Dear Quantum Flagship member,

As always, our newsletter is packed with exciting events and updates to share with you!

You can mark your calendars for the **European Quantum Technologies Conference 2025** – the must-attend event for the European quantum community. And don't forget to register for the next insightful training session for policymakers, or for Q-Expo.

We look back at Henna Virkkunen paying us a visit at MWC2025, and reveal **new white papers** on 'AI & quantum computing', 'systematic benchmarking of quantum computers', and 'the global patent landscape in QT'. You'll also hear exciting news from the projects PROMISE, SEQUOIA and QIA, and newly selected EIC grants.

If you would like to inform the community on quantum technology (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

- **Make your city a Quantum City in 2025**

News from the Quantum Flagship

Quantum Flagship event news

Save the date: European Quantum Technologies Conference 2025

Mark your calendars for the European Quantum Technologies Conference (EQTC) 2025 – the must-attend event for the European QT community. EQTC 2025 promises to be another landmark moment in bringing together Europe's quantum ecosystem to shape the global quantum future.

This year's conference will take place in **Copenhagen, Denmark** from **10–12 November 2025** as part of the Danish EU Presidency. It is being co-organised with University of Copenhagen, Danish Ministry of Foreign Affairs, Danish Agency for Higher Education and Science and the Danish Business Authority.

More details will follow soon. But before we look ahead, let's take a moment to relive the energy, connections, and key highlights of EQTC 2024 in Lisbon.

Quantum Flagship event news

QT for policymakers: EU and national public strategies for QT

Register now for another insightful session of our policymaker training series: 'EU and national public strategies for QT', taking place on **27 March 2025**.

In this session, Marina Natalucci provides you with information on **European national strategies** for QT, while Elżbieta Hryniewicka speaks about **QuantERA mapping of national, regional and European public policies**.

Read more and register now on the training webpage.

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News from the Quantum Flagship

Europe urged to lead in AI-Quantum synergy

A new white paper, co-authored by leading European scientists and industry experts, calls on the EU to invest in the synergy between quantum computing and artificial intelligence. Targeting policymakers, the document firstly explains how quantum computing could improve the training of AI models. It provides achievable technical short-term goals and long-term goals for this new field of research. Concrete examples of use cases are detailed in domains such as drug discovery or electric vehicle management. The document is aligned with the current roadmaps of quantum hardware providers.

The second part of the white paper explores how AI can be used to improve quantum computing. Finally, the report contains recommendations for policymakers.

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News from the Quantum Flagship

Recommendations on systematic benchmarking of quantum computers published

The European Quantum Computing Benchmarking Coordination Committee (EQCBC) was

established to coordinate European activities in benchmarking quantum computers.

Architectures for quantum computing can only be scaled up when accompanied by suitable benchmarking techniques. Benchmarking becomes increasingly important as quantum technologies mature.

The EQCBC has released a paper providing a comprehensive overview of the current state and recommendations for systematic benchmarking of quantum computers. The document discusses component-level, system-level, software-level, HPC-level, and application-level benchmarks. Recommendations for future steps emphasise the need to develop standardised evaluation routines and integrate benchmarks with broader quantum technology activities.

READ WHITE PAPER

News from the Quantum Flagship

European Competence Framework for QT: new paper & call for feedback

The European Competence Framework for Quantum Technologies (CFQT) serves as a reference framework for planning, mapping, and comparing QT-related educational activities, personal qualifications, and job requirements. In the latest update, it has been expanded to include proficiency level descriptions and qualification profiles, based on feedback from the quantum industry. Two related papers have been published in *EPJ Quantum Technology*.

The next step will be the release of a certification scheme with sample tasks and further details on achieving specific proficiency levels. Please support this effort by **providing feedback** on the CFQT and the certification scheme.

Have you used the CFQT? Please take 5 minutes to complete this survey on your experience.

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News from the Quantum Flagship

Europe’s quantum power on full display at Mobile World Congress 2025


Europe’s quantum leadership shone at Mobile World Congress 2025, with groundbreaking cybersecurity advancements taking centre stage. With over 600 visitors from 30+ countries, the

Quantum Flagship stand received much attention from the attendees.

In a strong endorsement of EU quantum innovation, **Henna Virkkunen**, European Commission Vice-President for Tech Sovereignty, visited our stand (see centre image).

Another key highlight was our exhibition, featuring QKD technology by Telefónica and LuxQuanta, recently tested to secure hospital communications in Madrid. Companies like QUBO, Quside, and ThinkQuantum also showcased quantum chips and cryptography solutions.

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News from the European Commission

Funding for QT

EIC selects nine QT start-ups despite “most competitive” funding round yet

The European Innovation Council (EIC) recently announced a new batch of grants under their EIC Transition and EIC Accelerator initiatives. Both calls received the highest number of proposals in their history, over 1600 in total. Despite this fierce competition, nine European quantum technology start-ups were chosen to receive grants.

