



Council of the
European Union

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NOTE

From: Commission
To: Council

Subject: Quantum Technologies Flagship
- Information from the Commission

Delegations will find attached an information note from the Commission on the above-mentioned subject with a view to the Competitiveness Council on 29 November 2016.

COMPETITIVENESS COUNCIL 29.11.2016

AOB POINT: FLAGSHIP INITIATIVE ON QUANTUM TECHNOLOGIES

Context

In April 2016, the Commission adopted, the **European Cloud Initiative**¹. It was accompanied by a staff working document on **Quantum Technologies**², announcing the intention to set-up a Flagship initiative worth one billion Euros of joint public/private investment over the next 10 years. It is the third FET Flagship that the Commission will support, after Graphene and the Human Brain Project.

The Competitiveness Council in its conclusions³ from May 2016 welcomed the discussions on the launch of the Quantum Flagship.

Quantum Technologies

The Commission has been funding basic research activities in quantum for almost two decades and invested so far more than 350 million Euros covering a wide variety of quantum technologies.

European researchers working in this area have received many prestigious awards including the Nobel Prize for physics: Albert Fert, Serge Haroche, Theodor Hänsch. All these have nurtured the development of world-class expertise and have helped Europe become a global technological leader in the field.

Some Member States have launched their own national research initiatives on quantum or are planning soon to do so. At the level of transnational cooperation, the QuantERA⁴ initiative gathers 26 countries and a funding of 37M€ aiming at aligning national priorities.

The field is now at a turning point. The Flagship will permit to build on the research efforts and turn Europe's excellent quantum research results into a European industrial leadership.

¹ COM(2016)178 of 19 April 2016

² SWD(2016)107 of 19 April 2016

³ Council conclusions of 26 May 2016 (9524/16)

⁴ <https://ncn.gov.pl/quantera?language=en>

International initiatives

Quantum is high on many agendas worldwide. Europe has many world-class scientists in the domain, but there is little industrial take-up so far in Europe. Meanwhile, companies such as Google, IBM, Intel, Microsoft, D-Wave are actively working in this area.

Preparation of the Quantum Technology Flagship

In order to prepare the Quantum Technology Flagship, the Commission set up a high level expert group last September. Its mandate is to advise the Commission on the Research and Innovation Agenda in the field of Quantum Technologies, but also on the implementation and governance models of the Flagship.

The group is chaired by Professor Mlynek and gathers 24 distinguished members (half from academia, half from industry) from all over Europe.

The High Level Group on Quantum Technologies will provide their first input in January, in order to help define the Flagship's ramp-up phase. The final report of the group, due in June 2017, will help in setting the full Flagship's long term vision and implementation in the next Framework programme.

The group works in a transparent way and has a mandate to consult broadly the community: research institutes and organisations, industrial players, SMEs, and others.
