



The Standards People

ETSI Research Conference 2023

Maximizing the Impact of European 6G
Research through Standardization

Hexa-X-II Impact creation towards 6G era

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Nokia Standards and Technology

6G SNS

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1. Project Overview

- **Project Name:** Hexa-X-II
 - **Project website:** <https://hexa-x-ii.eu/>

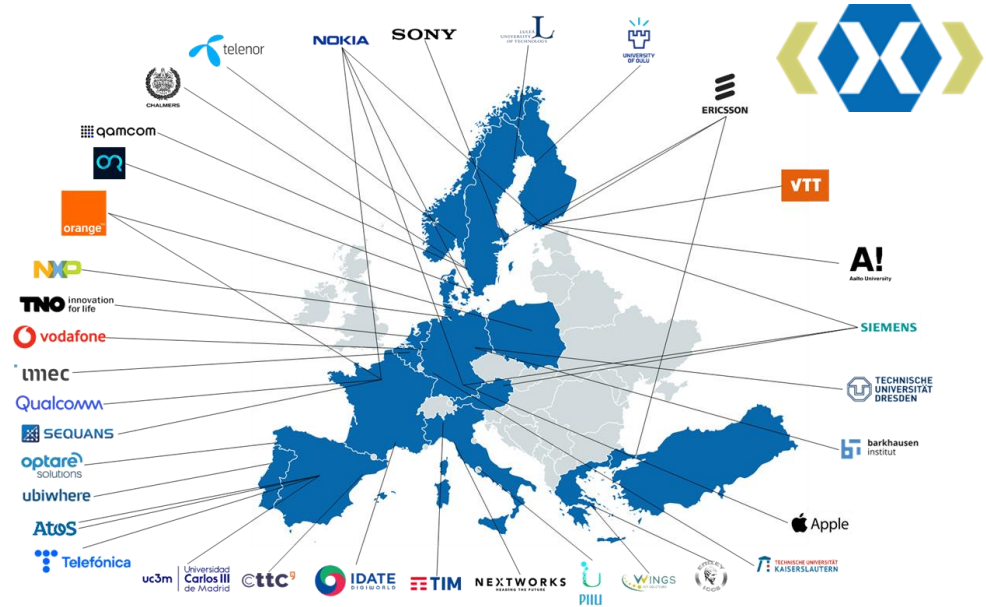
- **Stream:** B-01-05

- **Members:** 44 partners

- Cover the entire value-stack from hardware to system to platform to applications to service providers and a strong academic presence.

- **Other:**

- Three gradually evolving system level PoCs: 1) essential management mechanisms, 2) network architecture elements and refinements of management and 3) radio and devices aspects. All complemented by component-PoCs.



