Beyond 5G Multi-Tenant Private Networks Integrating Cellular, Wi-Fi, and LiFi, Powered by Artificial Intelligence and Intent Based Policy

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MORE INFORMATION
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VISION

5G-CLARITY brings forward the design of a system for beyond 5G private networks that addresses the challenges in **spectrum flexibility**, **delivery of critical services**, and **autonomic network management.**
The first pillar of our vision is a **heterogeneous wireless access network** that integrates three technologies: **5G beyond R16**, **Wi-Fi, and LiFi**.
The second pillar of our vision is a **novel management plane** based on the principles of **Software Defined Networking** (SDN) and **Network Function Virtualization** (NFV), and powered by **Artificial Intelligence** (AI) algorithms, in order to enable network slicing or neutral hosts, and autonomic network management.

CONCEPT

5G-CLARITY system architecture is distinguished by components such as:
- A **private network** with a deployment of multi-WAT
- **MNOs** with 5G infrastructure (radio, transport, and compute) deployed **outside the venue**
- A **venue infrastructure operator** that operates the heterogeneous infrastructure deployed in the venue
- A **variety of end-user devices** inside the venue
- **Multiple infrastructure** and **service slices**

5G-CLARITY envisioned system architecture will enable **dynamic deployment** of **connectivity services inside the venue**, addressed to the venue owner as well as to the MNOs serving customers inside the venue.

MISSION

5G-CLARITY will develop and demonstrate a **beyond 5G system private networks** integrating **5G**, **Wi-Fi**, and **LiFi technologies**, and managed trough **AI based autonomic networking**.
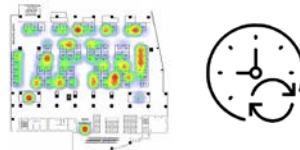**5G-CLARITY** aims to be instrumental in order to secure the leadership of Europe in the **growing markets of private 5G networks, and 5G for factory automation.**
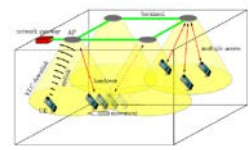
INNOVATIONS
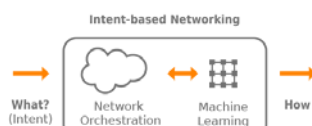
5GNR/Wi-Fi/LiFi Multi-Connectivity framework

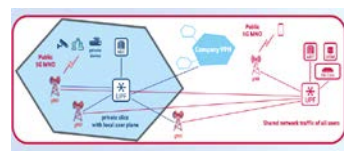### Cm-Level Localization and synchronization capabilities

LiFi Technology

AI-Driven and Intent-Based network management

Integration and interoperation of Private and Public Networks

Use Case 1:
Enhanced Human-Robot Interaction

Use Case 2:
Industry 4.0 Production Data Wireless Network

Use Case 3:
Enhanced Positioning for AGV