Pathways to Deploy 3GPP Mission Critical Broadband Services
MCX - Narrowband to Broadband

Icon Water – Case Study

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ACCF – Who are we

TCCA's local chapter, representing industry and users from around the Australasian, Oceania region bringing together all those with an interest in advancing the quality of standardized critical LMR and Broadband communications, open standards and benefits from TCCA's involvement in critical industry initiatives around the globe.

Our Focus

ACCF promotes TCCA principles of open and competitive markets through the use standards (ETSI, 3GPP) and harmonized spectrum and brings together stakeholders in the critical communications sector; governments, public safety, regulators, manufacturers, integrators, operators, and end-users; to discuss, debate, deliver and evolve the market for the benefit of all.

Why Open Standards are Important

Standards provide assurance that everything from different vendors is going to work together = interoperability

Create an evolving ecosystem of investment, development, manufacturing and reduce unnecessary variety in the marketplace

Encourage competition, competitive price environment, innovation and associated economies of scale that ultimately benefit all stakeholders and particularly the end users

Pick the best solution from a range of options in line with global standards such as 3GPP, ETSI and NIST

P25, TETRA, DMR, LTE 4G, 5G and future 6G

Continuous Technology Evolution

3GPP - Critical Part in Open Standards

3GPP supports the development of broadband technologies globally for specific business and mission critical sectors. of the communications market based on an established dialogue at government, public safety, security agency, transport, manufacturers and industry stakeholder level.

Mission Critical Broadband evolution started in 2015 with release of Mission Critical Push to Talk (MCPTT) in 2016 and Release of MCX (Voice, Data, Video) in 2017.

Work ongoing on 3GPP releases that include Interworking Function (IWF) between technologies, Proximity working Off network communication and Control Rooms connected to MCX servers and enabling the connection of different systems, agencies and/or countries

And include specific MC services for the Future Railway Mobile Communication system (FRMCS)

3GPP standards provide a path to a connected society via LTE and 5G specification – by specifically evolving broadband access, meeting the need of machine type communications and by providing ultra-reliable & low latency connectivity through implantation of 6G and beyond.

3GPP Interworking Function (IWF)

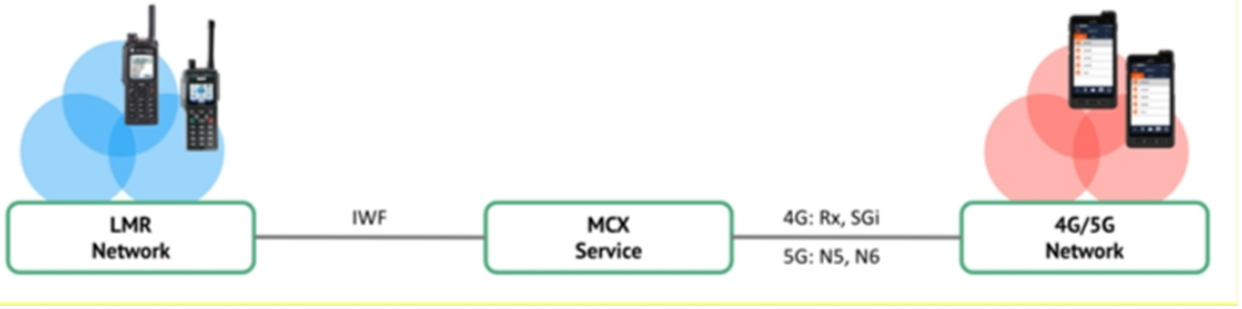
The integration of LMR networks with broadband MCX services via the IWF standard marks a major advancement in mission-critical communications**. IWF working group is currently driving the standards**

It plays a pivotal role in enabling hybrid communication environments that combine Land Mobile Radio (LMR) systems with modern broadband solutions.

