

EUCNC 2023 & 6G Summit
June 6th, 2023

Update from Hexa-X, Hexa-X-II and global alignment

Mikko.Uusitalo@Nokia-Bell-Labs.com

hexa-x.eu

hexa-x-ii.eu

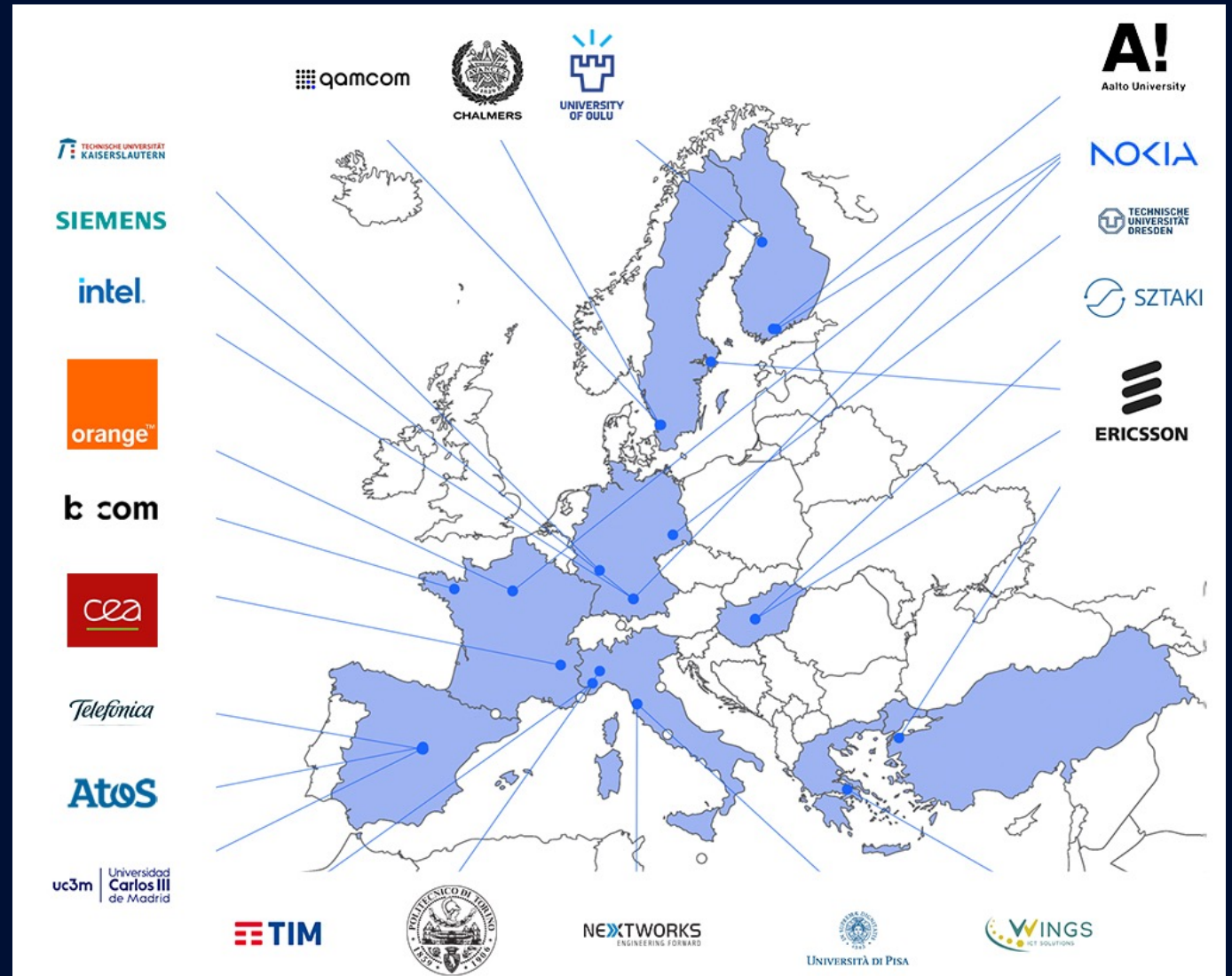


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101015956.

