



Dear Quantum Flagship member,

Before we all take a well-earned rest over the festive period, we have a final newsletter of 2024 with much exciting news.

We look back at the highlights of EQTC 2024, look forward to next year's Q-Expo, and present fascinating results from the Flagship projects. There are two new calls on quantum computing and communication, and we document a day in the lab of a quantum physicist in a special feature.

Finally, we wish you a relaxing holiday season and happiness and health in 2025!

If you would like to inform the community on QT activities or events within your national or regional community, or provide feedback to the Quantum Flagship newsletter, please get in touch at newsletter@qt.eu.

Best regards,
The Quantum Flagship Coordination Team

- Looking back at a wonderful EQTC 2024
- A day in the lab of a quantum physicist
- Connecting quantum communication infrastructure
- Cooperation with Japan on quantum computing
- Two quantum processors for an open hybrid HPC-QS infrastructure in Europe
- Quantum imaging without quantum light?
- Diffusion models to enhance quantum OCT analysis
- OpenSuperQPlus at EQTC 2024
- The Q-Expo series has taken off

News from the Quantum Flagship

Building Europe's quantum future together.

Looking back at a wonderful EQTC 2024



With over 650 participants, the 2024 edition of the European Quantum Technologies Conference again showed itself to be Europe's quantum event of the year.

Taking place at the historic *Culturgest* in Lisbon from 17-20 November, EQTC 2024 brought together leaders from academia, industry and policy, presenting the latest developments in the field, and discussing Europe's strategy in the crucial domain of quantum technology.

EQTC 2024 featured groundbreaking demonstrations, including the first ever use of a quantum gravimeter to detect an underground archaeological structure, a live demo of quantum-secure communications through a submarine and a terrestrial cable, and many special sessions covering not just quantum technology itself but the vibrant ecosystem around it.

It was also the occasion for the EU inauguration of the International Year of Quantum Science and Technology, proclaimed by the UN for 2025, and the global launch of the Quantum Cities initiative.

The success of the event was a collective endeavour, and we express our gratitude to all who played a role: speakers, panellists, exhibitors, sponsors, participants, and organisers!

Relive four incredible days of conference and exhibition - click below to watch the wrap-up video, read the news, and revisit the inspiring moments and connections made.



Gustav Kalbe

European Commission (DG Connect)

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News from the Quantum Flagship

A day in the lab of a quantum physicist



Ever wondered what it's like to work in a quantum lab? This new video takes you behind the scenes, following young quantum physicists through their daily routines at *Institut d'Optique*. From setting up experiments to collaborative problem-solving, it shows how theory meets practice and how teamwork drives progress in the exciting, challenging world of quantum research.

[WATCH VIDEO](#)

Stay up to date with the latest calls on our [funding opportunities page](#). In case you missed them, here are two calls which opened recently:

Funding for QT

Connecting quantum communication infrastructure

The European quantum communication infrastructure ([EuroQCI](#)) initiative aims to be a secure quantum communication infrastructure spanning the whole EU, including its overseas countries and territories (OCTs). A list of the ongoing national projects can be found [here](#).

The current €90mil call – open until **13 February 2025** – will support connections between Member States (including OCTs):

- where national infrastructures are already in place or planned
- and, where a cross-border link between EU countries (including OCTs) or a space segment interconnection is foreseen.

See the call text for full details and conditions.

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Funding for QT

Cooperation with Japan on quantum computing

In support of the [Japan-EU Digital Partnership](#), an open call aims to strengthen their cooperation in quantum computing. Amongst other things, it is aimed towards:

- enhanced quantum computing or hybrid quantum-high performance computing (HPC),
- developing algorithms and codes for material science, biomedical science, seismic/tsunami modelling, climate modelling applications,
- exchange of researchers and engineers between Japan and the EU.

The call is jointly funded by Horizon Europe (under EuroHPC) and the equivalent Japanese authorities. It remains open until **27 February 2025**.

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News from HPCQS

Two quantum processors for an open hybrid HPC-QS infrastructure in Europe

In 2021, **HPCQS** set the goal of building a hybrid quantum computing infrastructure in Europe that is open to science and industry and draws its performance from the combination of supercomputers with quantum computers.

In June 2024, Pasqal, a world leader in neutral atom quantum computing, delivered its **first 100+ qubit quantum processor**, Orion, to the French TGCC supercomputing centre, where it is currently being coupled with the Joliot-Curie supercomputer.

Finally, in November 2024, the **second Pasqal quantum processor** arrived at the Jülich Supercomputing Centre in Germany, where it will be coupled with the JURECA DC supercomputer and as such provide exceptional computing power as part of the Jülich UNified Infrastructure for Quantum computing.

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News from SEQUOIA

Quantum imaging without quantum light?

As part of the **SEQUOIA** project, Nicolaus Copernicus University researchers in Poland carried out a study in which they investigated whether Quantum Optical Coherence Tomography (QOCT) could be performed with classical laser light and still retain its benefits: increased resolution and image-distorting chromatic dispersion cancellation. Laser light pulses were attenuated to the level of single photons with a set of filters and measured using state-of-the-art, single-photon-sensitive detectors.

The obtained data, both theoretical and experimental, indicated that although the benefits of such an approach are limited when compared with the purely quantum light, it could be modified to provide advantageous performance. This sets an especially attractive path as classical light, unlike the quantum light, is very easy to launch and operate.

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News from SEQUOIA

Diffusion models to enhance quantum OCT analysis

Researchers at UPV (Valencia, Spain) are using generative models to tackle data scarcity in OCT analysis of rodent retinas. **SEQUOIA** compares classical Optical Coherence Tomography (OCT) with Quantum OCT (QOCT) to explore quantum benefits, requiring robust datasets often unavailable.

To address this, UPV developed a conditional denoising diffusion model to generate synthetic retinal images, enhancing datasets and boosting deep learning accuracy for retinal layer segmentation. This work was presented at the 25th International Conference on Intelligent Data Engineering and Automated Learning, showcasing how generative models advance OCT image interpretation within the SEQUOIA project.

[TO THE PAPER](#)

News from OpenSuperQPlus

OpenSuperQPlus at EQTC 2024

The **OpenSuperQPlus** (OSQ+) consortium made intensive use of this year's **EQTC** in Lisbon on 18-20 November. The partners not only helped organise the official conference programme, but also presented OSQ+ and prepared for the **International Year of Quantum Science and Technology** (IYQ) 2025 on site.

At the Quantum Flagship booth, the consortium was able to present project progress with information material, films and live demonstrations. An OSQ+ film team was on site to conduct interviews with project partners for an IYQ communication campaign. In addition to smaller sessions during the conference, the team was also able to offer a very well-attended benchmarking workshop on quantum computing.

[READ MORE](#)

News from the Community

QuIC event news

The Q-Expo series has taken off

BE PART OF IT!



MAY 14 & 15
AMSTERDAM, NL



After the success of the 2024 edition, featuring 28 exhibitors, representatives from 15 nations, 32 speakers from around the world and more than 400 participants, **Q-Expo** will return on 14-15 May 2025. Q-Expo is designed to be an event for everyone: from the domain experts to first-time users looking to grasp the potential of new quantum solutions.

14 May – Showcase

Discover quantum solutions and connect with end-users, innovators, investors, and industry leaders in an interactive environment.

15 May – Plenary Sessions

Join thought leaders and industry experts as they explore real-world implementations of quantum solutions, offer perspectives on the growing quantum economy, and share insights that shape the quantum landscape.

Get in touch via the button below to learn more about Q-Expo.

[GET IN TOUCH](#)



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