Innovative Solutions and Support, Inc. (NYSE: ISSC)

**Business**:

Systems integrator that develops, manufactures, sells and services air data equipment, engine display systems, standby equipment, primary flight guidance, autothrottles and cockpit display systems for retrofit applications and OEMs

* Supplies integrated flight management systems (FMS), flat panel display systems (FPDS)
  + FPDS with autothrottle, air data equipment, integrated standby units, integrated standby units with autothrottle, advanced GPS receivers, etc. enable reduced carbon footprint navigation, communication and navigation products and inertial reference units
* Position as a systems integrator provides ISSC with the capability and potential to generate more substantive orders over a broader product base
  + This strategy—as both a manufacturer and integrator—allows ISSC to leverage the latest technologies developed for the computer and telecom industries into advanced and cost-effective solutions
    - Serves the general aviation, commercial air transport, the U.S. DoD/governmental and foreign military markets
    - Combined with ISSC’s industry experience, this strategy enables the Company to develop high-quality products and systems, to reduce product time to market, and to achieve cost advantages over competitor products
* Working with technology to provide pilots with more information to enhance both the safety and efficiency of flying
  + Developed its COCKPIT/IP Cockpit Information Portal (CIP) product line, which incorporates proprietary technology, lower costs relative to the competition, reduced power consumption, decreased weight, and increased functionality
  + Integrated electronic flight bag functionality (ex. Charting and mapping systems) into its FPDS product line
* Developed an FMS that combines savings associated with in-flight fuel optimization in enroute flight management with the precision of satellite-based navigation required to comply with the regulatory environments of both domestic and international markets
  + FMS, FPDS, and CIP are well suited to address market demand driven by regulatory mandates, new technologies, and the high cost of maintaining aging and obsolete equipment on aircraft that may be in service for up to fifty years
    - Shift in regulatory environment evidenced by the dramatic increase in the number of Space Based Augmentation System (SBAS) or Wide Area Augmentation System (WAAS) approach qualified airports (particularly as realized through Localizer Performance with Vertical guidance (LPV) navigation procedures
      * Aircraft equipped with FMS, FPDS, and SBAS/WAAS/LPV enabled navigator will be qualified to land at such airports and comply with FAA mandates for Required Navigation Performance and Automatic Dependent Surveillance-Broadcast navigation
    - FMS/FPDS system designed for new production and retrofit applications in a variety of end markets
    - Offers a state-of-the-art integrated standby unit, integrating the full functionality of the primary and navigation displays into a small backup-powered unit
* Developed and received FAA certification on its NextGen Flight Deck featuring its ThrustSense Autothrottle (Integrated PT6) for retrofit in the Pilatus PC-12
  + Flight Deck features Primary Flight and Multi-Function Displays and integrated standby units, as well as an integrated FMS and electronic flight bag system
  + Available for integration into other business aircraft with full-authority digital engine control (FADEC) and non-FADEC engines
  + Developed for retrofit in the King Air, dual turbo prop PT6 powered aircraft; ThrustSense Autothrottle is designed to automate power management for speed and power control, while ensuring aircraft envelope and engine protection
    - Multi-year agreement with Textron to supply ThurstSense Autothrottle on the King Air 360 and King Air 260
      * Available for retrofit through Textron service centers and third-party service centers
    - FAA-certified safety mode feature (LifeGuard) providing critical protection that proportionally reduces engine power to maintain directional control during an engine-out condition
    - ThurstSense is innovative in that it is the first autothrottle developed for a turbo prop that allows a pilot to automatically control the engine’s power setting
* ISSC sells to both the OEM and retrofit markets
  + Customers include OEMs, commercial air transport carriers and corporate/general aviation companies, the DoD and its commercial contractors, aircraft operators, aircraft modification centers, government agencies and foreign militaries
    - ISSC may also sell its products directly to the DoD, however products are mainly sold to commercial customers for end use in DoD programs

**Industry:**

* Company believes that aircraft cockpits will become more complete information centers, capable of delivering information that is either mandated by regulation or demanded by pilots to assist in the safe and efficient operation of aircraft
  + Flight deck will continue to incorporate technologies that are stepping-stones for complete autonomy
* Flight data classified into four general types:
  + Aircraft heading and altitude information: aircraft speed, altitude, and rates of ascent and descent
  + Flight critical aircraft control data: engine data, such as fuel and oil quantity, and other engine measurements
  + Navigation data: includes radio position, flight management, GPS and alternative source information
  + Maintenance and aircraft health data: on-board sensors and programs to measure parameters related to health of a system on the aircraft
* Air data calculations based primarily on aircraft sensor measurements; engine data determined measuring various indices (temperature, volume, pressure, etc.) within an aircraft’s engines; GPS and alternative source information derived from satellites or land equipment using satellite/radio signals; maintenance and health data utilize various products and interface with many components
* Flight data and other information were displayed on a series of separate analog mechanical instruments until the early 1980s, when LCD displays began to be used
  + The ability to display more information in an efficient space and custom platform will become increasingly important as additional information becomes mandated by regulation
  + FPDS will eventually replace LCDs on legacy aircraft
  + New technologies and procedures—used to regulate increasingly crowded airports and skies and the environmental impact of air congestion—will require innovation and intuitive methods to display situational awareness information for the pilots