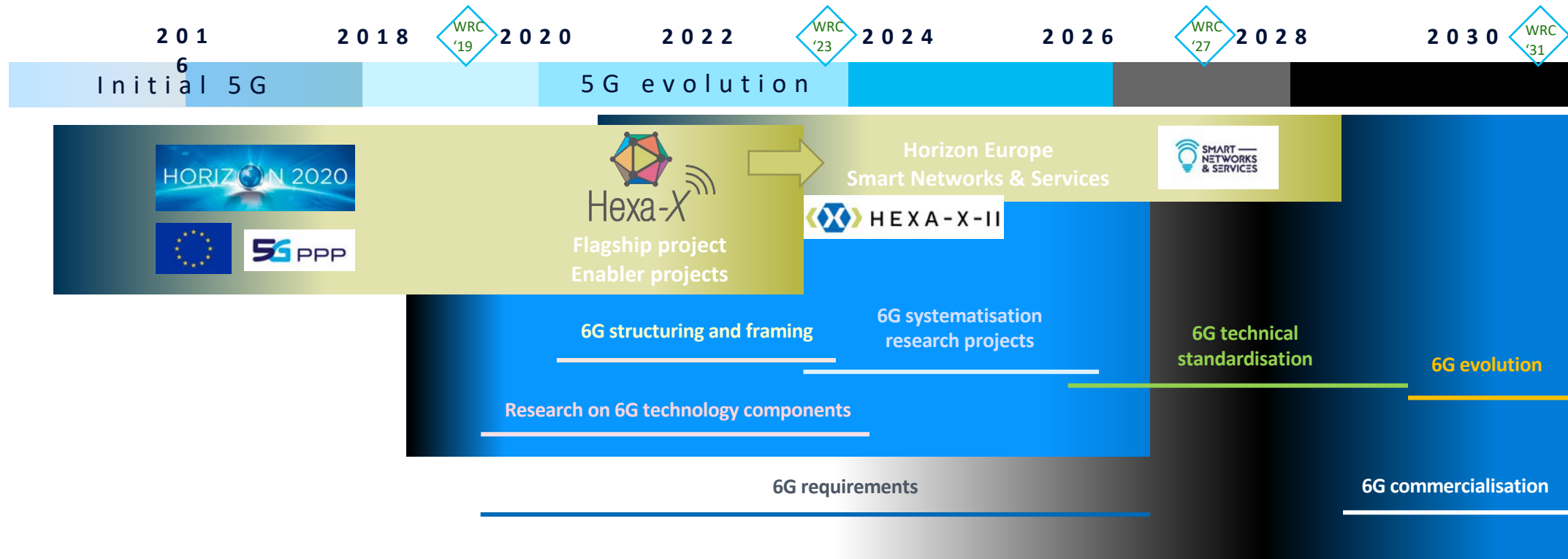
Hexa-X overview



- Hexa-X is the European flagship research initiative to develop the foundation and contribute to industry consensus leading to 6G
- The focus is on structuring, framing, and developing technology for connectivity needs in the 2030 timeframe
- Funded through EU H2020 ICT-52
- 25 partners
 - NW vendors
 - Operators
 - Industry
 - Academia
 - SMEs
- Nokia is overall leader
- Ericsson is technical manager



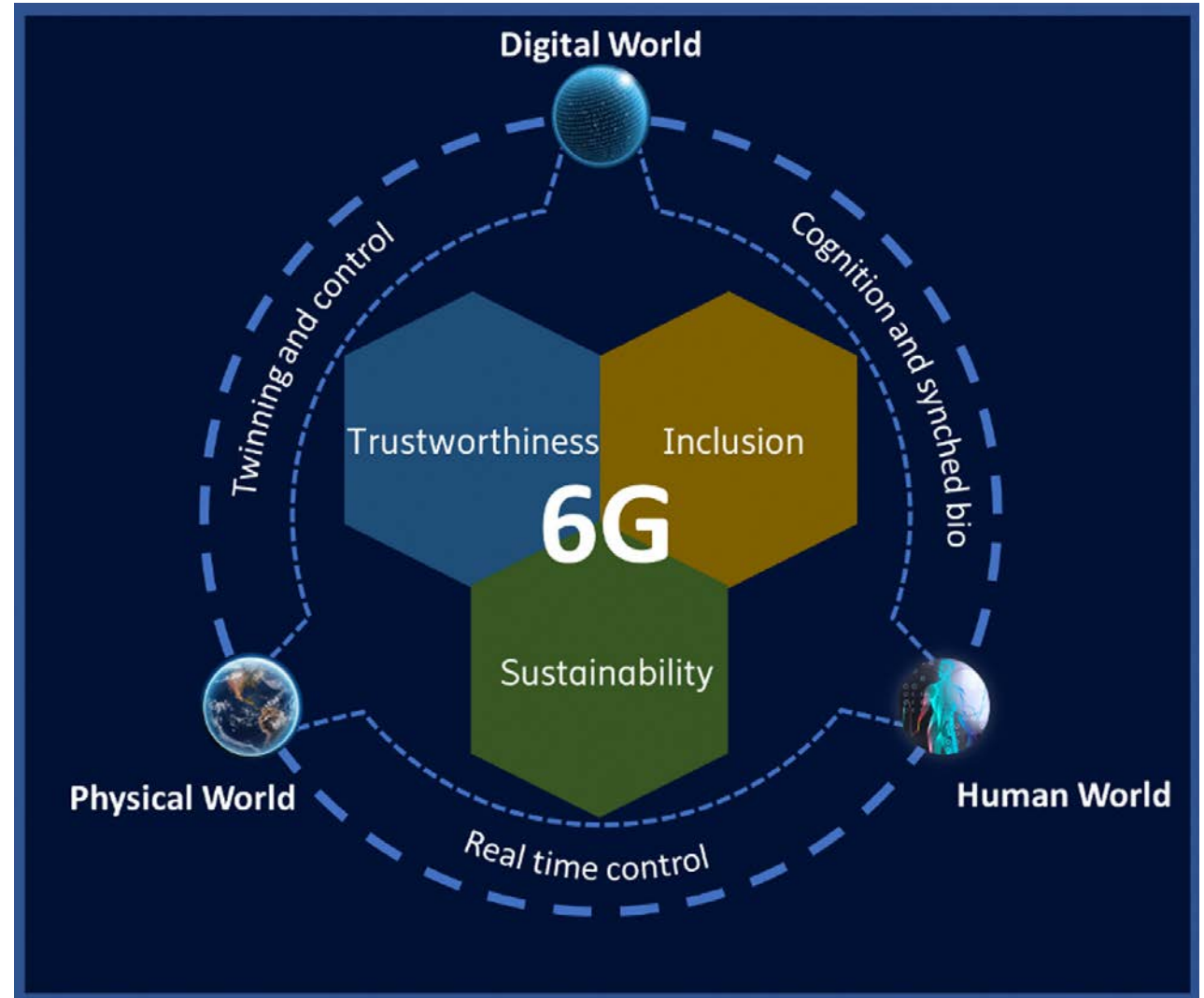
Timeline



Hexa-X vision on 6G



- Connecting the physical, digital and human world
- Key values:
 - Sustainability
 - Inclusion
 - Trustworthiness
- Research challenges:
 - Connecting intelligence
 - Network of networks
 - Sustainability
 - Global service coverage
 - Extreme experience
 - Trustworthiness