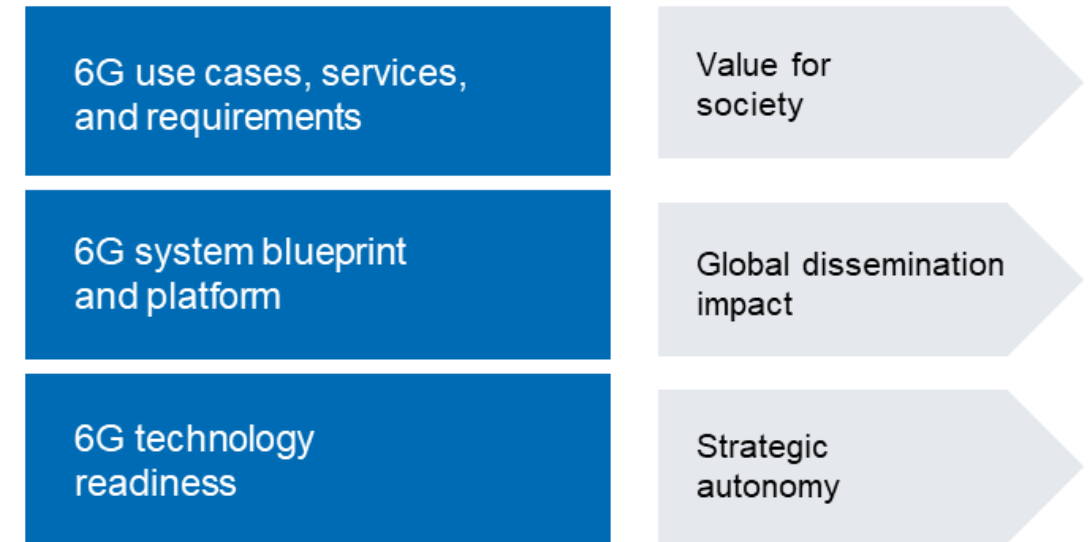
Overall objectives of Hexa-X-II



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



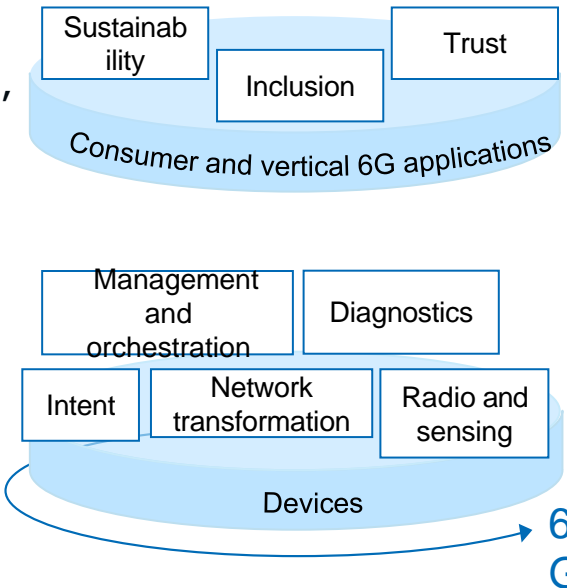
SNS stream B projects

2. Technical Information

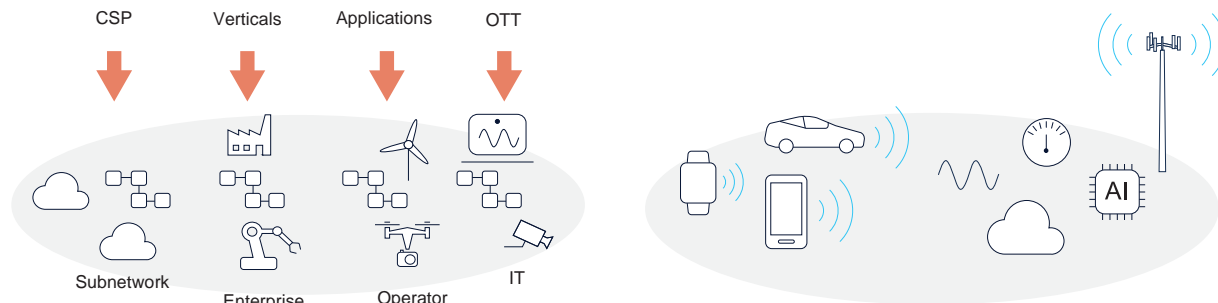


• Project Key Objectives:

1. Requirements for the sustainable, inclusive, and trustworthy 6G platform,
2. Blueprint and system validation of the sustainable, inclusive, and trustworthy 6G platform,
3. Radio access solutions for communication considering the requirements on 6G services,
4. Network sensing, compute, and AI for novel digital services,
5. Efficient network realisation, implementation, and management,
6. Impact creation towards a global and holistic 6G era.

