5G METRO – in a nutshell

Within the Build Approach, the hybridization of physical and digital environments is increasingly positioned as a cornerstone of next-generation collaborative and operational frameworks. This integration, underpinned by Augmented Reality (AR), Virtual Reality (VR), and telepresence robotics, supports the development of intelligent, immersive, and resilient infrastructures capable of bridging geographical divides and enhancing real-time decision-making. EDGE computing plays a critical enabling role in this paradigm by decentralizing data processing and minimizing latency—factors essential for ensuring seamless, context-aware experiences in hybrid spaces. By positioning computation closer to the point of interaction, EDGE allows AR/VR systems and telepresence robots to operate with higher responsiveness, autonomy, and adaptability. In the Build Approach, this technological stack facilitates not only remote engagement but also a reconfiguration of how knowledge is co-constructed and operational workflows are optimized across distributed environments. It empowers stakeholders to collaborate dynamically in complex, data-rich settings such as smart construction sites, connected campuses, and hybrid innovation labs. EDGE thus emerges as a foundational layer that supports the convergence of physical infrastructure with digitally enhanced interaction, advancing the objectives of sustainable, inclusive, and intelligent development.

Build Approach & EDGE's Role

- Supports real-time responsiveness for AR/VR and robotics
- Reduces reliance on centralized infrastructure
- Enables decentralized, smart decision-making in the field

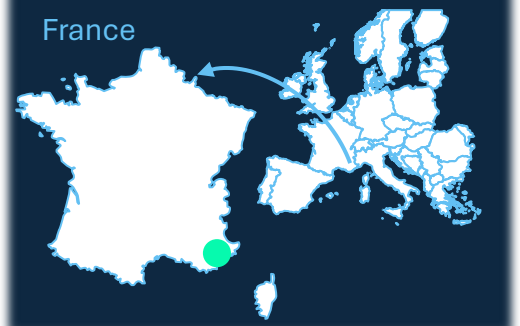
How will the project progress?

- Conceptual Design & Stakeholder Alignment
- Technical Architecture & Infrastructure Setup
- Pilot Deployment & User Testing
- Scaling & Integration into Real Environments
- Continuous Improvement & Knowledge Transfer

More information

Webpage: https://5gmetro.imredd.fr/ LinkedIn https://www.linkedin.com/company/5g-metro/ BlueSky @5gmetro.bsky.social

Location



Use-Case Cluster

- Education
- Health
- Robotics

Key Facts

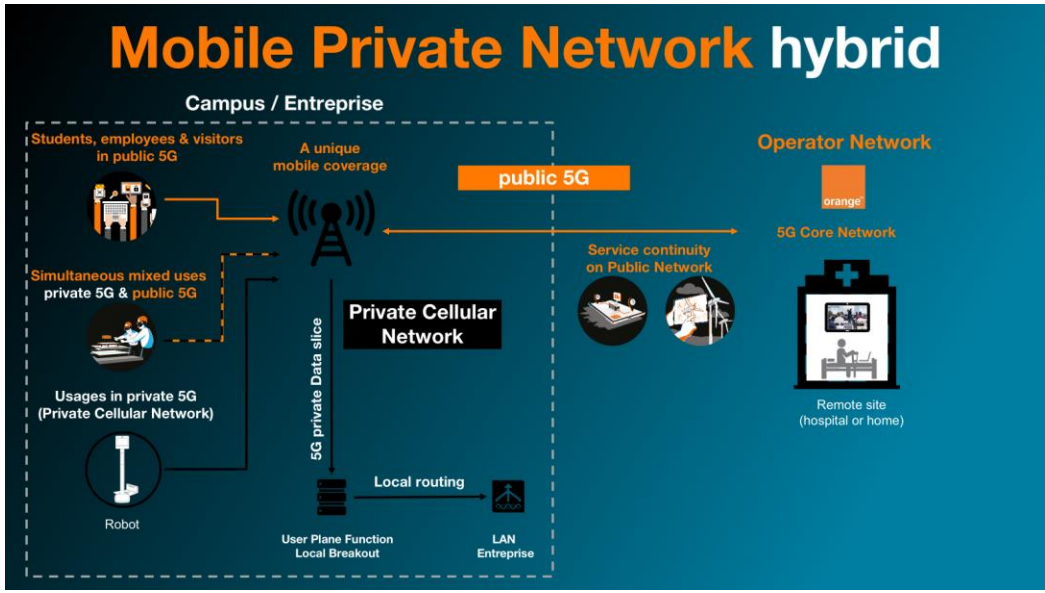
Total EU grant: € 2 274 250
Project duration: 12/24 –12/27
Consortium:

- Orange
- Université Côte d'Azur
- Awabot

5G METRO – Challenges in the EDGE/MEC context

Where are your biggest pain points or open questions right now?

Usability & Accessibility : Complex interfaces, cognitive overload, and limited inclusivity hinder widespread adoption across diverse user groups.
Scalability & Infrastructure Gaps : Bandwidth limitations, device interoperability issues, and uneven access to EDGE computing constrain broader implementation.
Stakeholder Trust & Integration : Adoption requires trust-building, clear value demonstration, and alignment with existing workflows and organizational cultures.
Need for Co-Designed Solutions : Success depends on collaborative approaches that integrate technological innovation with real-world needs and social inclusivity.



What are you working on right now? What's coming up next?

- **Prototyping Hybrid Collaboration Spaces :** Testing environments that integrate telepresence robotics, AR, and EDGE computing across educational, urban, and innovation settings.
- **Evaluating System Performance & Interaction :** Assessing user experience, responsiveness, and interoperability to foster inclusive, distributed human-machine collaboration.
- **Scaling Through Real-World Demonstrators :**Expanding pilots into living labs and public-private ecosystems to validate governance, ethics, and long-term viability.
- **Advancing Frugal & Sovereign AI at the Edge :** Embedding low-carbon, autonomous intelligence to support resilient, decentralized infrastructures.

Requests to the Community?

- Co-design partners to test and refine immersive use cases in real-world settings
- Researchers and practitioners interested in human-centered design, edge computing, and telepresence integration
- Policy and governance experts to explore regulatory frameworks and ethical considerations
- Technology providers to ensure interoperability, scalability, and frugal deployment models
- Educators and institutions to pilot hybrid learning scenarios and assess impact