the manufacturing and assembly of our products. Under such laws, we may become liable for the costs of removal or remediation of certain hazardous substances or wastes that have been or are being disposed of offsite as wastes or

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that have been or are being released on or in our facilities. Such laws may impose liability without regard to whether we knew of, or caused, the release of such hazardous substances or wastes. Any failure by us to comply with present or future regulations could subject us to the imposition of substantial fines, suspension of production, alteration of manufacturing processes, or cessation of operations, any of which could have a material adverse effect on our business, financial condition, and results of operations.

Changes in governmental regulations may reduce demand for our products or increase our expenses.

We compete in markets in which we or our customers must comply with federal, state, local, and foreign regulations, such as environmental, health, safety, and food and drug regulations. We develop, configure, and market our products to meet customer needs created by these regulations. Any significant change in these regulations could reduce demand for our products.

Risks Related To Our Capital Structure and Common Stock

Our Articles of Incorporation and other agreements contain provisions that could discourage a takeover.

Our Articles of Incorporation authorize our Board of Directors to issue up to 10,000,000 shares of preferred stock in one or more series, to fix the rights, preferences, privileges and restrictions granted to or imposed upon any wholly unissued shares of preferred stock, to fix the number of shares constituting any such series, and to fix the designation of any such series, without further vote or action by shareholders. The terms of any series of preferred stock, which may include priority claims to assets and dividends and special voting rights, could adversely affect the rights of the holders of our common stock and thereby reduce the value of our common stock. We have no present plans to issue shares of preferred stock. The issuance of preferred stock, coupled with the concentration of ownership in the directors and executive officers, could discourage certain types of transactions involving an actual or potential change in control of our company, including transactions in which the holders of common stock might otherwise receive a premium for their shares over then current prices, otherwise dilute the rights of holders of common stock, and may limit the ability of such shareholders to cause or approve transactions which they may deem to be in their best interests, all of which could have a material adverse effect on the market price of our common stock. We have in place a shareholder rights plan, adopted in 2000, under which our shareholders are entitled to purchase shares of preferred stock under certain circumstances. These circumstances include the purchase of 20% or more of the outstanding shares of common stock by a person or group, or the announcement of a tender or exchange offer to acquire 20% or more of the outstanding common stock. The stockholder rights plan may have the effect of impeding or preventing certain types of transactions involving a change in control of our company that could be beneficial to the shareholders.

Our Articles of Incorporation limit the liability of its directors, which may limit the remedies we or our shareholders have available.

Our Articles of Incorporation provide that, pursuant to the California Corporations Code, the liability of our directors for monetary damages shall be eliminated to the fullest extent permissible under California law. This is intended to eliminate the personal liability of a director for monetary damages in an action brought by us, or in our right, for breach of a director's duties to us or our shareholders and may limit the remedies available to us or our shareholders. This provision does not eliminate the directors' fiduciary duty and does not apply to liabilities for: (i) acts or omissions that involve intentional misconduct or a knowing and culpable violation of law; (ii) acts or omissions that a director believes to be contrary to the best interests of our company or our shareholders or that involve the absence of good faith on the part of the director; (iii) any transaction from which a director derived an improper personal benefit; (iv) acts or omissions that show a reckless disregard for the director's duty to the our company or our shareholders in circumstances in which the director was aware, or should have been aware, in the ordinary course of performing a director's duties, of a risk of serious injury to our company or our shareholders; (v) acts or omissions that constitute an unexcused pattern of inattention that amounts to an abdication of the director's duty to our company or our shareholders; (vi) certain transactions or the approval of transactions in which a director has a material financial interest; and (vii) expressly imposed by statute for approval of certain improper distributions to shareholders or certain loans or guarantees.

