

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

MISSION

5G-CLARITY will develop and demonstrate a **beyond 5G system private networks** integrating **5G, Wi-Fi, and LiFi technologies**, and managed through **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**.

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.

USE CASES

SMART FACTORY

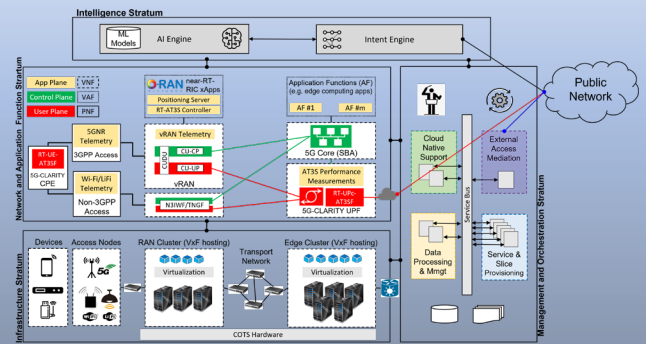
- **Industry 4.0 Production Data Wireless Network**
- **Enhanced Positioning for AGV**
BOSCH Factory Plant, Aranjuez, Madrid, Spain

SMART TOURISM

- **Enhanced Human-Robot Interaction**
M-Shed Museum, Bristol, UK

5G-CLARITY VISION & ARCHITECTURE

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**.

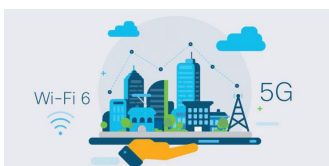


The first pillar of our vision is a **heterogeneous wireless access network** that integrates three technologies: **beyond 5G, Wi-Fi, and LiFi**.

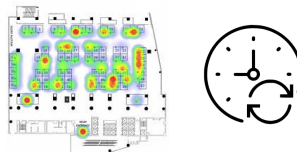
The second pillar of our vision is a **novel management plane** based on the principles of **Software Defined Networking (SDN) and Network Function Virtualization (NFV)**, and powered by **Artificial Intelligence (AI)** algorithms, in order to enable infrastructure slicing and neutral hosting capabilities, and autonomic network management.

INNOVATIONS

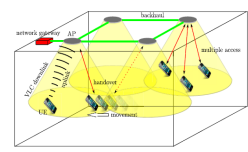
5G NR/Wi-Fi/LiFi Multi-Connectivity framework



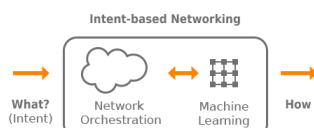
Cm-Level Localization and synchronization capabilities



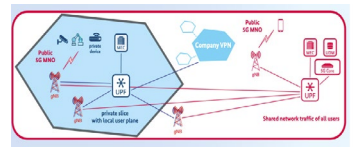
LiFi Technology



AI-Driven and Intent-Based network management



Integration and interoperation of Private and Public Networks



5G-CLARITY Project

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FURTHER INFORMATION:
www.5gclarity.com
@5G_CLARITY
5G-CLARITY LinkedIn Group
5G-CLARITY YouTube Channel
info@5gclarity.com