**Strategy:**

* Continue to drive the market toward the performance, situational awareness, and safety advantages of equipping the ThrustSense Autothrottle on both aftermarket and OEM aircraft
  + Highly effective, less complex and costly, offers sophisticated sensing and multiple safety features
  + Received first STC ever granted by the FAA for a turboprop autothrottle in June 2017; first to market
* Continuing of ThurstSense Autothrottle STC installations
  + Certified to perform PC-12 and King Air STC installations; able to go directly to an autothrottle customer location and perform the STC installation on site
* Focusing on retrofits
  + More cost effective compared to the acquisition of a new aircraft, of which it can provide equivalent functionality
* Expand presence in the flat panel display market
  + Due to demand from cargo operators, ISSC believes that many aircraft will be retrofitted with FPDS over the next several years
    - Increasingly replace individual analog and digital instrument LCDs and cathode ray tubes
    - Patented and proprietary Integrity Checking Processor and Zooming features will allow CIP to increase revenues and market share
* Continuing development of innovative products
  + CIP is an example of ISSC’s ability to engineer products through the selective application of non-avionic technology
* Maintaining focus on air data markets
  + ISSC believes it is one of the largest suppliers of air data products to the U.S. retrofit market
  + DoD budget pressures mean retrofitting is more attractive
  + Higher performance engines in business aircraft are creating a need for sophisticated air data products which the Company supplies
* Increasing sales to DoD, other government agencies, defense contractors, commercial air transport carriers and corporate/general aviation markets
  + Diversifying sales to include all aviation end user markets (ex. ongoing retrofit programs and an OEM program with Pilatus, a corporate/general aviation business)
* Expanding international presence
  + Adding sales and marketing personnel to target European and other international aircraft operators/modification centers
    - These potential customers will retrofit legacy in-service aircraft with large flat panel displays
    - EASA approved FPDS installation in Europe for the B757/B767 aircraft and anticipates approval for more aircraft types
* Acquisitions, investments, strategic partnerships or other ventures

**Products:**

* FPDS: active matrix liquid crystal display screens that can replicate the display of one or a suite of analog or digital displays on one screen
  + Used also for security monitoring on-board aircraft and as tactical workstations on military aircraft
  + Can replace conventional analog and digital displays while displaying additional information not commonly displayed in the cockpit (ex. air data, engine and fuel data, altitude, heading and navigational data, maintenance and aircraft health data and alternative source information
  + Engineering Development Contracts (EDCs): added development cost for customized FPDS
* FMS: NextGen Flight Deck is an easily installed navigation and performance computer complimenting FPDS
  + Interfaces with the Company’s SBAS GPS receiver to provide a GPS-based navigation solution
    - GPS receiver located remotely depending on space available
    - FMS housed in an ARINC 739B compliant Multifunction and Control Display Unit (MCDU)
  + Has an LCD display, keyboard, mode and function keys, line select keys and annunciator lights, and supports ethernet data loading
    - MCDU computes the most efficient flight profiles and provides steering commands for use upon entering a flight data plan
  + Incorporates a robust navigation database with ample growth for the future
  + ARINC 739B compliant, providing an interface option for other cockpit equipment
* Integrated Standby Unit (ISU): incorporates the measurement and display of altitude, attitude, airspeed, and navigation data into a single navigation instrument for various application
  + Based on the Company’s merger of CIP display technology and Reduced Vertical Separation Minimum air data products
    - Proprietary algorithm allows for accurate computation
    - Triaxial magnetometer tolerant to local soft iron effects
  + Display uses familiar Primary Flight Display format
  + Logistics and maintenance savings are realized due to increase reliability and a reduction in line-replaceable units
* Air Data Systems and Components: calculate and display various measures using advanced sensors and customized algorithms
  + Sells both individual components and partial/complete air data systems, including:
    - Digital air data computers: calculate various air data parameters
    - Integrated air data computers and display units: calculate and convey air data information
    - Altitude displays: convey aircraft altitude measurements
    - Airspeed displays: convey various airspeed measurements including vertical airspeed and rates of ascent and descent
    - Altitude alerters: allow pilots to select a desired cruising altitude and which provide warnings to pilots when a deviation occurs
* Engine and Fuel Displays: solid-state multifunction displays convey information with respect to fuel and oil levels and engine activity
  + Can be used in conjunction with the Company’s engine and fuel data equipment or that of other manufacturers
    - Extremely reliable, programmable and are easily adaptable without major modification to most modern aircraft
      * Have been installed on B727, B737, C-130H, DC-9, DC-10, P-3, F-16 and A-10 aircraft
  + Individual and multiple displays installed throughout the cockpit
  + Vital to safe flight and tend to be replaced more frequently than other displays
  + Have been slow to incorporate new technology since their introduction because of their low cost, standard design and universal use
* Integrated Global Navigation System: alternative for adding GPS navigation capability to legacy aircraft through an OEM FMS without incurring the high cost of upgrading the current FMS
  + Includes required navigation performance and RNAV approaches and leverages FPDS to provide annunciation to the pilot during GPS procedures
* ThrustSense Autothrottle: full regime autothrottle that can operate from takeoff to landing phases of flight including go around
  + Combines FADEC functionality with low and high-speed protection for the PC-12 and Beechcraft King Air Series aircraft
  + Improves safety and performance for Pratt and Whitney PT6 powered single and multi-engine aircraft
  + Lightweight, with minimal downtime and provides high value for performance
    - Fuel savings of 3%, can be as much as 10% when flying constant angle-of-attack
    - Installation takes less than a week with minimum modifications to the existing flight deck
  + Multi-year agreement with Textron to supply ThrustSense Autothrottle on the King Air 360 and 260
    - Also available for retrofit through Textron service centers and third-party service centers
  + Ensure stabilized approaches by controlling speeds during descent, enhancing aircraft safety and capability
  + Control is housed in an easy-to-install ISU that provides standby functionality
  + Avoids structural modifications to the existing throttle quadrant
  + Can be adapted to virtually all PT6 powered aircraft by installing the ISU, which executes software to control the autothrottle
  + Other miscellaneous benefits:
    - Safety enhancements and pilot workload reduction
    - Life-saving enhancements in multi-engine aircraft
    - FADEC-like engine protection
    - No required replacement of the existing throttle quadrant due to the patented compact and safe actuation mechanism
    - Broader applications for retrofit in FADEC or non-FADEC turbofan and turboprop aircraft
* Utilities Management System: provides its UMS for the Pilatus PC-24 aircraft
  + UMS integrates a wide range of aircraft functions (>20) that are commonly supported by multiple individual controllers
  + Monitors aircraft sensors and control systems; open architecture allows Pilatus to design/refine control and monitoring algorithms in-house
  + Data Concentrator and Processing Unit (DCPU) allowing manufacturers to configure and program specific applications on a ARINC 653 operating system on an open architecture platform
    - UMS allows for a maximum of six DCPUs to be included in the communication ring
    - Significant power and weight savings over the uses of federated boxes and utilizes ISSC’s latest technological advancements in avionics circuit design
* Communications and Navigation, Inertial Reference Products: product licenses (related to its inertial, communication and navigation product lines) sold by Honeywell for $35.9M to ISSC
  + Cost synergies from ISSC’s skilled engineering team and operational capacity

