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THE QUANTUM INSIDER

Intelligence News Exclusives Marketing

Happy Friday!

A look at this week's BIG stories.

This week saw The University of Calgary, Quantum City, and PASQAL join forces to bolster the quantum ecosystem in Alberta, while the quantum simulation industry saw a breakthrough in Fujitsu's optimized quantum simulations.

On the commercial front, Diraq has inaugurated a new commercial laboratory in Sydney intending to drive the era of fault-tolerant quantum computing, while IonQ managed to achieve ion-photon entanglement.

Finally, a new post-quantum cryptographic protocol was also launched that has been selected by NIST as a standard for post-quantum encryption.

The quantum realm witnessed key collaborations such as Q-CTRL merging with players like Wolfram and Keysight while enhancing quantum research across algorithms, hardware, and education.

Companies also released new quantum processors, products, and tools for simulations, optimization of lead times, designs, and circuitry.

Notable advancements include the QCCD architecture with 32 qubits, LINQER600 for controlling hundreds of qubits, and a collaboration for quantum-resistant encryption in home routers.

And in a significant move, a quantum hardware manufacturer secured $5 million in seed funding, led by 'Corporate Fuel' and 'Caruso Ventures' to accelerate new product introductions and expand market reach.

Also, this week saw Quantistry receiving funding for chemical R&D enhancement, SK Telecom forming a strategic alliance for quantum products, and PASQAL revealing a roadmap for qubit scaling and business utility.

Plus more news from around the quantum community -- let's dig in.

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This week's Qbite:

- PASQAL Plots Roadmap
- Quantum Cybersecurity Explained
- SemiQon Silicon Collab
- DARPA Sees Opportunities in Challenges
- IBM And USC Collaborate
- Connecticut Connecting With Quantum
- Australia Wrap-up
- Unexaggerated Magic III
- Vexlum Accelerated
- QuSecure Secures Cisco Deal
- Extropic's Heavy Duty Lite Paper
- EU Country Implements Quantum-Resistant Tech
- Superposition Guy Podcast
- PASQAL gets the spotlight

Notes for this week

Matt Swayne, Editor of The Quantum Insider

I like a good roadmap.

I actually can go back to a time when roadmaps were actual, real physical roadmaps. (I go back to flip-page AAA TripTicks. That old.)

PASQAL released its roadmap and is setting an ambitious course for creating quantum computers that add practical value.

Now, there are critics who dismiss roadmaps. But, a couple things about that. First, these roadmaps can be just as important for a company's internal goal-setting as it can be for you and me and all those critics. There's something about making a goal concrete and putting it out in public to add fire to your desire.

The other factor: Most of these roadmaps seem to be aligned on delivering quantum value in the next few years of quantum, as well as the challenges and opportunities that might lie ahead. That alignment, particularly among competitors, adds some evidence of validity, in my opinion. (It may also mean that competition is adding some fuel to drive along that roadmap.)

Working in Quantum Video Series

The Working in Quantum series, a partnership between Oxford Instruments and TQI, offers a glimpse into the working world of quantum technology and explores the skills, experience and support needed in order to build a workforce that will drive the future of quantum forward.

This week, **Simon Phillips, CTO at Oxford Quantum Circuits** discusses the forefront of quantum technology.

Quantum Events

I wanted to give a shout out to upcoming partner events for the quantum community. Mark these on your calendar:

The Global Quantum Symposium will be held March 18-20 at uptownBasel.

The third annual **Commercialising Quantum Global 2024** will be held June 5-6 2024 in London.

Quantum.Tech Europe will return to Twickenham Stadium on 23 – 25, 2024.

Anindya Jain, Analyst of The Quantum Insider
In recent industry updates, Quantistry secured €3M funding to enhance chemical R&D through their simulation platform.

