Leidos using quantum technology to thwart GPS jamming

June 5, 2025

RESTON, Va., June 5, 2025 /PRNewswire/ -- Susceptibility to jamming is a significant military vulnerability of the Global Positioning System (GPS) signal. Through a Defense Innovation Unit contract, Leidos (NYSE: LDOS) is developing an alternative navigation technology that measures variations in the Earth's magnetic field and harnesses the quantum properties of nitrogen in diamonds.

"With magnetic navigation (MagNav) there's no signal to jam," said Aaron Canciani, manager of the Leidos Transition of Quantum Sensing (TQS) team and a former Air Force scientist who is a pioneer of the technology. "The one thing MagNav does need is a very sensitive magnetometer, which is where quantum comes in."

Quantum sensing uses microscopic particles that can simultaneously exist in multiple states to more accurately detect aspects of geophysical properties like magnetic fields. Leidos has been doing quantum work for years, applying it to a variety of cyber security and sensing applications.

"Quantum magnetometers have the potential to greatly increase position and attitude accuracies in magnetic navigation systems," Canciani said. "Nitrogen vacancy-diamond magnetometers use the crystal structure of a diamond to define a sensing axis in which quantum measurements of the complete vector field can be known to exquisite accuracies."

The sensor is being developed by Frequency Electronics, Inc. under subcontract to Leidos and in collaboration with MIT Lincoln Lab.

Compared to classic magnetometers, which tend to drift due to reliance on relative measurements, Canciani adds, "These quantum measurements are linked to the magnetic field through fundamental physics-based constants."

Ultimately, Leidos intends to fly a MagNav system with the new magnetometer. If successful, the technology has the potential to significantly advance navigation technology for military use.

About Leidos
Leidos is an industry and technology leader serving government and commercial customers with smarter, more efficient digital and mission innovations. Headquartered in Reston, Virginia, with 48,000 global employees, Leidos reported annual revenues of approximately $16.7 billion for the fiscal year ended January 3, 2025. For more information, visit www.Leidos.com.

Certain statements in this announcement constitute "forward-looking statements" within the meaning of the rules and regulations of the U.S. Securities and Exchange Commission (SEC). These statements are based on management's current beliefs and expectations and are subject to significant *risks and uncertainties.* These statements are not guarantees of future results or occurrences. *A number of factors could cause our actual results, performance, achievements, or industry results to be different from the results, performance, or achievements expressed or implied by such forward-looking statements. These factors include, but are not limited to, the "Risk Factors" set forth in Leidos' Annual Report on Form 10-K for the fiscal year ended January 3, 2025, and other such filings that Leidos makes with the SEC from time to time. Readers are cautioned not to place undue reliance on such forward-looking statements, which speak only as of the date hereof. Leidos does not undertake to update forward-looking statements to reflect the impact of circumstances or events that arise after the date the forward-looking statements were made.*

Contact: Mackenzie Hicks
(256) 964-4034
shawna.m.hicks@leidos.com

View original content to download multimedia:https://www.prnewswire.com/news-releases/leidos-using-quantum-technology-to-thwart-gps-jamming-302473504.html

SOURCE Leidos