**Customers:**

* US govt. (DoD, Department of Interior and Department of Homeland Security), Air Transport Services Group Inc, Amazon, AAL, Boeing, Deutsche Post DHL Group, FedEx, Icelandair, L3Harris, Lockheed Martin, Pilatus, Sierra Nevada Corporation, Textron, Department of National Defense (Canada), etc.
  + 2023: Pilatus (23% of revenue), ATSG (12%), Textron (10%)
  + 2022: Pilatus (22% of revenue), ATSG (11%), Textron (11%)
* Retrofit market: most of the Company’s sales have come from here due to the growing need to support the world’s aging fleet of aircraft; main customers will continue to be the DoD and defense contractors, aircraft operators and aircraft modification centers
  + DoD and Defense Contractors: products sold directly to the DoD and to domestic and international defense contractors for end use in military aircraft retrofit programs
    - DoD programs typically take one of two forms: a subcontract with a prime government contractor (Boeing, Lockheed, L3Harris) or a direct contract with the appropriate government agency (ex. U.S. Air Force)
    - Government’s desire for cost-effective retrofit of its aircraft has led it to purchase commercial off-the-shelf equipment rather than to develop specially designed products, which are more costly and difficult to implement
      * Retrofit contracts on arms-length commercial terms; each government agency or general contractor retains the right to terminate a contract at any time at its convenience, when the Company is entitled to be compensated for already delivered items and incurred costs
  + Aircraft Operators: sold to commercial airlines, cargo carriers and business and general aviation aircraft owners and suppliers
    - Primarily for retrofitting
    - Commercial fleet customers include AAL, ATSG, FedEx and Icelandair; they purchase a range of products from FPDS to air data systems
  + Aircraft Modification Centers: the primary retrofit market for private and corporate jets
    - ISSC has established relationships with several aircraft modification centers throughout the US, which act as distribution outlets and installation centers for ISSC products
    - These centers repair and retrofit private aircraft
  + OEMs: Textron, Pilatus, Boeing, Lockheed

**Backlog:**

* Value of contracts and purchase orders, less the revenue recognized to date on these contracts and purchase orders
* Excludes potential future sole-source production orders from EDC products
* 8% of backlog expected to be filled beyond fiscal 2024

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**Engineering Development:**

* Invests a significant portion of sales in engineering development (R&D and EDC)
  + 26% of ISSC employees were engineers engaged in various EDCs
* Total engineering development expense comprises both internally funded R&D and product development and design charges related to specific customer contracts
  + Consists of payroll-related expenses of employees engaged in EDC projects, engineering related product materials and equipment/subcontracting costs
* R&D costs incurred for product design, enhancements and development are expensed as R&D
* Product development and design charges related to specific customer contracts are charged to cost of sales-EDC based on the method of contract accounting

**Sales and Marketing:**

* Focuses sales efforts on passenger and cargo carrying aircraft operators, general aviation owner/operators, MRO dealer networks, distributors, avionics integrators, aircraft modification centers, the DoD, DoD contractors and OEMs
  + Periodically makes use of third-party sales representatives who receive compensation through performance-based commissions
    - 2023: 13 third-party sales representatives worldwide actively selling the Company’s products
* Expand MRO dealer network to address worldwide markets for Boeing 737, 757, 767, Pilatus PC-12, Beechcraft King Air models and other aircraft types
* Established dealer network for ThurstSense Autothrottle and is exploring adding more MRO dealers in the US and internationally
* Marketing efforts focused on applicable markets to establish and maintain customer relationships using email campaigns, key market influencers, advertisements, trade shows, web casts, direct mailers and digital and social media
  + ThrustSense Autothrottle has been favorably featured in multiple articles in major publications over the past several years
* Providing prompt and effective repair and upgrade service is critical to its marketing efforts
  + 24-hour customer hotline
  + Services customers either using field service engineers or its in-house repair and upgrade facility
    - May lend spare units to customers when it is repairing or overhauling their equipment
    - Standard two-year warranty on new products and extended warranties of varying lengths beyond the two years for additional fees
  + Repair station provides a mobile STC Installation Team to install the PC-12 and King Air ThrustSense Autothrottle systems
* Net sales outside the US: $15.5M (2023), $11.1M (2022), $8.4M (2021)

**Government Regulation:**

* FAA regulations govern the manufacture and installation of ISSC products in aircraft owned and operated in the US
  + Manufacturing facility and repair station are FAA-certified
* Most significant product and installation regulations are Technical Standard Orders (TSOs), Parts Manufacturer Approvals (PMAs), and STCs
  + April 2019: TSO authorization and STC for the ThrustSense Autothrottle in the King Air dual prop PT6
  + February 2019: TSO authorization and STC for the B767 ISU to be issued on B767 aircraft in the US
* Sales of products to European or other non-US owners of aircraft require EASA (or other relevant governmental agencies) approval
  + Mirror FAA regulations
  + September 2021: EASA and the Transport Canada Civil Aviation issued STCs for the ThrustSense Autothrottle for King Air series aircraft in the EU and Canada, respectively
* Subject to US government procurement regulations with respect to the sale of the Company’s products to government entities or contractors
  + Retains right to terminate a contract at any time; ISSC entitled to an equitable adjustment to the contract price so that the Company receives the purchase price for products or services already delivered and reimbursement for allowable costs incurred and termination related costs
* Impacted by various other laws and regulations (ex. tax codes, import/export controls, employment-related laws)