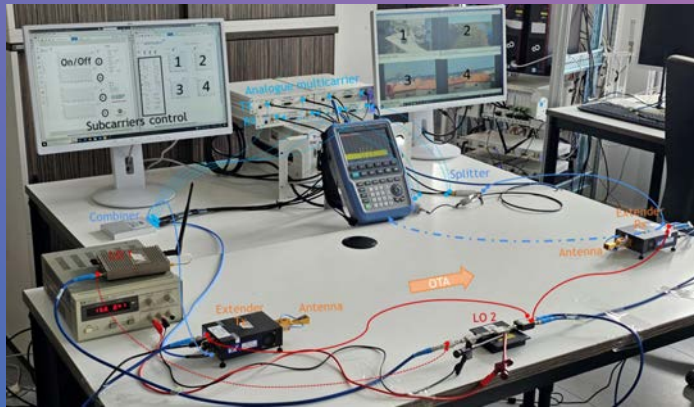
Hexa-X-II builds on output from Hexa-X and other projects

- 6G will be much broader than the radio-access technology
A flexible platform providing connectivity, data, compute, intelligence, and sensing
- New results available at hexa-x.eu/deliverables/
 - D1.2 Expanded 6G vision, use cases and societal values - including aspects of sustainability, security and spectrum
 - D1.3 Targets and requirements for 6G - initial E2E architecture
 - D2.3 Radio models and enabling techniques towards ultra-high data rate links and capacity in 6G
 - D3.3 Final models and measurements for localisation and sensing
 - D4.3 AI-driven communication & computation co-design: final solutions
 - D5.3 Final 6G architectural enablers and technological solutions
 - D6.3 Final evaluation of service management and orchestration mechanisms
 - D7.3 Special-purpose functionalities: final solutions

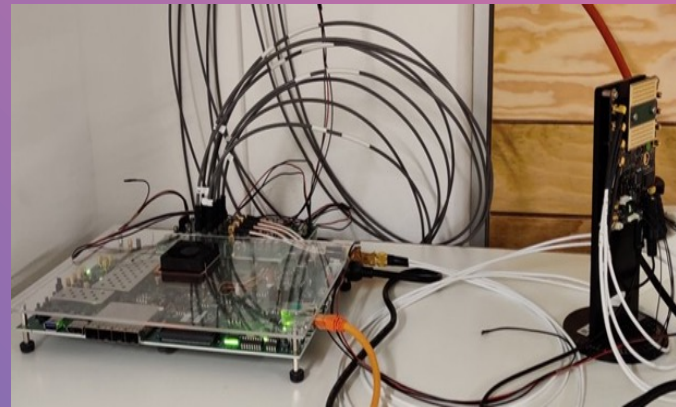
Come and see six 6G demos in Hexa-X booth #H02:06 at EUCNC



