

Atos and IQM partner up in quantum simulation

Paris, France –November 16, 2022 – Atos and IQM today announce the signature of a partnership to deliver end-to-end quantum computing technologies and capabilities, as part of the Group’s hybrid computing strategy. As the market is shifting to real-world quantum computing applications, this partnership will see the integration of IQM’s Quantum Processing Unit (QPU) into Atos’ QLM and, more globally, into Atos’ quantum application development platform.

This unique proposition on the market enables customers to seamlessly program their Quantum Computing applications and run them on the QLM framework perfectly emulating all attributes of the target quantum hardware (topology, gate set, noise model). By doing so, customers could then directly execute these applications on real-world IQM Quantum Computing hardware without any need to modify them.

Atos’ exascale strategy will use Artificial Intelligence technologies and quantum computing as accelerators in traditional HPC workflows, in order to achieve lower time to solution and a reduced energy footprint. To that end, supercomputers will use the Atos QLM quantum application development platform as a gateway to Quantum Computing resources (emulated or real hardware) in hybrid computing workflows. With an emulation capacity of up to 41 Qubits, Atos’ QLM Application programming Environment will help its customers to develop hybrid applications, using the gate, annealing and analog quantum computing paradigms, together with IQM QPU, offering 20 Qubits today and up to 50 Qubits committed by 2023.

In 2020, IQM was selected to be part of [Scaler](#), the Atos Accelerator program, starting the cooperation between Atos’ Quantum Computing R&D team and IQM labs to tightly couple the Atos QLM and the IQM’s range of QPUs, in order to provide optimum results to their joint customers.

This long-term relationship has also fostered several research programs in Europe, with the most recent one between IQM, Leibniz Rechenzentrum (LRZ) and Atos, with the aim to boost supercomputers using hybrid scalar/quantum computing technologies, as part of Q-Exa project.

“We are glad to reinforce our relationship with IQM to empower our customers with best-in-class quantum computing technologies to prepare the future.” said **Emmanuel Le Roux, Group SVP, Global Head of HPC, AI & Quantum at Atos** *“At Atos we believe that hybrid platforms are the foundation stone of all future digital simulation, especially with the acceleration of quantum. With this partnership Atos will become a trusted Value Added Integrator of IQM with the capacity to not only sell and install IQM QPU’s at customers’ premises, but to integrate them into a more complex Hybrid Computing environment, which is in line with our Hybrid Computing strategy for exascale [announced in February 2022](#) with the unveiling of our new [BullSequana XH3000 supercomputer](#).”*

Dr. Jan Goetz, CEO and Co-founder of IQM Quantum Computers, commented *"We are excited to strengthen our partnership with Atos and create this unique offering for our customers globally. This partnership is an important next step towards quantum readiness for the industry and we're glad that Atos has selected IQM for this product offering. This is also an important milestone for the commercialization of quantum accelerators for supercomputing centers, and for our quantum computers to be sold globally."*

The first quantum simulator available on the market as early as 2016 and already used in many countries worldwide (including [Austria](#), [Brazil](#), [Finland](#), [France](#), [Germany](#), [India](#), [Japan](#), [UK](#), [United States](#)) the Atos QLM enables researchers and engineers to develop applications and experiment with quantum software. The QLM combines an ultra-compact, highly powerful large memory system with a universal programming language meaning that quantum applications can be developed without the need for quantum hardware. This new collaboration finally allows users to unleash the full potential of their quantum algorithms by seamlessly transitioning to actual quantum hardware provided by IQM.

About Atos

Atos is a global leader in digital transformation with 112,000 employees and annual revenue of c. € 11 billion. European number one in cybersecurity, cloud and high performance computing, the Group provides tailored end-to-end solutions for all industries in 71 countries. A pioneer in decarbonization services and products, Atos is committed to a secure and decarbonized digital for its clients. Atos is a SE (Societas Europaea) and listed on Euronext Paris.

The [purpose of Atos](#) is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

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About IQM Quantum Computers

IQM is the pan-European leader in building quantum computers. IQM provides on-premises quantum computers for supercomputing data centres and research labs and offers full access to its hardware. For industrial customers, IQM delivers a quantum advantage through a unique application-specific, co-design approach.

IQM is building Finland's first commercial 54-qubit quantum computer with VTT, and an IQM-led consortium (Q-Exa) is building a quantum accelerator in Germany. The computer will be integrated into an HPC supercomputer to create an accelerator for future scientific research. IQM has over 180 employees with offices in Paris, Madrid, Munich and Espoo.

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