



Modern Field Communications Project Overview

for Rural Fire Brigades Association Queensland 17 March 2024

Respect

Integrity

Courage

Loyalty

Trust



The Project Vision for QFES

“Provision reliable front-line
communication technology to
improve safety of our staff and the
community anywhere, anytime
across Queensland.”



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The Communication Problem

- In Greater Queensland (GQ), Queensland Fire and Emergency Services (QFES) communication coverage, capability and capacity is insufficient. Many areas are currently operating with limited or no supporting communication technology.
- A high percentage of operational hours is spent without effective communications.
- The location of appliances and personnel is often unknown.
- Our personnel cannot effectively co-ordinate operations to protect the public and assets.
- This creates risks to the safety of our personnel in areas where there is limited or no communication infrastructure.
- The current solution is therefore unable to meet the current and future demands of QFES operational personnel.

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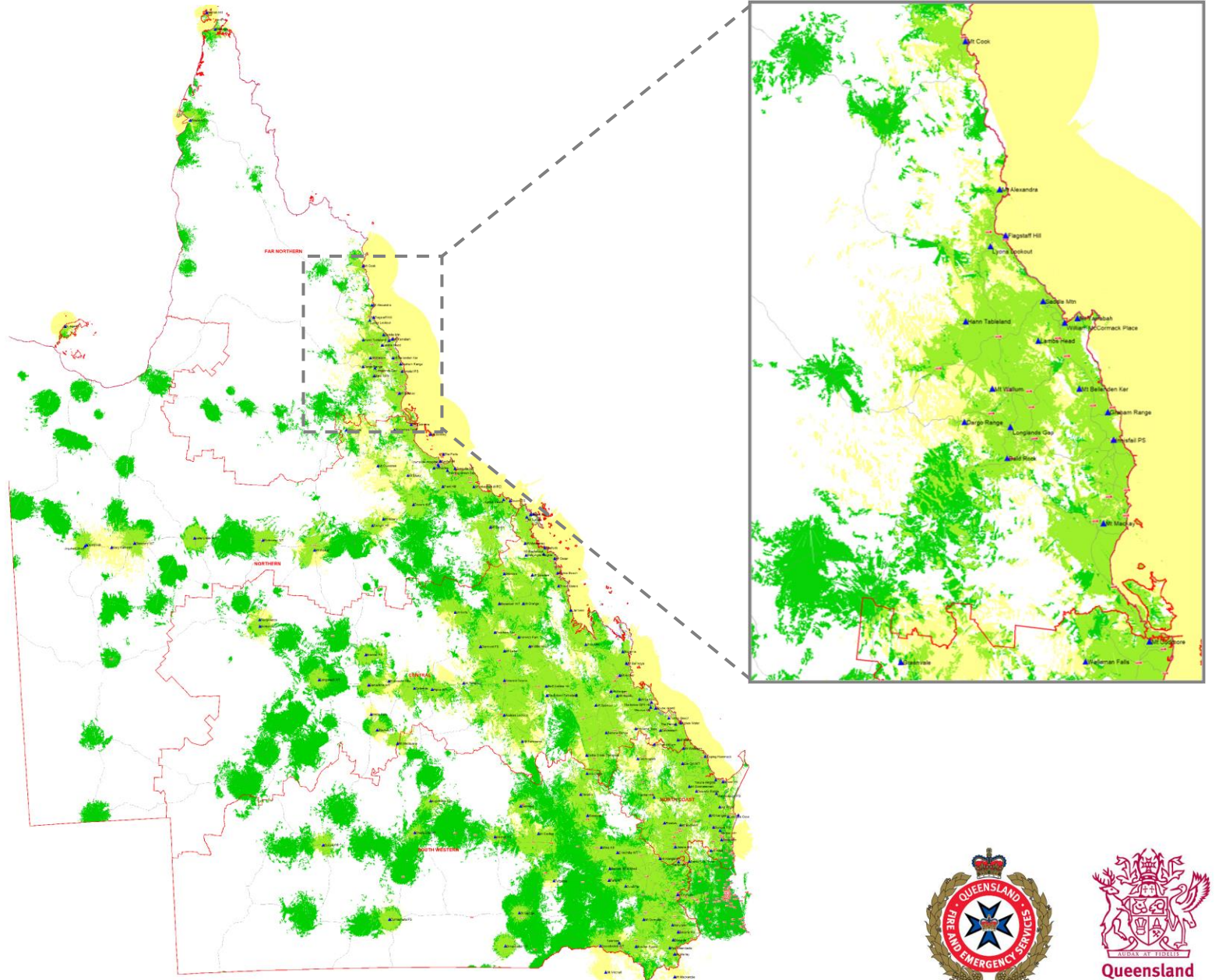


The Communication Coverage in Greater Queensland

FireCom network

Network overlap

Mobile phone network



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The Solution

QFES plans to convert QFES's appliances and other vehicles into 'in-vehicle communications hubs' in order to expand our comms capacity, capability and coverage.

We aim to equip the in-vehicle communication hubs with inbuilt seamless redundancy with multiple communication pathways.

The Modern Field Communication Project will provide:

- ✓ Push to talk (PTT) communication
- ✓ Handheld smart devices (dual channel)
- ✓ Prioritisation on the mobile phone network (LTE)
- ✓ Additional Cell on Wheels (CoWs)
- ✓ Fixed site satellite communication (300 stations)
- ✓ Generators for power outages to harden the mobile phone network (LTE)

Personal and vehicle location monitoring via GPS will be made available in Greater Queensland. This will enable the same duress functionality as currently available in South East Queensland.



