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INFOCOM 2020

Greek site infrastructure for the needs of 5G-EVE and 5G-Tours European projects

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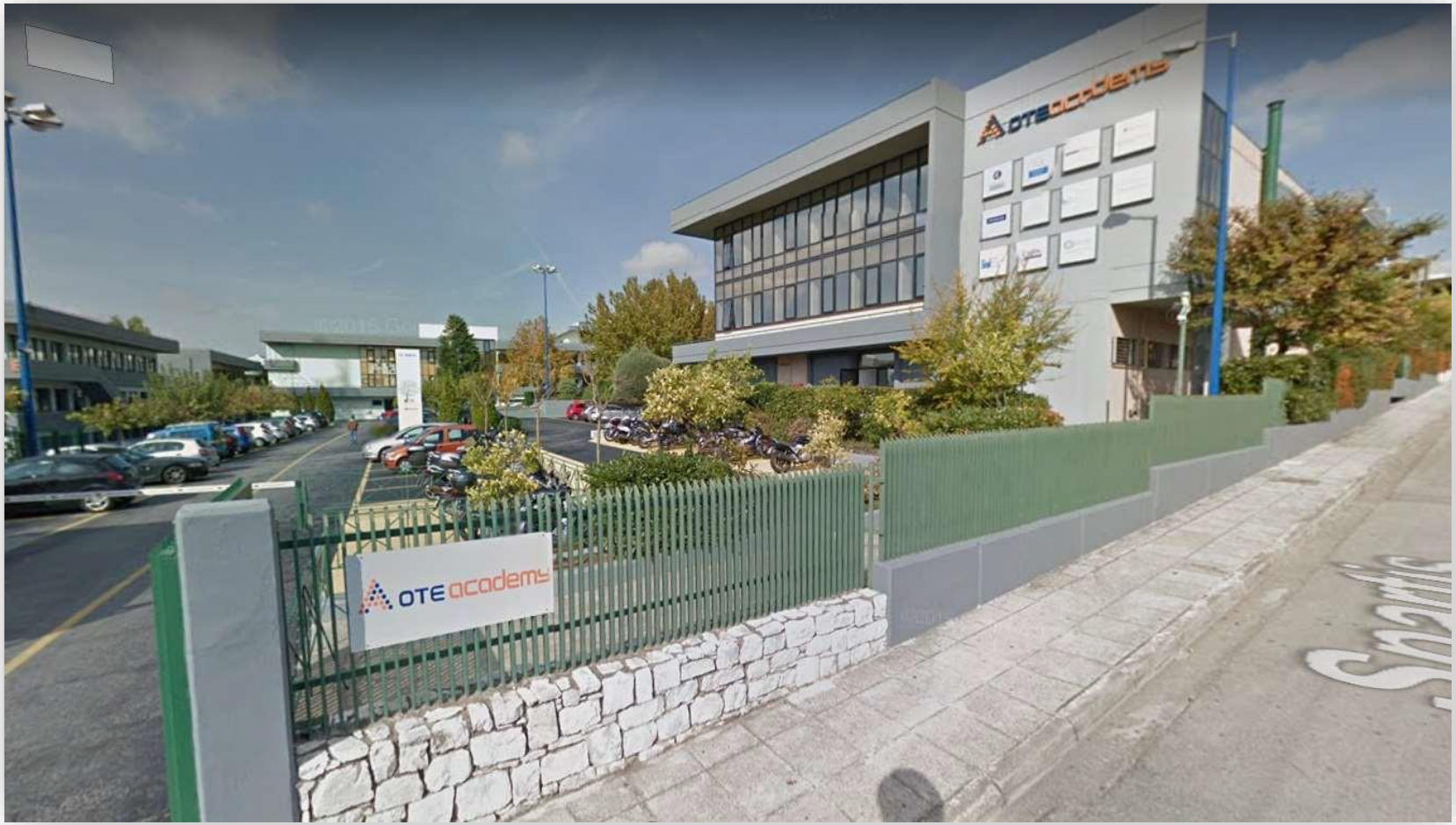
5G EVE

5G-TOURS

OTE
GROUP OF COMPANIES

5G-EVE Greek site in OTE facilities



5G-Eve Facilities – Greek Site

Greek Partners:

