3GPP standards and SNS-JU impact Webinar March 2025

Hexa-X-II: Best practices and success stories

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Hexa-X-II

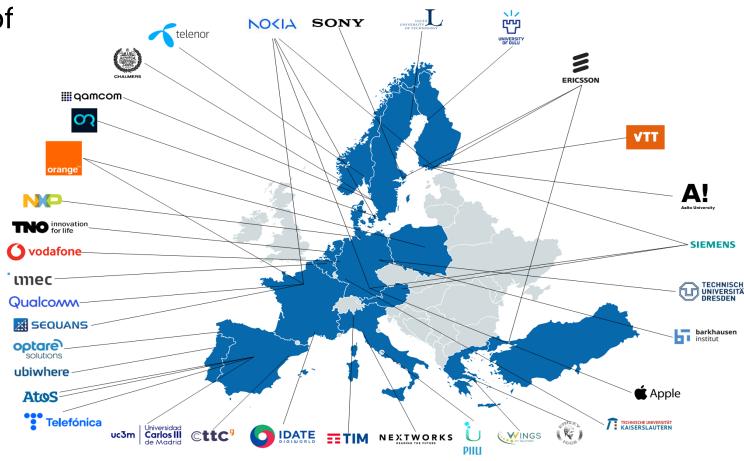
hexa-x-ii.eu



### Hexa-X-II overview



- Hexa-X-II is the European level 6G Flagship
- Focus on continued development of technology and defining the 6G platform and system
- Funded through Horizon Europe SNS-JU
- 44 partners
  - Cover the entire value-stack from hardware to system to platform to applications to service providers and a strong academic presence
- Nokia is overall leader
- Ericsson is technical manager



### Consortium





# Overall objectives of Hexa-X-II

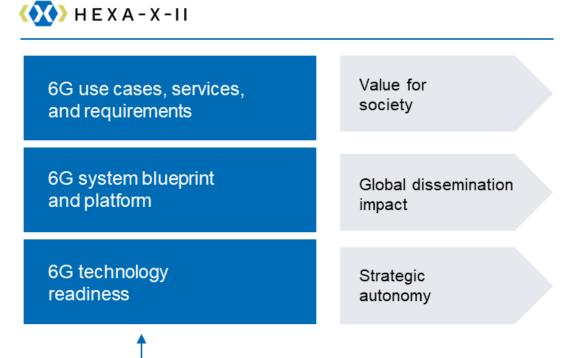


A holistic flagship towards the 6G platform and system to inspire digital transformation for the world to act together in meeting needs in society and ecosystems with novel 6G services





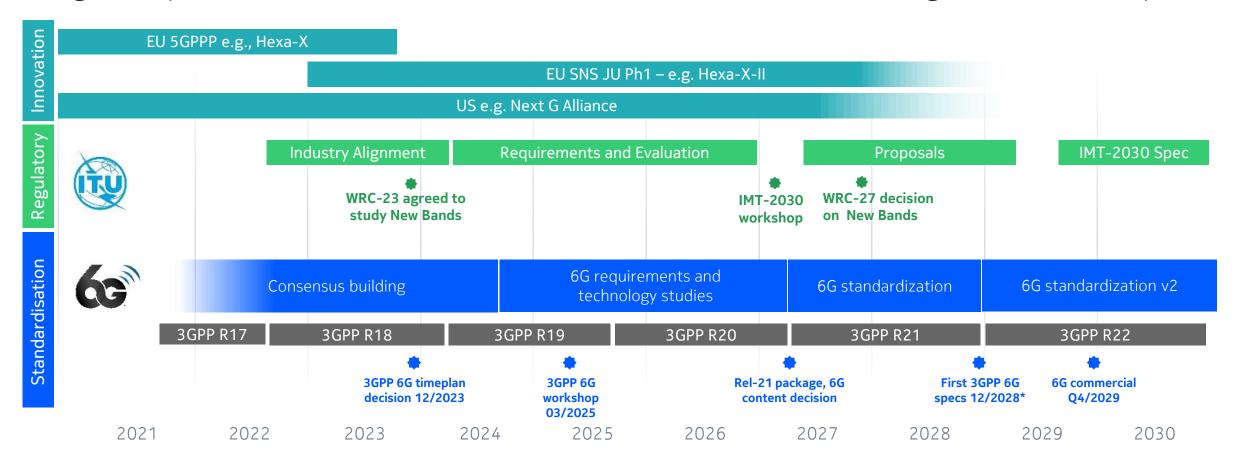
Hexa-X & Horizon-2020 candidate enablers



SNS stream B projects

# 6G success depends on a global, unified approach

Regulatory, innovation and standardization timelines must be brought into harmony





## European input

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- 3GPP SA1 invited SNS to participate in the workshop and present the envisioned 6G Use Cases based on the projects' work
- As SNS values collaboration with all EU stakeholders, it has invited EU National Initiatives to contribute to a coherent <u>European view</u>, formulated through SNS-ICE
- The following projects have contributed:



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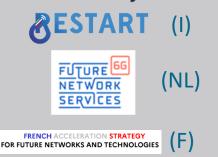
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**SNS** projects





