

PDI connectivity and cooperation enablers building trust and sustainability for CCAM

Project overview

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General facts and figures

- Call Identifier: HORIZON-CL5-2021-D6-01-03B
- 26 Partners
- 8 MS Countries
- Total Budget in €: 12M
- 36M Duration: 2022-2025



Scope

Enable connected & cooperative automated mobility in real traffic conditions



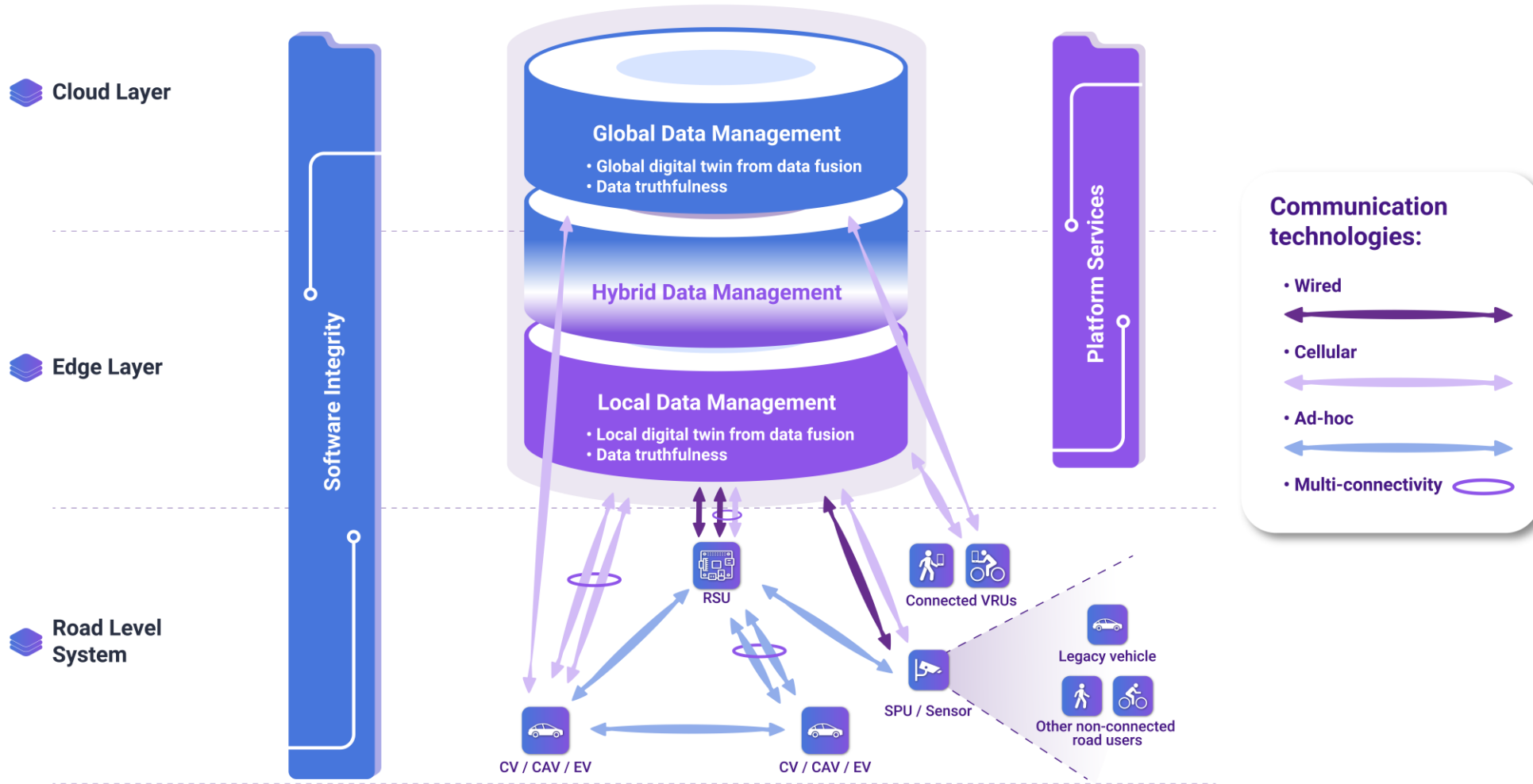
- **Advance Multi-access Edge Computing (MEC)** as an enabler of new use cases (UCs) and services.
- **Data fusion** (locally generated and distributed computed data) to build **enhanced environmental models** towards digital twins.
- **Extend C-ITS messages** for enabling advanced CCAM use cases.
- **Ensure software integrity, trust and truthfulness of CCAM data**, their exchange and their processing.
- **Integration of Vulnerable Road Users (VRUs)**.
- Demonstration of **urban and highway use cases in 3 Living Labs** (5G SA testbeds, mmWave).