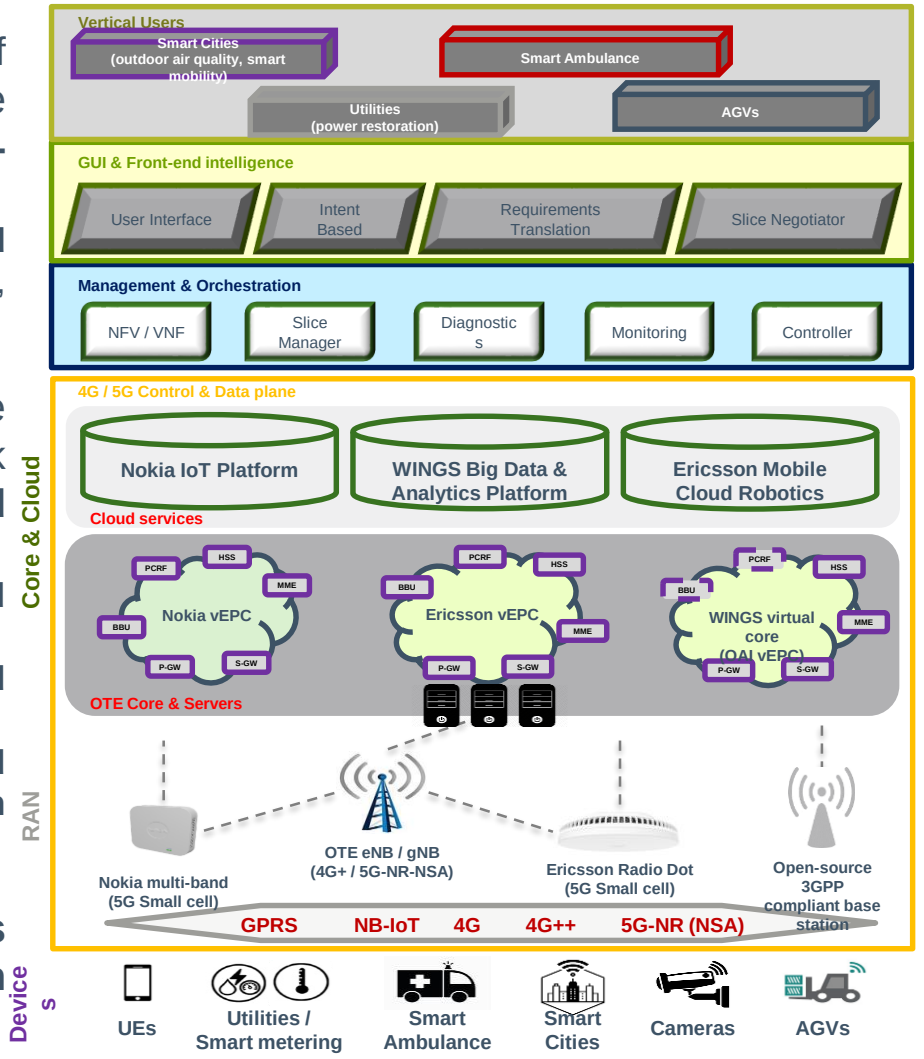
- OTE S.A. (Hellenic Telecommunications Organization)
- ERICSSON Hellas S.A.
- NOKIA GR S.A.
- WINGS ICT Solutions
- AIA (Athens International Airport)

Greek Site Architecture

- The Greek 5G EVE site facility covers a region of Northern Athens, around the R&D site of the **Greek National Telecommunication Organization (OTE)**
  - The OTE site facility can provide **5G end-to-end functionality** for certain services such as **eMBB**, **URLLC** and **mMTC**

- **OTE, Ericsson GR, Nokia GR and WINGS** are responsible to prepare and upgrade the Greek site facility to be able to handle three **5G-oriented vertical use cases**, namely:
  - **Industry 4.0 functionality with Automated Guided Vehicles (AGVs) (responsible: ERICSSON-GR)**
  - **Smart cities applications focused on Connected Ambulance (responsible: NOKIA-GR)**
  - **Utilities applications on Smart Energy grid monitoring & ultra-reliable / fast fault detection (responsible: WINGS)**

- **The facility will be offered to vertical industries /other 5G projects for execution and validation of pilots with full sets of 5G capabilities**