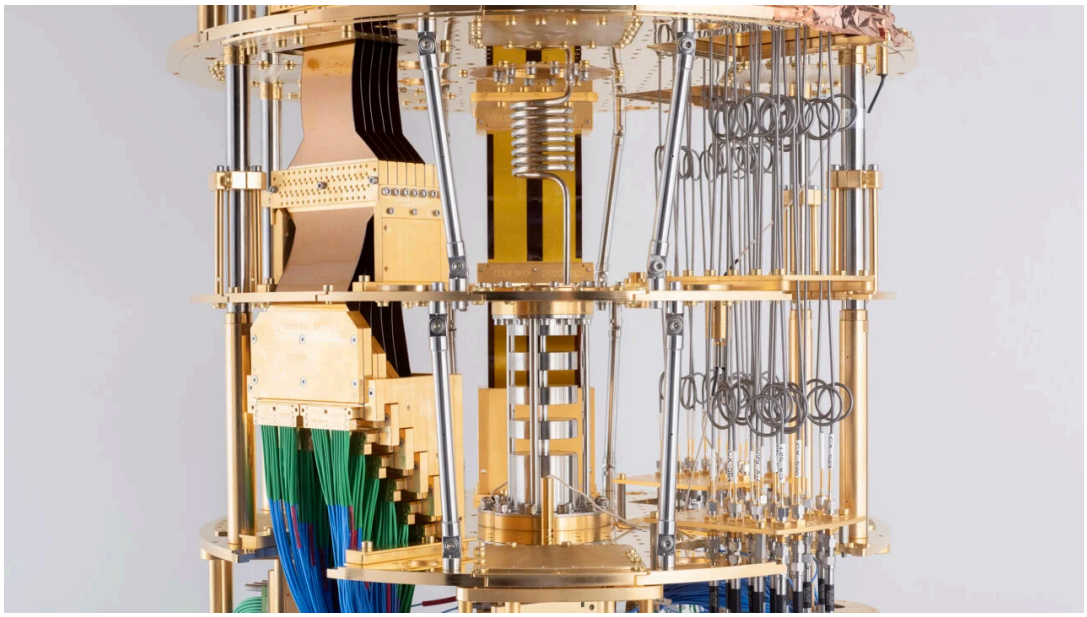
SK Telecom partnered with Nokia, and others to form a strategic alliance aligned towards quantum products for global markets.

PASQAL unveiled a roadmap targeting business utility, scaling beyond 1,000 qubits towards fault tolerance.

Have a great weekend!

Insider Spotlights

IBM Agreement Boosts USC's Quantum Computing Leadership



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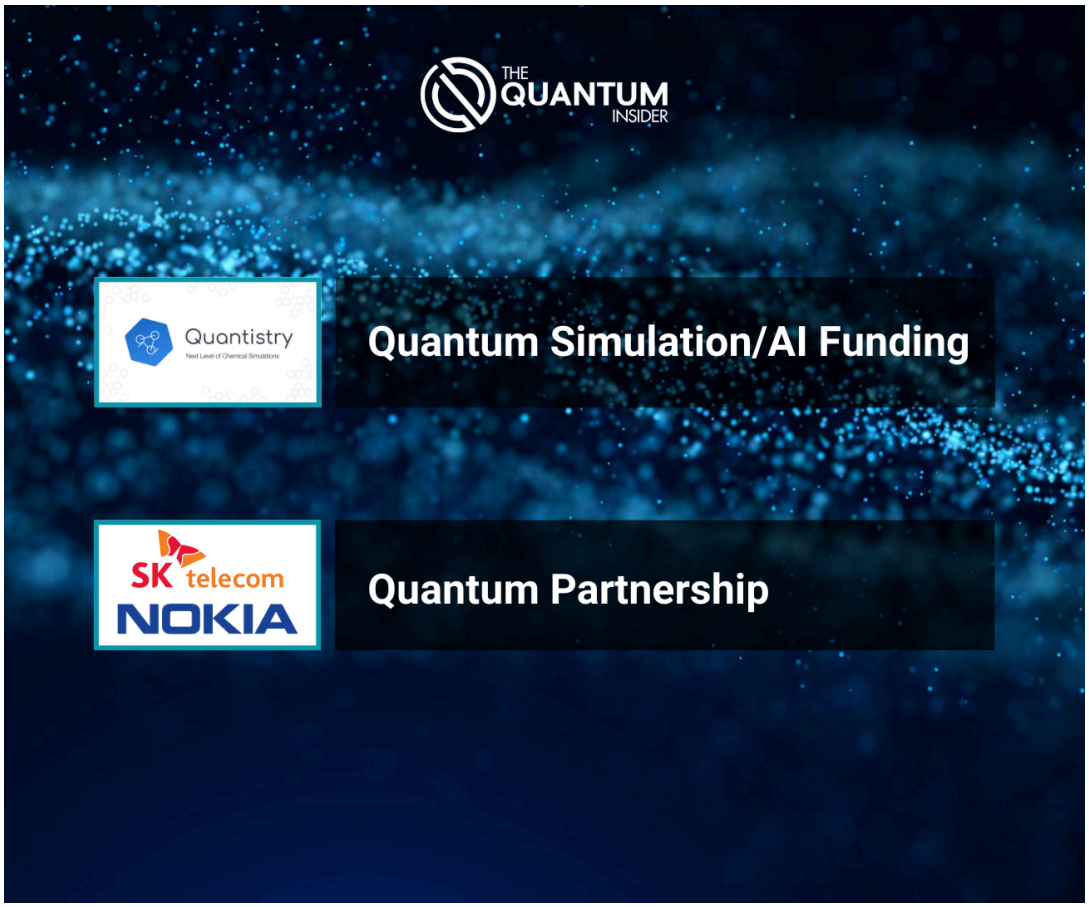
Key Takeaways:

