DEMOS DOSSIER

5G FORUM

APRIL 24 & 25, 2019 MALAGA

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PROMÁLAGA

WHERE **5G LEADERS** MEET

DEMO 1: Real-time conference audience measurements using Artificial Intelligence at ´Edge´ of 5G

In this first Nokia Demo they will present an **application that counts the faces of the audience to a conference**, in this way it is possible to measure in real time the people who attend a certain conference, and who look at the speaker.

The technologies used are **Edge computing** with **GPU** support and **Artificial Intelligence**.

These same technologies **can be used to measure or analyze practically any remarkable event** in a captured image with sufficient quality.

DEMO 2: 5G Emergencies

In this Demo Nokia will present a simulation of **agile action in a medical emergency**.

It will be carried out using a **Dron with 360 camera that sends real-time images** of the accident through the 5G network. At the same time, a healthcare provider uses **VR glasses** and evaluates the patient's situation, while another person uses the **triage APP** to make a pre-evaluation that is sent in real time to the ambulance that is on its way.

When the **ambulance** approaches the emergency, the traffic light connected by **5G** automatically turns green to give way.

After the first attention, the victim is taken to the ambulance and evacuated to the hospital.

DEMO 3: The bus with 4K TV on going

Nokia Bell Labs will show us a video of the first bus with **4k television and 5G technology** that has been tested in Segovia, pioneer city of 5G.
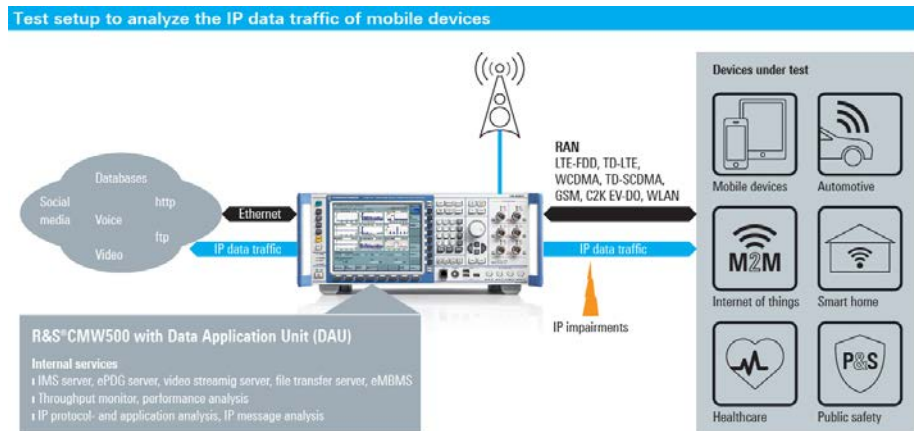
It is a bus where three television screens have been installed and connected to a 4K decoder that is connected through a 5G mobile network.

During the journey, **users can enjoy mobile content in 4K, which quadruples the resolution offered by HD High Definition**.

DEMO ROHDE & SCHWARZ: Generation and analysis of broadband signals.

**User Experience testing is critical for mobile device providers and network operators**.

Rohde & Scwarz bring us CMW500, the most widely used test platform in the world, which is used to test the connectivity of devices such as Mobile and Tablets, Connected Vehicles, Smart Homes and objects connected to Internert (IoT), applications for Health and Public Safety ...

In short, it is able to simulate the operation of all devices/cases of use under a 5G environment in a completely realistic way.

DEMO CISCO: Orchestration for 5G Mobile Service Deployment

Cisco will complete a comprehensive deployment of both transport and 5G service elements in a fully automated manner through the use of proprietary automation tools such as **Network Services Orchestrator (**NSO).
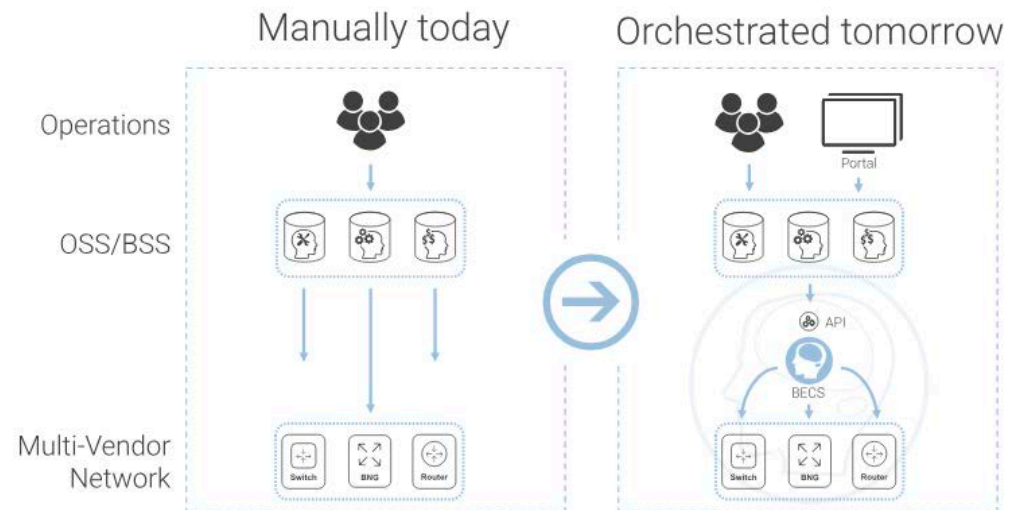
The use of this CISCO tool, allows to automate and simplify a huge volume of operations and provide services more quickly and easily through network automation.

DEMO HUAWEI: 4K remote video edition over 5G network

In the demo we will see **the first 4K video edition in the world, made remotely from Malaga to Madrid**.

