Metrology for Quantum Communication: results and perspectives in the context of the EURAMET European Metrology Network for Quantum Technologies

QUANTUM TECHNOLOGIES

EURAMET

19NET02 EMN-Quantum

EMPIR EURAMET

The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States

The European Metrology Network for Quantum Technologies (EMN-Q) provides active coordination of European measurement science research to maintain competitiveness in the field of QT.

Smart specialization

Plan for a sustainable EU metrology infrastructure for QT [Survey of facilities, coordination strategies]

Relevant quantum Industrial needs

Developing stable links via:

-User Groups

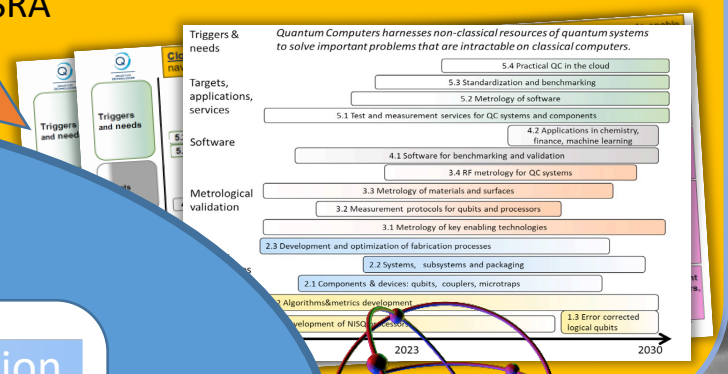
-Workshops

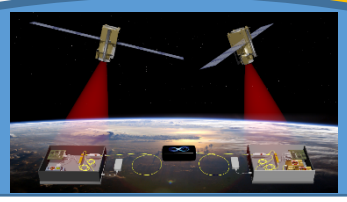
-Forum

-EMN-Q Stakeholder Advisory Board

Strategic Research Agenda and Roadmaps

Preparation of the Technological Roadmaps and of the EMN-Q SRA



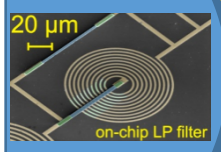


EMN-Q

QUANTUM TECHNOLOGIES

Q-Clocks | Q-Electronics | Q-Photonics

Communication
Simulation
Sensing/Metrology
Computation



QUANTUM COMMUNICATIONS HUB

UK National Quantum Technology Hub Sensors and Metrology

QUANTERA

QUTEGA Quantentechnologie – Grundlagen und Anwendungen

QUANTUM FLAGSHIP

QUTech

CENELEC

ETSI World Class Standards

BIPM

EURAMET

Standardization and certification processes

- Participation to standardization meetings
- contributions in writing standardization documents

EC Q-Flagship & *National Quantum Programs*

Coordinated actions, participations and connections with the research programs

- Watchtower on funded EU projects (metrology needs)

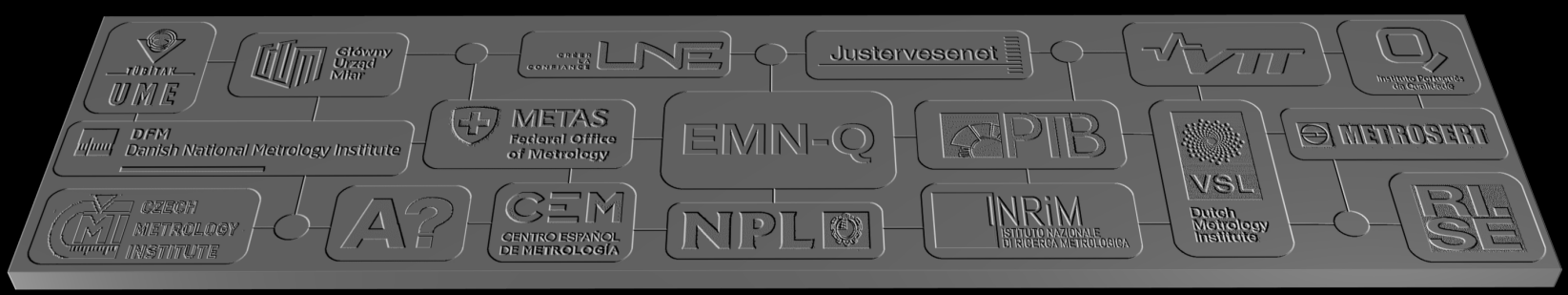
IMPACT

Our ability to manipulate quantum effects [...] is now paving the way for a **second quantum revolution** [...]. The future markets for *q-techies* are going to be at least as significant as current ICT markets. [...] Near-term technologies could be available within 5 years, notably for sensing, metrology, imaging and communication. Otherwise the anticipated time frame is 10 to 15 years and beyond." *[1]*

The EMN-Q aims to coordinate cutting-edge research activities in the context of all these R&D *q-techies*, and the development of the necessary metrological infrastructure for quantum devices.

[1] https://ec.europa.eu/digital-single-market/en/news/european-commission-will-launch-eu1-billion-quantum-technologies-flagship

CONTACTS



EUROPEAN METROLOGY NETWORKS