Alice & Bob Partners with the CEA to Accelerate Quantum-HPC Integration and Industrial Use Cases

France's CEA will work to integrate the quantum computing company's cat qubits software stack to accelerate the advent of useful quantum applications

PARIS, FRANCE, September 17, 2026 /EINPresswire.com/ -- Alice & Bob, a leader in fault-tolerant quantum computing (FTQC) technologies, today announced a research collaboration with the CEA, a globally recognized scientific institution, to advance the integration of its quantum software stack within hybrid quantum-HPC computing centers and to explore early quantum use cases in condensed matter physics.

> Our priority is to make Alice & Bob's unique fault-tolerant quantum computing technology usable in environments where real computational work happens."
>
> *Chloé Poisbeau, Chief Operating Officer at Alice & Bob*

With Alice & Bob's first Quantum System, Helium, unveiled in June, the CEA partnership tackles two blockers on the road to useful quantum computing. Firstly, the integration of quantum software into existing HPC computing infrastructure, and secondly the development of industry relevant applications.

Alice & Bob's software stack will be integrated into a hybrid HPC–quantum workflow using Bull Qaptiva™, to streamline how future users access quantum resources from within existing supercomputing environments. Qaptiva is a hardware-agnostic quantum application platform, designed by Bull so that developers can write code once and run it across different quantum backends, on-premises or via cloud access, while also providing orchestration capabilities to route workloads and manage execution across hybrid infrastructures. This integration will be based on CEA expertise on coupling quantum computer and HPC systems.

"Our priority is to make Alice & Bob's unique FTQC technology usable in environments where real

computational work happens," said Chloé Poisbeau, Chief Operating Officer at Alice & Bob. "By integrating our stack through Qaptiva into hybrid HPC/quantum setups, we're removing friction for adoption and laying the operational foundation for seamless, industrial-grade access to FTQC systems."

In parallel, the partners will launch a joint research program focused on many-body problems, targeting the development of algorithms that can realistically be executed on early fault-tolerant quantum computing (eFTQC) systems around 2030. These many-body workloads are a strategic proving ground for quantum advantage because they connect directly to future high-value use-cases and real-world challenges, ranging from new materials discovery to chemistry and complex industrial simulations, where hybrid HPC/quantum execution models can accelerate the path from scientific insight to engineering impact.

"Many-body physics sits at the crossroads of fundamental science and industrial relevance," said Jacques-Charles Lafoucriere, Program Director at CEA. "This collaboration lets us couple world-class HPC practices with Alice & Bob's FTQC tech to define concrete, high-impact use cases, so that, when eFTQC systems reach the required maturity, the value creation pathways are already validated and ready to scale."

The CEA is a major government-funded research organization and one of France's most influential R&D institutions, with more than 20,000 employees and multiple national research centers.

Together, the program aligns Alice & Bob's unique FTQC technology, seamless hybrid HPC/QC integration, and a pipeline of industrial-grade use cases, turning technical progress into measurable market value.

About Alice & Bob
Alice & Bob is a quantum computing company based in Paris and Boston whose goal is to create the first universal, fault-tolerant quantum computer.

Advised by Nobel Prize winning researchers, Alice & Bob specializes in cat qubits, a technology developed by the company's founders and later adopted by Amazon. Demonstrating the power of its cat architecture, Alice & Bob recently showed that it could reduce the hardware requirements for building a useful large-scale quantum computer by up to 200 times compared with competing approaches.

About CEA
CEA is a public research organization whose mission is to contribute to the scientific, technological, and industrial sovereignty of France and Europe in four key areas: low-carbon energy, digital technologies, the medicine of the future, defense and security, based on fundamental research of excellence.
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