6G waveforms



Joint communication and sensing



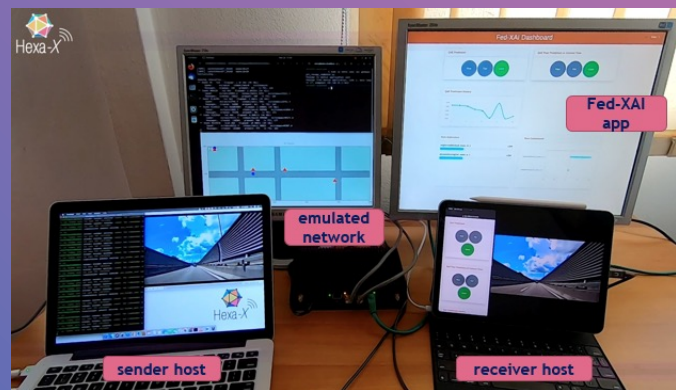
Data-driven device-edge-cloud continuum



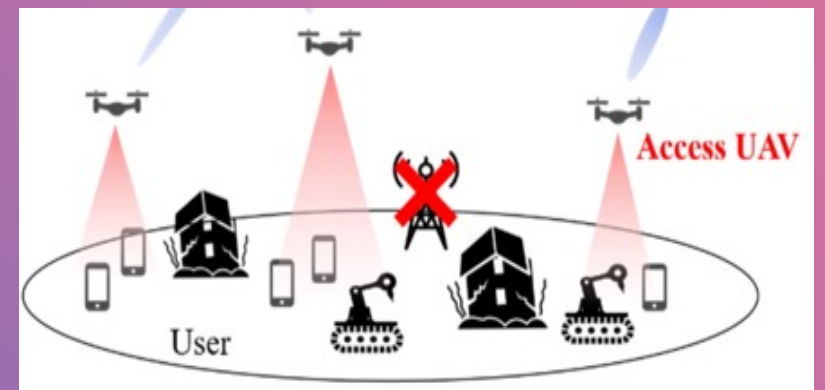
Collaborative robots



Federated explainable AI



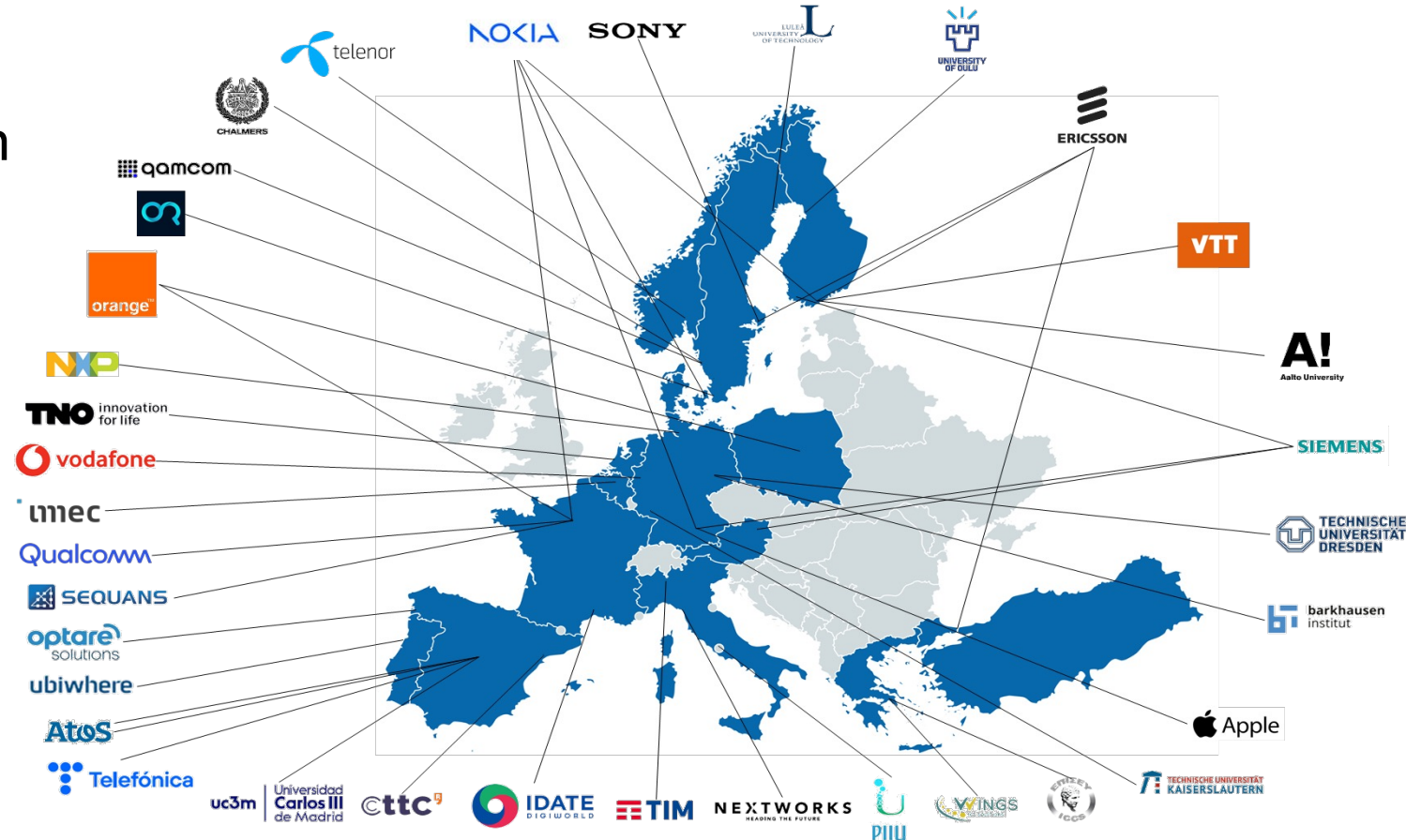
Flexible topologies



Hexa-X-II overview



- Hexa-X-II is the next European level 6G Flagship
- Focus will be continued development of technology and define 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