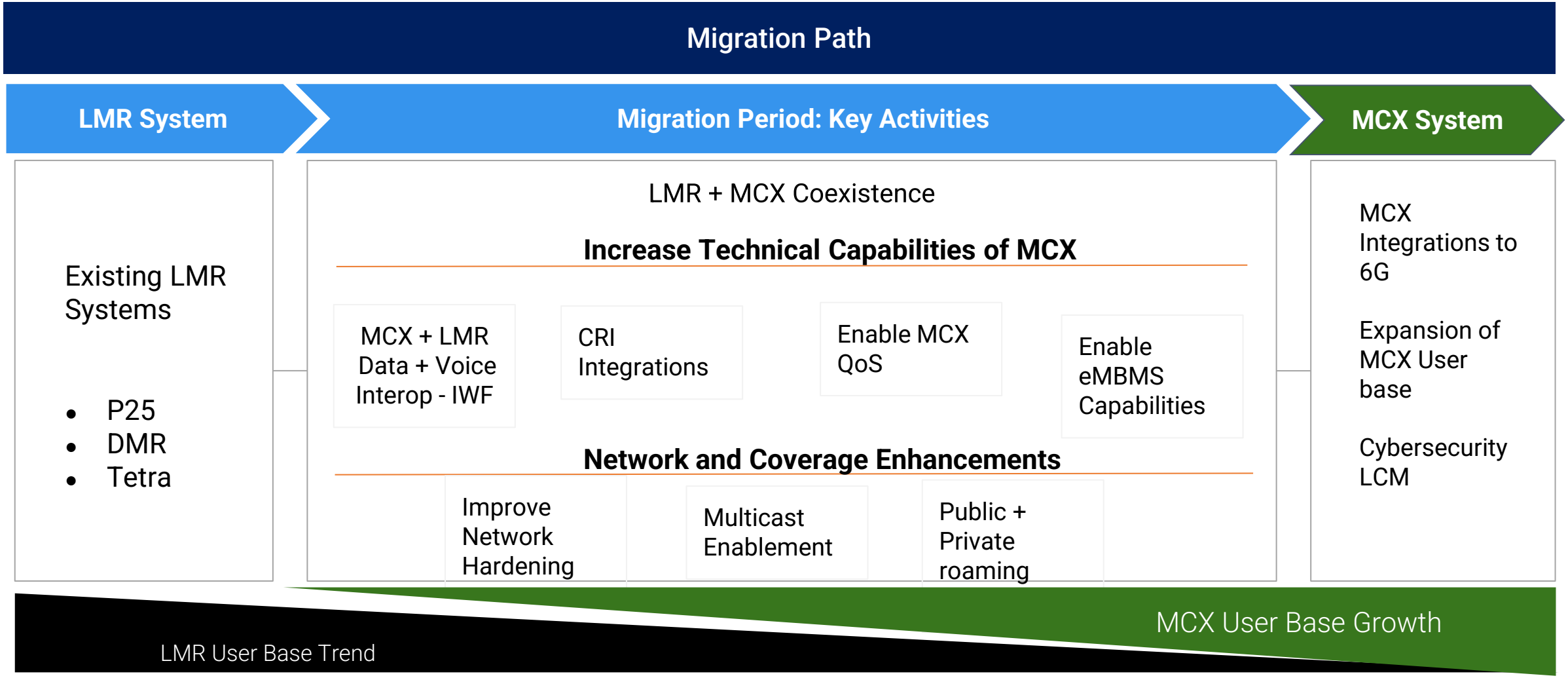
IWF convergence harnesses the reliability of LMR with the expanded capabilities of 4G and 5G—enabling seamless voice, real-time data transfer, high-resolution video, and enhanced coverage ensuring long-term viability of LMR–MCX interworking and maximizes return on existing technology investments.

By bridging these technologies, organizations can either augment existing LMR infrastructure or transition gradually toward fully broadband-based Mission-Critical Services (MCX).

The IWF adheres to internationally recognized 3GPP (developed in Release 17) and ETSI standards, providing a secure, scalable, and vendor-neutral interoperability framework, allowing selection and deployment of best-of-class solutions.



Migration Path LMR to MCX



Case Study Example - MCX

icon WATER

AIRBUS

vertel

Winner of Best use of Critical Communications in Utilities

ICCA INTERNATIONAL CRITICAL COMMUNICATIONS AWARDS 2025 WINNER

About Icon Water

Icon Water Limited is an unlisted public company wholly owned by the ACT Government

Manage and operate all water and wastewater services for the ACT.

