



Overview of the 6G-SHINE project

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- **Project Name:** 6G SHort range extreme communication IN Entities (6G-SHINE)

- **Grant agreement ID:** 101095738
- **Total cost:** € 5 097 275
- **Start/end date:** March 1, 2023 – August 31, 2025
- **Project website:** 6gshine.eu (under construction)

- **12 partners:**

Academia: Aalborg University (Denmark) (**Coordinator & TM**);
Universidad Miguel Hernandez de Elche (Spain); National Inter-
University Consortium for Telecommunications (Italy)

Device/User equipment vendors: Apple (Germany); Sony
(Sweden)

Network equipment vendor: Nokia (Denmark)

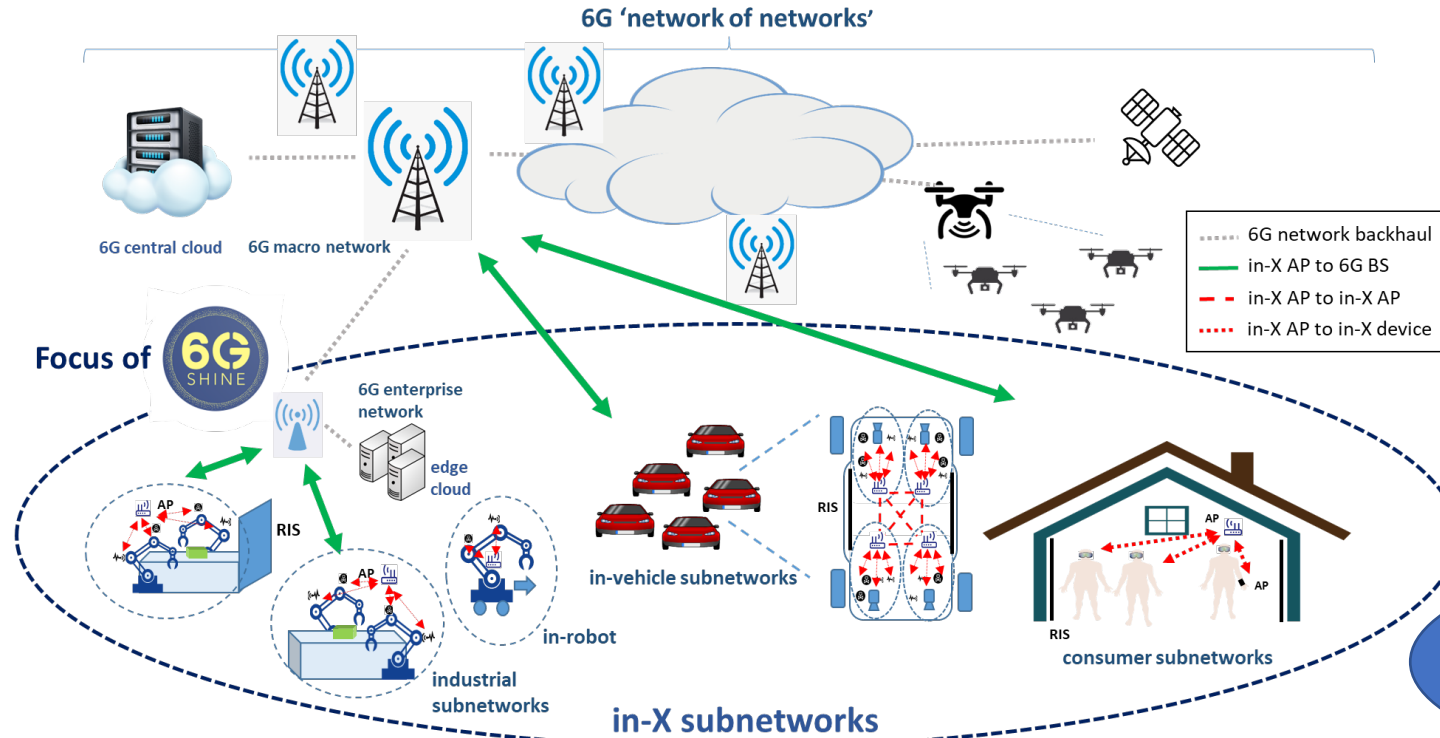
**Manufacture of equipment and components for cars/vehicles,
industrial automation and consumer electronics:** Bosch
(Germany)