**Manufacturing, Assembly and Materials Acquisition:**

* Consist primarily of assembling and testing components and subassemblies and integrating them into finished systems
  + Purchases components (including raw materials) from third-party suppliers, several of which are sole source and assembles them in a clean room environment
    - Many components are standard products although certain parts are made to ISSC specifications
    - Although there are a limited number of suppliers of particular components, management believes other suppliers could provide similar components on comparable terms
* ISSC enters into long-term supply agreements and uses its relationships with these suppliers to improve product quality/availability and reduce delivery times/product costs
  + Company also identifies alternative suppliers for important component parts
* The introduction of component parts from new suppliers into existing products requires FAA certification of the entire finished product if the newly sourced component varies significantly from the original drawings and specifications
  + ISSC has not experienced significant delays in the delivery of its products caused by the inability to obtain either component parts or FAA approval of products incorporating new component parts

**Quality Assurance:**

* ISO 9001 and AS9100D certified, which represent an international consensus on effective management practices ensuring that products and services are delivered consistently in a manner that meets or exceeds customer quality requirements
* Products undergo extensive and documented quality control testing prior to being delivered to customers

**Competition:**

* The market for ISSC’s products is highly competitive
  + Competitors vary in size and resources, although almost all of ISSC’s competitors are much larger than and have substantially greater resources
* Air data systems and related products: Honeywell, Collins Aerospace, Thales Defense & Security, Garmin Ltd
* Flat panel displays: Honeywell, Collins Aerospace, L3Harris, Garmin Ltd, GE Aviation Systems
  + As the flat panel display industry evolves, the Company may face future competition from other suppliers
* Principle competitive factors are cost, development cycle time, responsiveness to customer preferences, product quality, technology, and reliability
  + Significant and long-standing customer relationships reflect ISSC’s ability to compete favorably with respect to these factors

**Intellectual Property and Proprietary Rights:**

* As of September 30, 2023, ISSC holds 32 US patents and has three pending
  + Also has 85 international patents and six international patent applications pending
    - These patents and patent applications cover technology relating to air data management systems, flat panel display systems and other aspects of the CIP product
    - While these patents have significant value, the innovative skill, technical expertise and know-how of ISSC’s personnel in applying patent technology would be difficult, costly and time consuming for third parties to reproduce
* Not aware of any pending lawsuits against the Company alleging patent infringement or the violation of other IP rights

**Human Capital:**

* 98 employees (95 of whom are full-time employees)
  + None are currently represented by a labor union and are not subject to a CBA
* Consider relationship with employees to be good

**Executive Officers of the Registrant:**

* Shahram Askarpour has been CEO since April 2022
  + Previously Director of Engineering, VP of Engineering, President
  + 30 years of aerospace industry experience in managerial and technical positions
    - Previously employed by Smiths Aerospace, Instrumentation Technology and Marconi Avionics
* Relland M. Winand has been interim CFO since November 2023
  + Previously CFO from Dec 2014 until retirement in July 2022, Controller
    - Previously at ECC International, Traffic.com, Orbit/FR, Solomon Edwards Group