FORWARD-LOOKING STATEMENTS

The statements contained in this prospectus that are not historical facts are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”). These forward-looking statements may be identified by the use of forward-looking terms such as “believes”, “expects”, “may”, “will”, “should” or “anticipates” or by discussions of strategy that involve risks and uncertainties. From time to time, we have made or may make forward-looking statements, orally or in writing. These forward-looking statements include statements regarding our expectations, goals or intentions about the future, including, but not limited to, statements regarding anticipated future revenues, sales, operations, demand, competition, capital expenditures, credit arrangements, and other statements regarding matters that are not historical facts, involve predictions which are based upon a number of future conditions that ultimately may prove to be inaccurate. Our actual results, performance or achievements could differ materially from the results expressed in, or implied by, these forward-looking statements. Factors that may cause or contribute to such differences include those discussed under “Risk Factors” above, and in our Form 10-K for fiscal year ended June 30, 2004. These risk factors, of course, do not include all risk factors which might affect our business and financial condition.

USE OF PROCEEDS

The Selling Shareholders are selling the Shares and will receive all of the proceeds from any sales. We will not receive any sales proceeds.

SELLING SHAREHOLDERS

All of the Shares being offered in this prospectus are being offered by the Selling Shareholders listed below. We have registered this offering because of registration rights we granted to the Selling Shareholders when we sold the Shares to them. The Selling Shareholders are not required to sell all or any of the Shares. The Shares consists of 1,500,000 shares of common stock purchased by the Selling Shareholders in a private placement on June 1, 2004, together with 337,500 additional shares of our common stock issuable to the Selling Shareholders pursuant to warrants purchased by them contemporaneously with the purchase of the common stock. The warrants have a 7-year term and are exercisable at a price of \$27.73 per share. Under the terms of the warrants, the holders thereof may not exercise the warrants to the extent such exercise would cause any such holder, together with its affiliates, to have acquired a number of shares of common stock that would exceed either 4.999% or 9.999% of our then outstanding common stock, including for purposes of such determination shares of common stock issuable upon exercise of the warrants. The restriction that prevents such holders, together with its affiliates, from acquiring a number of shares of common stock that would exceed 4.999% of our then outstanding common stock may be waived by the holder of the warrant as to itself upon not less than 61 days notice to us.

Name	Shares Owned Before Offering ⁽¹⁾	Shares to be Sold in Offering	Shares Owned After Offering ⁽²⁾	Percentage Owned After Offering
Cranshire Capital L.P. ⁽³⁾	532,885	306,250	226,635	1.4%
Mainfield Enterprises Inc. ⁽⁴⁾	918,750	918,750	0	0%
Smithfield Fiduciary LLC ⁽⁵⁾	693,750	612,500	81,250	*
Total		1,837,500		

* Less than 1%.

Percentage of ownership for each holder is calculated based on 16,245,310 shares of common stock outstanding on October 4, 2004. Beneficial ownership is determined in accordance with the Rule 13d-3 of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and generally includes shares over which the holder has voting or investment power, subject to community property laws. All shares of common stock obtainable upon conversion of securities or exercise of stock options or warrants (including those that are not currently exercisable but will become exercisable within 60 days hereafter) are considered to be beneficially owned by the person holding the options or warrants for computing that person's percentage, but are not treated as outstanding for computing the percentage of any other person.

⁽¹⁾ Includes Shares covered by this prospectus.

⁽²⁾ Assumes the completion of this offering and that the Selling Shareholders dispose of all of their Shares covered by this prospectus, that they do not dispose of any securities owned by them, but not covered by this prospectus, and that they do not acquire any additional securities.

⁽³⁾ Includes 56,250 shares of our common stock issuable upon the exercise of warrants issued on June 1, 2004, and 108,123 shares of our common stock issuable upon the exercise of warrants issued on December 10, 2001. Downsvew Capital, Inc. ("Downsvew") is the general partner of Cranshire Capital L.P. ("Cranshire") and consequently has voting control and investment discretion over the shares of common stock held by Cranshire. Mitchell Kopin is the President of Downsvew. Each of Downsvew and Mr. Kopin disclaims beneficial ownership of the shares held by Cranshire.

