Atos Delivers World's Highest Performing Quantum Simulator to Argonne National Laboratory

Paris and Irving, TX, November 12, 2018 – Atos, a global leader in digital transformation, today entered into a contract with Argonne National Laboratory to deliver its latest Atos Quantum Learning Machine, the world's highest-performing commercially available quantum simulator. The 35-qubit Atos Quantum Learning Machine will help accelerate research efforts at the science and technology powerhouse.

Argonne, a U.S. Department of Energy (DOE) Office of Science national laboratory, focuses on computation, modeling, and simulation as a key component of its research efforts. Argonne's high-performance computing systems also provide computing power to advance pivotal discoveries and understanding in a broad range of disciplines, helping solve some of society's most complex problems.

The Atos 35-qubit Quantum Learning Machine will support Argonne in multiple areas of research, and allow scientists to achieve levels of computational analysis not previously available on a quantum simulator.

Combining a high-powered, ultra-compact machine with a universal programming language, the Atos Quantum Learning Machine enables researchers and engineers to develop and experiment with quantum software. It simulates the laws of physics, which are at the very heart of quantum computing, to compute the exact execution of a quantum program with double-digit precision. This is very different from existing quantum processors, which suffer from quantum noise, quantum decoherence, and manufacturing biases, as well as performance bottlenecks.

> *"The Atos Quantum Learning Machine allows us to leverage our expertise in scalable algorithms across many science applications to explore the impact of quantum computing on key areas such as quantum chemistry and quantum materials,"* said **Rick Stevens, Associate Laboratory Director at Argonne National Laboratory.** *"Argonne recently expanded its research program into the areas of quantum error-correcting codes and quantum networks. This now allows us to utilize the Atos Quantum Learning Machine to explore effective fault tolerance methods as well as demonstrate the power of distributed quantum computing and other applications of quantum networks."*

Argonne also leverages its suburban Chicago-area location to lead discovery and to power innovation in a wide range of core scientific capabilities, from high-energy physics and materials science to biology and advanced computer science, and is the latest U.S. national laboratory to deploy the Atos Quantum Learning Machine.

> *"We are working with the scientific community, and leading institutions like Argonne National Laboratory, to provide engineers, researchers and scientists tools such as the Quantum Learning Machine that allow them to focus on their applications and*

algorithms, without having to wait for actual quantum machines to be available," **said Ludovic Sauvage, Head of Big Data Services, HPC and Quantum Computing, Atos North America.** *"Moving forward we expect quantum computing to foster developments in deep learning, algorithms and Artificial Intelligence for a variety of domains, and the tools we provide today will help drive those advancements of tomorrow."*

In November 2016, Atos launched an ambitious program to anticipate the future of quantum computing and to be prepared for the opportunities as well as the risks that come with it. As a result of this initiative, Atos was the first to successfully model quantum noise. To date, the company has installed Quantum Learning Machines in numerous countries including Austria, Denmark, France, Germany, the Netherlands, and the United States empowering major research programs in various sectors.

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About Atos

Atos is a global leader in digital transformation with 120,000 employees in 73 countries and annual revenue of € 13 billion. European number one in Cloud, Cybersecurity and High-Performance Computing, the Group provides end-to-end Orchestrated Hybrid Cloud, Big Data, Business Applications and Digital Workplace solutions through its Digital Transformation Factory, as well as transactional services through Worldline, the European leader in the payment industry. With its cutting-edge technologies and industry knowledge, Atos supports the digital transformation of its clients across all business sectors. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and operates under the brands Atos, Atos Syntel, Unify and Worldline. Atos is listed on the CAC40 Paris stock index.

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