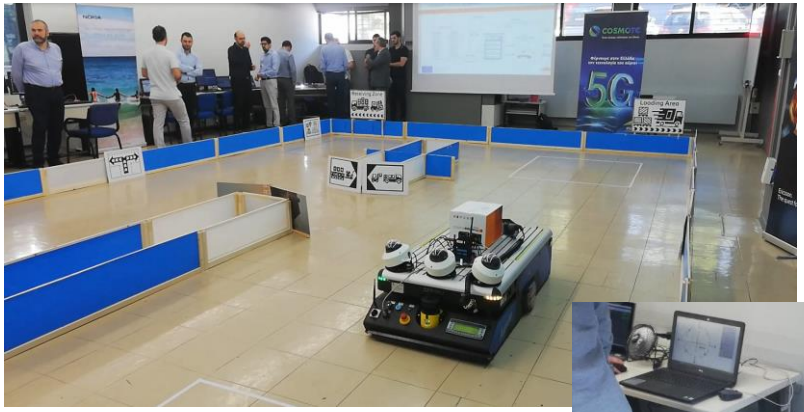


5G-EVE Greek Site overview

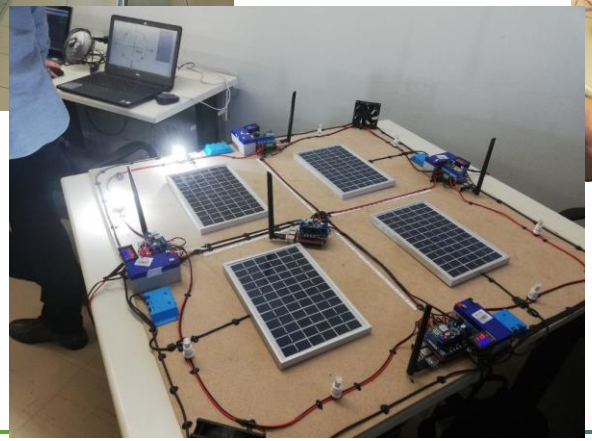
- At OTE Labs both an **Ericsson** and a **NOKIA** 5G Network platforms are being planned.
- An **OSM (Open source MANO) Orchestrator** is configured and installed by Wings at OTE-Labs
  - The OSM is interconnected with Multisite orchestrator in Turin (Italian 5G-EVE site)
- Also a **Kafka broker** *(for collecting KPIs measurements)* is configured and installed by Wings at OTE-Labs
  - *Interconnection with central kafka (in Turin)*
- Ericsson UC is installed and fully functional for the **AGV UC**. It is expanded to 5G
- OSM interconnection with Ericsson's 5G platform is under implementation.
- OSM interconnection with CBAM – NOKIA's 5G platform is finishing
- NOKIA's Lab installation is in a final phase for **eHealth UC**.
- Wings' IoT platform (**Utilities, Environment and Smart Cities UC**) initially will utilize the Ericsson/ 5G Lab infrastructure and later the NOKIA testbed.

5G-EVE Greek Site Greek Site overview

- OSM interconnection with IWL in Turin
- WINGS UCs have been tested to operate with Ericsson platform
- UC E2E pilot is prepared for WINGS/NOKIA's/Ericsson UCs
  - ➢ Test Plans and Blueprints are prepared

