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Prime Avionics, QCM and IS&S

Innovative Solutions & Support (IS&S) was founded in February 1988 by Geoffrey S. M. Hedrick. A leader in the aerospace industry at the time, Hendrick emphasised solving unique problems and providing exceptional customer support, a philosophy that remains core to IS&S.

From its inception, IS&S has been at the forefront of avionics innovation, maintaining a strong focus on improving flight safety and efficiency, qualities which are reflective across their product range. This dedication to developing innovative, useful solutions over the past 36 years has seen IS&S become a world leader in the avionics industry, receiving numerous awards for its products from prominent customers including Boeing, Lockheed Martin, Rockwell Collins, Gulfstream and Raytheon. Specialising in the design, development, manufacture and support of advanced equipment for commercial, military, government and business aviation, their impressive product range includes Precision Air Data Instruments, Integrated Avionics Suites, Flight Management Systems, Flat Panel Multifunction Displays, and more.



Boeing 737 upgrade

Committed to quality

Customer satisfaction forms the cornerstone of IS&S's success. Renowned aircraft manufacturers and operators around the globe trust IS&S for their cutting-edge technology, exceptional craftsmanship and rigorous quality standards. These attributes collectively enhance the reliability, performance and value of their avionics solutions.

IS&S's advanced manufacturing processes allow for significantly reduced product cycle times and cost advantages over competitors. The company's headquarters in Exton, Pennsylvania, is equipped with all the necessary facilities for design, qualification, production and support, ensuring comprehensive and seamless service for their clients.

AS1900D certified and compliant, IS&S is dedicated to upholding the highest industry standards and quality in both employee education and product design and manufacturing, ensuring their products consistently meet or exceed customer expectations. Understanding that variation leads to defects, IS&S has invested significantly in bringing surface mount technology (SMT) capabilities in-house. This self-sufficiency not only boosts product quality but also accelerates the time-to-market for new innovations, reinforcing IS&S's reputation as a leader in the avionics industry.

While precision and quality are paramount when it comes to ensuring the safety of the aircraft, IS&S's commitment to customer excellence does not stop at their products. They offer comprehensive support for their advanced cockpit avionics technology through expert installation and technical guidance, as well as essential pilot and crew training for safe and informed operations. When updates or modifications are needed, IS&S addresses these challenges with the same innovative spirit as in the original product development, ensuring ongoing reliability and excellence.

Equipped with their expansive design and manufacturing campus in Exton, Pennsylvania, IS&S has the necessary tools and disciplines essential for the development of their innovative programmes and products in-house. With control and oversight over the entire process from design, manufacturing, assembly and customer service and repair, IS&S maintains their commitment to quality and innovation.

High-quality, innovative avionics

Over the past 36 years, IS&S have significantly expanded their patents and resulting products to include Air Data Display Units, Altimeter, Airspeed Indicators, Engine / Fuel Instruments, Mission Displays, Primary Flight/Navigation Displays and more. More recently, IS&S has been at the forefront of developing a new generation of aerospace solutions. This new generation of products are being designed to meet the increasing needs of sophisticated and technically advanced customers and regulators in response to increases in demand for fuel savings and environmentally friendly aircraft. Designed for OEM or retrofit, these new products add value to clients' aircraft, as well as extend operational life.

One such product is the ThrustSense® Autothrottle (A/T), IS&S's award-winning Auto Throttle System. ThrustSense is a full regime A/T, from take-off to landing phases of flight, including go around. In addition, the system incorporates engine and speed exceedance protection and includes VMCa mitigation for twin engines with engine out thrust control. In case of engine failure, the engine out thrust control automatically sets the remaining engine to the correct power level if airspeed drops below minimum controllable airspeed, ultimately improving safety. Equipped with these important safety features and a sleek, modern design, the ThrustSense is an elegant solution that improves safety and performance, while also being high value and lightweight. It also integrates seamlessly into the NextGen Flight Deck, which features a larger display area and more display pixels than latest generation aircraft off the production line. The Flight Deck is fully compliant with NextGen requirements for Required Navigation Performance (RNP).