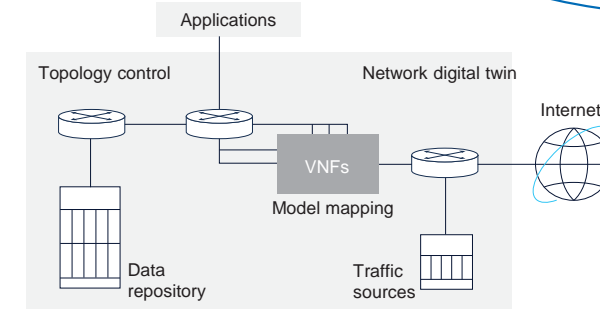


• Key technologies investigated:



Sustainable trustworthy AI/ML based control. Programmable Networks

6G radio interface and protocols

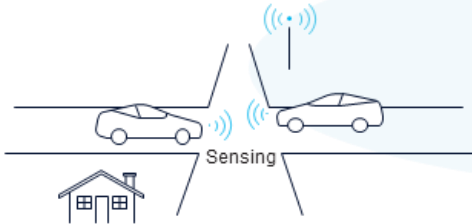
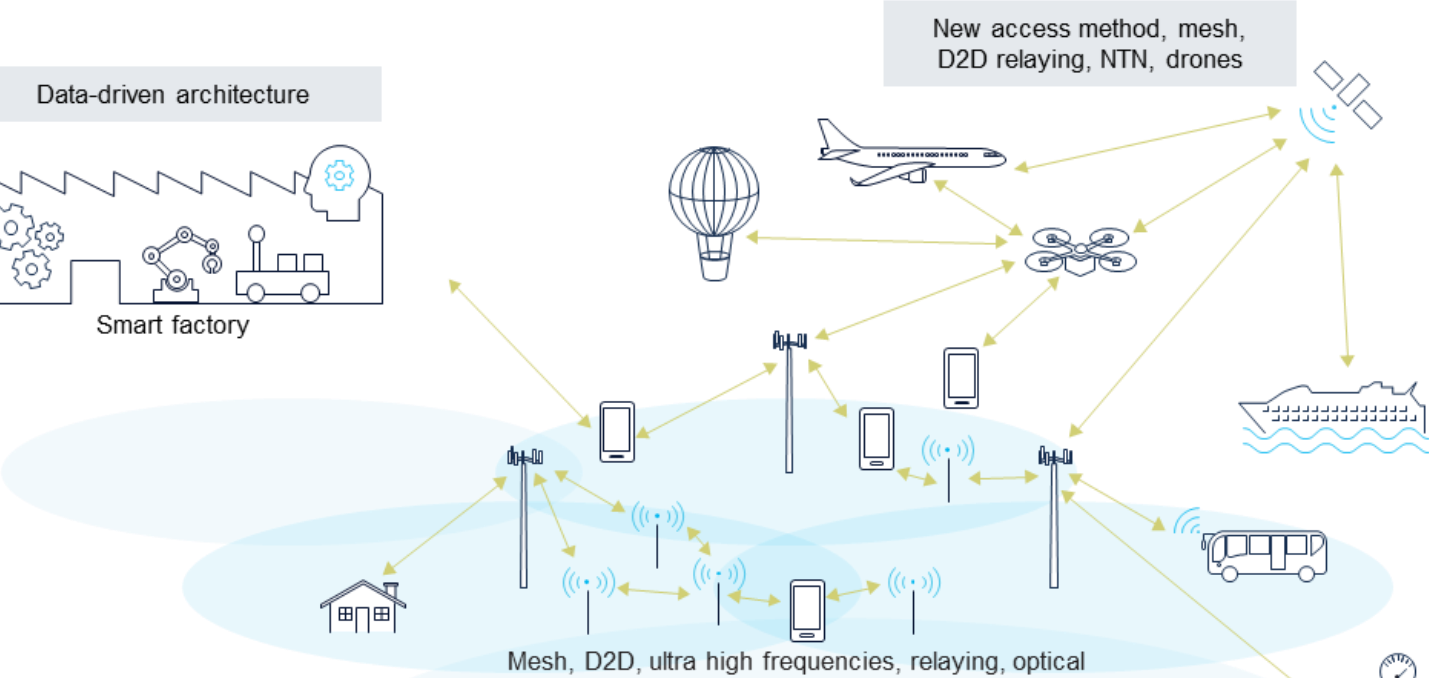
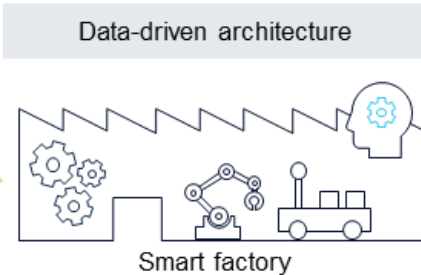