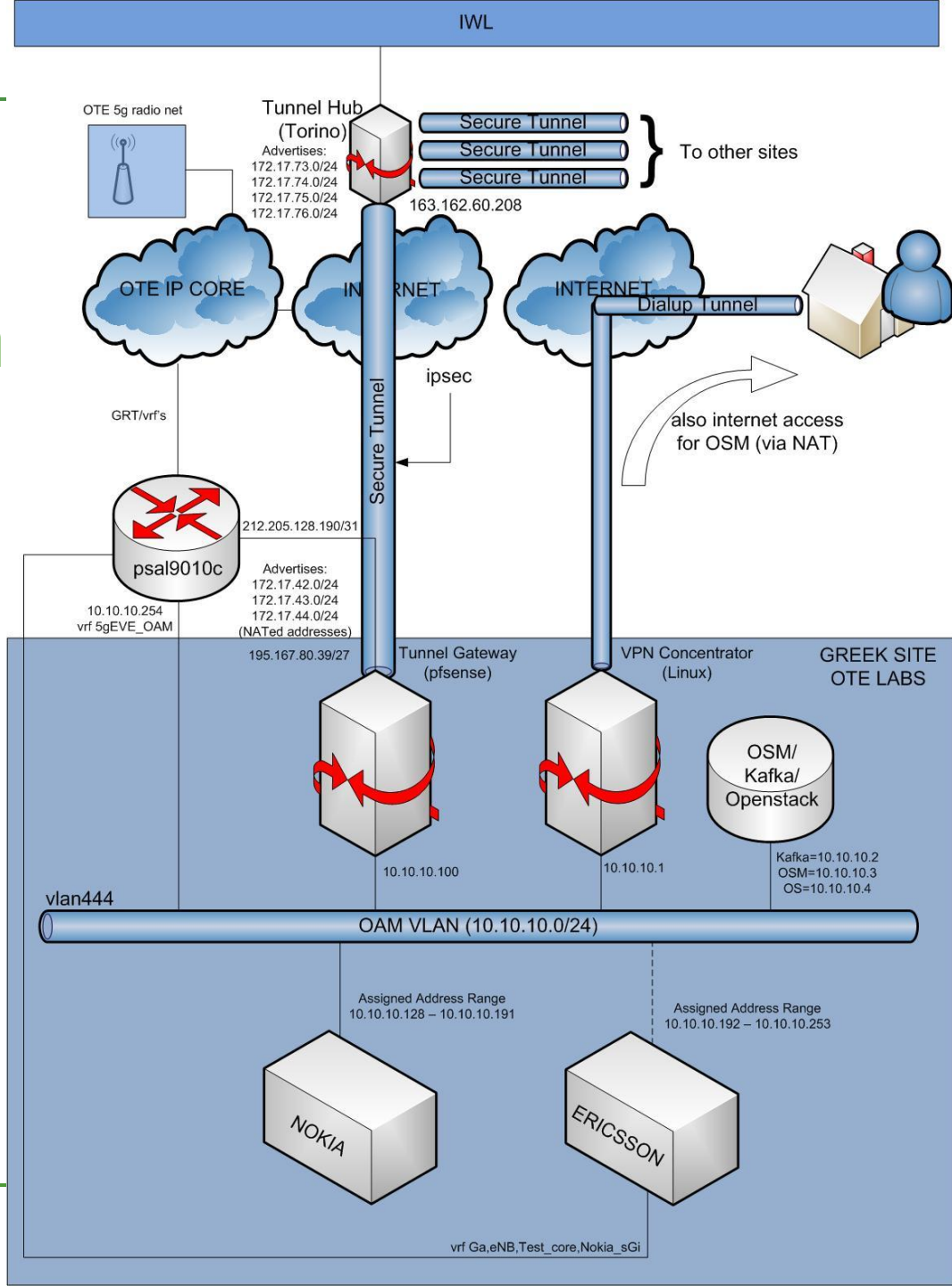


Ericsson AGV platform



NOKIA GR – Smart Ambulance

5G-EVE Greek Site Interconnection diagram



ICT – 19 projects

Two ICT-19 projects will rely on 5G-EVE Greek Site Infrastructure

- ***5G-Tours***
  - Extension of Greek Site infrastructure with new antennas and BBUs by NOKIA-GR at AIA and interconnection with Psalidi (OTE Labs).
  - NOKIA's platform will be used.
  - 4 UCs for mobility efficient city will be implemented.
  - Test plans and Blueprints will be used for running the tests.

- ***5G-Heart***
  - Extension of Greek Site infrastructure with antennas, cables, BBUS by Ericsson and OTE for supporting the Aquaculture UC Skironis at Megara area.
  - Ericsson's platform will be used.

5G Tours: Main objectives

The touristic city: The visitors of museums and outdoor attractions are provided with **5G-based applications** to enhance their experience while visiting the city. This includes VR/AR applications to complement the physical visit with additional content, involving interactive tactile communications.

The mobility-efficient city: Mobility to reach and move inside the city is made more efficient and comfortable. This involves smarter cities, gathering information about the city and using it to improve navigation systems as well as parking. Traveling is also made more enjoyable, providing AR/VR services to passengers, and airports become logistically more efficient by relying on **5G** for their operation.

The safe city: **5G technology** greatly improves the safety in the city by providing means to better assist health-related care in all the phases of an incident, ranging from the health monitoring for prevention and early detection, to diagnosis and intervention at the ambulance, and surgery at the wireless operation room in the hospital.

5G Tours: Consortium

5G-Tours: OTE is leader in The mobility-efficient city

The **aim** of these use cases is to demonstrate how 5G is expected to enhance applications related to mobility within a city, covering various setups, such as:

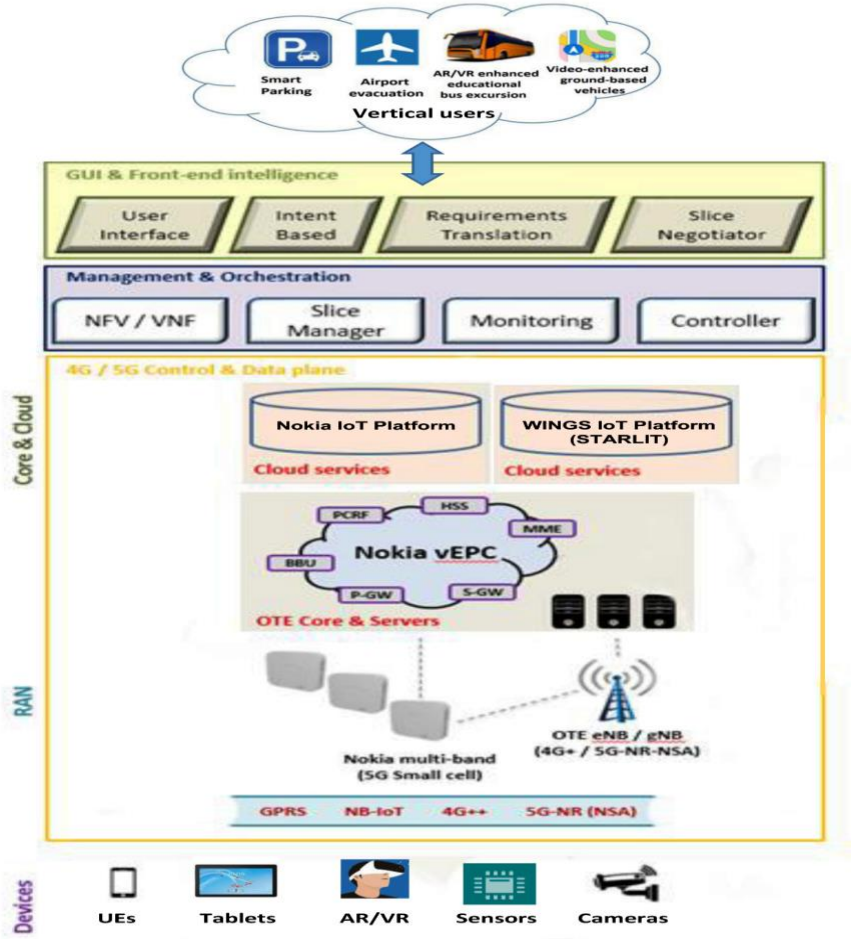
- **Smart parking management**
- **Video-enhanced ground-based vehicles**
- **Airport evacuation**
- **AR/VR Enhanced educational bus excursion**