Impacted entities/processes

Physical: MEC, wireless networking, RSUs, OBUs, VRUs, etc.

Digital: Traffic Management Centre, Environmental perception, Digital Twins, C-ITS messages, Trust and Truthfulness, etc.

The overall PoDIUM architecture



Living Labs

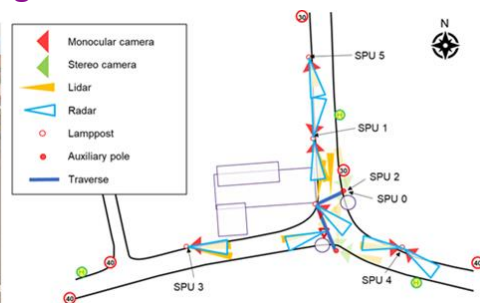
Common aspects in all LLs

- Multi-access Edge Computing
- LTE and 5G coverage
- ITS-G5 (automotive WiFi) infrastructure
- Connected Automated Vehicles
- Mobile devices as VRUs

Ulm-Lehr LL in Germany

Urban T-junction equipped with sensing and data processing infrastructure + communication gear

- 5G mmWave coverage
- 60GHz-WiFi
- Multipath connectivity
- RSU and Sensor Processing Units (SPUs) supporting multiple communication technologies



LL in Spain

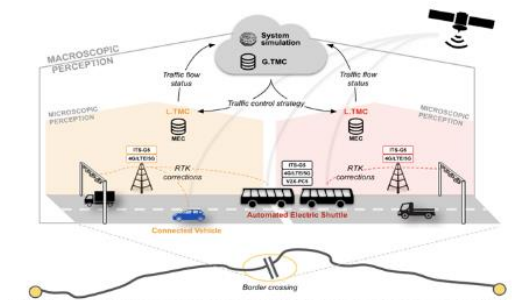
Real urban traffic environment: a corridor in the city of Barcelona

- Emergency vehicles
- Emergencies Management Centre
- Traffic light controllers



Spain-France cross-border corridor

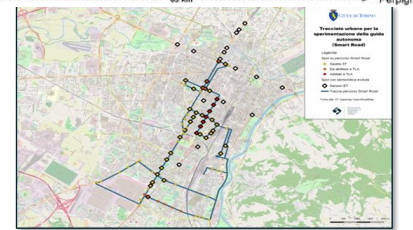
- Connected automated shuttle
- MEC servers on each side of the border



LL in Italy

A complex urban intersection in the City of Turin

- Real edge infrastructure by TIM



Highway tunnel located on the Autostrada del Brennero

- A22/BRE Traffic Control Centre
- RSUs along the motorway axis

Focusing on software integrity, trust and truthfulness enhancements



Expected Impact

- Provide an **enhanced blueprint for CCAM services based on tightly integrated physical and digital infrastructures** via the digital twin concept.
- **Enhance quality of and trust in external data via a truthfulness assurance mechanism**, meeting the requirements of cross-border interoperability and continuity.
- Demonstrate the **potential, feasibility and sustainability of multi-connectivity, multipath communications and 5G mmWave for automotive-related services**.
- **Support the vision of low carbon and more energy efficient transport with increased safety**, especially for VRUs.
- **Increase the uptake of CCAM related systems and services** by identifying and assessing the cooperation enablers and needs, and providing real-life validation.

Thank you!



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