⁽⁴⁾ Includes 168,750 shares of our common stock issuable upon the exercise of warrants issued on June 1, 2004. Pursuant to an investment management agreement entered into between Mr. Avi Vigder and Mainfield Enterprises Inc. ("Mainfield"), Mr. Vigder has voting control and investment discretion over the shares of common stock held by Mainfield. Mr. Vigder disclaims beneficial ownership of the shares held by Mainfield.

⁽⁵⁾ Includes 112,500 shares of our common stock issuable upon the exercise of warrants issued on June 1, 2004, 56,250 shares of our common stock issuable upon the exercise of warrants issued in October 2002, and 25,000 shares of our common stock issuable upon the exercise of warrants issued on December 10, 2001. Highbridge Capital Management, LLC ("Highbridge") is the trading manager of Smithfield Fiduciary LLC ("Smithfield") and consequently has voting control and investment discretion over the shares of common stock held by Smithfield. Glenn Dubin and Henry Swieca control Highbridge. Each of Highbridge and Messrs. Dubin and Swieca disclaims beneficial ownership of the shares held by Smithfield.

PLAN OF DISTRIBUTION

The Selling Shareholders and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. The Selling Shareholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- exchange distributions in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- broker-dealers may agree with the Selling Shareholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The Selling Shareholders may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Shareholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Shareholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The Selling Shareholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved.

The Selling Shareholders may from time to time pledge or grant a security interest in some or all of the shares of our common stock or warrants to purchase shares of our common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell such shares of common stock from time to time under this prospectus, or under an amendment to this prospectus pursuant to Rule 424(b)(3) of the Securities Act or other applicable provision of the Securities Act amending the list of Selling Shareholders to include the pledgee, transferee or other successors in interest as Selling Shareholders under this prospectus.

The Selling Shareholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The Selling Shareholders and any broker-dealers or agents that are involved in selling the shares may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. The Selling Shareholders have informed us that they do not have any agreements or understandings, directly or indirectly, with any person to distribute the common stock.

We are required to pay all fees and expenses incident to the registration of the Shares. We have agreed to indemnify the Selling Shareholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

LEGAL MATTERS

The law firm of Loeb & Loeb LLP, of Los Angeles, California, will pass upon the validity of the securities offered by this prospectus.

EXPERTS

The consolidated financial statements incorporated in this prospectus by reference to our Annual Report on Form 10-K for the year ended June 30, 2004, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference, and have been so incorporated in reliance upon the report of such firm given upon their authority as experts in auditing and accounting.

The consolidated/combined financial statements incorporated in this prospectus by reference to our Form 8-K/A dated June 1, 2004 and our Form 8-K/A dated October 12, 2004, have been so incorporated in reliance on the reports of KPMG LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting. These reports contain explanatory paragraphs that state that Spacelabs Medical was acquired on July 3, 2002 and October 8, 2003, in separate transactions accounted for as purchases. The purchase accounting on these dates resulted in assets and liabilities being recorded at their estimated fair values. Accordingly, the combined financial statements for periods subsequent to the acquisition dates are not comparable to the consolidated financial statements presented for prior periods. In addition, these reports contain explanatory paragraphs that state that Spacelabs Medical, effective January 1, 2002, changed its method of accounting for goodwill in accordance with SFAS No. 142, "Goodwill and Other Intangible Assets."

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus certain information which we file with the SEC. This means we can fulfill our obligations to provide you with certain important information by referring you to other documents which we have filed with the SEC. **The information which is incorporated by reference is an important part of this prospectus.**

We are incorporating by reference into this prospectus the following documents which we have filed, or may later file, with the SEC under the Exchange Act. The information we file with the SEC later will automatically update and supersede the present information.