Technical issues common for all use cases of the Greek Node

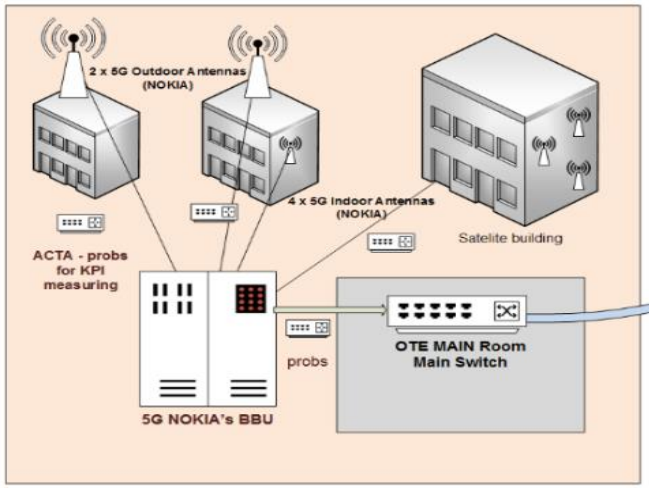
Extended 5G-EVE infrastructure

The four use cases of the Greek node will rely on the 5G-Infrastructure developed in the area of Psalidi/Maroussi, at the facilities of OTE-Academy.

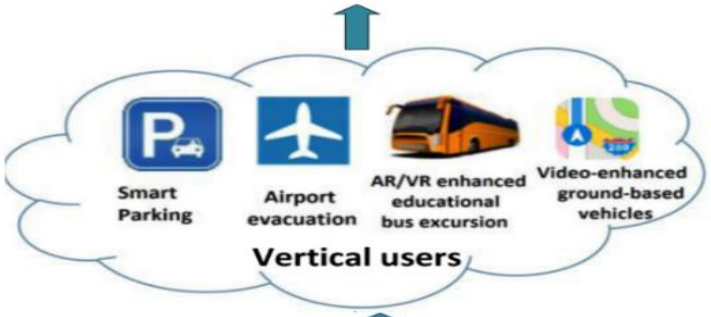
The infrastructure is implemented by OTE, NOKIA-GR and Ericsson GR.