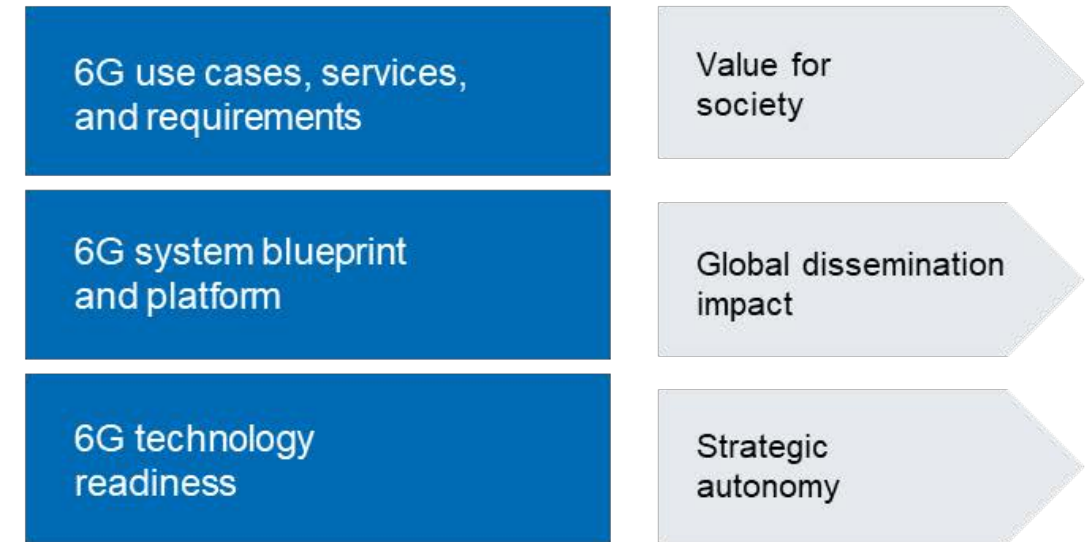


Overall objectives of Hexa-X-II

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

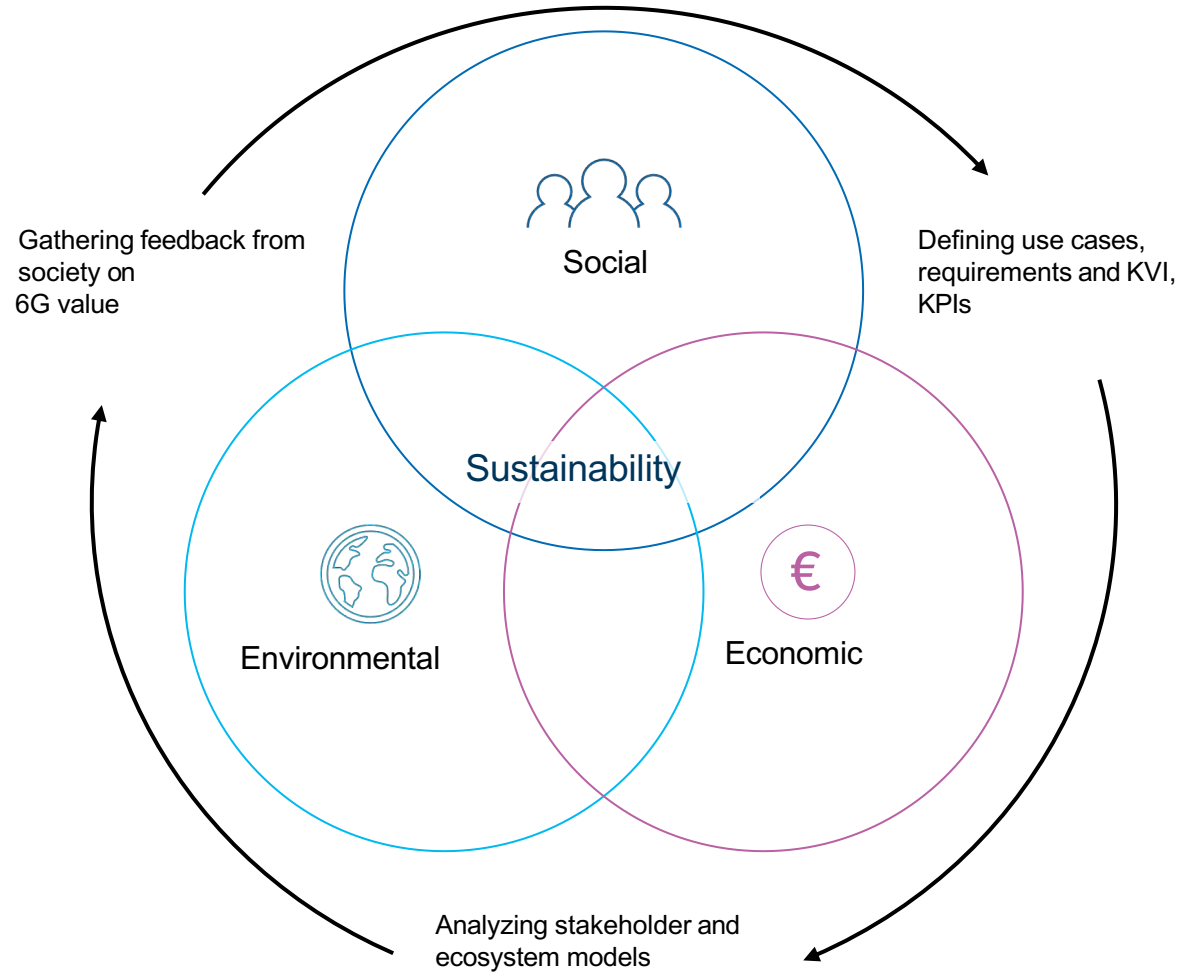


Hexa-X & Horizon-2020 candidate enablers

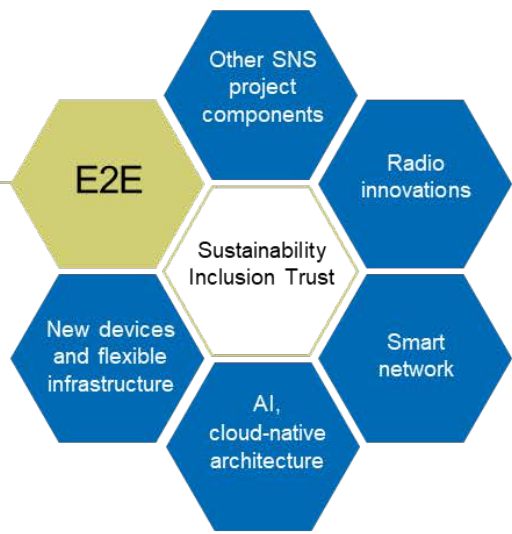
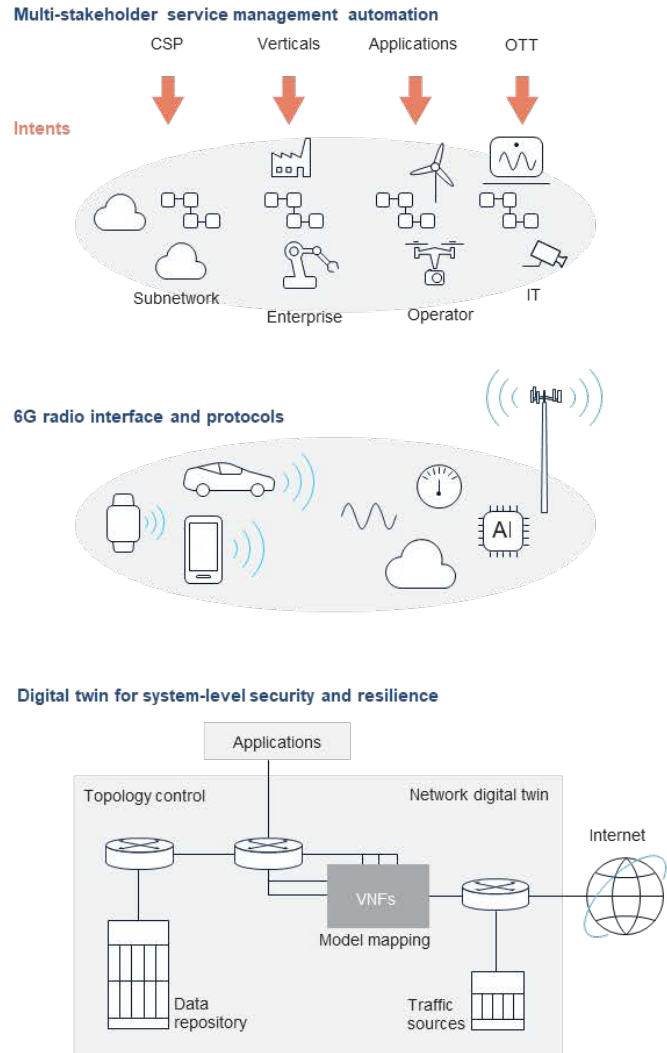