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Platform

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**National initiatives** 

# Updated use cases based on external input





Autonomous Embodied Agents Within Flexible Manufacturing

Mesh Embodied Intelligence

Collaborative Robots

Physical Awareness

Network Assisted 3D Mobility

Network Physical Data Exposure

Wide-area Surveillance/Smart Crowd Monitoring

**Environmental Radio Sensing** 

#### **Seamless Immersive Reality**

Immersive Enterprise and Industry

**Immersive Education** 

**Immersive Gaming** 

Live and Interactive Immersive Content Creation

Immersive **Experience** 

Sustainability



Digital

**Twins** 

**Cloud Continuum** 

**Smart Maintenance** 

**Realtime Digital Twins** 

Digital Twins (Building Model)

Public Protection & Disaster relief
Digital Twin

#### **Human-Centric Networks**

Industrial Sensors Network for Safe Production & Manufacturing

Wireless In-Vehicle Network

Virtual Control Room

Trusted **Environments** 

Fully Connected World

#### **Ubiquitous and Resilient Network**

Digital Sobriety and Enhanced Awareness

Earth Monitor, Sustainable Food Production

**Autonomous Supply Chain** 

Virtualization of Device Functionalities

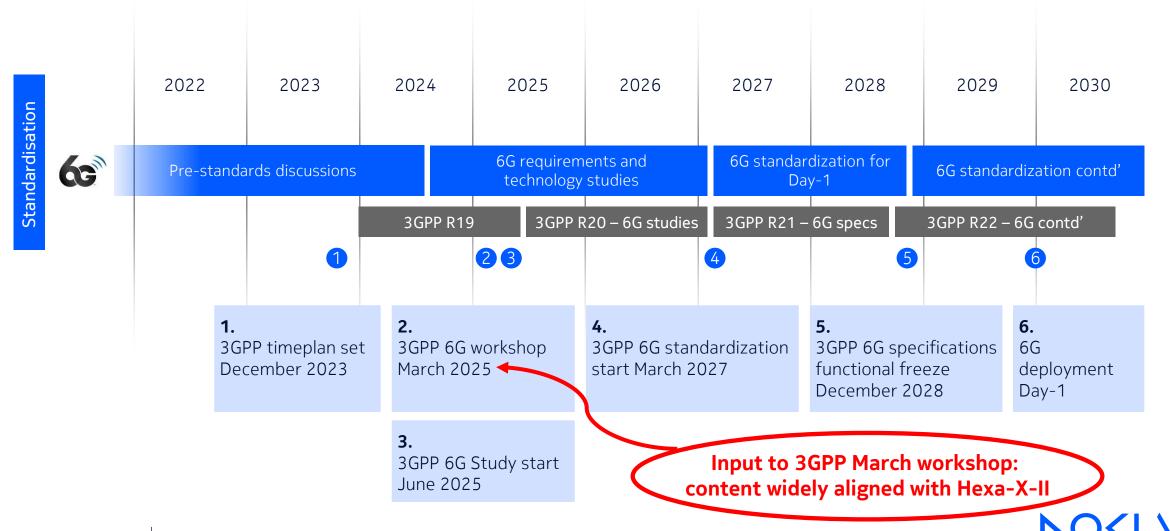
Resilient Communication for Safety Critical Applications

4 use cases agreed in 3GPP coming from Hexa-X-II, input made to SA1

## 6G will come with Rel-21

### Commercialization will start Q4 2029





## Additional observations



- Amount of std contributions by Hexa-X-II by March 18th 2025: 147
  - Top rank among SNS JU projects
- Many workshops by Hexa-X-II in cooperation with others, impacts in std expected
  - Architecture, sustainability, NTN, ...
- 6G IA has a pre-standards working group
- Personal reflections
  - Is your organization creating good enough linkage between the personnel in the joint research projects and the people working on standards?
  - Plan to create research output before the start of the standards process
    - European level research projects work on different timelines than standards
      - Challenging to work in parallel
    - If you are late, you miss the opportunity
    - If you are too early, you might not be able to build on latest findings that are available later and you need to follow up to time clearly after the project
  - Think, if your research results give reasoning for new standards
    - Impact on sub THz discussions at ETSI by Hexa
  - Input to discussions at right time
    - E.g. invited talks at ETSI, ITU and Radio Spectrum Policy Group by Hexa-X-II
    - Regular updates to the O-RAN community by Hexa-X-II

# Hexa-X-II results from <a href="https://hexa-x-ii.eu/results/">https://hexa-x-ii.eu/results/</a>



- D1.2 6G use cases and requirements
- D1.3 Environmental and social view on 6G
- D2.3 Interim overall 6G system design
- D2.4 End-to-end system evaluation results from the interim overall 6G system design
- D3.5 Final architectural framework and analysis
- D4.5 Final design of 6G Radio solutions and Promising Radio Innovations
- D5.3 Initial design and validation of technologies and architecture of 6G devices and infrastructure
- D6.5 Final Design on 6G Smart Network Management Framework
- Also presentations and videos from our workshops



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