



5G ExPerimentation Infrastructure hosting Cloud-nativE Netapps for public proTection and disaster RElief

5G-EPICENTRE Project

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IAFA EVENT SERIES #4-2: Second event on pre-Standardisation – Steps: 6G Standardisation
Requirements

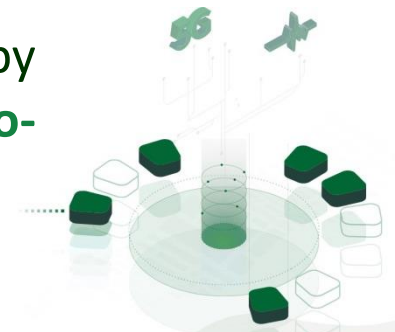
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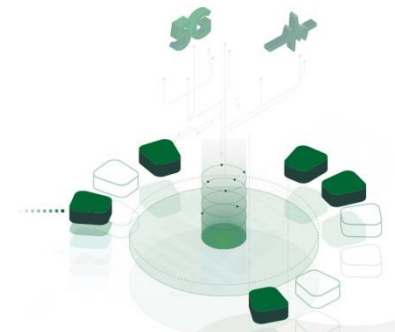
5G-EPICENTRE objectives

- To build an **end-to-end 5G experimentation platform** specifically tailored to the needs of the **public safety and emergency response** market players.
- To **pilot 5G systems in PPDR-based trials**, successfully demonstrating 5G-EPICENTRE onboarded apps as a crucial accompaniment to public safety MC communications technologies.
- To cultivate a **'5G Experiments as a Service'** model, enabling developers and SMEs to experiment with PPDR applications in **parameterized, easily repeatable, and shareable environments**.
- To facilitate automation, continuous deployment and MEC supported by **containerized network functions**, so as to **reduce service creation time and time-to-market** for 5G solutions.



5G-EPICENTRE objectives

- To leverage AI for achieving **cognitive experiment coordination and lifecycle management**, including **dynamic 5G slicing, application awareness and insightful ML-driven analytics**.
- To implement **impact-driven dissemination, standardisation and exploitation**.
- Enable a stakeholders' community, who are expected to become early adopters and facilitate introduction of the solutions in the relevant markets.



5G-EPICENTRE highlights

Over the course of three years, the 5G-EPICENTRE consortium partners will achieve key objectives towards the provision of an open, federated, end-to-end experimentation facility.



Federation

Federating multiple constituent 5G platforms evolved under previous 5G PPP Phase 2 and 3 projects into an advanced, user-friendly, zero-touch orchestration single point of control.



Openness

Implementing a repository of network functions (V/CNFs) and applications (NetApps) to address requirements pertaining to the most common PPDR experimentation environments.



Cloudification

Working towards the cloud-native transformation of both facilities and network functions in support of the transformational technologies, such as Multi-access Edge Computing (MEC).

5G-EPICENTRE: open and federated 5G end-to-end experimentation platform specifically tailored to the needs of PPDR software solutions

Federated infrastructure

5G-EPICENTRE brings together 4 geographically dispersed, end-to-end private 5G platforms, which support key 5G KPIs and allow cross-site orchestration and experimentation for PPDR solution vendors to validate NetApps reliant upon those KPIs.



5GENESIS
Málaga

Funded under the 5GENESIS project for indoor and outdoor 5G scenarios, hosted by UMA.



5G-VINNI
Aveiro

Funded under 5G-VINNI, based on ALB computational & networking infrastructure.



5G-CTTC Barcelona
Barcelona

Operated by CTTC, based on C-RAN architecture, with fully virtualized 5G RAN.



5G BERLIN
Berlin

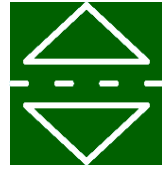
Experimental platform consisting of the latest RAN technologies, operated by HHI.