Research and development institutions: Fraunhofer IIS
(Germany); IMEC (Belgium); InterDigital (UK)

Test equipment manufacturers: Keysight (Finland)

High-tech SME: Cogninn (Greece)





Focus on **in-X subnetworks**, short range low power cells to be installed in entities like robots, vehicles, production modules, classrooms, etc.

Demanding performance requirements in terms of latency, reliability, or data rates

Potential high density subnetwork crowds (e.g., vehicles in a congested road)

Standalone operations, with potential support of a broader 6G network

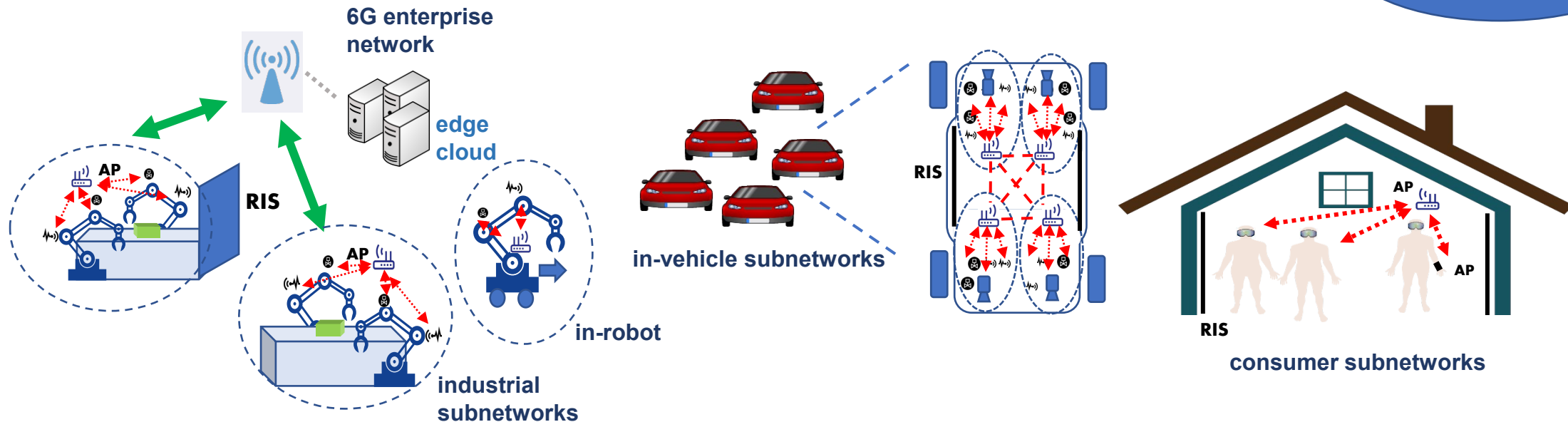
Possible in-X scenarios/use cases

- Industrial: Fast closed loop control (e.g, force control) in robots and production modules
- In-vehicle: motor control, breaking, advanced driver assistance systems (ADAS) sensors
- In-room/classrooms: XR applications for education; gaming; entertainment