Digital twin for system-level security and resilience

6G architecture framework



In-robot sub-networks



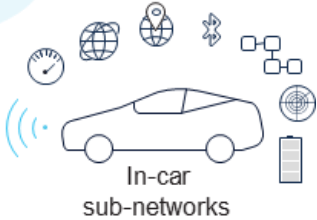
Beyond communication, sensing, compute, etc



Modularized network



Modularized network

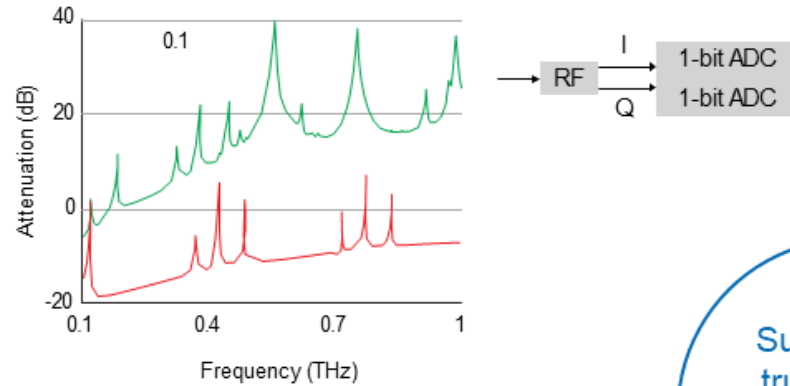


In-car sub-networks

6G radio evolution & innovation



Towards THz communications



Joint communications and sensing

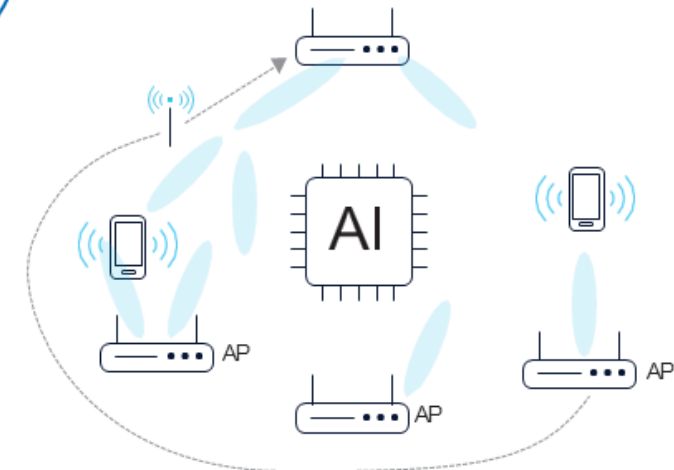


Sustainable,
trustworthy,
inclusive and holistic
radio design

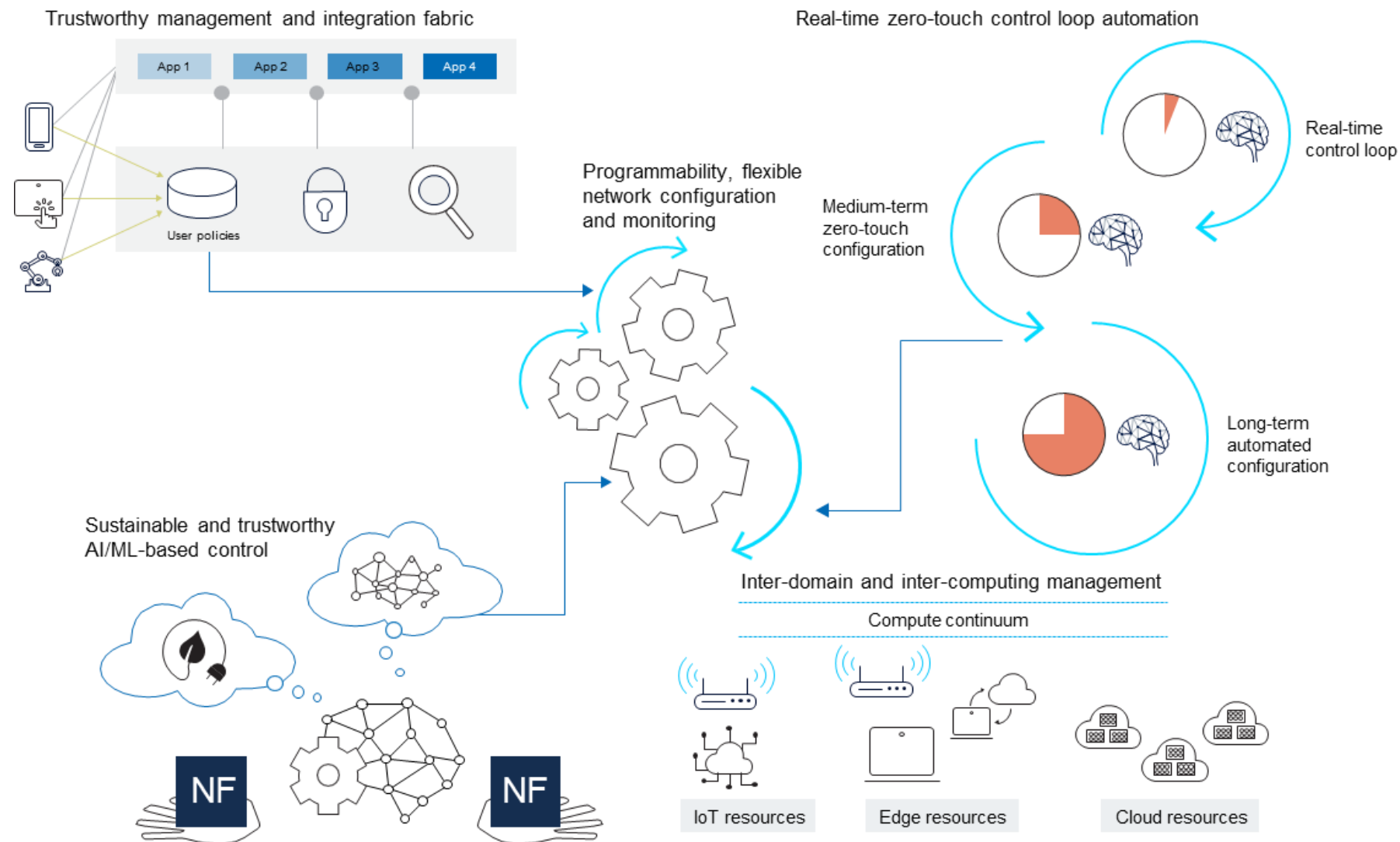
Flexible spectrum access solutions



Intelligent radio air-interface design



Smart Network Management



3. Planned Standardization Activities



- **Potential targeted standardization bodies / groups:** 3GPP, ITU-T/R, ETSI, O-RAN, IETF and other relevant industry fora
- **Standardization planning and estimated time plan:**
 - Starting with use cases, requirement and KVIs/KPIs in interaction with other SNS projects

3GPP - R20/R21 releases onwards

- **SA1:** use cases and requirements
- **SA2:** modular architecture, use of AI/ML, RAN-CN interface.
- **SA3:** Security
- **RAN:** intelligent radio, flexible spectrum access, JCS
- **SA5:** flexible network configuration. Sustainability.

ITU-R/T (started in Hexa-X)

- Sustainability.
- Flexible spectrum use and access.
- Requirements

ETSI (started in Hexa-X)

- Towards THz communication.
- Real-time zero-touch control loop automation.
- Trustworthy management and integration fabric.
- Inter-domain and inter-computing management.