- The University of Southern California (USC) has signed an agreement with IBM.
- USC officials say that the agreement will boost quantum research.
- USC also reported that it started operations in the IBM Quantum Information Center in February,giving its researchers access to the company's quantum devices.
- Officials also reported the collaboration will boost the university's Frontiers of Computing program, which seeks to ethically advance AI, robotics and quantum.

Our Thoughts: On the surface, the agreement between USC and IBM is a fairly obvious collaboration between two pioneers in their respective fields. It's a win-win for the organizations. Access to IBM's quantum computers will help USC researchers explore not just quantum information science, but, likely, all the fields and disciplines that quantum is expected to touch -- think pharmaceuticals, logistics, materials sciences, etc. Students will also benefit from educational experiences with the latest quantum tech. And think of the potential for commercial relationships not just with USC, but the startups and spin-outs that might ferment in this quantum computing kettle. And that leads us to our deeper point, which deserves a call out. In deep tech, and particularly in quantum, we have a government-academic-industrial support system. These technologies were supported and will need to be supported -- from theoretical inception, to basic science to applied science to commercialization. And, although IBM and USC make it seem natural, it's not always easy. There's an often tempestuous relationship between the industrial and academic communities. The goals can be different. The values can be different. And the cultures can be different. A question we've been dwelling on is: How can we build trusted relationships across government, academia and business? More on that later.

Industry Updates



Quantistry has secured €3M in a **funding round** led by Ananda Impact Ventures, joined by Chemovator. The company aims to enhance chemical R&D and new material discovery, with plans to utilize the funding to further develop its simulation platform and secure new customers.

SK Telecom has formed an **alliance** with **Nokia**, and several other companies to promote developments in the quantum ecosystem. Quantum VPN provider **Xgate**, hardware-based cryptographic module specialist **KCS**, quantum communication solutions company **IDQ Korea**, **SOS Lab**, and **Wooriro**, are the others involved in the alliance with the main aim of developing more quantum products while targeting the local and overseas quantum markets.

TQI Product Updates

This month, we are excited to announce several additions to our Insight Section in our data intelligence platform designed to deliver the best value to our customers.

New Features in the TQI Insights Section:

1. **Contact Details for Enterprise Users in EU and Asia:** We have added a comprehensive document listing contact details of quantum computing, sensing, and security enterprise users in the EU and Asia region.
2. **Quantum Grants in Canada, the US, and the EU:** Added to the platform is also a document providing comprehensive details about various quantum-specific grants available in these regions.
3. **Monthly Research Roundup:** A report detailing the main research news of the month, including information such as research topics, institutions, and descriptions.

Quote of the week

"The remarkable innovation that underpins quantum computing is the result of decades of knowledge exchange between industry leaders like IBM and academic researchers at universities like USC. Building on this long tradition of collaboration, we will work together to accelerate the quantum revolution and deepen our fundamental understanding of the world." -- USC Dornsife Dean Amber Miller."