Improving Pilot Safety and Efficiency with IS&S's New ISU

Currently, IS&S is working alongside Prime Avionics, a Maintenance Repair Overhaul (MRO) organisation in South Africa and QCM Design, an EASA-certified design organisation based in Europe, to upgrade the flight deck on Beechcraft 1900 aircraft to glass cockpits, starting with the IS&S's Integrated Standby Unit (ISU), a modern device that simplifies and enhances how pilots view critical flight information.



ISS standby instrument

The newest addition to their product range, the ISU has been designed to enhance safety through simplicity and precision. Combining altitude, attitude, airspeed, slip / skid and navigation data into one easy-to-read, high-quality display, this innovative ISU improves pilot safety and workload. From a maintenance perspective, its solid-state design is more dependable than older mechanical instruments, reducing maintenance needs.

This compact device is designed to be easily upgraded and customised to ensure it meets the pilot's requirements. It has been designed to support additional enhancements for radio management and alternative navigation. The Inertial Measurement Unit (IMU) is adaptable to include accelerometers, gyroscopes, and magnetometers to provide accurate readings. It can also be enhanced with an air data module to independently display altitude, airspeed and Mach number. An advanced algorithm corrects any magnetic interference, ensuring reliable readings.

Each ISU is calibrated to the specific aircraft it is installed into, storing vital data like error corrections and speed limits. Suitable for various types of aircraft and helicopters, the ISU comes in a standard size and can be easily installed across different aircraft models. While small in size, the overall impact of this solution is not to be underestimated. Using this ISU, pilots can expect improved readability of the ISU in all lighting conditions, due to the high-resolution

LCD display, LED backlighting and adaptive brightness. Its familiar display format also contributes to enhanced situational awareness and reduced pilot workload.

A modern, reliable and easy-to-read solution for critical flight information, this newest addition to IS&S's avionics range is a valuable upgrade for both new and existing aircraft.



ISS ThrustSense KingAir



ISS ThrustSense ProLIne21

When it comes to the safety and efficiency of your aircraft and all passengers and crew members aboard, there's no compromising on quality and service. IS&S's entire range of avionics reflects their core commitment to developing innovative, high-quality solutions which exceed customer expectations and improve safety and efficiency.

Throughout their entire process, from manufacturing to installation, IS&S continues to provide the personal and responsive service on which its success has been achieved since 1988, no matter how small or large the customer.

A note from Prime Avionics on IS&S's ISU

At Prime Avionics, we are dedicated to ensuring the safety and reliability of your aviation instruments. We understand that the integrity of a pilot's instruments is paramount for safe flying. That is why we are excited to introduce a groundbreaking product from IS&S: the new Integrated Standby Unit (ISU).

This instrument is much more than a mere upgrade; it represents a significant leap forward in aviation technology. Designed as an all-in-one solution, the IS&S Standby Artificial Horizon replaces outdated and unreliable analogue units, which are often expensive and cumbersome to maintain. With this advanced instrument, pilots can rely on a dependable, modern system that enhances flight safety and operational efficiency.

Think of this new standby instrument as an essential piece of insurance. Like a large insurance policy, it might seem like an extravagance until the moment it is needed, at which point it becomes indispensable. In critical situations, having a reliable standby artificial horizon can be a lifesaver, delivering peace of mind and ensuring that pilots can navigate with confidence and precision.

At Prime Avionics, we are proud to offer and support this upgrade path. With esteemed partners such as QCM and IS&S, we bring together the perfect combination of expertise and innovation to facilitate a smooth transition. Our team is committed to guiding you through the installation and integration process, minimizing any frustration and ensuring that the upgrade is seamless and hassle-free.

We invite you to explore the benefits of the new IS&S Standby Unit and see for yourself how it can enhance the safety and performance of your aircraft. Our goal is to provide you with the best tools and support, ensuring that your flying experience is as safe and efficient as possible. Thank you for your continued trust in Prime Avionics. We look forward to assisting you with this exciting upgrade and enhancing your aviation safety and reliability.

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