This edition will be made with a **new 4K video editing application in Cloud, supported with the FusionAccess application**, exclusive to Huawei, and **under a 5G network environment**.

VÍDEO CELLNEX 1: 5G Mobility Projects

Cellnex will present two videos illustrating its most ambitious 5G projects it is working on, linked to **mobility (connected, autonomous and sustainable) and emergency prevention and management**.

Mobility Lab

Cellnex has equipped the Circuit Parc Motor Castellolí Barcelona with the necessary infrastructures and technology so that agents and companies working in the development of future mobility and vehicle manufacturing can develop innovative products and services linked to intelligent mobility and the connected and autonomous vehicle.

All these innovations can be implemented in vehicles (future mobility), in towns and cities (smart cities) and on roads and highways (smart roads).

This **is Cellnex's commitment to improving road safety**.

VÍDEO CELLNEX 2: Emergency Management under 5G

5G Firefighting Drone Pilot Project

This Cellnex project, developed jointly with **Sitep, Masmovil and 5G Barcelona**, uses 5G technology to facilitate and optimize fire management through the capture, processing and transmission of data such as heat maps, geo-located images and location of personnel.

This information is sent to emergency teams in real time, making use of drones and a dedicated broadband network. The objective is threefold: to reduce response times, monitor the situation in real time and activate the appropriate and optimal resources to extinguish the fire.

It is another Cellnex project in which the ultimate goal will be to save human lives.

DEMO HISPASAT: New flat antenna technologies for mobile satellite communications

We will see the antenna developed by the company **Phasor for Hispasat**.

Thanks to this flat antenna, drivers and occupants of buses, trucks and municipal or emergency **vehicles will enjoy a high quality connected travel experience for applications** such as operational telematics, **Internet access, mobile telephony and even on-board entertainment services such as live TV**.

Another Case of Use that we will see in the near future will be that in which emergency healthcare professionals will receive indications from specialists from a hospital, as a full audiovisual connection can be established between the vehicle and the hospital allowing the direct monitoring of the patient's condition by the specialist, which may be **crucial for their survival and subsequent recovery**.

DEMO DEKRA: Connected Vehicle. DEKRA's firm commitment to the mobility of the future.

DEKRA brings us a **connected vehicle from its connected car test area**: DEKRA TC SAU (Parque Tecnológico de Andalucía, Málaga) which has the necessary equipment to carry out various tests for DSRC and C-V2X technologies.

This equipment consists of: an On-Board Unit DSRC (802.11p), a video camera for video recording during the tests, a tablet, sniffers for capturing messages and equipment for generating C-V2X messages on LTE.

All this equipment is used in the different test scenarios in order to ensure the correct generation of appropriate communication messages between vehicles (V2V) and vehicles-infrastructure (V2I), the correct reception of communication messages between them, as well as the generation of appropriate warnings to the driver.

Some test scenarios are: **movement assistant at intersections, optimal speed assistant, frontal collision alert and works area alert**.

DEMO 5GENESIS: Advanced communications services for Police

Emergency networks are currently undergoing a major transformation process. These networks, traditionally based on private technologies, closed and with little capacity for innovation, are giving way to standardised, interoperable technologies that make use of commercial mobile networks and with the capacity to offer other video and data services in parallel with the voice services themselves (MCPTT, Mission Critical Push To Talk).

5GENESIS echoes this new trend in relation to Critical Mission Communications (MCS) and integrates them with the latest advances in mobile networks in their transformation towards the expected fifth generation (5G). **The combination of both advances will make it possible** for the Mission Critical services for the **security forces to be deployed flexibly, dynamically and on demand on radio infrastructure with capacities much higher than the current ones, thus being able to manage the celebration of large events, possible attacks on cities or other critical situations with better communication tools and as quickly and efficiently as possible**. In Q1 2019 and having closed the first integration phase, 5GENESIS presents a prototype of this technology on the 4G mobile network, but running the services on virtual machines, prior to its deployment as virtualized network functions (VNFs) for use in future 5G networks.

This demo will show UEs adapted for MCS executing an MCPTT application through an LTE infrastructure, as an initial version of the MCS deployment of the project.

DEMO UMA: UMA and H2020 ONE5G, revolutionizing Industry and User Experience

The UMA demo aims **to respond to the challenge of the industry to meet the massive demand for high-performance services** (videos, video games, experiences in Virtual or Augmented Reality ...) with a **quality that satisfies the experience of increasingly demanding users**.

We will see two screens: one will show how an intelligent system of individualized optimization of the network radio resources works, and the other how a streaming video user varies its quality depending on the agreed requirements of the service.

This project was presented at MWC 2019 and involves major multinationals in the sector such as **Samsung, Orange, Huawei, Nokia or Intel** among others.
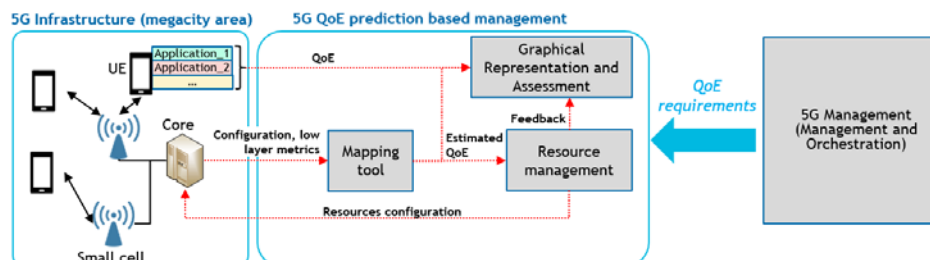
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