AMBER MILLER, USC Dornsife Dean

News of the week

SemiQon And CMC Microsystems Collaboration Aims to Accelerate Development of And Access to Silicon-based Quantum Computers

Insider Brief SemiQon and CMC Microsystems announce a collaboration agreement to advance silicon-based quantum processor technology. SemiQon will supply CMC with prototypes of its semiconductor-based quantum processor chips for research purposes. CMC scientists will collaborate with SemiQon to accelerate the development of processors for more powerful quantum computers. PRESS RELEASE — SemiQon from Finland, and Canada's [...]

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Infleqtion Unveils 5-year Quantum Computing Roadmap, Advancing Plans to Commercialize Quantum at Scale

Insider Brief Infleqtion unveiled its 5-year quantum computing roadmap, looking at commercial quantum solutions by the end of the decade. The company also announced a program of substantial investments in both hardware and software dedicated to creating error-corrected logical qubits tailored for commercial applications. Critical Quote: “2024 is an inflection point for quantum technologies, with […]

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Researchers: Deep-Tech Needs Old School Venture Capital

Insider Brief Venture capital is currently focused on turning a quick buck, not long-term investments, according to MIT Sloan Management Review columnists. In the past VCs funded cutting-edge, but risky companies and technologies. The piece was written by Thomas Ramge, associate researcher at the Einstein Center Digital Future and Rafael Laguna de la Vera, founding […]

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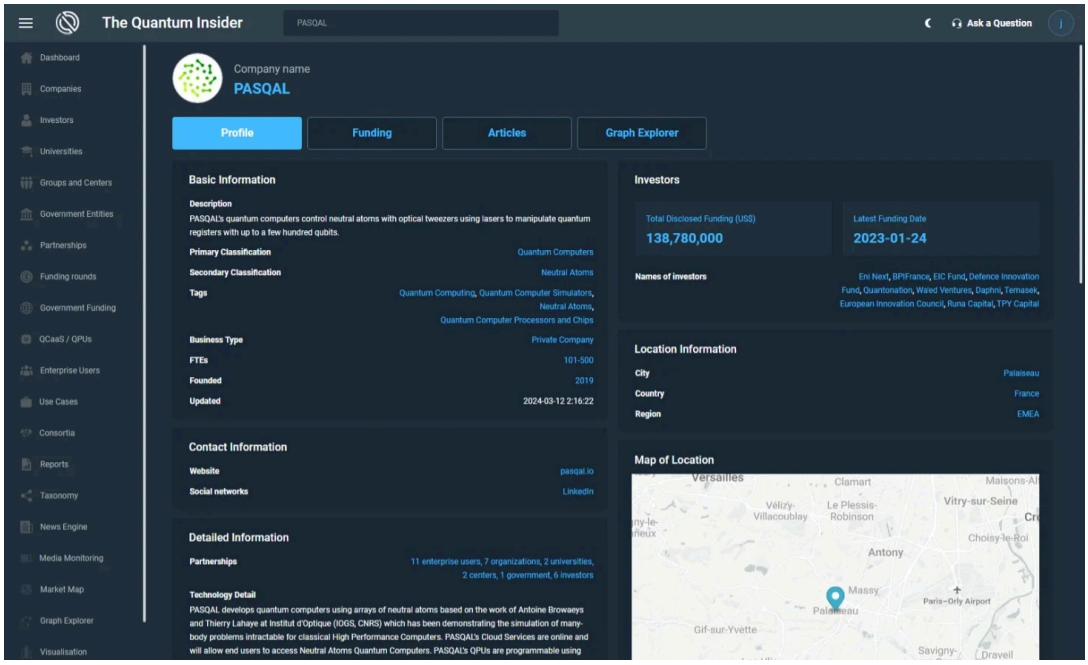
Quantum Spotlight



PASQAL has announced a new **roadmap** focused on business utility and scaling beyond 1,000 qubits towards the fault tolerance era. The roadmap includes plans to deliver quantum computers with over 100 qubits in 2024, aiming to reach 10,000 qubits by 2026 with a scalable logical qubits architecture. This progression involves moving algorithms beyond the blueprint phase into development, with potential production environment use starting in 2025.

PASQAL is actively collaborating with Fortune 500 companies to identify hardware-accelerated algorithms in various fields like quantum materials, graph machine learning, optimization, and differential equations.

Learn More About **PASQAL**

The Quantum Insider

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