Press release

Atos takes the most powerful quantum simulator in the world to the next level with Atos QLM E

Paris, 23 June 2020 – Atos, a global leader in digital transformation, extends its portfolio of quantum solutions with **Atos QLM Enhanced** (Atos QLM E), a new GPU-accelerated range of its Atos Quantum Learning Machine (Atos QLM) offer, the world's highest-performing commercially available quantum simulator. Offering up to 12 times more computation speed, Atos QLM E paves the way to optimized digital quantum simulation on the first, intermediate-scale quantum computers to be commercialized in the next few years (called NISQ - Noisy Intermediate-Scale Quantum).

By promising to apply, in the near-term, computation capabilities that are beyond the reach of even the most powerful existing computers to solve complex, real-life problems, NISQ devices will play an important role in determining the commercial potential of quantum computing. Herein lies a double challenge for the industry: developing NISQ-optimized algorithms is as important as building the machines, since both are required to identify concrete applications.

Integrating NVIDIA's V100S PCIe GPUs, Atos QLM E has been optimized to drastically reduce the simulation time of hybrid classical-quantum algorithms simulations, leading to quicker progress in application research. It will allow researchers, students and engineers to leverage some of the most promising variational algorithms (like VQE or QAOA) to further explore models fostering new drugs discovery, tackling pollution with innovative materials or better anticipation of climate change and severe weather phenomena, etc.

> **Bob Sorensen, Chief Analyst for Quantum Computing at Hyperion Research**, said**:** *"Atos' continues to play a key role in the advancement of the quantum computing sector by offering yet another world-class digital quantum simulator with increasingly powerful capabilities, this time through the inclusion of leading-edge NVIDIA GPUs. This latest Atos QLM offering uses a quantum hardware agnostic architecture that is well suited to support faster development of new quantum systems and related architectures as well as new and innovative quantum algorithms, architectures, and use cases. Since launching the first commercially available quantum system in 2017, Atos has concentrated its efforts on helping an*

increasing base of users better explore a wide range of practical business and scientific applications, a critical requirement for the overall advancement and long-term viability of the quantum computing sector writ large. The launch of the Atos QLM E is an exciting step for Atos but also for its clients and potential new end users, both of whom could benefit from access to these leading-edge digital quantum simulation capabilities".

Agnès Boudot, Senior Vice President, Head of HPC & Quantum at Atos, explained: *"We are proud to help imagine tomorrow's quantum applications. As we are entering the NISQ era, the search for concrete problems that can be solved by quantum computing technologies becomes critical, as it will determine the role they will play in helping society shape a better future. Combining unprecedented simulation performances and a programming and execution environment for hybrid algorithms, Atos QLM E represents a major step towards achieving near time breakthroughs"*.

Atos QLM E is available in six configurations, ranging from 2 to 32 NVIDIA V100S PCIe GPUs. Atos QLM customers have the possibility to upgrade to Atos QLM E at any moment.

The Atos QLM user community continues to grow. Launched in 2017, this platform is being used in numerous countries worldwide including Austria, Finland, France, Germany, India, Italy, Japan, the Netherlands, Senegal, UK and the United States, empowering major research programs in various sectors like industry or energy. Atos' ambitious program to anticipate the future of quantum computing – the '**Atos Quantum'** program – was launched in November 2016. As a result of this initiative, Atos was the first organization to offer a quantum noisy simulation module within its Atos QLM offer.

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