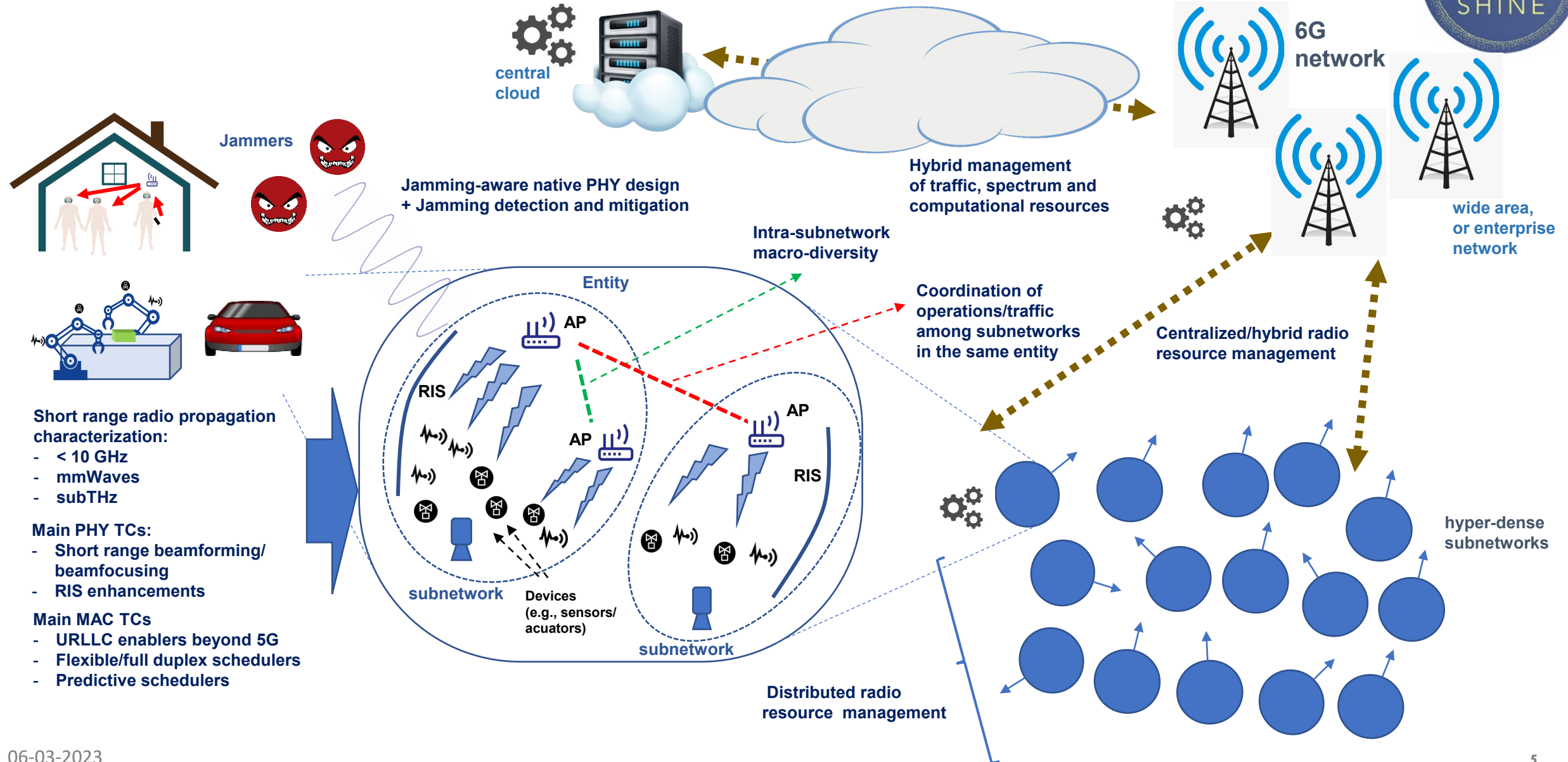
Key project objectives

- Define relevant application scenarios, use cases and architectures for in-X subnetworks, and analyze related performance requirements.
- Design novel radio enablers for 'extreme' communication in in-X subnetworks, and their smooth integration into the larger 6G 'network of networks'
- Validate the most promising technology components via proof-of-concepts in laboratory facilities.

