FOR IMMEDIATE RELEASE

AlarisPro Awarded NASA SBIR Funding to Develop AI-Enhanced Digital Twin Technology for Advanced UAS Safety and Reliability

NEWS PROVIDED BY:
AlarisPro
July 22, 2025, 0800 EDT

Baltimore, MD – [July 22, 2025] - AlarisPro, the industry leader in unmanned aircraft systems (UAS) fleet management and safety solutions, has been awarded a prestigious Small Business Innovation Research (SBIR) award from NASA. The award supports AlarisPro's development of a next-generation Artificial Intelligence Safety and Reliability (AISR) Digital Twin framework, a transformative technology designed to advance In-Time Aviation Safety Management Systems (IASMS) and revolutionize predictive maintenance and risk management for UAS operations in the National Airspace System (NAS).

As UAS traffic increases, so does the demand for smarter, data-driven safety oversight. AlarisPro's solution integrates artificial intelligence, high-fidelity sensor data, and component degradation modeling to build a real-time prognostic system. This digital twin maintains a live, synchronized representation of its physical UAS counterpart, continuously learning and adapting through advanced AI techniques including transfer learning and anomaly detection.

"At AlarisPro, our mission is to empower UAS operators with tools to fly safer, smarter, and more efficiently," said Anthony Pucciarella, CEO and Founder of AlarisPro. "This NASA SBIR award validates our vision and supports the development of a technology that not only elevates safety but also lays the groundwork for new certification and operational standards across both government and commercial sectors. We're honored for this opportunity to work with NASA to improve the future of aviation safety."

The AISR Digital Twin framework will enable predictive maintenance by identifying subtle signs of component degradation before failure occurs—reducing unplanned downtime, extending component lifespan, and enhancing safety during complex missions such as Beyond Visual Line of Sight (BVLOS) operations. The system will also provide real-time risk assessments during flight, helping operators mitigate issues before they escalate.

Public Sector Advancements for the UAS Industry:
AI models will help establish baseline performance standards, detect anomalies in real

time and generate immediate risk assessments—reducing in-flight issues and enhancing safety. The system improves the accuracy of digital simulations by continuously aligning virtual models with real-world performance. These capabilities will reduce the need for physical testing and support the development of new UAS safety standards for integration into the National Airspace System (NAS), aligning with IASMS objectives and paving the way for a more efficient, data-driven airspace ecosystem.

Commercial Applications:

Commercial UAS operators can use this technology to perform predictive maintenance based on real-time use, reducing downtime, extending component life, and improving operational safety. Insurers can build data-driven risk models, adjust premiums based on reliability, and reward safer operations. Regulators can validate new UAS designs through simulation and track industry-wide reliability trends speeding up the aircraft certification process. Supply chains will be optimized through better forecasting, just-in-time parts availability, and early detection of quality issues, resulting in more efficient and resilient operations.

AlarisPro's AISR Digital Twin technology will shape the future of both public and private UAS operations, creating an ecosystem where operational insights not only prevent failures but proactively guide safer, more efficient skies.

About AlarisPro

AlarisPro offers the most advanced UAS operations and fleet management platform available, equipping operators, manufacturers, and maintenance professionals worldwide with the critical safety and reliability data needed to reduce risk, ensure compliance, and optimize unmanned systems and subsystems. Designed by military aviators and civilian aviation and UAS experts, AlarisPro brings a systems-of-systems approach to analyzing UAS reliability. The platform uniquely manages the industry's only centralized repository of UAS component reliability data, empowering users to make data-driven decisions, maximize operational efficiency, and safely expand mission capabilities across the unmanned aviation ecosystem. Learn more at www.alarispro.com.

Media Contact:

Amy Betz, Marketing Manager

Amy.betz@alarispro.com

www.AlarisPro.com