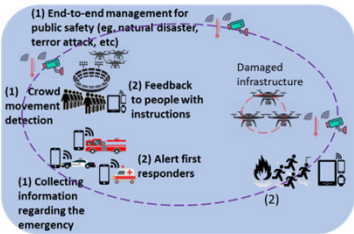# DEDICAT 6G

Dynamic coverage Extension and Distributed Intelligence for human Centric Applications with assured security, privacy, and Trust: from 5G to 6G
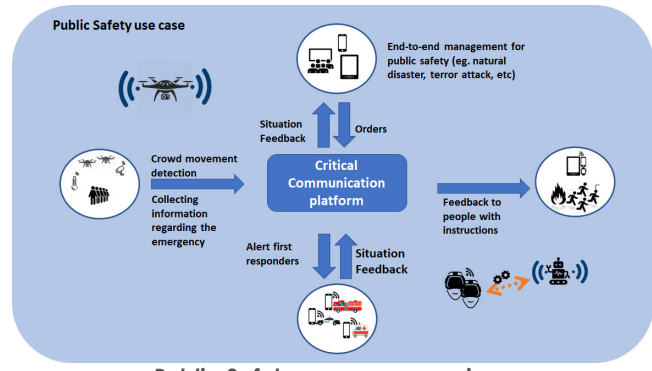
Public Safety

Need for B5G/6G

- *Need for **extremely** reliable and efficient communications* to respond to natural or man-made disasters.
- Infrastructure **availability anytime, anywhere**

Public Safety

Global Public Safety and Security Market size is expected to grow from from USD 433.6 billion in 2022 to USD 707.2 billion by 2027

The market growth is expected to accelerate at a a Compound Annual Growth Rate (CAGR) of 10.3% from 2022 to 2027

Support for Mission Critical and Business Critical organizations and end users with rich and reliable capabilities, services and applications.

Integration of a variety of devices, services and applications e.g. multimedia apps for AR/VR situational awareness
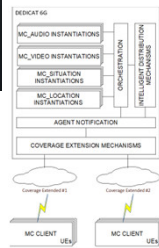

Public Safety use case overview

- Mobile access points (MAPs) deployed in the area of interest in order to create an ad-hoc mobile network for dynamic coverage and connectivity extension.
  - Monitoring of the area of interest while alleviating the congestion of public networks in such situations.
- End-to-end management of terror attack detection and handling or any similar situation leading to sudden crowd movements, featuring multi-level decision making, including crowd movement detection at the mobile equipment and edge levels, based on gait analysis, coordination with police, emergency services etc. at server level, and providing feedback to people in terms of instructions, recommendations, etc.
- Innovative devices and human interfaces, such as AR vision, and AI enabled applications to provide First Responders with augmented connectivity and interactions capabilities for situational awareness and mission efficiency.

Technical approach

Hardware

ORA-2 + BT Joystick

Software

Messages
Record Video
Take Pictures
Reco Connected

User interface   APP

Smart glasses components

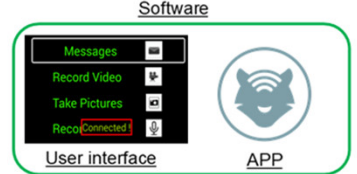### Mission Critical Services (MCX) client app

Functionalities offered to first responders:
- *Press To Talk (PTT)* (voice) group call
- Video call
- Video streaming
- Mapping/geolocation

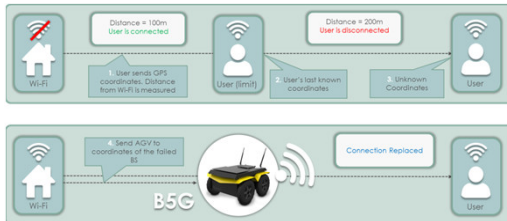*Connectivity Client applications with MCX services*

*Clearpath Robotics Jackal Unmanned Ground Vehicle*

Tarot Quadcopter Custom Drone

The Public Safety pilot will take place in Elancourt, France

AIRBUS
cea   Optinvent
France
NOKIA   UNIVERSITY OF SURREY
AtoS   WINGS ICT SOLUTIONS

High-level view of AGV being used as a MAP

Preliminary KPIs

KPI ID	Description	Target value
UC3_KPI1	MC-PTT (voice) to MCX Audio service access time	Access time < 300 ms / 95% of request
UC3_KPI2	End-to-End MC-PTT (voice) access time for all MCX client under the same network	Access time < 1000 ms
UC3_KPI3	Mouse-to-Ear (voice) latency	Access time < 300 ms / 95% of voice burst
UC3_KPI4	Maximum late call entry time	Late entry time < 150 ms / 95% of late call request
UC3_KPI5	End-to-End MC-DATA (IP Data) and MC-VIDEO (video) request time for IP packets transmission	Transmission request time < 10 ms
UC3_KPI6	User Data Rate	DL user data rate shall be 100 Mbps / UL user data rate shall be 50 Mbps
UC3_KPI7	Successful packet transmission (Reliability)	Reliability indicator at least 99.999% of success for a 32 bytes IP Packet within 1ms
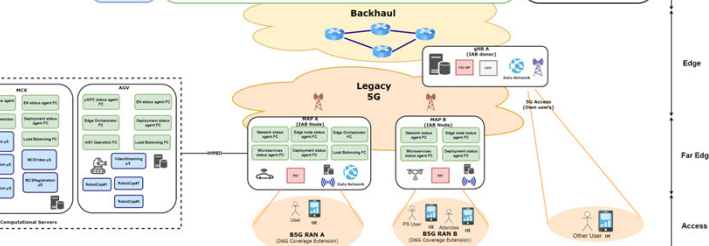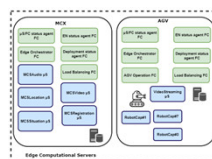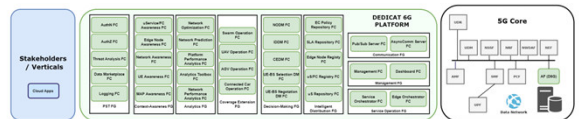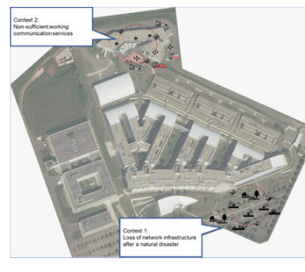
DEDICAT 6G architecture deployment view for Public Safety