**focus on
low TRL: 2-4**



6G-SHINE technology components (TCs)



WP1: Project management

WP6: Communication, dissemination and exploitation

WP2: Scenarios, use cases and requirements

- Identification of relevant use cases and requirements for subnetworks
- Data traffic characterization
- Radio propagation characterization (< 10 GHz, mmWave, subTHz)

WP3: PHY & MAC enablers

- RIS & beamfocusing
- Jamming-robust PHY design
- URLLC enablers beyond 5G
- Predictive schedulers
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WP4: Radio resource and operation management

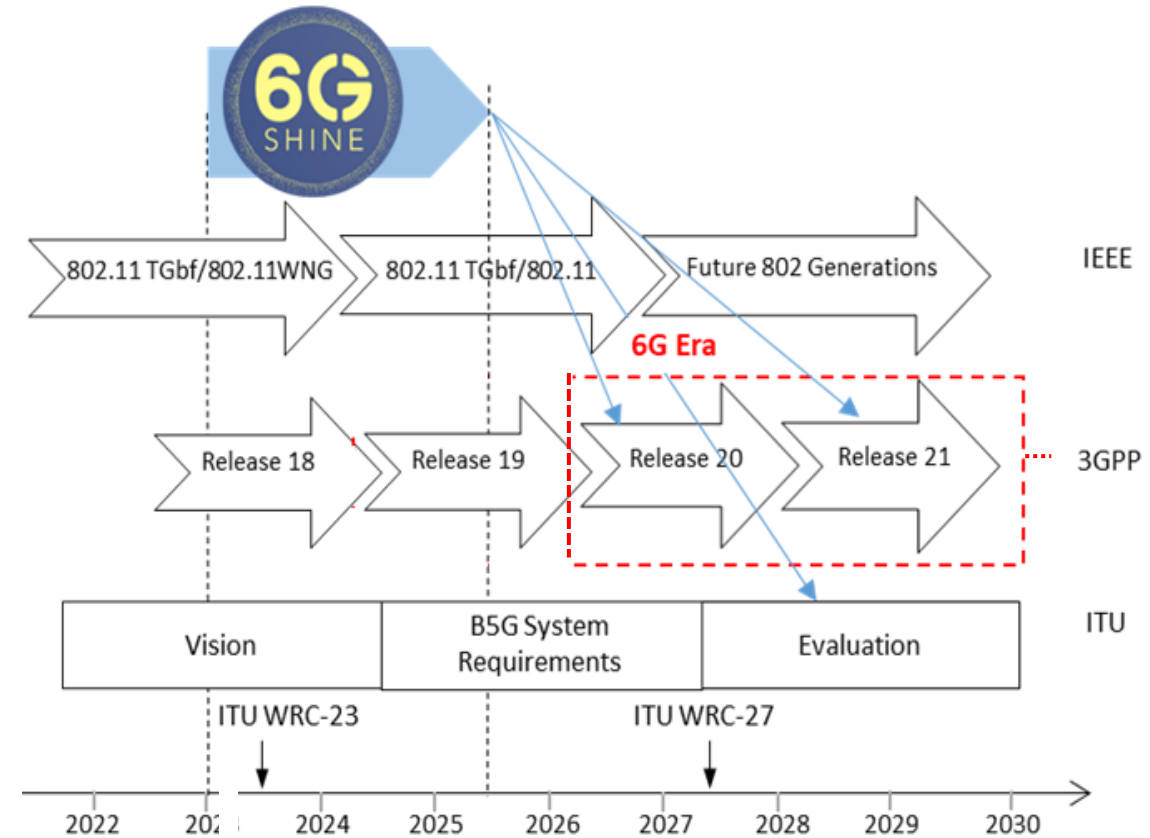
- Centralized/distributed/hybrid radio resource management
- Jamming detection and mitigation
- Management of traffic, spectrum and computational resource
- ...

SELECTION

WP5: Experimental verification and proof of concept

- URLLC enablers
- Jamming-resilient transceiver
- Radio resource management solutions
- Low latency channel emulation
-

- **Bringing wireless pervasiveness to a level never experienced earlier!**
- Delivery of novel disruptive concepts for short range communication leveraging characteristics of in-X deployment and connectivity to the larger 6G network for a high-performant yet cost-effective design.
 - Scientific publications, IPRs, Whitepapers, technical presentation & demonstrations
 - Standardization: contributions and/or proposal of study items to 3GPP, IEEE, ETSI, 5G-ACIA, 5GAA.
 - Focus on pre-standardization





THANK YOU



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