

AQT Joins €122 Million NFQC-1k Project to Advance Germany's High-Tech Agenda to develop a 1,000-qubit fault-tolerant quantum computer

Press Release
Planegg, September, 25rd 2026

Planegg, AQT Germany – September, 25th 2026 – AQT Germany will be one of the seven members in the consortium of research institutions and industry partners in a bid to build one of Europe's most advanced quantum computers. The project, named NFQC-1k and led by QUDORA, is being selected under the Quantum Computing Competition of Germany's Federal Ministry of Research, Technology and Space (BMFTR), with a total volume of approximately €122 million. Its goal is to develop a quantum computer with at least 1,000 qubits at European state-of-the-art level, built on trapped-ion technology.

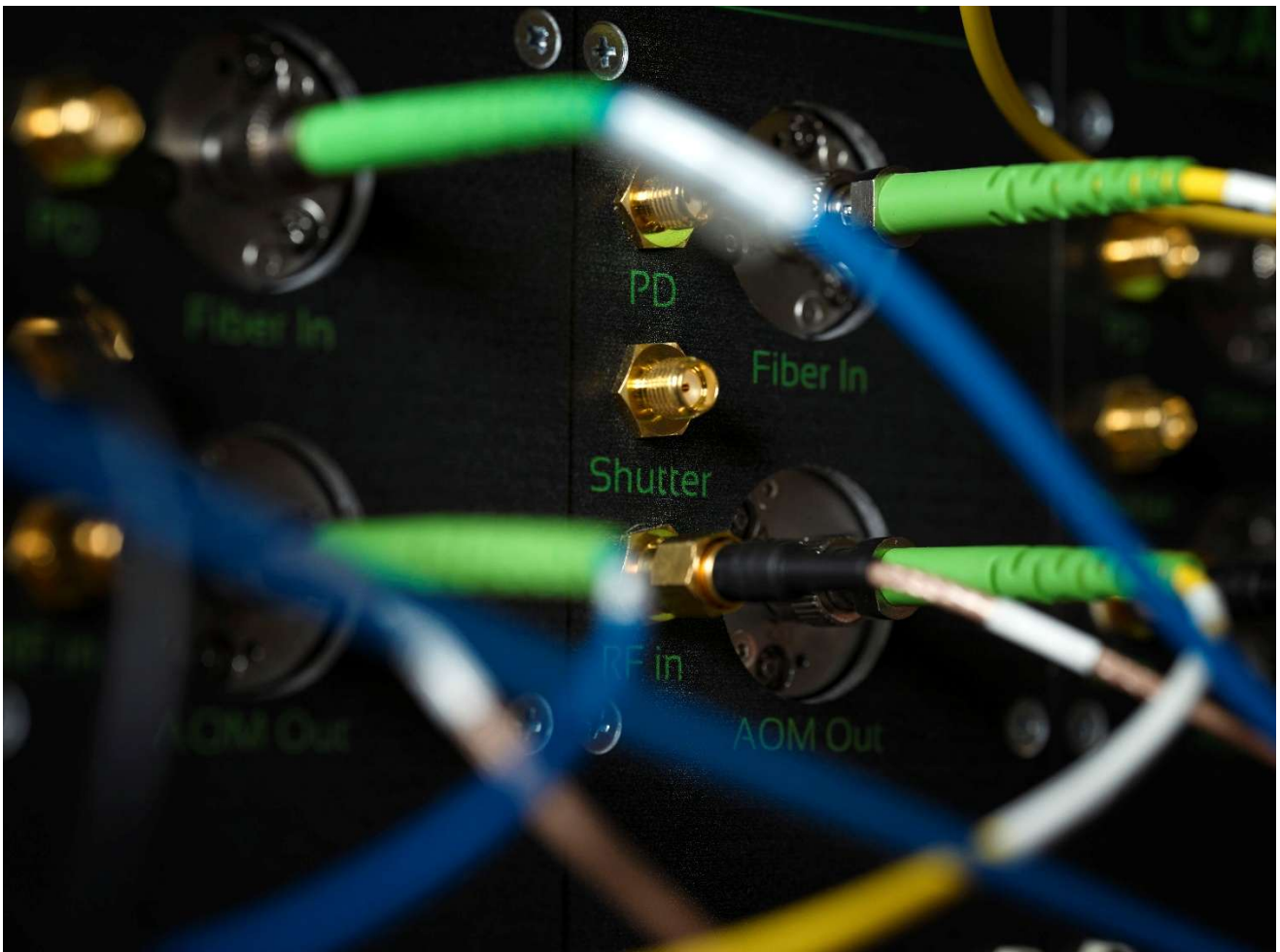


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A cornerstone of Germany's High-Tech Agenda:

The Quantum Computing Competition sits at the heart of the High-Tech Agenda Deutschland (HTAD), through which the federal government aims to establish at least two fault-tolerant quantum computers at European state-of-the-art level by 2030. Quantum technologies are one of six priority key technologies under the HTAD, ranking second, a clear signal of how much weight Berlin places on the technology for the country's future competitiveness.