Extended 5G-EVE infrastructure for the needs of 5G-Tours

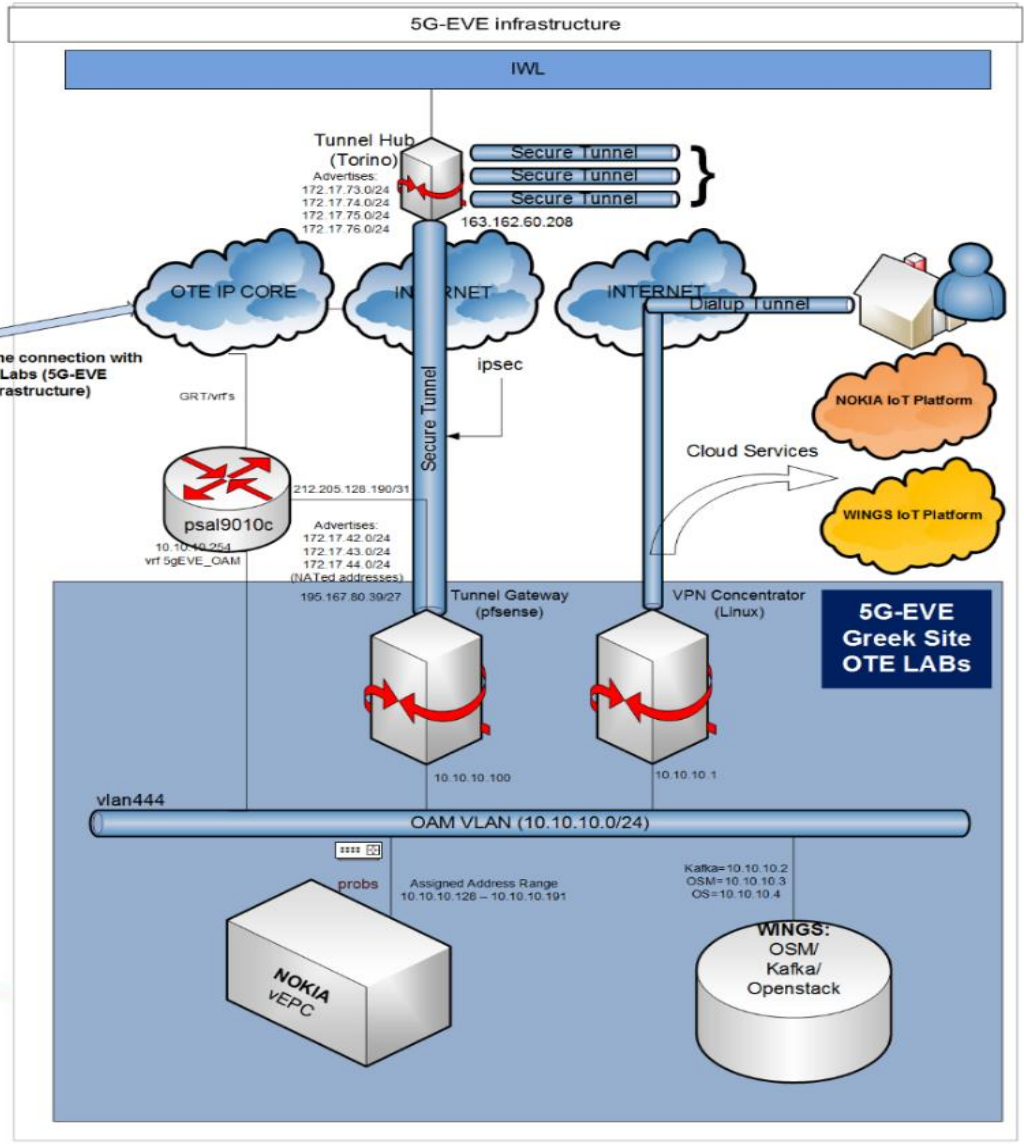


AIA Premises
5G-Tours Extension of 5G-Infrastructure