Approx. $3B of water & wastewater related assets

Water

- 278GL combined dam capacity
- 50 Reservoirs, 25 pump stations, 2 treatment plants
- 3,400Km of water pipes
- Approx. 130 million litres of treated water each day

Wastewater

- 25 pump stations, 4 treatment plants
- 3,400Km of wastewater pipes
- Approx. 117 million litres of sewerage each day

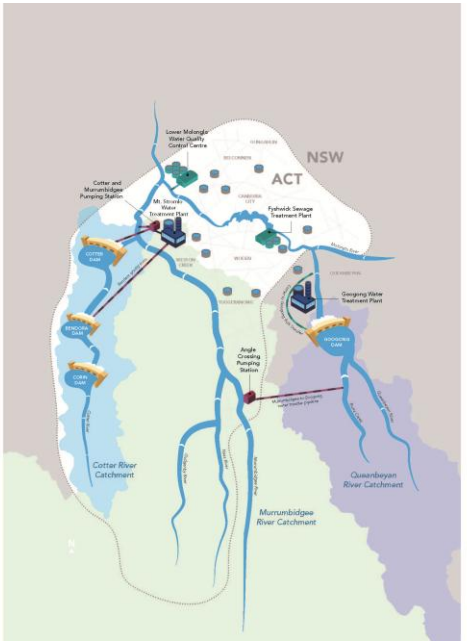
Challengers and Requirements

Challengers

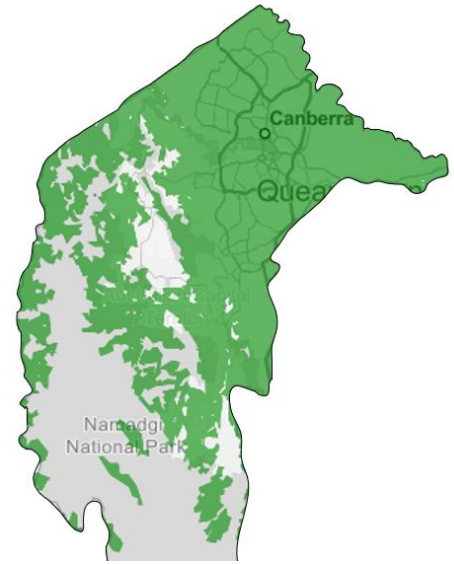
- LMR System was obsolete, well past end of life
- It provided the primary method of communications for operational staff & in some locations, the ONLY communication tool
- LMR System did not offer coverage where Icon Water operated
- Lone Worker requirements where not met with the current LMR network

Requirements

- Solution to enable staff to work remotely, reducing dependence on office environments
- Must provide reliable group communications, especially in areas without cellular coverage
- Must meet Icon Water availability, RTO & RPO metrics
- Critical locations to have resilient connectivity
- 4G Network doesn't cover all Icon operational regions
- Increasing demand to use more data centric applications
- Must support both voice and data services securely
- Based on a Standards Solution – non proprietary



Icon Water Assets and places of operations



Telco coverage with black spots where Icon Water operates

Solution Overview

- **SaaS** Airbus Agent MCx Mission-Critical Communication Solution
- Geo-redundant configuration hosted in Microsoft Azure
- 99.99% Availability of Agnet Core
- Integration with PBX, Microsoft SSO, SMS
- Airbus Agnet Smart Phone Client
- Airbus Agnet Console
- iSafe Smart Phones
- iPhone Smart Phones and Tablets
- Ania Bluetooth RSM
- Cradle Point Vehicle Routers
- Telstra SIM Cards
- Starlink Satellite Vehicle Antennas
- WIFI Vehicle Antennas
- In Building Wi-Fi and Cell Extenders
- 24/7 Monitoring & Support through Vertel NOC

icon WATER

i.safe IS530

The i.safe device has a number of physical buttons that can be used to interact with the AgnetWork application.