**Risk Factors:**

* Growth of the Company’s customer base could be limited by delays/difficulties in completing development/introduction of planned products or enhancements; if ISSC fails to enhance existing products or develop market acceptance for flat panel displays, FMS, autothrottle technology and other new products that meet customer requirements, its business, reputation and statements of income may be affected adversely
  + Spends a large portion of R&D in developing and marking FPDS, FMS, Autothrottle and complementary products
  + Growth and diversification of operations from new product sales is dependent on continued success in product development and engineering activities, S&M, and obtaining regulatory approvals
  + Sales growth depends on market acceptance of and demand for these products
    - Cannot be certain that these products and relevant enhancements will be delivered in a timely or cost-effective manner, or that any new products or enhancements will receive market or regulatory acceptance
  + Company dependent upon maintain its reputation and relationships with existing customers
    - If Company performance or that of its products is damaged, the Company’s reputation and its relationships could be damaged, materially impacting business and sales
  + May face difficulties in displacing the products of incumbent competitors in seeking new customers
* Contracts can be terminated by many of the Company’s customers at any time, and therefore may not result in sales
  + Contracts include various terms and conditions that allow the government agency or general contractor to alter the price, quantity or delivery schedule of the products
  + Also reserve the right to terminate the contract at any time at their convenience
    - ISSC typically entitled to an equitable adjustment to the contract price so that it is compensated for incurred costs and delivered items
    - Cannot ensure that its backlog will result in sales
* Fixed-price contracts or service agreements to perform specified design and EDC services related to its products that could subject the Company to losses in the event the Company incurs cost overruns on its projects
  + FY 2023: ~3.3% of the Company’s total sales were from fixed-price EDC arrangements with customers to perform specific design and EDC services related to its products
    - Allow the company to recover some of its PDCs, but it carries the risk of potential cost overruns
      * May incur potentially large on time charges and losses on these contracts if its initial cost estimates are incorrect
      * Customer may compel the Company to complete a project or (in the event of a termination for default) pay the incremental cost of its replacement by another provider
      * Unforeseen events such as technological difficulties, fluctuations in raw material prices, subcontractor problems, cost overruns may result in the contractual price becoming less favorable or unprofitable
  + If ISSC does not meet project deadlines or if its products do not meet customer specifications, it may need to renegotiate contracts on less favorable terms, be forced to pay penalties, or suffer losses if the customer decides to terminate
  + Operations are dependent on ISSC’s ability to maximize EDC earnings
* A portion of the Company’s sales come from government contracts, which may be adversely affected by continued high US federal budget deficits; these contracts are also special risks as a result of the government’s audit practices
  + Sales to government contractors and government agencies could decline as a result of DoD spending cuts and general budgetary constraints, which may become more severe as the federal budget deficit remains high
  + US government regularly conducts investigations, inquiries and audits into its suppliers’ compliance with procurement regulations and performance under the relevant government contracts
    - If ISSC violated applicable law or regulations, government contracts could be terminated and the Company will be restricted from future procurement activities
    - Illegal activities conducted by ISSC may result in civil/criminal penalties and administrative sanctions, in addition to the Company’s reputation being harmed
* Reductions in government expenditures could adversely affect the Company’s business
* The loss of a key customer or significant deterioration in the financial condition of a key customer could have a material adverse effect on the Company’s results of operations
  + Revenue is concentrated with a limited number of customers
    - FY 2023: 54% of revenue from the top five customers
    - Company continues to expect a relatively small number of customers to account for a majority of its revenues
    - A loss of one or more of these customers (or a dispute or litigation with one of them) could adversely affect revenue and operations
  + Company monitors and evaluates the credit status of its customers and attempts to adjust sales terms as appropriate
    - A deterioration in the financial condition or bankruptcy filing of a key customer could adversely affect the Company’s business
  + Subject to credit risk associated with the concentration of AR from its key customers
    - Bankruptcy or insolvency of key customers may result in significant AR write-offs
* We self-insure a significant portion of our employee medical insurance program, which may expose us to unpredictable cost and negatively affect our financial performance
  + Estimated liability for the self-funded portion of our insurance program is determined actuarially, based on historical claims, demographic factors and estimates of claims incurred but not yet reported
    - Maintain stop-loss insurance coverage on a per employee and aggregate basis
      * Liabilities associated with these losses include estimates of both claims filed and losses incurred but not yet reported
  + Unanticipated changes in assumptions or estimates may result in materially different amounts of expense and liability
  + Premiums for coverage could increase in the future, or the firm could be forced to raise our self-insured retention amounts
  + If these expenses increase, or if ISSC experiences a claim in excess of their reserve and/or coverage limits, it could materially impact the Company’s financial condition
* ISSC currently operates without a substantial backlog
  + During periods of economic uncertainty, the rate of customer orders can quickly decrease, and a substantial backlog may help promote more efficient production, facilitate business planning and improve revenue visibility
    - September 30, 2023: 8% of the Company’s backlog was expected to be filled beyond fiscal 2024
      * Below the Company’s historical expectations and may result in lower revenues in future periods
      * Future revenue will be dependent on orders booked and shipped in that quarter, and may not be predictable with any degree of certainty
    - Certain contracts may represent a significant portion of our revenue and profits for a quarter such that the loss or deferral of even one such contract could adversely affect revenue and profitability
* The Company has limited experience in marketing and distributing products internationally
  + Plans to derive increasing revenues from sales outside the US, particularly in Europe and Asia; risks to international business include:
    - Differing regulatory requirements
    - Legal uncertainty regarding liability and the enforceability of agreements
    - Tariffs, trade and investment barriers
    - Political and economic instability
    - Changes in diplomatic and trade relationships
    - Failure by employees/agents to comply with US laws affecting the activities of US companies abroad
    - Difficulty with staffing and managing widespread operations
    - Impact of recessions in economics outside the US
    - Variances and unexpected changes in local laws and regulations
  + International sales are denominated in US dollars
    - Increase in the dollar’s value compared to other currencies may render the Company’s products less competitive internationally
    - May be required in the future to conduct sales in the foreign country’s local currency, exposing ISSC to fluctuations and volatility in exchange rates
    - Pursuing customers in Asia and less developed markets may result in an inability to ensure the creditworthiness of counterparties
      * Additional risks include volatility in GDP, government/economic instability, and the imposition of exchange controls and capital controls
* The Company’s competition includes other manufacturers of air data systems and flight information displays against whom it may not be able to compete successfully
  + Markets for these products are intensely competitive and subject to rapid technological change
    - Competitors: Honeywell, Collins Aerospace, Thales Defense & Security, Garmin Ltd and GE Aviation Systems
      * All have substantially greater financial, technical and human capital resources than the Company
      * All have much greater experience in and resources for marketing their products
        + May be able to respond more quickly to new and emerging technologies and customer preferences, or to devote greater resources to development, promotion and sale of their products
      * All have greater name recognition and more extensive customer bases
        + All of these factors may result in price reductions, fewer customer orders, reduced gross margins, and loss of market share
* The Company relies on third-party suppliers for components of its products, including any necessary raw materials and any interruption in the supply of these components could hinder its ability to deliver products on a timely basis
  + Suppliers may not continue to be available to the Company or be able to perform/timely deliver our components
  + If ISSC is unable to maintain relationships with key third-party suppliers, the development and distribution of its products could be delayed until equivalent components can be obtained and integrated into the products
  + Substitution of certain components from other manufacturers may require product redesign or FAA/EASA/other approvals, resulting in delays to the Company’s ability to ship products
  + Any increase in component costs (including an increase in raw material cost) could adversely affect the Company’s results of operations
* The Company depends on key personnel to manage its business effectively, and an inability to retain its key employees and plan for management succession could adversely impact the Company’s ability to compete
  + No assurance that the Company will retain senior management and other key personnel
    - May result in the Company being unable to capitalize on existing and potential market opportunities
  + Failure to ensure effective transfer of knowledge and smooth transitions could hinder strategic planning and execution
* The Company’s revenue and operating results may vary significantly from quarter to quarter, which may cause its stock price to decline
  + Due to several factors:
    - Demand for products and/or delivery schedule changes by its customers
    - Capex budgets of aircraft owners and operators, and appropriation cycles of the US government
    - Changes in the use of the Company’s products
    - Delays in introducing or obtaining government approval for new products
    - New product introductions by competitors
    - Changes in Company pricing policies or pricing policies of competitors
    - Costs related to possible acquisitions
* If the Company is unable to respond to rapid technological change, its products could become obsolete and its reputation could suffer
  + Future generations of products could render ISSC products obsolete, as the aviation market is subject to rapid technological change, new product introductions, changes in customer preferences, and evolving industry standards and government regulations
  + Future success depends on:
    - Embracing rapidly changing technologies
    - Adapting company products to evolving standards and regulations
    - Develop and introduce timely, high-quality, cost effective new products and product enhancements to address the increasingly sophisticated needs of its customers
* If the Company fails to modify or improve its products in response to evolving industry standards and government regulations, its products could become obsolete
  + Company must demonstrate that its products are accurate and able to maintain certain levels of repeatability over time to be certified
  + No guarantee of reciprocity between the FAA and EASA
  + Delays or losses in certification could result in lost sales or delays in sales
    - Also may require ISSC to change its products
* As the Company uses sophisticated technology and deploys its products in complex aircraft cockpit environments, problems with these products may arise that could harm the Company’s reputation for quality assurance, and consequently its business prospects
  + Recalls or redesigns may result in:
    - Delay or loss of revenues
    - Cancellation of customer contracts
    - Diversion of development resources
    - Damage to the Company’s reputation
    - Increased service and warranty costs
    - Litigation costs
  + Product liability insurance may not be adequate to cover its losses in the event of a large product liability claim
* ISSC may pursue strategic acquisitions, investments, partnerships, other ventures, etc. that may materially harm the Company if ISSC fails to successfully identify, evaluate, complete and integrate such transactions
  + Growth strategy includes evaluating acquisition opportunities and opportunities to make investments in complementary businesses, technologies, services or products
    - Or to enter strategic partnerships with parties who can provide access to those assets, additional product or services offerings, additional distribution or marketing synergies or additional industry expertise
      * Ex. Acquisition of certain inertial, communication and navigation product lines from Honeywell
        + Working on successfully integrating the Honeywell product lines in a manner that results in:

Enhancing current offerings in air transport, military, and business aviation markets

Creating potential cost synergies

Enhancing growth and global reputation

* + Risks include:
    - Ability to assess accurately the value, strengths, weaknesses, internal controls, contingent and other liabilities and potential profitability of acquisition candidates
    - Difficulties in integration
      * Loss of key personnel
      * Difficulty realizing synergies
      * Diversion of management attention
      * Integration issues with internal controls of acquired businesses
      * Impairment of assets
      * Unknown liabilities (environmental, antitrust, production delays)
* ISSC’s success depends on its ability to protect its proprietary rights against potential risk of infringement. If the Company is unable to protect and enforce its IP rights, it may be unable to compete effectively
  + Company holds 32 U.S. patents and has three U.S. patent applications pending
  + Company holds 85 international patents and has six international patent applications pending
  + Existing patents or future patents may not adequately protect the Company’s technology if they are not broad enough or are successfully challenged
* A cyber security incident or other technology disruption could have a negative impact on ISSC’s business
  + Face threats to IT infrastructure, attempts to gain access to proprietary or classified information, threats of terrorism and failures of ISSC’s technology
    - A variety of technological tools and systems, including both company-owned IT and technological services, support ISSC’s critical functions
* Litigation with customers, employees and others could harm ISSC’s reputation and impact operating results
  + Ex. Employment-related claims, claims filed by customers alleging product defects or breaches of contract, lawsuits filed by patent holders
* Tax changes could affect the Company’s effective tax rate and future profitability
* ISSC is subject to various laws and regulations. Changes to, or failure by ISSC to comply with, these laws and regulations may negatively affect Company business and operations
  + Ex. FAA/EASA regulations, U.S. government procurement regulations, SEC rules and regulations, local/state/federal/international tax codes, import/export controls, employment laws, environmental laws, IP laws, and customer protection statutes
    - Failures to comply may result in payments being withheld and/or increased compliance costs
* If the Company fails to maintain an effective system of internal control over financial reporting, it may not be able to accurately report its financial condition, results of operations or cash flows, which may adversely affect investor confidence and stock value
  + Sarbanes-Oxley requires ISSC to maintain effective internal control over financial reporting and disclosure controls and procedures
    - Material weakness is a control deficiency or combination of control deficiencies in internal control over financial reporting that results in more than a reasonable possibility that a material misstatement of financial statements will not be prevented or detected in a timely manner
    - Requires an attestation from the Company’s independent registered public accounting firm on the effectiveness of ISSC’s internal control
    - Failure may restrict the Company’s future access to the capital markets
* ISSC’s common stock may be affected by limited trading volume and may fluctuate significantly
* ISSC’s common stock has experienced and may continue to experience price fluctuations, which could cause investors to lose a significant portion of their investment and interfere with business growth
* Shareholders must rely on appreciation of stock price for return on investment, as ISSC does not intend to declare cash dividends for the foreseeable future
* Volatility and weakness in capital markets may adversely affect credit availability and related financing costs, which could adversely affect the Company
  + Risks include:
    - Declines in revenues and profitability from reduced orders, payment delays or other factors caused by the economic problems of customers
    - Reprioritization of government spending away from defense programs in which ISSC participates
    - Reduced access to credit sources
    - Disruptions in supplies associated with vendor financial constraints
* There are risks associated with our outstanding and future indebtedness:
  + June 28th, 2023: Company and one of its subsidiaries entered into an Amendment to Loan Documents (the “Loan Amendment”) with PNC Bank which amends certain terms of that certain Loan Agreement entered into by the parties on May 11, 2023 (the “Loan Agreement”) and a corresponding Term Note in favor of PNC (the “Term Note”)
    - Together provide for a senior secured term loan in an aggregate principal amount of $20.0M, with a maturity date of June 28, 2028 (the “Term Loan”)
    - In addition to providing for the Term Loan, the Loan Agreement, together with a corresponding Revolving Line of Credit Note in favor of PNC, executed May 11, 2023 (“Line of Credit Note”) provides for a senior secured revolving line of credit in an aggregate principal amount of $10.0M, with an expiration date of May 11, 2028 (the “Revolving Line of Credit”)
    - As of September 30, 2023, the balance of the Term Loan amounted to $19.5M
      * No balance drawn on the Revolving Line of Credit as of September 30, 2023
    - May incur additional indebtedness; failure to pay these or additional future obligations would harm ISSC’s business, operating results, financial condition and cash flows
      * May result in credit rating downgrades that would harm ISSC’s ability to obtain additional financing or the terms of such financing
      * Interest expense may increase if prevailing interest rates or other factors result in higher interest rates for future financing
    - Certain financial and negative covenants associated with agreements governing ISSC’s indebtedness
      * Failure to comply with these covenants may result in forced refinancing, selling of strategic assets, incur additional indebtedness or issuance of common stock/equity
        + Equity issuance would result in dilution to our shareholders
    - December 19, 2023: the Company and PNC entered into an Amendment to Loan Documents (“Restated Loan Amendment”) and a corresponding Amended and Restated Revolving Line of Credit Note (“Restated Line of Credit Note”) and Amended and Restated Line of Credit and Investment Sweep Rider (“Restated Rider”)
      * Increase the aggregate principal amount available under the Company’s senior secured revolving line of credit from $10M to $30M and extend the maturity date until December 19, 2028
      * The proceeds of the Restated Line of Credit Note will be used for working capital and other general corporate purposes, for acquisitions as permitted under the Restated Loan Amendment
        + And to pay off and close the loan evidenced by that certain Term Note executed in favor of PNC, dated June 28, 2023, which provides for a senior secured term loan in an aggregate principal amount of $20M with a maturity date of June 28, 2023
        + Interest rate applicable to loans outstanding under the Restated Line of Credit is a rate per annum equal to the sum of (A) Daily SOFR plus (B) an adjustable spread of Applicable SOFR Margin plus (C) a SOFR adjustment of ten basis points