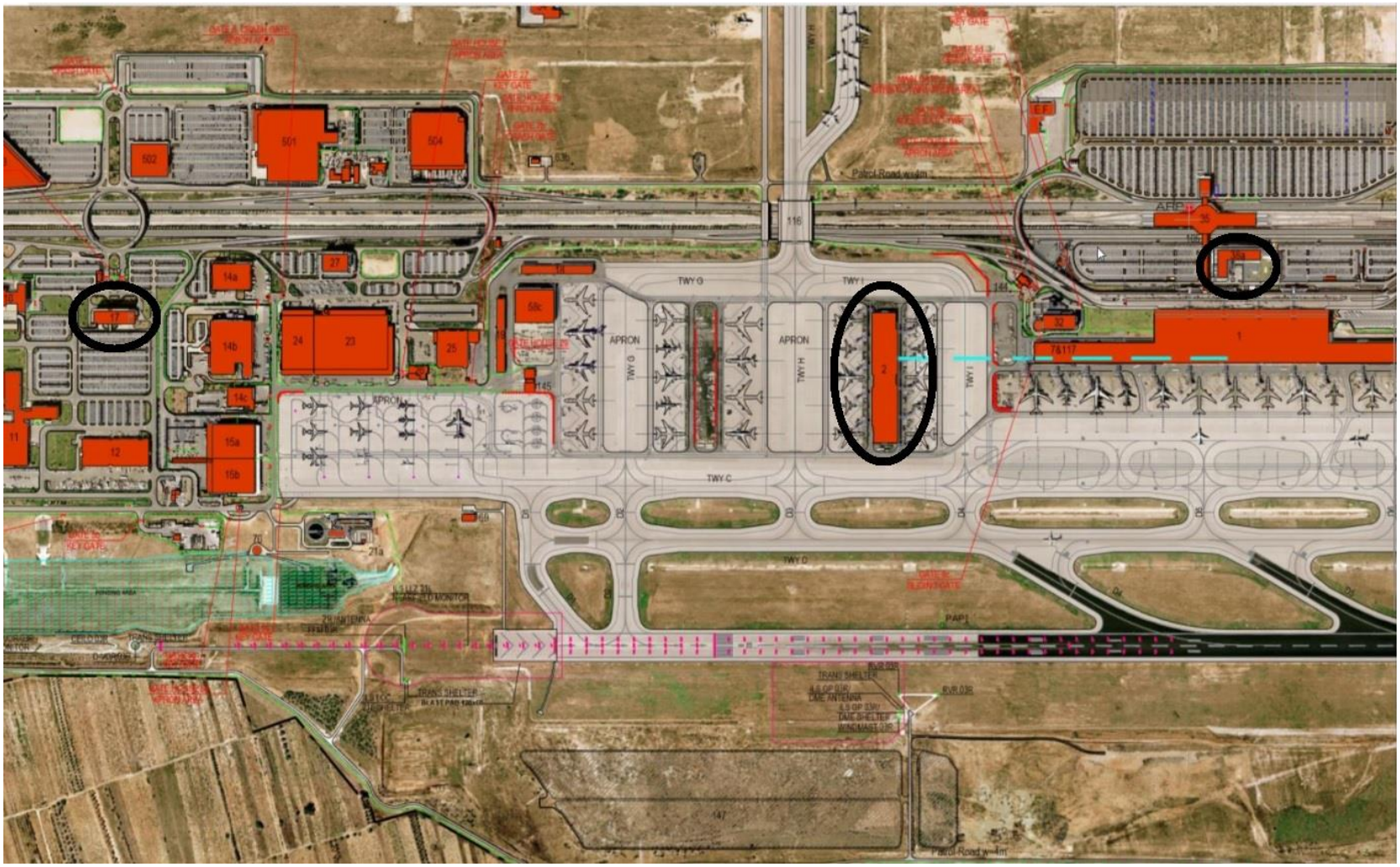


Devices

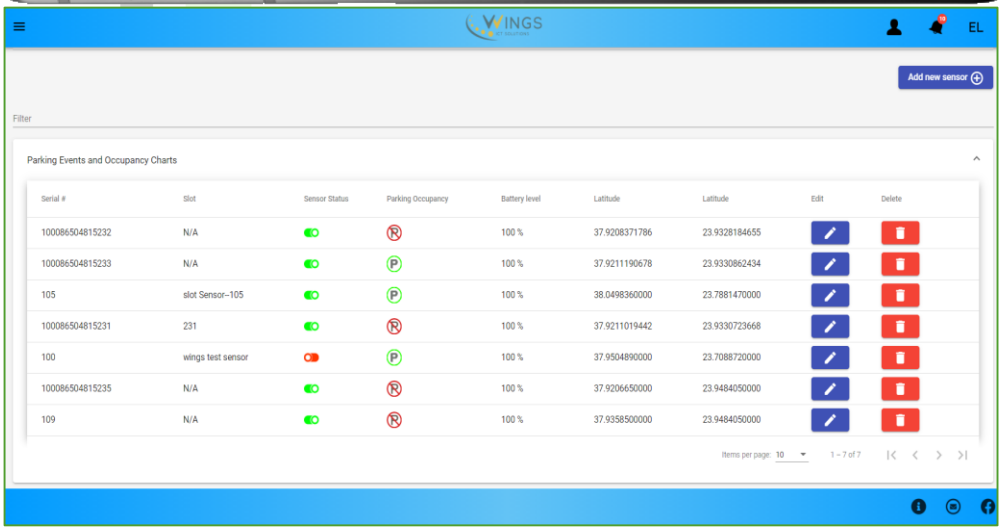
10 Gbit line connection with OTE Labs (5G-EVE infrastructure)