Use the PTT button to talk to the selected group

Breaking Down Coverage Barriers

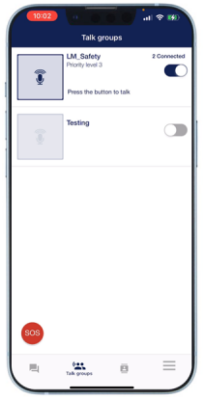
Using a “Network of Networks” strategy by delivering multiple broadband networks, allows users to connect and communicate anywhere Icon Water operates today.

Unlike traditional LMR networks where you are limited to the network footprint and data speeds of narrowband networks, broadband networks extends coverage, enhances operational requirements with many of the tools used today in the workforce on smart devices.

By delivering a Broadband centric approach supporting Voice and Data requirements for users, ensures ubiquitous coverage anywhere enhancing communications and workplace safety for their teams with LTE, Satellite, In Building WIFI extenders combined with Agnet MCX.

Airbus Agnet, LTE, Satellite, Vehicle Routers, Wi-Fi extenders, Smart Phones, Tablets, Dispatchers delivers the complete communications ecosystem for Icon Water.

Icon Water vehicle with Satellite Antenna mounted



Agnet operating on iPhone and iSafe devices

Ania Bluetooth BSM

Vehicle As A Node

Vehicle as a Node Transforms your Vehicle into a robust network

Smart Phones and Tablets using AIRBUS and other Data Applications

Mobile Wi-Fi

Safety of Staff outside the Vehicle for Lone Worker and Durness

Wi-Fi Coverage Outside of the vehicle up to 100m

Vehicles can mesh using Wi-Fi as WAN for extended coverage

Quality of Service for prioritisation of Agnet Data Traffic (Voice and Data)

Remote monitoring and configuration

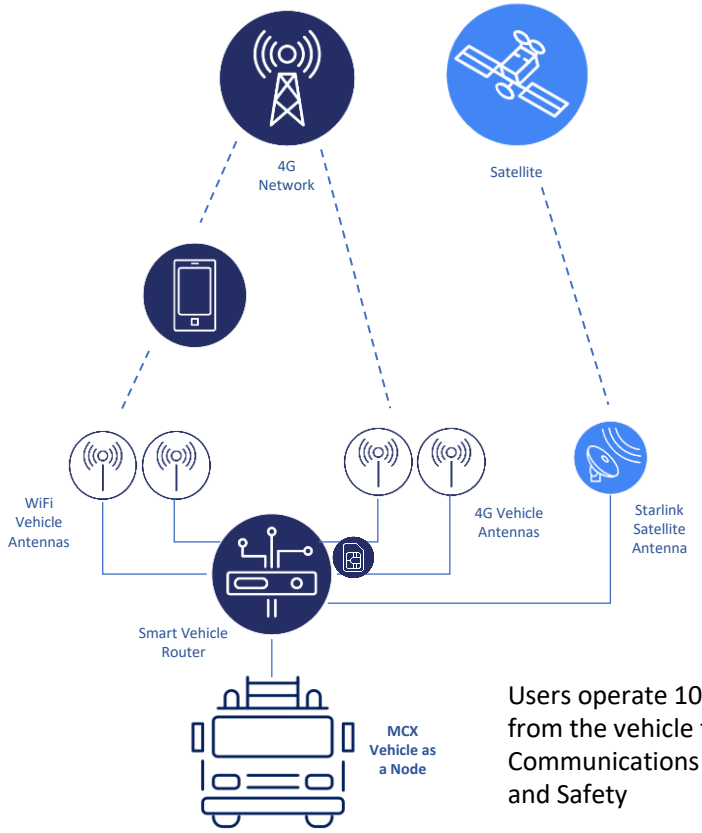
Resilience

LTE and Satellite for Broadband Connectivity

Multiple Wi-Fi antennas for diversity and redundancy

Multiple 4G antennas for diversity and redundancy

Redundancy to LTE if required (secondary Telco SIM)



Users operate 100m away from the vehicle for Group Communications and Health and Safety