For example, the German company HQS Quantum Simulation will receive €2.5mil to work on ‘Next-Gen NMR’, and Finland’s VTT spin-out SemiQon receives €17.5mil for its ‘cryo-CMOS chips’ project. Exciting start-ups from France, Italy, Netherlands have also been chosen for “groundbreaking” projects across the spectrum of QT.

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News from the QT Projects

Three new Quantum Flagship projects recently kicked off under the Horizon Europe call ‘*Quantum sensing and metrology for market uptake*’, which targets development of mature quantum sensing technologies and devices. We will be profiling these projects in the next few newsletters, starting today with PROMISE…

PROMISE project news

PROMISE unveils next-generation quantum imaging sensors

On 5 February 2025, an international consortium of ten partners launched the PROMISE (PROtotypes of Magnetic Imaging Systems for Europe) research project to advance quantum sensing technology. Led by Tecnalia Research & Innovation Foundation (Spain), it features partners from six EU countries and will receive around €5mil in funding.

Focusing on technological development and industrial testing, PROMISE aims to bring nitrogen-vacancy (NV)-based quantum imaging sensors to a pre-industrial technology readiness level (TRL7). NV-based sensors provide calibration-free, quantitative measurements without the need for vacuum systems, cryogenics, or magnetic shielding. PROMISE is developing wide-field magnetometers for faster, real-time imaging, enhancing efficiency while reducing size, weight, power consumption, and cost – facilitating broader market adoption.

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SEQUOIA project news

New detection scheme for quantum OCT tested

Quantum OCT has traditionally used a time-domain configuration with a moving reference mirror and coincidence detection, but acquiring high-resolution images of bulk objects can take hours. In the SEQUOIA project of the Quantum Flagship, the team from Nicolaus Copernicus University (Poland) has developed a Fourier-domain detection approach that reduces acquisition time to minutes.

This new QOCT method retains coincidence detection but adds photon wavelength measurement, generating a 2D joint spectrum encoding the object's depth structure. By simply applying a Fourier transform and extracting its diagonal, the depth information can be efficiently retrieved.

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QIA project news

First operating system designed for quantum networks unveiled

Researchers from Delft University of Technology, QuTech, Universität Innsbruck, Inria, and CNRS – part of the Quantum Internet Alliance (QIA) – have introduced QNodeOS, the first operating system designed for quantum networks.

Published in *Nature* and described by the journal as “a huge practical step forward”, this

breakthrough paves the way for programmable quantum network applications.

"Our goal is to make quantum network technology accessible to all," says Prof. Dr. Stephanie Wehner, who led the work. "With QNodeOS, we're taking a major step forward – enabling users to easily program and run applications on a quantum network for the first time."

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News from the Community

News from QuIC

White paper on patent landscape published

The European Quantum Industry Consortium (QuIC) recently released a new edition of *A Portrait of the Global Patent Landscape in Quantum Technologies*.

This publication offers the most up-to-date analysis of the intellectual property (IP) landscape in quantum technologies. It also reaffirms the commitment to providing valuable insights and strengthening Europe's global position.

Read more and download the paper via the button below.

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QuIC event news

Q-Expo 2025 Opening Ceremony: Welcome to the quantum era

Q-Expo 2025 kicks off with a powerful Opening Ceremony!

Esteemed speakers include Nobel Laureate Prof. Alain Aspect, HM Constantijn van Oranje – Special Envoy, UNICC Director Sameer Chauhan, Quantum Delta NL Chair Prof. Philippe Bouyer, and QuIC President Laure Le Bars.

Q-Expo is co-organised by Quantum Delta NL as part of Quantum Meets ’25, a four-day series of quantum events. Explore the full programme and discover exciting opportunities to engage with the quantum community.

Secure your ticket for Q-Expo and check out the exhibitions and sponsorship opportunities via the buttons below!

REGISTER NOW **EXHIBITION & SPONSORSHIP**

News from Sweden

Inauguration of the National Quantum Communication Infrastructure in Sweden

A pilot quantum communications facility has been inaugurated at KTH Royal Institute of Technology (KTH). The consortium consists of leading experts from Sweden with expertise in key classical and quantum technologies needed to establish a secure communication network. It brings together the classical communication industry with the emerging quantum communication sector.

Led by Professor Katia Gallo, the research team at KTH will co-ordinate with partners from Chalmers University of Technology, Ericsson AB, Linköping University, Stockholm University, quCertify and Quantum Scopes.

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News from the World Quantum Day

Make your city a Quantum City in 2025

Celebrate the International Year of Quantum Science and Technology (IYQ) by organising an event in your city to promote public awareness of quantum science. Submit your event to the World Quantum Day website, and your city will be recognised as a *Quantum City*, with your event featured on the IYQ site.

Do you have a bold idea that brings quantum science to the public without requiring registration or travel? Apply for the Quantum City Prize, rewarding the most creative initiatives that integrate quantum science into urban spaces.

World Quantum Day – every day in 2025!

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QUANTUM FLAGSHIP

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Responsibility

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