1. Our Annual Report on Form 10-K for the fiscal year ended June 30, 2004 (SEC file number 0-23125).
2. Our Quarterly Report on Form 10-Q for the period ended March 31, 2004 (SEC file number 0-23125).
3. Our Quarterly Report on Form 10-Q for the period ended December 31, 2003 (SEC file number 0-23125).
4. Our Quarterly Report on Form 10-Q for the period ended September 30, 2003 (SEC file number 0-23125).
5. Our Current Reports on Form 8-K filed on January 7, 2004, January 22, 2004, March 2, 2004, March 26, 2004, June 1, 2004, June 2, 2004, September 10, 2004 and October 12, 2004 (SEC file numbers 0-23125).
6. All reports which we file with the SEC under the Exchange Act after the date of the initial Registration Statement of which this prospectus is a part and prior to the effective date of such Registration Statement.

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7. The description of our common stock in our Registration Statement on Form 8-A (File No. 0-23125) filed under the Exchange Act on September 24, 1997, which, in turn, incorporated such description by reference to page 54 of our Preliminary Prospectus, dated August 27, 1997, filed with the Securities and Exchange Commission on September 2, 1997, as part of our Registration Statement on Form S-1 (No. 333-29179), and any amendments or reports filed to update the description.

All documents which we file under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus and the termination of the offering shall be deemed to be incorporated by reference into this prospectus.

We will provide to each person to whom a prospectus is delivered, including any beneficial owner, a copy of any or all of the information which is incorporated by reference in this prospectus but which is not delivered with this prospectus. We will provide such information, at no cost to the requesting person, upon written or oral request made to:

Deepak Chopra
President and Chief Executive Officer
12525 Chadron Avenue
Hawthorne, California 90250
(310) 978-0516

WHERE YOU CAN FIND MORE INFORMATION

You should rely only on the information in this prospectus or any prospectus supplement or incorporated by reference in them. We have not authorized anyone else to provide you with different information. Offers of the securities are being made only in states where the offers are permitted. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents. If information in incorporated documents conflicts with information in this prospectus, you should rely on the most recent information.

This prospectus is part of a Registration Statement on Form S-3 that has been filed with the SEC. It does not include all of the information that is in the Registration Statement and the additional documents filed as exhibits with it. For more detailed information, you should read the exhibits themselves.

We are subject to the informational requirements of the Exchange Act and, in accordance with it, are required to file reports, proxy and information statements, and other information with the SEC. Such reports, proxy and information statements and other information can be inspected and copied at the SEC's Public Reference Rooms at 450 Fifth Street, N.W., Washington, D.C. 20549, as well as at the SEC's regional offices at 500 West Madison Street, Suite 1400, Chicago, IL 60661 and at 233 Broadway, New York, NY 10279. The public may obtain information about the operation of the Public Reference Rooms by calling the SEC at 1-800-SEC-0330. We electronically file reports, proxy and information statements, and other information with the SEC. The SEC maintains an Internet website that contains our electronically filed reports, proxy and information statements, and other information at <http://www.sec.gov>. We maintain an Internet website at <http://www.osi-systems.com>. Our common stock is traded on the Nasdaq National Market under the symbol "OSIS", and our SEC reports, proxy and information statements and other information concerning us also can be inspected at the offices of Nasdaq Operations, 1735 K Street, N.W., Washington, D.C. 20006.

INDEMNIFICATION

Our Articles of Incorporation allow us to indemnify our officers and directors to the maximum extent allowed under California law. This includes indemnification for liabilities which could arise under the Securities Act. Insofar as we are permitted to indemnify our officers and directors, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

No dealer, salesperson or other person has been authorized to give any information or to make any representations not contained in this prospectus in connection with the offering covered by this prospectus. If given or made, such information or representations must not be relied upon as having been authorized by OSI Systems, Inc., a Selling Shareholder, or any underwriter. This prospectus does not constitute an offer to sell, or a solicitation of any offer to buy, common stock in any jurisdiction to any person to whom, it is unlawful to make such an offer or solicitation in such jurisdiction. Neither the delivery of this prospectus nor any sale made under this prospectus shall, under any circumstances, create any implication that the information contained in this prospectus is correct as of any time after the date of the prospectus or that there has been no change in the affairs of OSI Systems, Inc. after the date of this prospectus.

1,837,500 SHARES
OSI SYSTEMS, INC.
COMMON STOCK

PROSPECTUS

October 18, 2004