Northrop Grumman’s Lumberjack Proves Quantum-Enabled Flight Capabilities



FORT HUNTER LIGGETT, Calif. — Northrop Grumman collaborated with SandboxAQ to demonstrate quantum sensing magnetic navigation on Lumberjack, a Group 3 uncrewed aircraft system, just one month after establishing an objective to fly this capability on this type of platform.

Lumberjack is equipped with an electronic warfare suite, tactical data links and intelligence, surveillance, and reconnaissance technology along with precision strike capabilities. Adding magnetic navigation through quantum sensors allows Lumberjack to detect tiny variations in the Earth’s magnetic field to guide vehicles or aircraft even where GPS signals are unavailable or unreliable.

This flight test demonstrated Lumberjack to be:

- **Jam-proof:** The quantum-based navigation system resisted jamming and operated reliably in GPS-denied environments, including over open water.
- **Recoverable:** The demonstration proved Lumberjack can launch, fly and land multiple times for military training purposes.
- **Flexible:** The integration of Northrop Grumman mission kits with industry and partner solutions enables customers to rapidly and affordably meet their mission requirements with Lumberjack's versatile and modular design.

Expert:

Max Schuster, program manager, Lumberjack, Northrop Grumman: "Lumberjack showcases not only 'best-of-breed' technology across industries, but our ability to integrate quickly has moved us from vision to operational reality in a rapid timeline. Adding quantum sensing to an adaptable autonomous platform like Lumberjack advances mission capability in GPS-denied environments."

Details:

Lumberjack, a one-way-attack drone, was designed and developed in under 14 months of its first flight and has performed a series of successful flights to add and test capabilities to the platform. The versatility of this technology highlights Northrop Grumman's multi-use, loitering munition and launched effect capabilities.

The most recent successful flight test included the vehicle, integrated mission kit, AI technology, SandboxAQ magnetic navigation and software-hardware solution provided by this cross-industry group.

Northrop Grumman is the mission systems integrator, munitions and systems provider of many of the technologies that enable the aircraft to sense, detect and deter threats in the battlespace. ESAero Inc., a wholly owned subsidiary of AV Inc., provides the Lumberjack air vehicle and its systems integration.

Northrop Grumman is a trusted autonomy and mission solutions provider with decades of autonomous experience and more than 500,000 autonomous flight hours. The company builds capabilities that support the entire spectrum of uncrewed solutions including MUX TACAIR, Lumberjack and Project Talon.

SandboxAQ is a B2B company delivering solutions at the intersection of AI and quantum techniques. The company's Large Quantitative Models (LQMs) deliver critical advances in life sciences, financial services, navigation, and other sectors. SandboxAQ is an independent, growth-backed company funded by leading investors and strategic partners.

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