SNS stream B projects

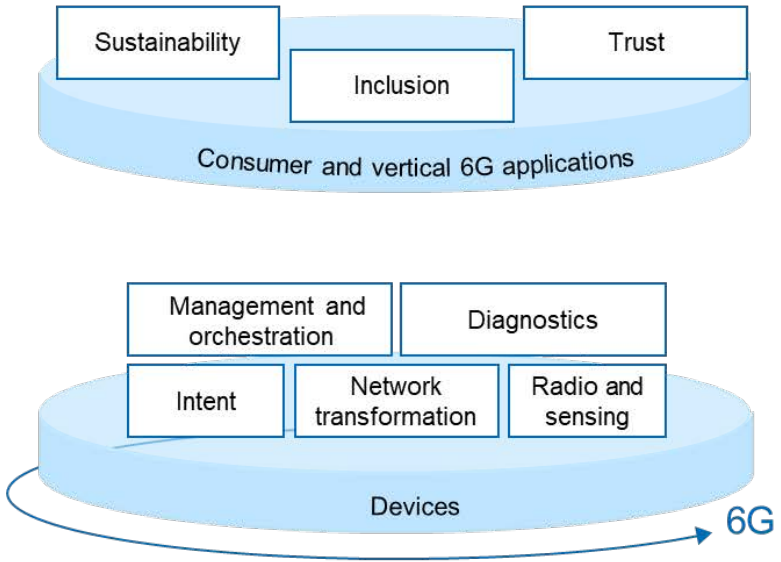
WP1 Value, requirements and ecosystems



WP2 End-to-end system



6G network platform blueprint

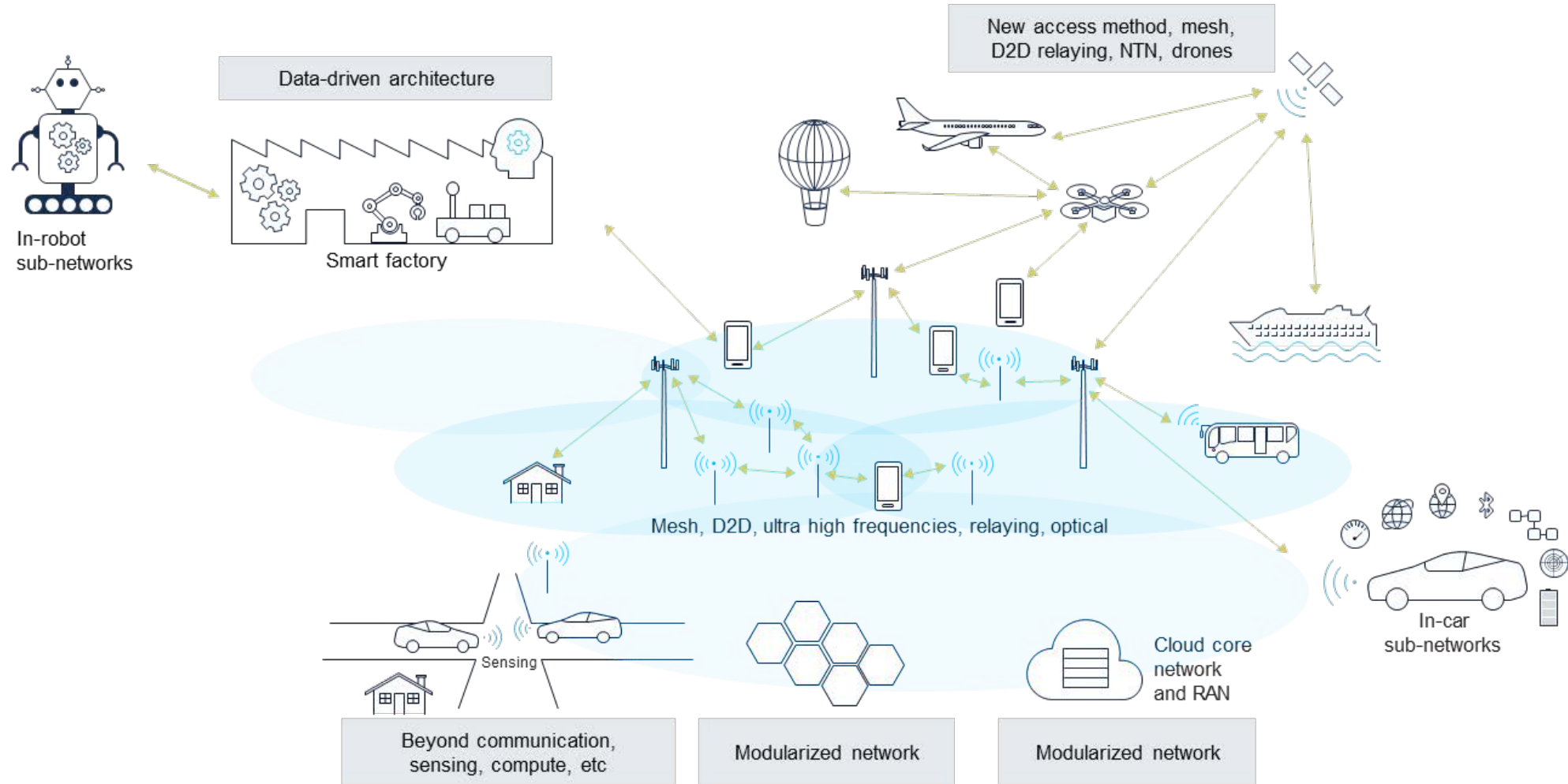


E2E system validation

WP3 6G architecture design



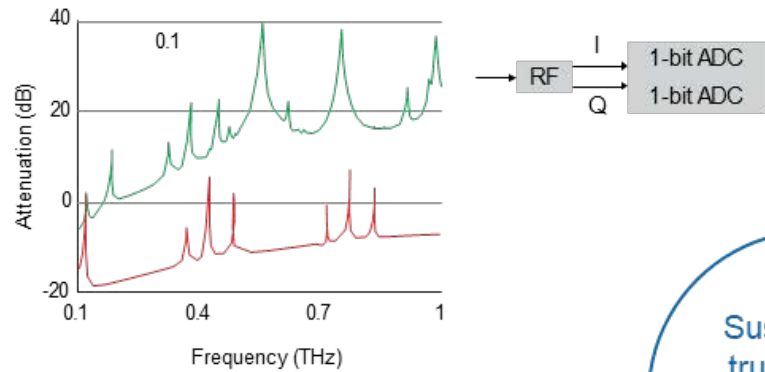
In-robot sub-networks



