

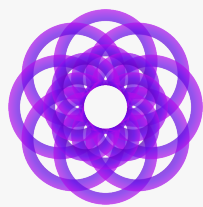
Leading Authority on Magnetic Navigation and Alt-GPS Tech Joins Q-CTRL to Support Development of Quantum Navigation Tech

Aaron Canciani, former U.S.A.F. Navigation Engineer, brings 12+ years' experience in magnetic navigation tech to Q-CTRL's development of solution to GPS denial

LOS ANGELES, CA, UNITED STATES, October 22, 2025 /EINPresswire.com/ -- Q-CTRL, the global leader in quantum infrastructure software, today announced that [Aaron Canciani](#), an internationally recognized expert in geophysical navigation and former Principal Navigation Engineer for U.S. defense giant Leidos, has joined the company's quantum sensing team as a Principal Scientist.

Canciani pioneered research in practical magnetic-anomaly-based navigation techniques to enable precise navigation in GPS-denied environments during his PhD work in 2014. These foundational contributions, published in [leading academic journals](#), established the viability of magnetic navigation and underpinned Q-CTRL's recent demonstrations of quantum advantage in quantum magnetic navigation.

Since this early research at the Air Force Institute of Technology, Canciani has tested magnetic anomaly navigation on a dozen distinct Department of Defense platforms. Most recently, he was principal investigator and program manager for Leidos's effort under the Department of Defense's Innovation Unit's (DIU) Transition of Quantum Sensing (TQS) program for quantum



Q-CTRL

magnetic sensing for navigation and anomaly detection. This focus on aggressively addressing the practical challenges of magnetic navigation aligns with Q-CTRL's focus on making quantum technology useful in the real world.

Canciani joins Q-CTRL after the company demonstrated that its quantum-sensing-based magnetic navigation system, Ironstone Opal, could outperform the best competitive alternative by over 100 times in flight trials. The company also recently announced contracts from both DARPA and the DIU to develop next-generation quantum sensors for robust navigation on defense platforms.

"I am beginning work with Q-CTRL at a pivotal point in the development of quantum-based navigation technologies, and I look forward to contributing to the excellent work the company has done in providing GPS-free navigation for manned and unmanned platforms," said Canciani. "I am eager to leverage my expertise at the intersection of emerging quantum magnetometers and their applications to further advance this groundbreaking technology."

Ironstone Opal has been [field-validated](#) in air, land, and maritime trials and has been designed as a robust backup to GPS, providing a solution to the rampant threat of GPS denial in conflict zones. TIME recognized this solution in its Best Inventions of 2025 list, highlighting Ironstone Opal's ability to deliver GPS-like accuracy without dependence on satellites.

"Q-CTRL is thrilled to welcome Aaron to our quantum sensing team as we accelerate the deployment of Ironstone Opal for commercial and defense applications," said Michael Hush, Chief Scientist of Q-CTRL. "His expertise as the world's leading authority on magnetic navigation, coupled with his experience with the Air Force and with one of the U.S. Government's biggest contractors, makes Aaron invaluable to our team and our mission to make quantum technology useful."

Canciani received his bachelor's degree in Electrical and Electronics Engineering from the U.S. Air Force Academy and his master's and doctorate in Electrical and Electronics Engineering from the Air Force Institute of Technology.

Quantum sensing is a near-term application of quantum technologies delivering transformational new capabilities for commercial aviation, defense, and health. Q-CTRL has assembled one of the largest and most prominent teams of quantum sensing and navigation specialists. This group forms a key business unit delivering software-driven innovation for defense and commercial aviation, in parallel to the company's world-leading quantum computing infrastructure software business.

To learn more about quantum navigation and Q-CTRL's work to overcome GPS denial, please visit the company's website: <https://q-ctrl.com/ironstone-opal>

About Q-CTRL

Q-CTRL is a global leader in quantum infrastructure software that makes quantum technology useful. Q-CTRL partners with industry pioneers like IBM, Rigetti, and AWS to enhance quantum computer performance through AI-driven control solutions. Its education platform, Black Opal, is trusted by thousands worldwide to build practical quantum skills. In quantum sensing, Q-CTRL delivers field-deployable capabilities for navigation and detection in GPS-denied environments, with partners including Lockheed Martin and Airbus. The company's breakthroughs have been featured in The New York Times and are transforming both commercial and defense operations. Founded in 2017 by Professor Michael J. Biercuk, Q-CTRL operates globally from offices in Sydney, Los Angeles, San Francisco, Berlin, and Oxford.

Taylor White

HKA, Inc. Marketing Communications

+1 714-426-0444

[email us here](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/860199160>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2025 Newsmatics Inc. All Right Reserved.