

Sensata Technologies Unveils Innovative Digital Inceptor for AAM and UAM Applications at NBAA BACE 2024

2024-10-15

- The lightweight, modular Digital Inceptor is designed to meet the evolving needs of advanced air mobility (AAM) and urban air mobility (UAM) markets.
- Sensata's Inceptor features a compact multi-axis design with advanced RVDT sensor technology, offering flexible signal outputs, high reliability and options for redundant sensors, ensuring safe, seamless integration into aircraft structures.
- The Digital Inceptor is part of Sensata's broader cockpit control portfolio, designed for a range of applications including air taxis and cargo delivery, supporting mission profiles for modern air mobility. Visit Sensata's Booth 2258 at NBAA BACE 2024 for a demo.

SWINDON, United Kingdom--(BUSINESS WIRE)-- **Sensata Technologies** (NYSE: ST) today announced it will showcase its latest aerospace innovation, the Digital Inceptor, at the NBAA-BACE conference in Las Vegas, Nevada, from October 22-24, 2024. As advanced air mobility evolves, the demand for lightweight, reliable pilot controls increases. Sensata, a global leader in high-volume, multi-axis inceptors, leveraged its micro-RVDT technology and a modular design to create the lightest passive inceptor on the market.

Sensata's Digital Inceptor for AAM and UAM Applications (Photo: Business Wire)

Sensata's Digital Inceptor features a compact design that integrates seamlessly into aircraft structures, offering single-axis to four-axis control. Its weight-optimized, three-axis models weigh less than 3.175 kilograms (7 pounds) and includes single-point of failure mitigation features for enhanced reliability.

"eVTOL operation optimization relies heavily on weight reduction to conserve power during all phases of flight that

results in increased range,” explains Prem Trivedi, Director of Aerospace Engineering at Sensata. “Our Digital Inceptor delivers advantages to overall system weight compared to traditional analog inceptors. Utilizing Controller Area Network (CAN) bus architecture, our Inceptor provides significant reduction in wire count which lends to reduced cable harness weight within the aircraft, helping to optimize the energy demands from the eVTOL battery system. Further weight savings and system complexity reductions are also realized with the Interfacing Flight Control Computers, since they no longer need to include circuitry that is typically required to interface with an analog inceptor.”

The design incorporates redundant load paths and jam-resistant features across all axes, ensuring safe operation at both the sensor and mechanism levels. With flexible signal outputs available in either analog or digital formats, the Inceptor also includes precise, high-reliability RVDT sensors for non-contact position sensing with fault tolerance. Additionally, it offers options for redundant sensors with three channels or upgrades to quad-redundant sensors per axis. The product's signal conditioning electronics offer direct analog outputs or the customer's preferred digital protocol—whether ARINC 825 CAN bus, ARINC 429, SPI, UART, or others. The component architecture is designed for maximum flexibility, allowing customer-specific variations, and enabling the production of a wide range of products in a short time.

Sensata's Digital Inceptor has successfully completed rigorous RTCA/DO-160 EMI testing, including Lightning Induced Transient Susceptibility, RF Susceptibility, RF Emissions, and Power Input, and has demonstrated the robustness required to comply with aerospace standards. The design architecture has been developed to withstand the rigor at the highest design assurance levels per RTCA/DO-178C to ensure the flight control systems are able to operate safely and reliably.

With the introduction of digital conditioning electronics and software, Sensata has expanded its ability to seamlessly integrate the Digital Inceptor into its cockpit control portfolio. "We are committed to shaping the future of advanced air mobility and believe the weight and complexity reductions achieved through digital applications will be increasingly important to facilitate electrification adoption in aerospace and beyond," shares Stuart Parker, Aerospace General Manager at Sensata.

Visit Sensata at **NBAA-BACE 2024 in Booth 2258** to explore its Digital Inceptor and other cutting-edge products designed to support infrastructure and mission profiles for advanced air mobility (AAM), urban air mobility (UAM), air taxis, and middle/last-mile cargo delivery.

About Sensata Technologies

Sensata Technologies is a global industrial technology company striving to create a safer, cleaner, more efficient and electrified world. Through its broad portfolio of mission-critical sensors, electrical protection components and

sensor-rich solutions, Sensata helps its customers address increasingly complex engineering and operating performance requirements. With more than 19,000 employees and global operations in 14 countries, Sensata serves customers in the automotive, heavy vehicle & off-road, industrial, and aerospace markets. Learn more at www.sensata.com and follow Sensata on [LinkedIn](#) , [Facebook](#) , [X](#) and [Instagram](#) .

Investor Contact:

James Entwistle

+1 (508) 954-1561

jentwistle@sensata.com

Media Contact:

Mariam Lochoshvili

mlochoshvili@sensata.com

Source: Sensata Technologies