French Government Taps Alice & Bob to Deliver Scalable Fault-Tolerant Systems with €500M in Funding

Alice & Bob among five quantum computing startups selected to accelerate French quantum national program

PARIS, FRANCE, March 13, 2024 /EINPresswire.com/ -- Alice & Bob, a leading hardware developer in the race to fault-tolerant quantum computers, has been invited by the French Ministry for Armed Forces to participate in France's PROQCIMA initiative. This ambitious program supports the delivery of a universal fault-tolerant quantum computer demonstrator with 128 logical qubits by 2030 and its industrialization into a 2048-logical-qubits computer by 2035, a target that perfectly aligns with Alice & Bob's roadmap to deliver industry-relevant quantum solutions to the global market.

The PROQCIMA program is one part of the €1 billion French National Strategy for Quantum. The selected companies: Alice & Bob, PASQAL, Quandela, C12 and Quobly will have access to funding of€500 million as they both compete and collaborate to push the French quantum ecosystem forward. The program is structured as a competition over the next 10 years. Three out of the initial five candidates will continue the program after four years, then only two winning companies will continue to get funding after the first eight years have passed.

Quantum computers can be classified as analog, noisy or fault tolerant. Only the latter ones, built with error-corrected logical qubits, are expected to bear the full impact of universal quantum computation. The company's pioneering technology, the “cat qubit”, is a new type of quantum bit specifically conceived to accelerate the path toward fault tolerant applications.

“We are grateful for France’s commitment to invest in fault-tolerant quantum computing. This initiative will support establishing our global leadership and fueling the whole ecosystem’s growth,” said Théau Peronnin, CEO and co-founder of Alice & Bob. “We stand ready to contribute our cat qubit fault-tolerant architecture to PROQCIMA, driving innovation and committing to deliver the full potential of quantum computing.”

Alice & Bob's technology significantly reduces the largest barrier in quantum development: error correction. Their cat qubit is protected against bit flips, leaving only one dimension of errors, phase-flips, to be corrected. This dramatically reduces the overhead needed for quantum error correction as shown in a recent paper from the company researchers and Inria, the French national research institute for digital science and technology. This work estimates a 200-fold reduction of the resources needed to execute complex quantum algorithms, including code-breaking applications, compared to other state-of-the-art approaches.

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> *Théau Peronnin, CEO and co-founder of Alice & Bob*

About Alice & Bob

Alice & Bob is a start-up based in Paris and Boston whose goal is to realize the first universal, fault-tolerant quantum computer. Founded in 2020, Alice & Bob has already raised €30M in funding, hired over 90 employees, and demonstrated experimental results surpassing those of technological giants like Google or IBM. Alice & Bob specializes in cat qubits, a technology pioneered by the company’s founders and later adopted by Amazon. Demonstrating the power of its cat architecture, Alice & Bob recently showed it could reduce hardware requirements to build a large-scale useful quantum computer by up to 200 times compared to competing approaches. Follow Alice & Bob on LinkedIn, X or YouTube, visit our website www.alice-bob.com, or join The Cat Tree on Slack to learn more.

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