Airbus Agnet MCX – Eco System

Features

Voice

Messaging

Video

Location

Safety
Emergency calls,
lone worker

Mission focused apps

Agnet Dispatcher

Agnet Tacteam

Agnet Turnaround

Integration possibilities with API's

Customer application integration

IoT management

End user devices

M-to-M devices

Connectivity

BROADBAND
IWF
P25, TETRA, DMR
AIRBUS TETRA
SATCOM

Deployment

SaaS
On-premises

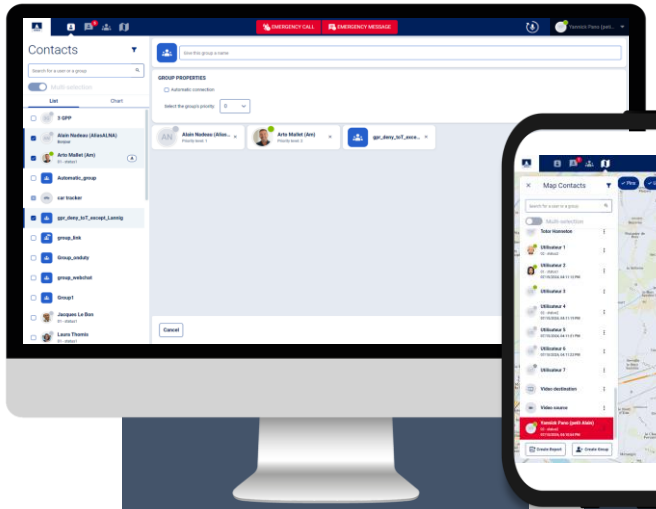
Platform

Security
Hosting
SLA
LTE/QoS
MDM
Audit
Priority

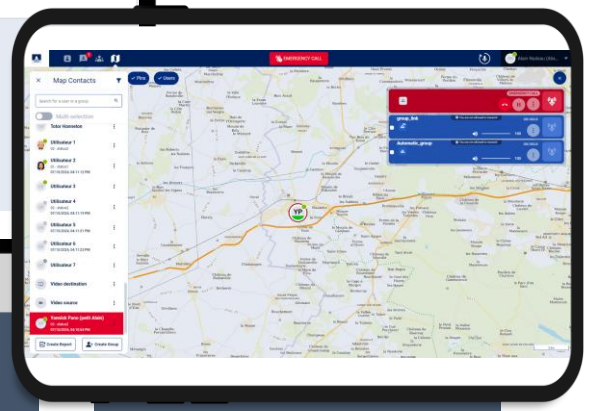
Professional Services and integration

End-to-end security

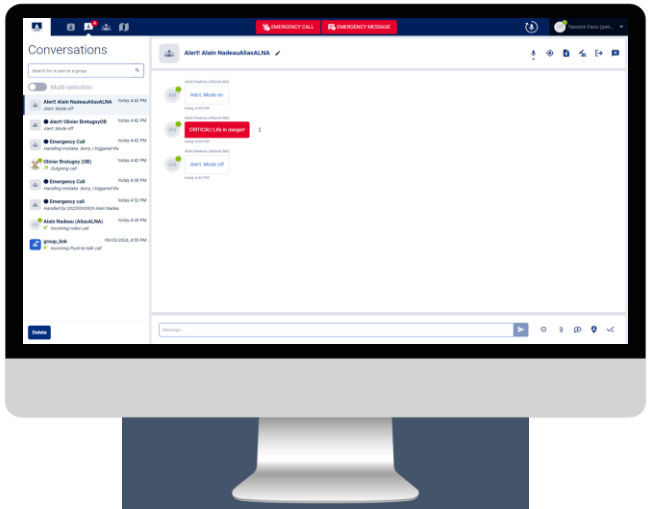
Airbus Agnet Dispatcher Features



