General facts and figures

- **Call**: HORIZON-JU-SNS-2023
- **Topic**: STREAM-D-01-01, "SNS Large Scale Trials and Pilots (LST&Ps) with Verticals"
- **Use Case Priority 1**: Connected and automated mobility (CAM) vertical and intelligent terrestrial transportation
- 23 Partners
- 3 Living Labs (Greece, Italy, Netherlands)
- 10 MS Countries
- Total Budget in €: 15.8M (2.7M to open calls)
- 36M Duration: 2024-2027

12.TNO
13.KPN
14.SISW

16.LNVO
17.UDE

21.ERT

23.INC

15.CMS

11.ISFM

02.ATH
03.TIM
04.LINKS
05.NXW
06.TEO
07.COTO

19.IQU
20.VICOM

01.ICCS
08.COSM
09.NCSRD
10.FOGUS
18.ISI

22.EBOS
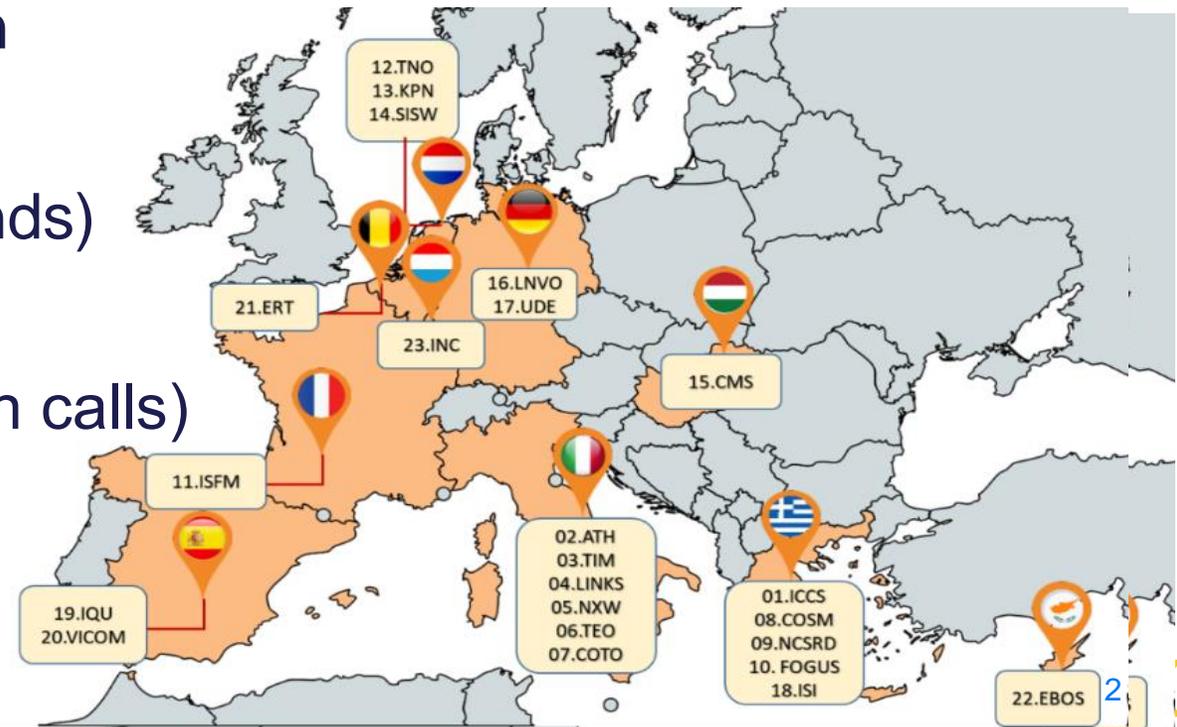
ENVELOPE high level view

- Transform the reference 5G-Advanced architecture into a vertical-oriented one with the necessary interfaces tailored to vertical CCAM use cases that:
  - expose network capabilities to verticals,
  - provide vertical-information to the network; and
  - enable verticals to dynamically request and modify certain network aspects,
  in an open, transparent and easy to use, semi-automated way