Germany's Federal Minister for Research, Technology and Space, Dorothee Bär, has emphasized the strategic significance of the program: quantum computers are among the most important key technologies of our time and will take computing power to a new level. In the future, they could speed up drug development and enable optimal traffic control; through new approaches in machine learning, quantum computers also promise a boost for AI models. Germany's competitiveness and sovereignty depend on playing a leading role internationally. With clear, measurable success criteria, the Quantum Computing Competition aims to produce technologically excellent quantum computers "Made in Germany."

Under its "Quantum Systems Research Program," the Federal Ministry is funding the three most advanced hardware platforms: neutral atoms, superconducting circuits, and trapped ions. NFQC-1k is part of the trapped-ion platform, one of the three qubit modalities the federal government is counting on for a breakthrough toward fault-tolerant quantum computing.

A consortium bringing science and industry together: QUDORA combines its expertise in developing fault-tolerant quantum processors with the strengths of six further partners from academia and industry:

- **TU Braunschweig** (Technical University of Braunschweig)
- **Leibniz University Hannover (LUH)**
- **Physikalisch-Technische Bundesanstalt** (PTB, Germany's national metrology institute)
- **NXP Semiconductors Germany GmbH** (a global semiconductor company with a major German R&D and manufacturing presence)
- **Forschungszentrum Jülich** (one of Europe's largest interdisciplinary research centers, active in quantum computing)
- **AQT Germany GmbH** (the German entity of Alpine Quantum Technologies, a spin-off of the University of Innsbruck specializing in trapped-ion quantum computers)

As consortium lead, QUDORA is responsible for the development and integration of the overall system. The partners contribute with complementary expertise, from fundamental research to semiconductor technology. The aim of NFQC-1k is to become a system that can be put to economic use in Germany and Europe over the long term.

What NFQC-1k aims to deliver:

The project's goal is to build a quantum computer demonstrator with at least 1,000 individually addressable physical qubits and at least 50 logical qubits, at a logical gate error rate below 0.01%. The demonstrator's performance will be verified through a Quantum Fourier Transform (QFT), a core building block of quantum algorithms and applications. In parallel, the consortium will implement a pilot line for high-performance QPU based on ion-trap technology.

*„Fault tolerance is not a milestone achieved by improving a single qubit. What truly matters is building an architecture in which thousands of resilient qubits can be controlled, and operated reliably, without the system falling apart as it scales", said **Amado Bautista-Salvador, CEO of QUDORA.***

*„NFQC-1k builds on our NFQC® technology to develop a fault-tolerant quantum computer alongside leading German research institutions and companies. That our project has been selected shows the confidence of German government in our technology and the expertise of our partners", said **Henning Hahn, COO of QUDORA.***

*"The NFQC-1k project represents a massive leap forward in fault-tolerant quantum computing. For AQT, contributing to a demonstrator that controls 50 logical qubits at exceptionally low error rates is a testament to our technological expertise. We are proud to bring our core capabilities to this initiative. said **Dr. Felix Rohde, CEO of AQT Germany.***

Funding framework and next steps

The funding runs for up to five years and is part of the BMFTR's Quantum Systems research program. NFQC-1k's total project volume is approximately €122 million, shared across all seven consortium partners. Following the successful outline phase, the consortium can now submit the full application after which the partners will move into the concrete implementation phase.

Funding Notice

Funded by Germany's Federal Ministry of Research, Technology and Space (BMFTR) under its Quantum Systems research program, funding measure "Mission-Driven Hardware Competition: Fault-Tolerant Quantum Computing with Pilot Line Development (Quantum Computing Competition)."

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ABOUT AQT

AQT **ALPINE QUANTUM TECHNOLOGIES GMBH**

Building on decades of experience in experimental and theoretical quantum information processing in Innsbruck (Austria), AQT develops and builds quantum computers. The company offers ion trap-based quantum computers that fit seamlessly into conventional IT infrastructure and can be operated from any PC or laptop, regardless of location. AQT enables its customers to install quantum computers on site or to explore use-cases via a convenient cloud solution. Researchers and developers are supported by both quantum hardware instruments as well as complete systems that significantly accelerate the development of quantum solutions.

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INFORMATION

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