Applicable SOFR Margin ranges from 1.5% to 2.5% depending on the Company’s funded debt to EBITDA ratio

Annual commitment fee of 0.15% on the amount available for borrowing under the revolving credit facility

**Properties:**

* In fiscal 2001, the Company purchased 7.5 acres of land in the Eagleview Corporate Park in Exton, PA
  + Constructed a 45,000 sqft design, manufacturing and office facility
  + Land development approval allows for expansion of up to 20,400 sqft
    - Provide for a 65,400 sqft facility which is adequate to meet the needs of the Company for the foreseeable future
  + Leased two separate hangars to house the Company’s airplanes in New Castle County, DE under month-to-month leases
    - One expired with the sale of the Pilatus PC-12 airplane during the quarter ended September 30, 2022
    - Annual lease expense for both hangars was approximately $52,000
    - November 30, 2023: ISSC sold its King Air aircraft and cancelled the remaining lease

**Dividends:**

* Previously declared special cash dividends in the amount of $0.65 per share in fiscal 2020 and $0.50 in fiscal 2021
  + Did not pay cash dividends in any fiscal year after
  + Intends to retain future earnings for development and business growth

**MD&A**

**Overview:**

* Incorporated in PA on February 12, 1988
* One business segment as a systems integrator that designs, develops, manufactures, sells and services, air data equipment, engine display systems, standby equipment, primary flight equipment, autothrottles and CDS for retrofit and OEM applications
* Supplies integrated FMS, FPDS, FPDS with autothrottle, air data equipment, ISUs, ISUs with autothrottle, and advanced GPS receives
  + Enable reduced carbon footprint navigation, communication and navigation products and inertial reference units
* Positioning as systems integrator provides ISSC with the capability and potential to generate more substantive orders over a broader product base
  + Leverages latest technologies developed for the computer and telecom industries into advanced and cost-effective solutions for the general aviation, commercial air transport, the DoD/governmental and foreign military markets
    - Combined with ISSC’s industry expertise, enables it to develop high-quality products and systems, reduce product time to market and achieve cost advantages over competitors
* Sells to both the OEM and retrofit markets
  + Customers include OEMs, commercial air transport carriers and corporate/general aviation companies, the DoD and its commercial contractors, aircraft operators, aircraft modification centers, government agencies and foreign militaries
    - Primarily to commercial customers for end use in DoD programs, although occasionally products are sold directly to the DoD
* Sales to defense contractors are made on commercial terms, although provisions of government contracts are applicable
* Retrofit programs are either a direct customer contract or subcontract with a general contractor to a customer
* June 2023: Asset Purchase and License Agreement with Honeywell
  + Certain assets related to its inertial, communication and navigation product lines, including a sale of certain inventory, equipment and customer-related documents, an assignment of certain contracts and a grant of exclusive and non-exclusive licenses to use certain Honeywell IP related to these products
  + For cash consideration of $35.9M
  + Enhances its current offerings in the air transport, military and BA markets
    - Cost synergies from better utilization of ISSC’s skilled engineering team and operational capacity
    - Drive growth and reputation
* Cost of sales related to product and service sales comprises materials, components and third-party avionics purchased from suppliers, direct labor and overhead costs
  + Standard components, although certain parts are manufactured to meet ISSC specifications
  + Overhead comprises salaries and benefits, building occupancy costs, supplies and outside service costs related to production, purchasing, material control and quality control
  + Also includes warranty costs
* Cost of sales related to EDC sales comprises engineering labor, consulting services and other costs associated with specific design and development projects
  + Incurred pursuant to contractual arrangements and are accounted for as contract costs within cost of sales
    - Reimbursement accounted for as a sale in accordance with the %-of-completion method or completed contract method of accounting
    - Company funded R&D relate to internally funded efforts for new product development and existing product improvement
      * Incurred and reported as R&D
      * Will continue to invest in the development of new products
* SG&A expense consist of sales, marketing, business development, professional services, salaries and benefits for executive and administrative personnel, facility costs, recruiting, legal, accounting and other general corporate expenses
* Economic changes may impact the spending of ISSC customers on new and existing aircraft