- Develop an envelope that can cover, accommodate and support any type of vertical service
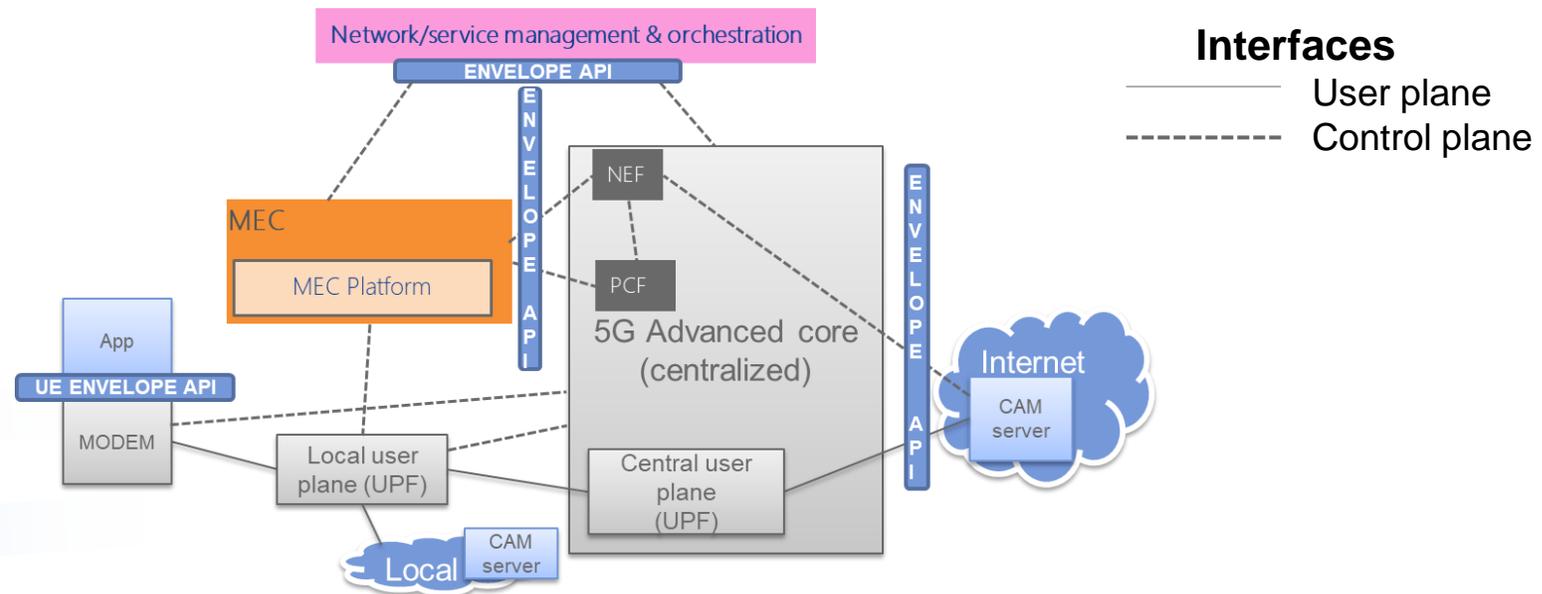
Scope & Project Objectives

Advance and open up the reference 5G-Advanced architecture for verticals

- Develop an **open and dynamically reconfigurable B5G system** with NEF + PCF services

- Develop novel CAM services and design vertical-oriented **open, transparent and easy-to-use interfaces** (network and service side)

- **Advance key B5G technologies** to enable the ENVELOPE architecture to meet the challenging requirements of automation and improved user experience (ATSSS multi-connectivity, PQoS, Zero-Touch management)

- **MEC integration and cross-domain east/west-bound coordination** involving different stakeholders (network-assisted service continuity)

- **Demonstrate** the ENVELOPE capacity to accommodate a variety of services (CAM and Open Call large-scale experimentation on 3 B5G infrastructures)

Living Labs (LLs)

Italy

- Advanced 5GS architectures supporting dynamic reconfiguration in cases of **emergency triggers**

- **The network as a distributed black box** that will be able to collect and reconstruct an accident scene, or even proactively detect it and provide critical guidance to avoid it