5G-EPICENTRE use cases



Multimedia Mission Critical (MC) Communication and Collaboration Platform

Airbus DS SLC



Multi-agency, multi-deployment MC communications & dynamic service scaling

Nemergent Solutions



Ultra-reliable drone navigation and remote control

Fraunhofer HHI



IoT for improving first responders' situational awareness and safety

OneSource



Wearable, mobile, point-of-view, wireless video service delivery

RedZinc



Fast situational awareness and near real-time disaster mapping

OPTO Precision



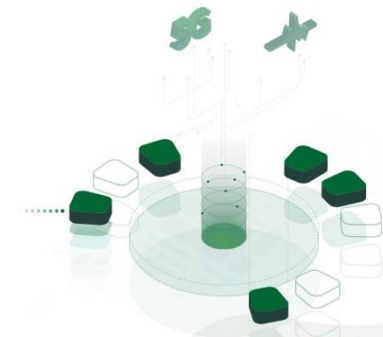
Augmented Reality and AI wearable electronics for PPDR

Youbiquo



AR-assisted emergency surgical care

ORamaVR



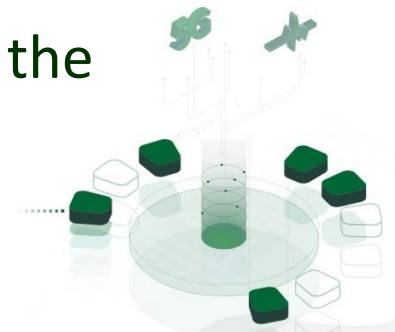
Standardisation Roadmap

- Consider and imply the definitions and requirements of the standards
 - MCPTT requirements to adjust the autoscaling capability for critical applications.
 - support MANO of both container based and VM-based VNFs through K8splug-ins, providing heterogeneity.
 - Related standards: ETSI VNF reference architecture ETSI GR NFV-IFA 029 V3.3.1, “NFV Release 4 FEAT 17, “ETSI GS NFV-SWA 001 V1.1.1
- Partners are active in WGs for standards with several targeted contributions
 - Pre-Standardisation & Security
 - 5G-PPP/6G-IA TVM and Vision and Societal Challenges
 - SMEs



Standardisation Roadmap

- 5G-EPICENTRE Consortium is active in the ETSI Plugtests
 - Bring and validate some of the 5G components utilized within the project, particularly:
 - the 5G Core Network and
 - MCS/MCX solutions.
- Disseminate & Communicate results and lessons learned on standards from the deployments and the Network Applications deployment.



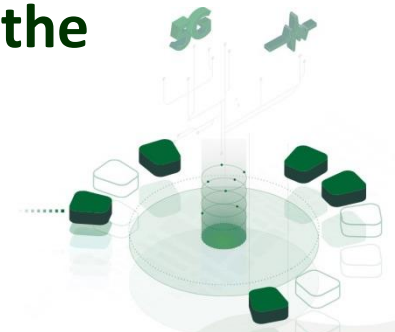
Major Challenges for Standardisation

- **Achieving global standardization and interoperability and network operators is essential for the widespread adoption of B5G/6G.**
 - Research and new technologies are involved fast
- **Compatibility with existing G networks: There is a need for smooth transition.**
- **B5G projects can contribute to policy and regulatory challenges [spectrum management, security and privacy, IPR, socioeconomic impact] & compliance.**
- **Network Slicing between hybrid public-private 5G networks and heterogenous networks**



Major Challenges for Standardisation

- **Cloudified 5G testbed platform for PPDR microservices needs to consider MCPTT requirements to adjust the autoscaling capability for critical applications.**
- **Federation across infrastructures with heterogeneous resources**
 - **NFV and MANO technologies need to utilize the common framework is defined by the ETSI [ETSI GR NFV-IFA 029].**
- **5G-EPICENTRE Portal provides the optionality for the specification of the microservices used, protected by the HSPF components.**
 - **Consideration of ETSI ZSM (Zero-touch network and Service Management)**



Thank you for listening

Q&A