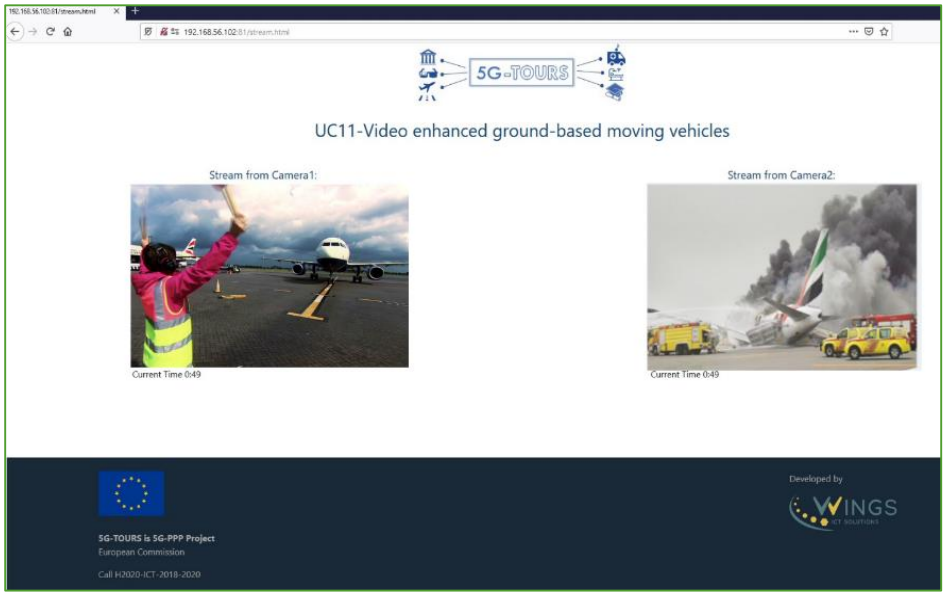
AIA area where antennas are installed

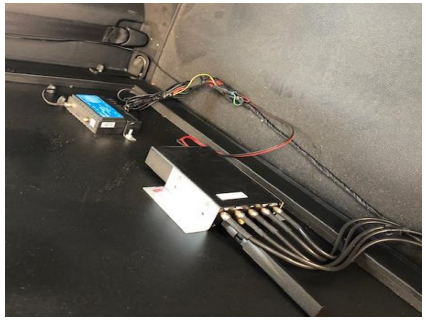


Progress on Smart parking management

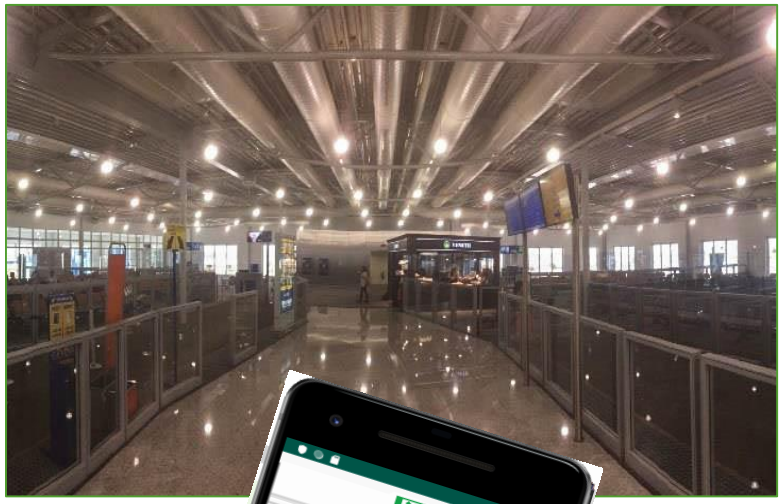


Progress on Video-enhanced ground-based vehicles



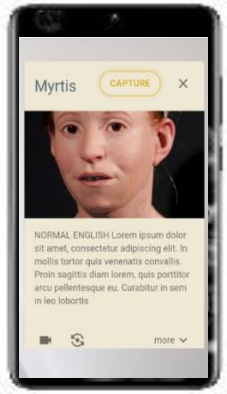


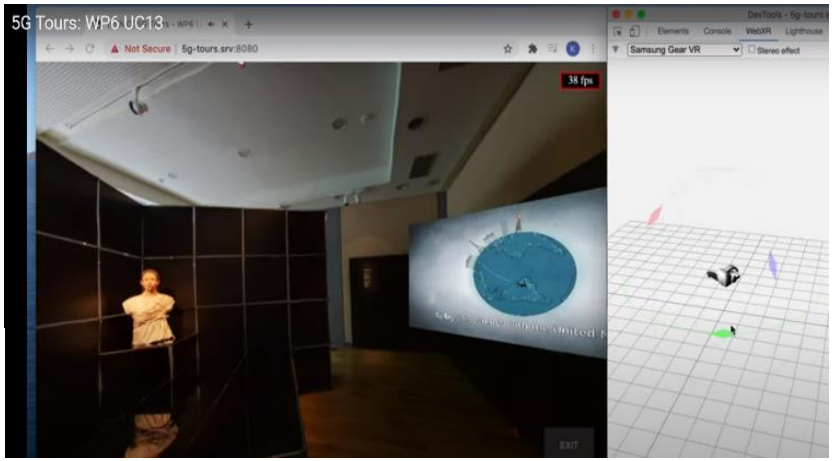
Progress on Airport evacuation Satellite terminal for the Evacuation



Progress on AR/VR student bus excursion

The theme of exhibition is the reconstructed face of an anonymous 11-year-old Athenian girl who was – along with Pericles – one of the tens of thousands of victims of typhoid fever in the year 430 BC. The girl is conventionally named Myrtis.





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Thank you!

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