**Fiscal Year Ended September 30, 2023 Compared to Fiscal Year Ended September 30, 2022:**

* Net sales in fiscal 2023 increased 25.5% (by $7.1M, from $27.7M to $34.8M); product sales increased by $0.2M, EDC sales increased by $0.7M (or 146.8%), and customer service sales increased $6.2M (127.2%)
  + EDC sales increase reflects increased EDC business
  + Customer service sales increase reflects customer service sales of $5.8M due to the Honeywell agreement
  + Product sales increase reflects increased shipments of displays to general aviation and commercial transport customers of $0.7M and $0.6M, respectively
    - Military product sales decrease $1.1M due to reduced business volume
* Cost of sales was $13.5M (38.8% of net sales), compared to $27.7M in fiscal 2022 (39.9% of net sales)
  + Increase due to an increase in customer service sales volume
  + Gross margin increase attributable to increased customer service sales that typically generate higher gross margins than manufactured products
* R&D was $3.1M (9.0% of net sales), compared to $2.7M in fiscal 2022 (9.8% of net sales)
  + Increase due to increased personnel and related benefits, offset by the increase in EDC contract activity whose costs are reflected in cost of sales rather than R&D
* SG&A in fiscal 2023 increased by 60.2% (by $4.0M, from $6.8M to $10.8M)
  + SG&A in fiscal 2022 was reduced by an inclusion of a gain of $1.2M from the sale of the PC-12 aircraft
  + Increase due to increased stock compensation expense and legal/professional/audit fees and amortization expense related to the Transaction
    - And increased board director fees
* Interest income of $0.5M in 2023 increased by $0.4M from 2022
  + Due to increased cash balance in 2023 and a general increase in interest rates
* Income tax was $1.6M in 2023 (21.1%) compared to $1.8M in 2022 (24.8%)
  + Due to higher state tax due to tax on the gain from the sale of the PC-12 aircraft in 2022

**Liquidity and capital resources:**

* Debt facility
  + $20.0M PNC Term Loan to finance Honeywell Transaction; an additional senior secured Revolving Line of Credit in an aggregate principal amount of $10.0M (expiring on May 11, 2028)
    - Amended on December 19, 2023
* Stifel Sales Agreement
  + September 22, 2023: at-the-market equity (ATM) Sales Agreement with Stifel
    - Company may offer and sell from time to time up to $40M in shares of its common stock
    - Sales agent compensated with up to 3.0% of the gross sales price per share of the stock
* Future Funding Requirements
  + Current liquidity expected to be sufficient
  + No plan to pay cash dividends for the foreseeable future
* Operating Activities
  + Generated $2.1M of cash in 2023, compared to $6.1M in 2022
    - $6.0M of net income, increase in non-cash compensation expenses for stock options and awards (of $0.8M and $0.7M respectively), D&A of $0.7M; offset by increases to AR of $5.4M and inventories of $0.8M
* Investing Activities
  + $36.2 of cash used
    - $35.9M used on Honeywell, $0.3M for the purchase of test equipment and computer hardware
    - Will continue to invest in capital equipment
* Financing Activities
  + $19.9 provided
    - $20M from PNC term loan, $0.4M from the exercise of stock options, paydown of the Term Loan for $0.5M
* Future capital requirements depend upon numerous factors, including market acceptance of ISSC products, the timing and rate of expansion, etc
  + Expects expenditures will remain relatively constant with the levels in 2023 and 2022

**Notes to Consolidated Financial Statements**

**Concentrations:**

* Major Customers and Products:
  + Derived 54%, 58%, and 59% of total sales from five customers in 2023, 2022 and 2021 respectively (although not all the same customers in each year)
    - AR and contract assets related to those top five customers was $3.5M, $3.3M and $2.1M as of September 30, 2023, 2022 and 2021 respectively
  + Three largest customers, Pilatus, ATSG and Textron accounted for 23%, 12% and 10% of total revenue, respectively
  + FP product sales were 99%, 98%, and 88% of total product sales in 2023, 2022 and 2021 respectively
  + Air data systems and components were 1%, 2% and 12% of total product sales in 2023, 2022 and 2021 respectively
  + Product sales to government contractors and agencies accounted for approximately 9%, 14% and 18% of total product sales in 2023, 2022 and 2021 respectively
* Major Suppliers
  + Buys several of its components from sole source suppliers, although other suppliers have been identified by management that could provide similar parts on comparable terms
    - Had four suppliers that accounted for 49.0% of total inventory-related purchases in 2023; 33.7% (three suppliers) in 2022 and 14.9% (one supplier) in 2021
* Concentration of Credit Risk
  + Mainly cash balances and AR
    - Company invests its excess cash where preservation of principal is the major consideration
      * Maintained with two major banks
      * Balances on deposit with certain money market accounts and operating accounts may exceed FDIC limits
    - Customers consist primarily of companies within aviation; ISSC requests advance payments and/or letters of credit from customers with significant credit risks