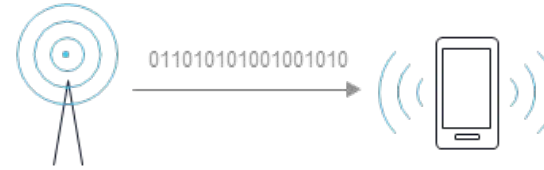
WP4 Radio evolution and innovation



Towards THz communications



Joint communications and sensing

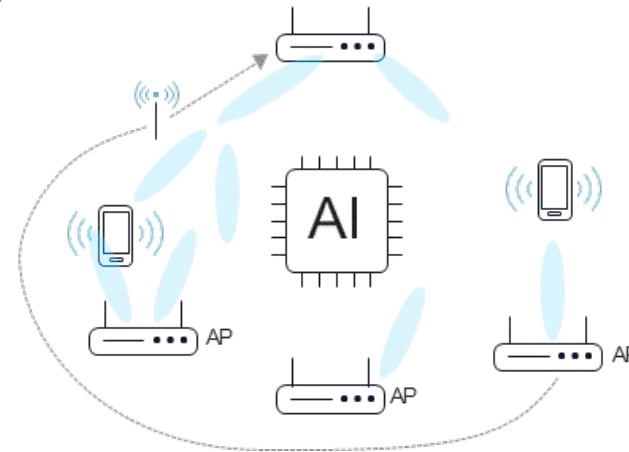


Flexible spectrum access solutions

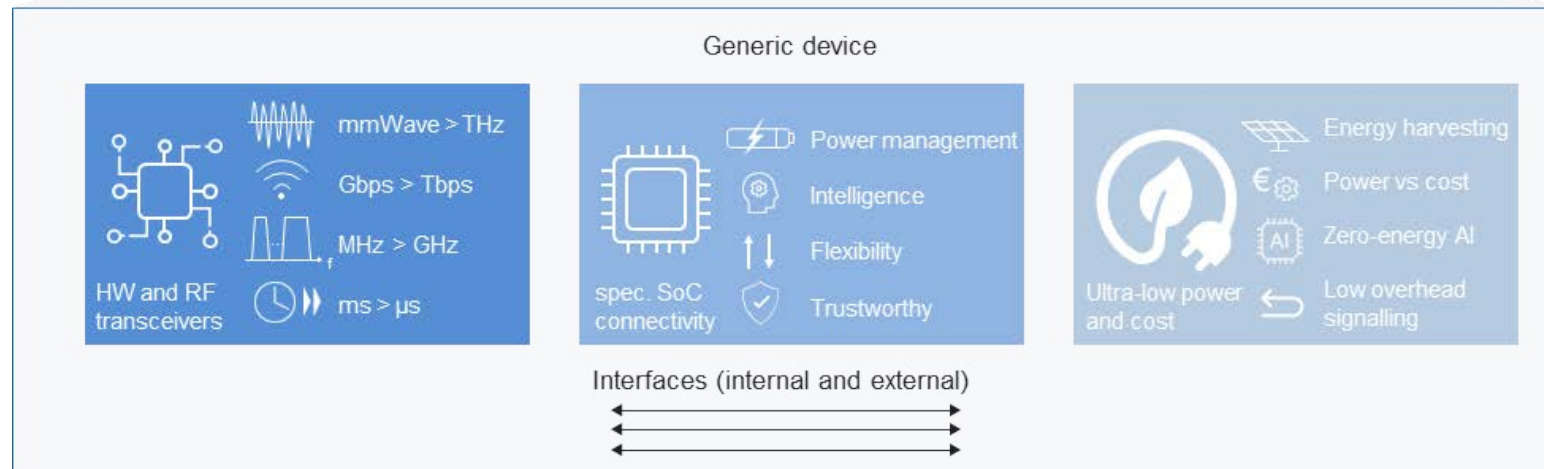
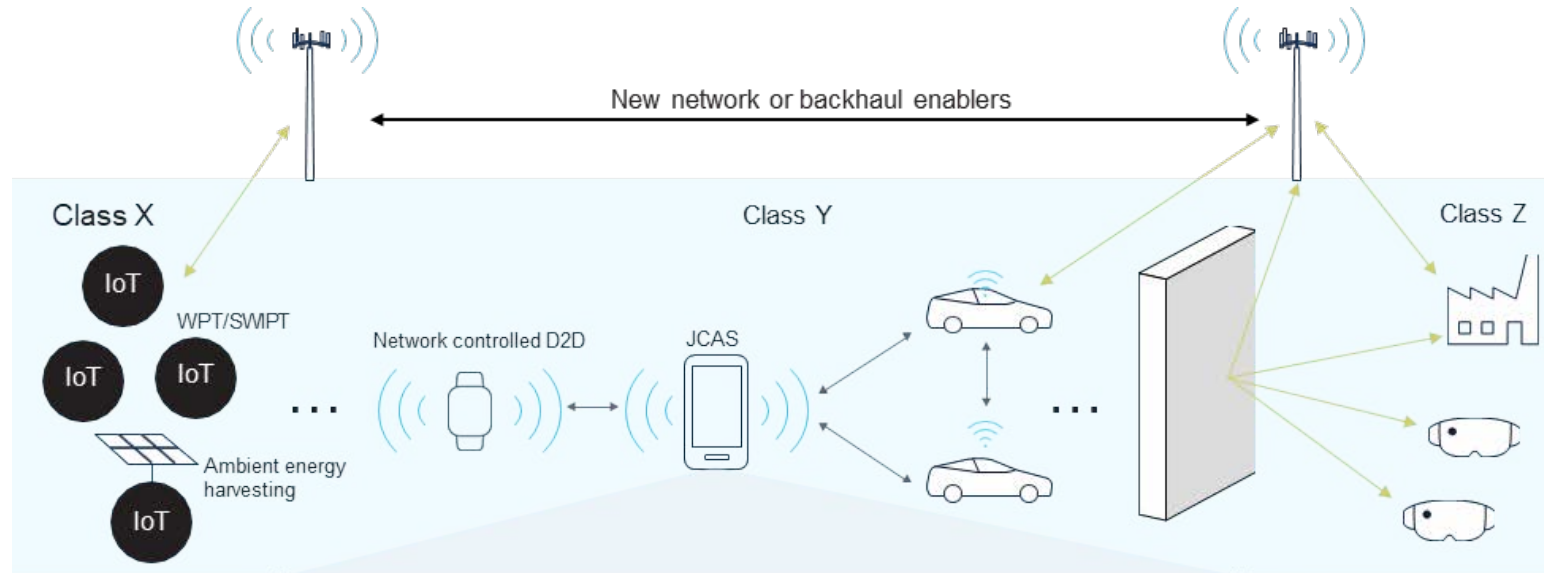


