



## Europe puts forward proposal for Joint Undertaking on Smart Networks and Services towards 6G

The European Commission has adopted its legislative proposal for a strategic European partnership on Smart Networks and Services as a Joint Undertaking, with a public R&I investment of €900 million over the new long-term budget period 2021-2027. The Joint Undertaking will coordinate research activities on 6G technology under Horizon Europe as well as 5G deployment initiatives under the Connecting Europe Facility Digital and other programmes.



The proposal for the Smart Networks and Services Joint Undertaking adopted by the Commission today is part of the Single Basic Act establishing the set of nine Joint Undertakings under Horizon Europe. The proposal will now be discussed among Member States in the Council with a planned launch in autumn this year.

The Smart Networks and Services Joint Undertaking has two main objectives:

- Fostering Europe's technological sovereignty in 6G by implementing the related research and innovation (R&I) programme leading to the conception and standardisation around 2025, as well as preparation for early market adoption of 6G technologies by the end of the decade. Mobilising a broad set of stakeholders will be key to address strategic areas of the networks and services value chain from edge- and cloud-based service provisioning to market opportunities in new components and devices beyond smartphones.
- Boosting 5G deployment in Europe in view of developing digital lead markets and of enabling the digital and green transition of the economy and society. For this objective, the Joint

Undertaking will coordinate strategic guidance for the relevant programmes under the Connecting Europe Facility, in particular 5G Corridors. It will also contribute to the coordination with national programmes including under the Recovery and Resilience Facility as well as other European programmes and facilities such as Digital Europe Programme and InvestEU.

## **Strategic governance**

A key differentiator to the predecessor - the 5G-PPP - will be a new governance model putting the European industry in the driving seat together with the Commission and closely associating Member States to its strategic decision making, e.g. in the area of Europe's technological sovereignty and maximizing synergies between European and national funding programmes.

The budget certainty over the full budget period of the next seven years will allow for the strategic planning and implementation of a truly roadmap-based 6G research programme. The public funding of €900 million committed upfront by the Commission will be matched by the private sector leading to a total investment of at least €1.8 billion, which can be expected to leverage broader R&I investments in Europe in the order of €10 billion.

## **Background**

### **From 5G to 6G**

In the next few years, 5G technology and standards will evolve in several phases, just as deployment advances. Operators in 23 EU Member States have already launched commercial 5G networks in major cities, whereas a more comprehensive deployment covering all urban areas and major transport paths across Europe is expected by 2025. Advanced 5G network and service infrastructures are key enablers for a broad range of consumer, business and industrial services, but will also be an important starting point for the introduction of 6G technologies in Europe.

R&I initiatives on 6G technologies are now starting in leading regions world-wide, with the first products and infrastructures expected for the end of this decade. In Europe, a first set of 6G projects worth €60 million has already been launched last month under the 5G-PPP with the Hexa-X flagship developing a first 6G system concept complemented by 8 projects investigating specific technologies for 6G.

6G systems are expected to offer a new step change in performance from Gigabit towards Terabit capacities and sub-millisecond response times, to enable new critical applications such as real-time automation or extended reality ("Internet of Senses").

Moreover, new smart network technologies and architectures will need to drastically enhance the energy efficiency of connectivity infrastructures to manage major traffic growth while keeping electromagnetic fields (EMF) under strict safety limits. These technologies will form the basis for a human-centric Next-Generation Internet (NGI) and address Sustainable Development Goals (SDGs) such as accessibility and affordability of technology.

### **Technology sovereignty**

Our trading partners are heavily engaged in 6G developments, including the USA and Japan, with focus on software-based networks and China aiming to build on its strong technology and Intellectual Property Rights position. There will be opportunities and challenges concerning new business models and players through software networks with architectures such as Open RAN and the convergence

with new technologies in the area of cloud and edge computing, AI, as well as components and devices beyond smartphones. The two major European equipment suppliers are in a world-leading position, with a combined global mobile equipment market share in the order of 40%, and more than 50% of the relevant Intellectual Property Rights share held by the four major global suppliers.

Building on this basis, that was created also thanks to the European R&I investments under the 5G-PPP over the last seven years, Europe needs to position itself to ensure the best outcome both for the digital economy at large, but also for the technology capabilities of our existing and emerging industrial leaders. This calls for a strategic partnership with a solid R&I roadmap set out and followed by a critical mass of European actors.

## Related documents

- Procedure
- Proposal for a Council Regulation establishing the Joint Undertakings under Horizon Europe - COM/2021/87 final (.pdf) (page 289: European partnership on SNS JU), and its Annex (.pdf)
- Impact Assessment Report on SNS JU (.pdf), and its Annex (.pdf)
- Executive Summary of the Impact Assessment Report on SNS JU (.pdf)

## More information

- 5G Public Private Partnership
- Candidates for European Partnerships in digital, industry and space
- 5G Brochure
- 5G Factsheet

## Related topics

Advanced Digital Technologies 5G/6G Smart Networks and Services Joint Undertaking

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