



Quantum Sweden Innovation Intelligence Digest (QSIIID) is a curated monthly newsletter with external quantum innovation business news from around the globe.

A Google patent could overcome quantum cooling challenges. The company's "cryogenic cooling system" for "multi-unit scaling of quantum computing" uses seven stages of cooling to get the devices to absolute zero which is what is needed to run.

[Read more here.](#)



Aquark Technologies, a UK quantum technology company, in partnership with the Royal Navy have successfully tested the capabilities of its novel quantum sensing (cold atom) technology. This trial and its success demonstrate the strength of the technology and its readiness for demanding military conditions, which unlocks new possibilities in accurate positioning, navigation and timing and thus covert monitoring.

[Read more here.](#)

Sparkle, the first international service provider in Italy and among the top global operators, has announced the pre-order launch of its Quantum Safe over Internet (QSI) service. This is the first product in its Network as a Service (NaaS) suite which soon will include additional use cases. Quantum-secure connections represents a crucial step forward in communications security.

[Read more here.](#)

The UK is now home to a newly opened National Quantum Computing Center (NQCC) which will house a wide range of quantum computer platforms, designed to push the technology's boundaries and provide open access to industry, academia and other sectors across the UK. There will be more than 70 staff, including many opportunities for students. The NQCC is unique in that it is not restricted to government use and instead will foster collaboration and innovation across both public and private sectors.

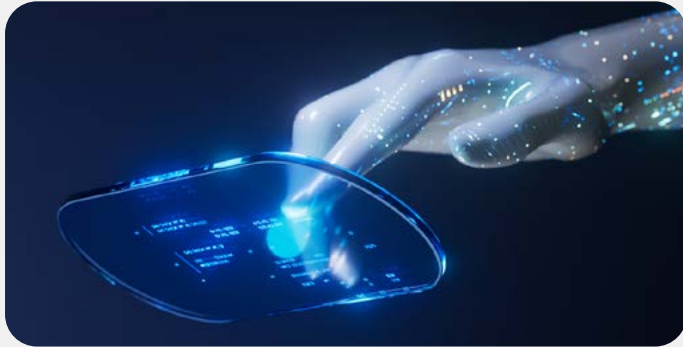
[Read more here](#) & [here.](#)

In IonQ's latest quarterly report, released on Nov 6th, an announcement was made of their plans to create a quantum application development center together with AstraZeneca in Gothenburg. The center will be hosted at the BioVenture Hub at AstraZeneca's facilities in Mölndal, where quantum experts from IonQ will collaborate with AstraZeneca's world-class scientists to develop applications. According to the CEO of IonQ, Peter Chapman, this is the first time IonQ announce a plan for partnership when it comes to application development.

[Read more here.](#)

Rigetti, a pioneer in full-stack quantum-classical computing, announced the successful demonstration of real-time and low latency quantum error correction on a Rigetti quantum computer. Rigetti and Riverlane's recent work demonstrating real-time and low-latency quantum error correction on Rigetti's 84-qubit Ankaa™-2 system is an important step in the journey towards developing fault tolerant quantum computers.

[Read more here.](#)



Researchers at Shanghai University used the D-Wave quantum computer, to demonstrate decryption of a working RSA public key. This incident demonstrates that the timeline to encryptions cracking may be sooner than expected, although is still not eminent.

[Read more here.](#)

Two quantum computers using semiconductor spin qubits will be installed at SURF in the Netherlands and LuxProvide in Luxembourg, making them the first of their kind in Europe under the EuroHPC Joint Undertaking (JU). This type of technology is not yet implemented in any other EuroHPC quantum computers and will complement the others in Poland, France, Germany, and the Czech Republic using other quantum technologies.

[Read more here.](#)

Scientists at the Tsing Hua University in Taiwan have built the smallest quantum computer in the world. It is the size of a desktop PC and can work at room temperature. The machine is powered by just one photon, or light particle, and is a proof of concept. Compared to superconducting qubits, photons maintain a stable quantum state at room temperature and use less energy, making it a cheaper option.