Sustainable,
trustworthy,
inclusive and holistic
radio design

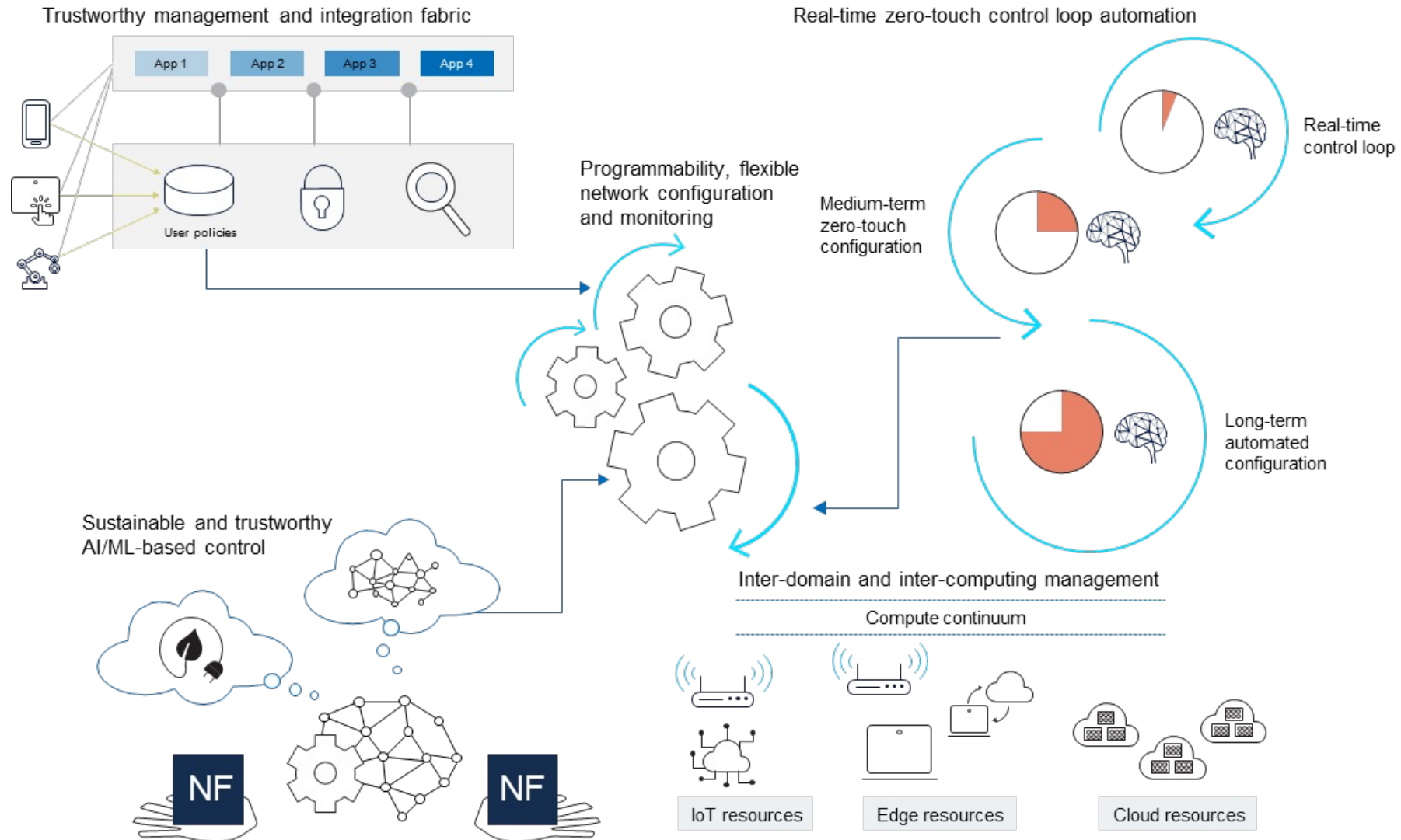
Intelligent radio air-interface design



WP5 Future devices and flexible infrastructure



WP6 Smart Network Management





HEXA-X-II.EU //   



Hexa-X-II project has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101095759.