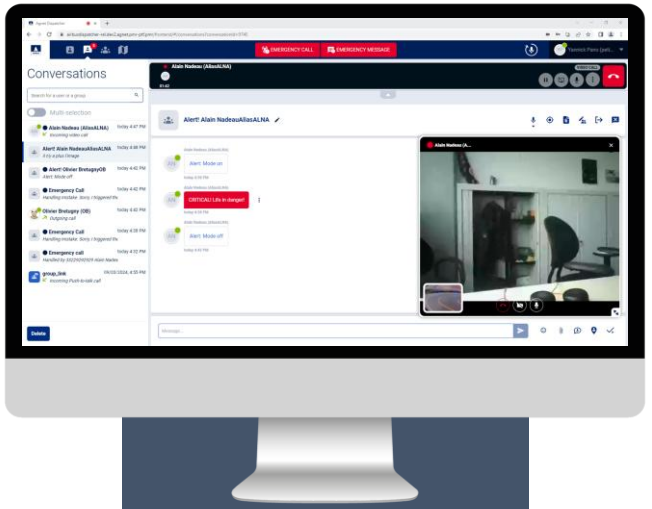
Talk groups



Geolocation



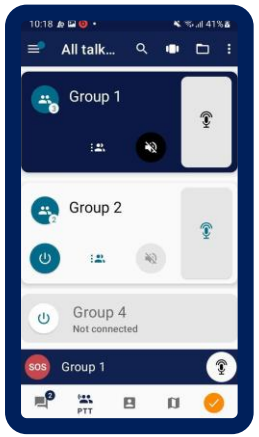
Emergency calls



Video calls

Airbus MCX – Client Features

Voice



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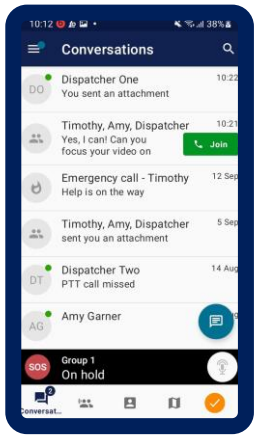
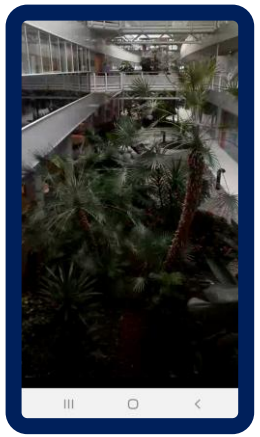
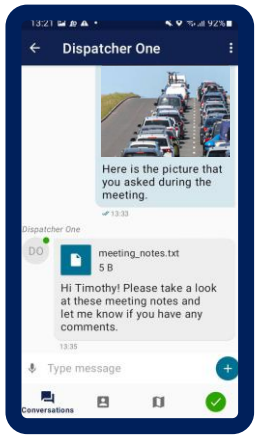


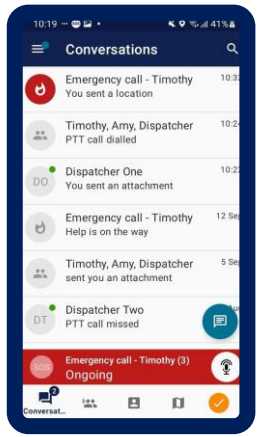
Conversations



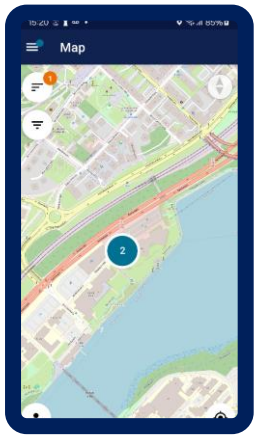
Video



File sharing



Emergency



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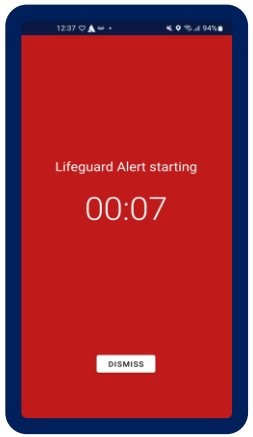
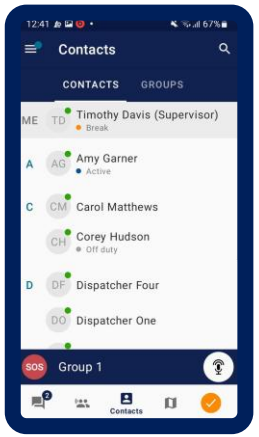


Lifeguard



Contacts