- Focus on **east/west-bound interfaces** especially across different edge providers or MNOs
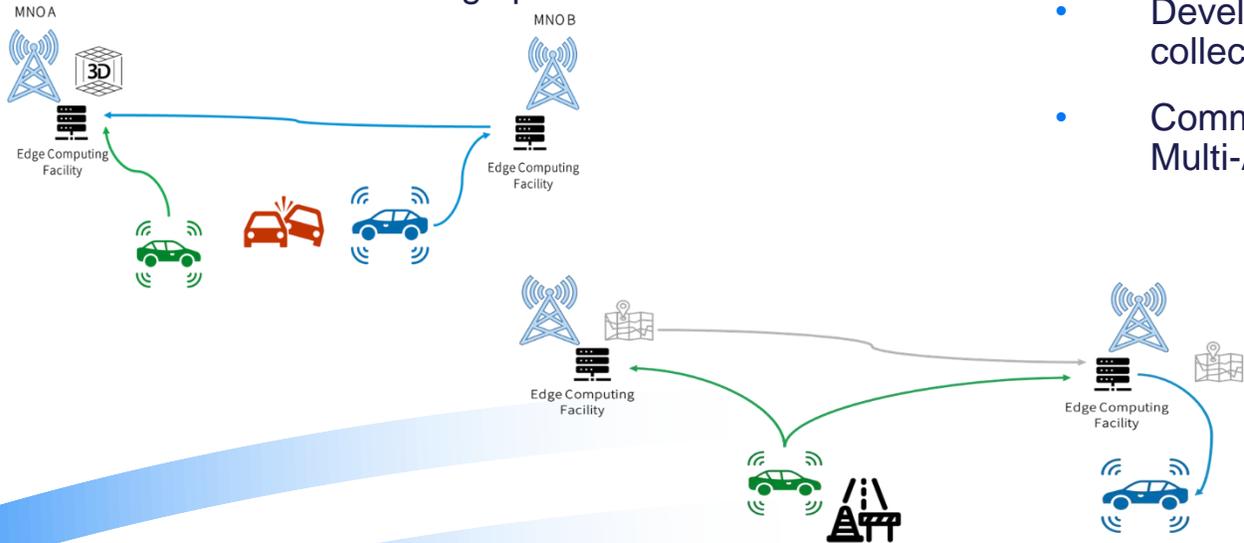
Greece

- **Vertical control and information delivery** to the network/vehicle (see AF influence)

- **Roaming scenarios**: interaction of the commercial network of COSM with that of NCSRD private PLMN.
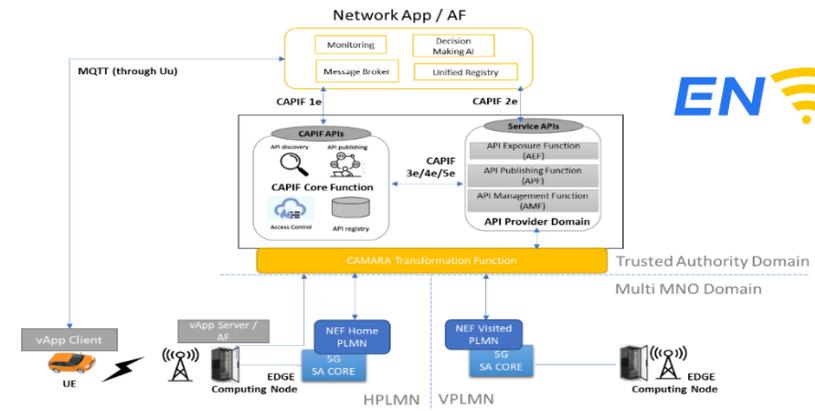
Netherlands

- Development and testing of new open **uplink-focused APIs** for data collection and **Digital Twin creation**.

- Commercial SA network of KPN hosting a DT service running on a Multi-Access Edge service environment & V2X protocol stack
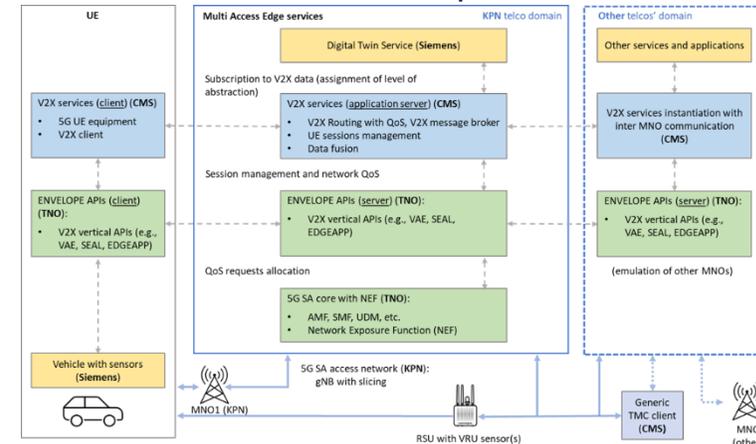
Planned Use Cases (UC)

- **Italian UCs**
  - Advanced in-service reporting for automated driving vehicles
  - Dynamic collaborative mapping for automated driving

- **Dutch UCs**
  - Periodic vehicle data collection for improving digital twin, e.g., for predictive maintenance
  - Vehicle testing with mixed reality
  - Tele-operated driving aided by DT

- **Greek UC**: MEC handover across MNOs

Project Coordinator – Lazaros Gkatzikis

lazaros.gkatzikis@iccs.gr

Communication manager - Anna Zanetti

a.zanetti@mail.ertico.com

in /envelope-project   www.envelope-project.eu