EVIDEN
an atos business

News

# Eviden makes significant progress in enhancing the scalability of Qubit emulation and platform capabilities

**Paris, France – November 13, 2023 –** Eviden, the Atos Group business leading advanced computing today announces significant enhancements to its recently launched quantum offering, Qaptiva™, including a new contract.

Eviden is strengthening its quantum capabilities and continuing its mission of making quantum computing accessible to all by introducing several new features in its Qaptiva offering. The Qaptiva software now offers emulation capabilities of more than 100 qubits, two brand-new tensor network QPU simulators, and a new framework for integrating high-performance computing (HPC) with quantum computing. Additionally, a new consulting service is now available.

**Development environment platform**

Eviden is also raising the bar in quantum emulation with its latest Qaptiva software upgrade. The newest version of Qaptiva 800s software offers immediate benefits for validating algorithms and providing a virtual environment to test the performance of Quantum Processing Units (QPUs) with outstanding fidelity, all through noiseless simulations. As an outcome of Eviden's R&D activities, brand-new simulators have been introduced that significantly reduce computing time while providing an accuracy which is at least as good as that of today's quantum processors.

Eviden goes a step further towards Fault-Tolerant Quantum Computation (FTQC) by introducing Q-Pragma, a framework that helps HPC centers utilize quantum algorithms and implement HPC-Quantum hybridization. This hardware-agnostic technology enables HPC applications to use quantum acceleration and effortlessly integrates existing C++ programs, streamlining workflow and boosting productivity. Q-Pragma also enables heterogeneous computing by allocating memory and scheduling workloads to different processors. It can be expanded with Quantum Error Correction (QEC) modules.

**Emulation capabilities**

Qaptiva 800, formerly known as Atos Quantum Learning Machine (QLM), can emulate over 100 qubits depending on the algorithm and emulator used. This improvement confirms the relevance of emulators for developing and testing various classes of algorithms.

The National Laboratory for Scientific Computing (LNCC) in Brazil has chosen to use Eviden's Quantum Computing appliance (QLM 38E) for its research in the field of computer science. LNCC will develop solutions for complex problems across various domains with the appliance. With this new customer win, Eviden has expanded the Qaptiva appliance's customer base to over 36 worldwide references, bolstering its client portfolio and reaffirming its position as a trusted choice for businesses across the globe.

Through the HPCQS[1] project, co-funded by EuroHPC JU, France and Germany, Eviden plays a crucial role in unlocking the potential of HPC and Quantum hybridization. The programming and emulation environments, which include Qaptiva, will be accessible in Germany through Jülich Supercomputing Centre (Q-solid initiative) and in France through the GENCI and CEA – the French Alternative Energies and Atomic Energy Commission – (HQI initiative).

**Consulting services**

To fully harness the power of quantum computing, it is essential to carefully select the right components, identify use cases, and evaluate various criteria for implementing solutions. Eviden has launched a new consulting service supported by a team of quantum experts who provide consulting to different industries, universities, and high-performance computing centers. They help to create actionable strategies that enable the adoption of quantum computing, identify relevant use cases, and solve complex problems. The consulting services bring together a strong network of partners with specialized knowledge in various industry sectors, such as finance and energy. This consulting practice is expanding in France, with an increased footprint in Brazil, Germany, India and Spain, as it looks to grow globally.

**Partner ecosystem**

With its strong partnerships and joint go-to-market strategies, Eviden is realizing its commitment to provide access to a real QPU and offer end-to-end solutions.

In France, Le Lab Quantique has launched the first Maison du Quantique, further highlighting the significance of quantum computing in the French ecosystem. Eviden is proud to be a co-founder of this project and is committed to creating new synergies that will accelerate the growth of quantum computing in France.

> **Dr Cédric Bourrasset, Global Head of HPC-AI and Quantum Computing, Eviden, Atos Group** said: "*This new client and portfolio evolutions are a great marker of success, only a few months after the launch of our new Qaptiva offering. This shows that the market is ready to turn to the first quantum applications and to place their trust in Eviden's teams and technologies. We look forward to supporting many new clients in their quantum journey with our technologies, services and partners ecosystem.*"
>
> **Bob Sorensen, Chief Analyst for Quantum Computing at Hyperion Research** highlighted "*There is a growing demand for integrating Quantum and HPC technology, as it has the potential to boost computing power significantly. This indicates a genuine interest in the potential benefits of quantum computing. I applaud Eviden, a leader in the field, for showcasing their continued success in the industry at SC23. Their Qaptiva platform is designed to emulate hundreds of qubits, and Eviden has introduced a new framework that supports the optimization of HPC programs and the acceleration of classical supercomputers – both important development areas.*"

Qaptiva is a powerful quantum computing application development platform offered by Eviden, enriched with a software and hardware partner ecosystem. This platform caters to customers seeking solutions to develop quantum applications and run them as a service or on-premises. Leveraging Eviden's significant experience in hybrid computing, Qaptiva empowers enterprises, organizations, and research centers globally to harness the

[1] High Performance Computer – Quantum Simulator hybrid | HPCQS

potential of quantum computing and take application development to the next level to solve complex business and scientific challenges. With Qaptiva, they can access all the quantum technologies they need to program, optimize, compile, emulate, or run code on a Quantum Processing Unit (QPU) and can rapidly achieve tangible results without waiting for FTQC.

***

**About Eviden[2]**

Eviden is a next-gen technology leader in data-driven, trusted and sustainable digital transformation with a strong portfolio of patented technologies. With worldwide leading positions in advanced computing, security, AI, cloud and digital platforms, it provides deep expertise for all industries in more than 47 countries. Bringing together 53,000 world-class talents, Eviden expands the possibilities of data and technology across the digital continuum, now and for generations to come. Eviden is an Atos Group company with an annual revenue of c. € 5 billion.

**About Atos**

Atos is a global leader in digital transformation with 105,000 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 69 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.

**Press contact**

Constance Arnoux – constance.arnoux@atos.net – +33 (0)6 44 12 16 35

[2] *Eviden business is operated through the following brands: AppCentrica, ATHEA, Cloudamize, Cloudreach, Cryptovision, DataSentics, Edifixio, Energy4U, Engage ESM, Evidian, Forensik, IDEAL GRP, In Fidem, Ipsotek, Maven Wave, Profit4SF, SEC Consult, Visual BI, Worldgrid, X-Perion. Eviden is a registered trademark. © Eviden SAS, 2023.*