[Read more here.](#)

The UAE is now among a select group of nations worldwide that have invested in Quantum Key Distribution (QKD) technologies, an unhackable quantum communication technology that allows encryption keys to be transferred using particles of light. This development is due to the partnership between the Technology Innovation Institute (TII) and the UAE Space Agency and links the UAE to the global quantum-secure network, advancing secure free-space optical communications.

[Read more here.](#)

Quandela, the European leader in photonic quantum computing, has released an ambitious roadmap for 2024-2030. Its primary aim is to achieve fault-tolerant quantum computing by 2030, but they also plan to have the first logical qubits by 2025, a second quantum factory by 2027 and industrial-scale quantum computer assembly by 2028.

[Read more here.](#)



"We are explorers. We're working to explore the limits of computing, chart the course of a technology that has never been realized, and map how we think these technologies will benefit our clients and solve the world's biggest challenges. But we can't simply set out into the unknown. A good explorer needs a map."

Explore updates to IBM's roadmap and see what it tells us about the company and the future of quantum computing. For one, they see it as "quantum-centric"!

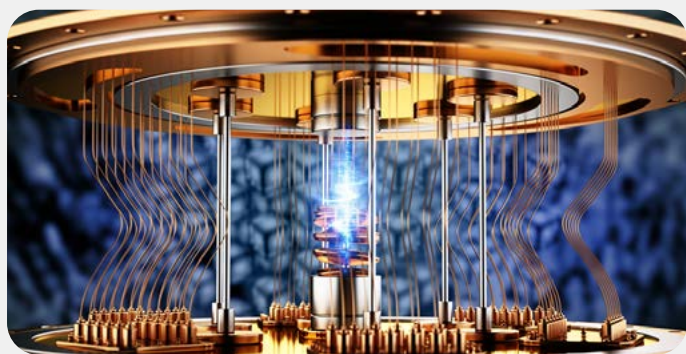
[Read more here.](#)

The UK aims to bring quantum computing to healthcare by 2030. In a [new report](#) advancement such as wearable brain scanners and non-invasive cancer detection using quantum entanglement were referenced, highlighting efforts to improve diagnostic capabilities, making healthcare more efficient and less invasive. However, the report also acknowledges the complexities associated with regulatory compliance and clinical adoption, among others.

[Read more here.](#)

The Quantum Research Center, at the Technology Innovation Institute (TII) collaborated with researchers from around the world to develop Qibo – an end-to-end, open-source platform for quantum computing programming. Qibo offers three different modules and allows for quantum simulations to be run on classical hardware, making it ideal for researchers, scientists, students and professionals alike. The platform can be used in a wide range of sectors from finance to AI and engineering.

[Read more here.](#)



IQM Quantum Computers (IQM), has announced that it has been awarded a contract to deliver the Czech Republic's first quantum computer, which is to be installed at the IT4Innovations National Supercomputing Centre in Ostrava. The contract is part of the European High Performance Computing Joint Undertaking (EuroHPC JU) program and it will be the first quantum computer in an HPC centre that will run on IQM's unique star topology. The proprietary star topology QPU – where 24 qubits are connected to a central resonator – is designed to work more efficiently with IQM's latest quantum error correction and other complex algorithms.

[Read more here.](#)

The Anhui facility in China is set to increase its production capacity from five to eight superconducting quantum computers; reflects the aggressiveness with which China is approaching this sector. Researchers from the facility also report higher qubit numbers and greater stability of next-generation chips, enhancing China's capabilities even further and bringing quantum computing applications to many industries.

[Read more here.](#)

TELUS and Photonic Inc. have joined forces to accelerate the development of next-generation quantum communications in Canada. TELUS will provide Photonic dedicated access to its advanced fibre-optic network, enabling the testing of groundbreaking quantum technologies and emerging solutions that promise to reshape Canada's digital landscape, improve productivity, and drive economic growth.

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QSIP – Empowering Sweden's Quantum Innovation Future