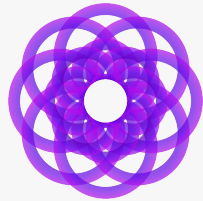


Q-CTRL Partners with USGS to Pioneer Quantum Sensing and Computing Applications

Agreement with U.S. Geological Survey to jointly improve capabilities for science that impacts natural resources, geologic hazards and ecosystems



Q-CTRL

LOS ANGELES, UNITED STATES, January

16, 2024 /EINPresswire.com/ -- In a

significant advancement for geophysics with resource exploration impacts, [Q-CTRL](#), a global leader in developing useful quantum technologies through quantum control infrastructure software, has entered a pioneering partnership with the United States Geological Survey ([USGS](#))

to explore potential quantum computing and sensing applications for geological sciences.

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*Jonathan Stock, Director of
the USGS National Innovation
Center*

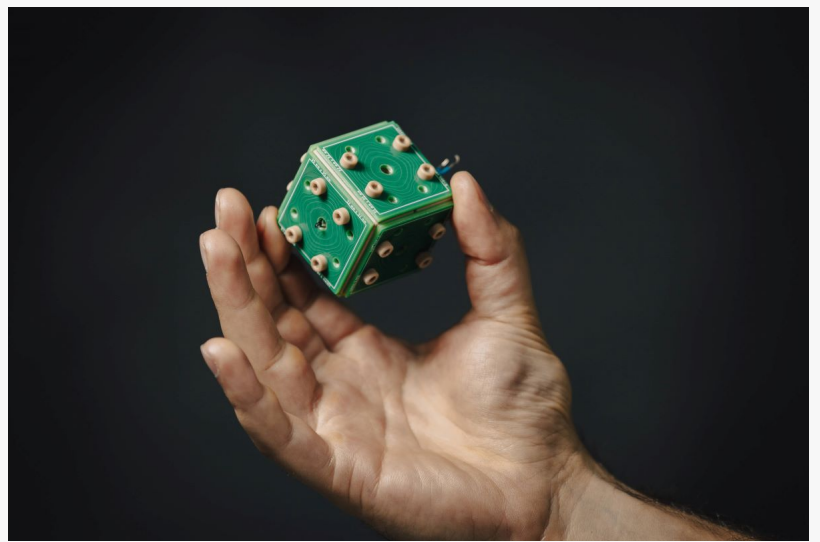
The United States Geological Survey is a scientific agency that researches Earth systems. Its mission is to make scientific data available to help people understand Earth, prepare for natural disasters, and manage the nation's natural resources.

The collaboration is established under a formal Cooperative Research and Development Agreement (CRADA), which marks the beginning of a transformative era in the application of quantum technologies to key

challenges in geophysics and environmental sensing.

Q-CTRL's focus on quantum control engineering is essential to making quantum technologies useful for real applications including delivery of quantum computers capable of solving high-impact problems in logistics and data analysis and deploying quantum sensors in the field to extract previously unattainable insights. The company's special ability to address critical challenges in both quantum computing and quantum sensing through its globally unique technology opens totally new applications to advance USGS missions.

“Q-CTRL is excited to deliver a new generation of quantum technologies to an agency as essential as the USGS,” said Q-CTRL CEO and Founder Michael J. Biercuk. “The missions undertaken by USGS are critical to our economy and the resilience of our society now and in the future. We are thrilled to be delivering transformational new capabilities with this important partner, and truly pushing the limits of human capabilities.”



Q-CTRL's Quantum Magnetometer

Looking toward a future where quantum technology is seamlessly integrated into environmental science and geophysics, this collaboration is a foundational step toward developing practical applications for a broad range of national and global challenges. These include critical areas such as underground water resource management, polar ice-sheet monitoring, natural-hazard preparedness, and the discovery and utilization of energy and mineral resources.

The partnership will utilize sophisticated quantum techniques, such as quantum gravimetry, quantum magnetometry, and quantum-enhanced logistics optimization in order to deliver previously impossible insights and solve previously intractable problems. The technology under exploration promises earlier detection of hazards, new ways to see through the earth to monitor sensitive water assets, and dramatic cost reduction in resources production. These carry both exceptional economic and strategic value in the presence of a changing climate.

In the spirit of collaborative innovation, Q-CTRL and the USGS will embark on workshops and field investigations to fully exploit quantum technologies' capabilities. By integrating Q-CTRL's groundbreaking quantum technology with USGS operations, the partners aim to set a new benchmark in geophysical exploration and environmental monitoring - both on Earth and beyond.

Jonathan Stock, Director of the USGS National Innovation Center (NIC) said, “The USGS geophysics and computational community is excited to be exploring quantum sensors and tools with industry. Combined with other enabling technologies, quantum sensors may dramatically improve the ability to detect and assess resources and hazards in the undiscovered country of planetary subsurfaces, on our own world and beyond. This is a frontier that will require public, private and international partners together to explore, and we are delighted to be exploring with Q-CTRL.”

Both Q-CTRL and the USGS uphold a strong commitment to ethical principles and responsible

innovation. As this partnership progresses, all developments will be conducted with a steadfast dedication to scientific integrity and benefit for the global community.

About the U.S. Geological Survey

The U.S. Geological Survey provides science for a changing world, which reflects and responds to society's continuously evolving needs. As the nation's largest water, earth, and biological science and civilian mapping agency, it collects, monitors, analyzes, and provides scientific understanding of natural resource conditions, issues, and problems. The USGS is composed of over 10,000 scientists, technicians and support staff working at over 400 locations across the nation's landscape. Importantly, the U.S. Geological Survey is policy neutral, non-regulatory where the Ecosystems and Water Mission areas provide impartial science with expertise in fish health, environmental toxicology, hydrology, and analytical chemistry that allows work both with both regulators and industry to accelerate science toward solutions. For more information, visit www.usgs.gov.

About Q-CTRL

Q-CTRL's quantum control infrastructure software for R&D professionals and quantum computing end users delivers the highest performance error-correcting and suppressing techniques globally, and provides a unique capability accelerating the pathway to the first useful quantum computers and quantum sensors. Q-CTRL operates a globally leading quantum sensing division focused on software-level innovation for strategic capability. Q-CTRL also has developed Black Opal, an edtech platform that enables users to quickly learn quantum computing.

Founded by Michael J. Biercuk in 2017, Q-CTRL has pioneered the quantum infrastructure software segment, and has become the leading product-focused software company in the broader quantum sector. Q-CTRL has been an inaugural member of the IBM Quantum Network startup program since 2018, and its performance management software now runs natively on IBM quantum computers. The company has international headquarters in Sydney, Los Angeles, Berlin, and London.

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