Quantinuum, Rolls-Royce, Riverlane and University of Edinburgh Sign Agreement to Explore Quantum Computing for Industrial Design and Simulation

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- Collaboration will explore how fault-tolerant quantum computing could advance complex fluid dynamics simulations, including for uses in gas turbine design
- Project aims to combine Quantinuum's Helios platform, the world's most accurate commercial quantum computer[1], Rolls-Royce's industrial applications, Riverlane's quantum error correction and fault-tolerant algorithm expertise, and EPCC's supercomputing expertise
- Collaboration will help advance the UK quantum strategy by developing the quantum technologies and hybrid computing capabilities needed for future industrial applications

BROOMFIELD, Colo. and CAMBRIDGE, England, July 14, 2026 /PRNewswire/ -- Quantinuum Inc. (NASDAQ:QNT), Rolls-Royce, Riverlane and EPCC, the UK National Supercomputing Centre based at the University of Edinburgh, today announced an agreement to explore the quantum computing capabilities needed in future industrial workflows, such as gas turbine design.

Under the agreement, Quantinuum will provide access to its quantum systems and software environment; Rolls-Royce will contribute industrial design use cases and domain expertise; Riverlane will contribute quantum error correction and algorithmic expertise; and EPCC will contribute supercomputing expertise and hybrid workflow integration.

Complex fluid dynamics simulations are central to gas turbine design, but they can require substantial computing resources as models become more detailed. In what is expected to be a multi-year collaboration, the partners will explore how fault-tolerant quantum computers could work alongside supercomputers to address this bottleneck, and accurately model fluid dynamics inside gas turbines.

"The computing demands of simulating complex fluid dynamics are a major challenge in industrial design, and exploring how quantum computing can complement today's supercomputers is an important step toward addressing them," said **Dr. Rajeeb Hazra, President and CEO of Quantinuum**. "This collaboration will help develop and test the hybrid quantum-classical algorithms needed for future industrial applications."

The collaborators plan to test key computational building blocks for industrially relevant quantum algorithms on Quantinuum's Helios quantum computer and assess how these could scale on planned future systems, such as Sol and Apollo.

This project builds on prior collaborations between Rolls-Royce, Riverlane and EPCC that laid the foundations for understanding key algorithmic, error correction and data requirements for tackling fluid dynamic simulations with commercial quantum computers.

"We have been developing and improving algorithms for hybrid fault-tolerant applications for almost five years with Riverlane, using classical emulators in collaboration with EPCC. This agreement marks the start of an exciting new phase where we work together to explore their implementations on Quantinuum's hardware," said **Leigh Lapworth, Fellow in Computational Science at Rolls-Royce**. "Applications development is a multi-year activity and if we want to be in a position to benefit from teraQuOp devices, we have to start now, co-developing the algorithms, hardware and software."

"Riverlane specialises in quantum error correction (QEC), as the critical technology that will ultimately unlock large fault-tolerant quantum computing, and fault-tolerant applications for various industries," said **Steve Brierley, CEO and Founder of Riverlane**. "Building on our work with Rolls-Royce and EPCC, collaborating with Quantinuum will help us explore how fault-tolerant quantum computing and hybrid quantum-HPC approaches can accelerate the path to industrial quantum computing."

EPCC will contribute its expertise in high-performance computing, simulations and the software interfaces needed to connect quantum and classical systems. Its role includes exploring how different parts of an algorithm can be compiled, emulated and executed across classical and quantum resources, including pre- and post-processing steps required for hybrid compute workflows.

"Quantum computing will be most valuable when users can exploit it within a wider computing environment, and EPCC has been working towards hybrid HPC and quantum since my appointment as a Chancellor's Fellow in 2023," said **Oliver Thomson Brown, Quantum Group lead at EPCC**. "EPCC's mission is to accelerate the effective use of novel computing across industry and academia, and this project is a natural fit with the goals of the UK's first National Supercomputing Centre."

The UK's quantum computing mission aims to develop accessible, UK-based quantum computers capable of one trillion error-free operations, known as "teraQuOp" systems. The collaboration and its anticipated multi-year timeline support the UK Government's quantum computing mission and reflect the strength and maturity of the UK's quantum and advanced computing ecosystem in moving from foundational research toward industrially relevant hybrid applications.

About Quantinuum

Quantinuum is a leading quantum computing company offering a full-stack platform designed to make quantum computing deployable in real-world environments. The company has commercially deployed multiple generations of trapped-ion based quantum systems built on the well-established QCCD architecture, which it has implemented with novel designs and capabilities to achieve the industry's highest accuracy levels based on average two-qubit gate fidelity.[2] Quantinuum has active engagements with market leaders across pharmaceuticals, material science, financial services, and government and industrial markets, as well as academic and research institutions globally.

The company has a global workforce of approximately 700 employees, including top scientists and researchers. Over 70% of its technology team holds PhDs or Master's degrees. Quantinuum's headquarters is in Broomfield, Colorado, with additional facilities across the United States, United Kingdom, Germany, Japan, Qatar, and Singapore.

For more information, please visit www.quantinuum.com.

Cautionary Statement Concerning Forward-Looking Statements

This press release contains certain statements that may be deemed "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include all statements that are not historical facts. The words "anticipate," "assume," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "future," "will," "seek," "foreseeable," the negative version of these words, or similar terms and phrases are intended to identify forward-looking statements. Such statements are based on certain assumptions and assessments made by our management in light of their experience and their perception of historical trends, current economic and industry conditions, expected future developments and other factors they believe to be appropriate. The forward-looking statements included in this release are also subject to a number of material risks and uncertainties, including but not limited to economic, competitive, governmental, and technological factors affecting our operations, markets, products, services and prices. New factors emerge from time to time, and it is not possible for Quantinuum to predict all such factors. Any forward-looking statement speaks only as of the date on which it is made, and, except as required by law, Quantinuum does not undertake any obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

[1] based on its high two-qubit gate fidelity supporting 98 physical qubits
[2] As of December 31, 2025.

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