DDC-I

PROGRAM OVERVIEW

US Army HADES Program

The US Army's aerial-intelligence, surveillance and reconnaissance (A-ISR) community, has the mission of providing timely, relevant, and accurate intelligence to tactical, operational, and strategic commanders.

The next-generation platform for A-ISR is the High Accuracy Detection and Exploitation System (HADES) program. HADES will replace aging turboprop planes, like the RC-12 Guardrail. Using modified Bombardier Global 6500 business jets, HADES enables high-altitude, long-endurance "deep sensing" to detect threats in contested environments.

HADES serves as a central pillar of the Army's 2030 modernization strategy, filling a critical gap in high-altitude, deep-sensing capabilities.

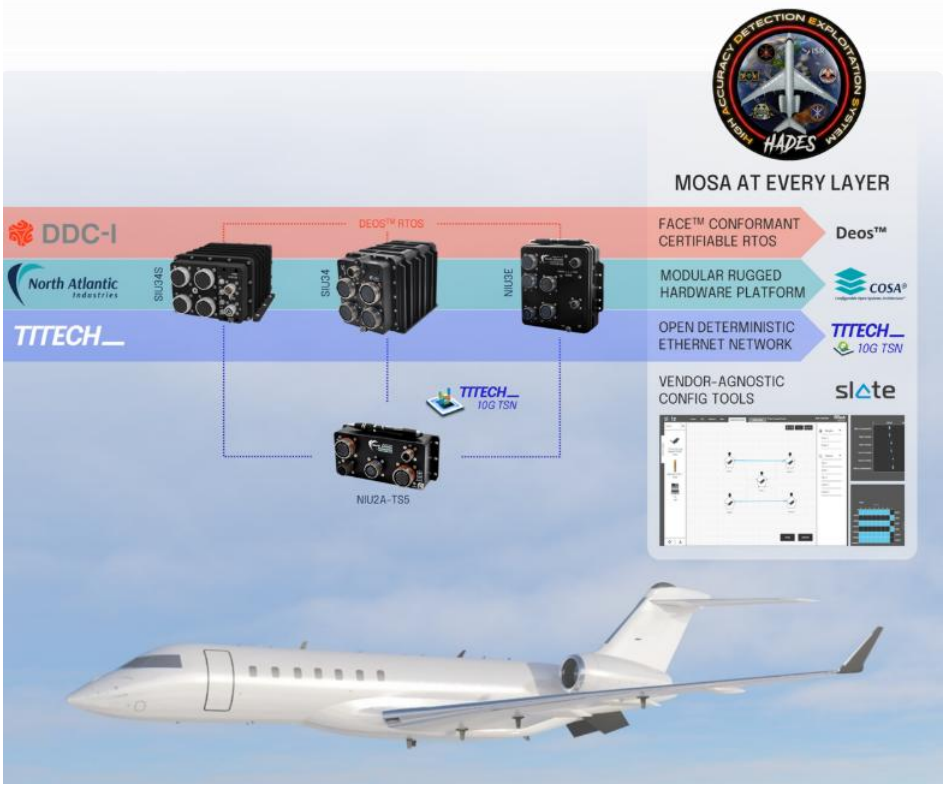
Key Deliverables

- **Provides advanced, persistent deep-sensing capabilities for multi-domain operations against peer and near-peer adversaries**
- **Includes a MOSA approach to reduce risk and mature key technologies**
- **Acquisition process designed to dramatically accelerate delivery of critical capabilities and meet an aggressive acquisition schedule**
- **Reduced aircraft down time for new integrations/technology updates**

"It will possess speed, range, endurance-at-range, and altitude for deep sensing, all culminating in its ability to overcome the physical challenges encountered by legacy airborne ISR aircraft, without sacrificing the unique quality and capability of collection that airborne ISR provides to Army and joint force commanders around the world," said Lt. Col. Matt Paladino, ISR Task Force aerial chief for the Army Military Intelligence Staff. *"With exceptional payload capacity, it will offer convergence options that occur on or off-board the aircraft to cover assured, denied or degraded communications environments."*
Source: https://www.army.mil/article/265353/hades_modernizes_aerial_military_intelligence

HADES provides multi-domain sensing, allowing for real-time information transmission to commanders, faster decision-making, and increased situational understanding.

The Digital Backbone



Critical to the success of the program is the ability to provide a low-SWaP, high-speed network for sensor fusion and to distribute information and power throughout the integrated aircraft system.

For this system, the US Army selected FACE® conformant DDC-I Deos RTOS. HADES utilizes Deos to orchestrate the data flow through the North Atlantic Industries (NAI) processor platforms with NAI's TSN end point devices employing TTTECH's Time Sensitive Networking (TSN) technologies.

This system is modular, scalable and flexible. It can be configured to evolving requirements to address speed of relevance. For example, HADES can rapidly deploy new sensors and field additional ISR capabilities while a new threat is still active.

> *"Enhancing the capabilities of the HADES digital backbone is central to our ability to integrate sensors, share data, and act in real time across airborne ISR platforms. DDC-I's FACE® conformant RTOS technology provides a robust, scalable, and MOSA-aligned foundation for our new digital backbone that accelerates capability insertion,"* stated Jeffrey Jablonski, US Army HADES Program Lead, PEO Aviation.

TSN is an IEEE networking standard that is rapidly being adopted as a backbone standard for next generation aerospace and defense systems. TSN ensures common, reliable, real-time and low-latency data delivery, supporting real-time mission systems and advanced sensor integration.

Conclusion

HADES is providing the US Army with the next-generation of aerial intelligence, surveillance and reconnaissance to support the warfighter. Using a rapid acquisition strategy, HADES embraces MOSA, FACE® and SOSA (Sensor Open Systems Architecture) to enable rapid updates, scalability and reduce vendor lock-in. DDC-I's Deos™ provides the mission critical real-time operating system required to enable the digital backbone.