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The Solution – Smart Devices



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The Solution – Low Earth Orbit (LEO) Satellite



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The Solution – Geostationary (Geo) Satellite



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The Solution – Black Boxes



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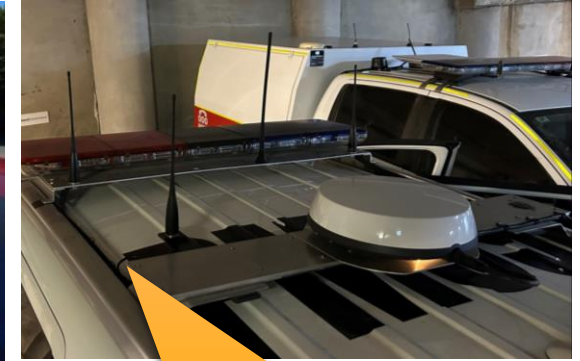
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The Outcomes

- ✓ Improved reliability of voice communications and access to data in remote locations
- ✓ Expanded coverage in areas with an existing mobile phone network (LTE) e.g. indoors
- ✓ Provision of non-voice emergency/duress notification capability, in conjunction with location
- ✓ Improved audio quality and intelligibility to and from the field
- ✓ Ability to communicate directly to and from FireCom centre to any QFES vehicle anywhere in the State
- ✓ Remote access to operational application in the field via the QFES vehicle



**Improved
protection of
assets i.e. lives
and property.**

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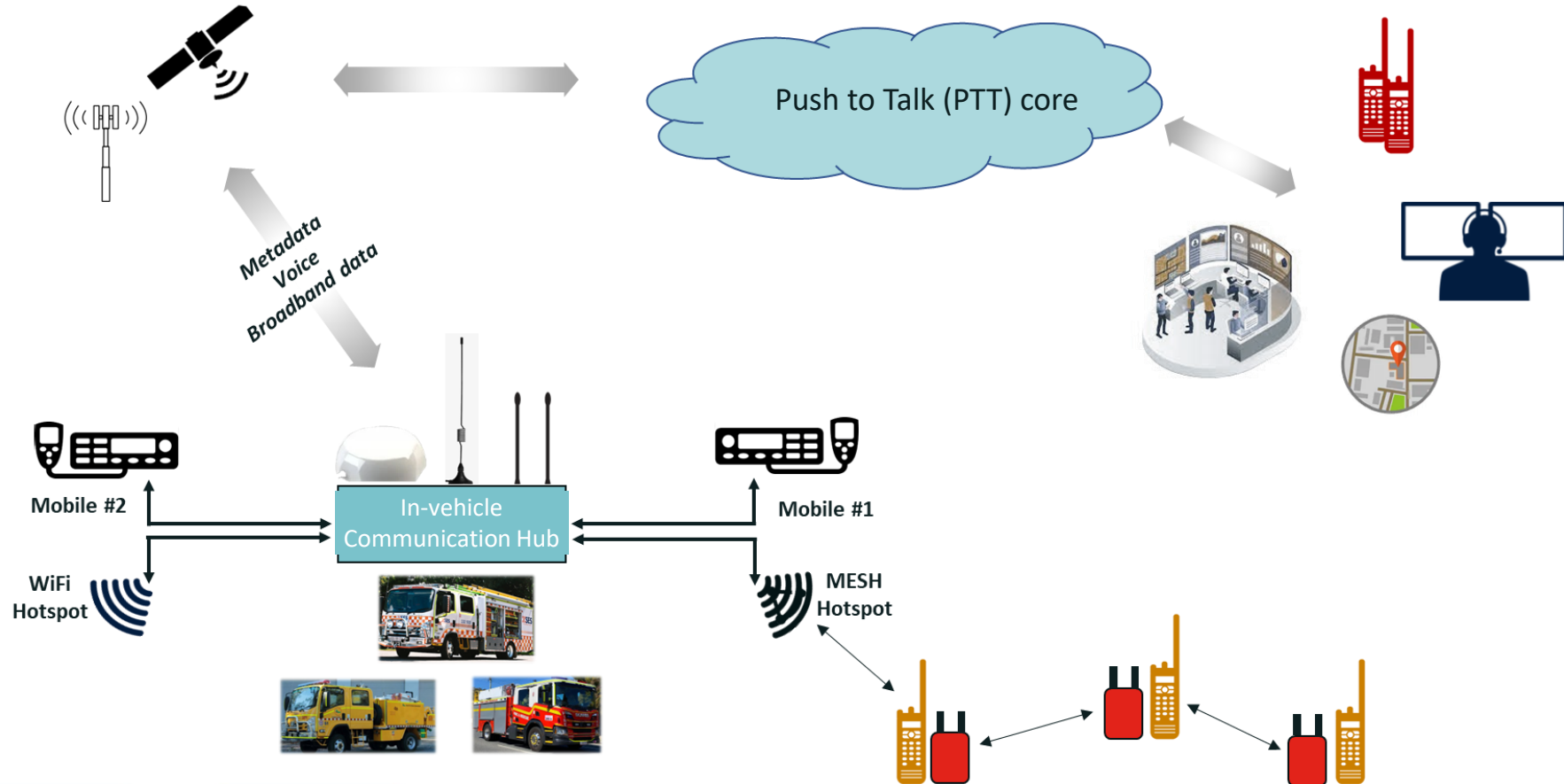
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The Conceptual Design of the Solution



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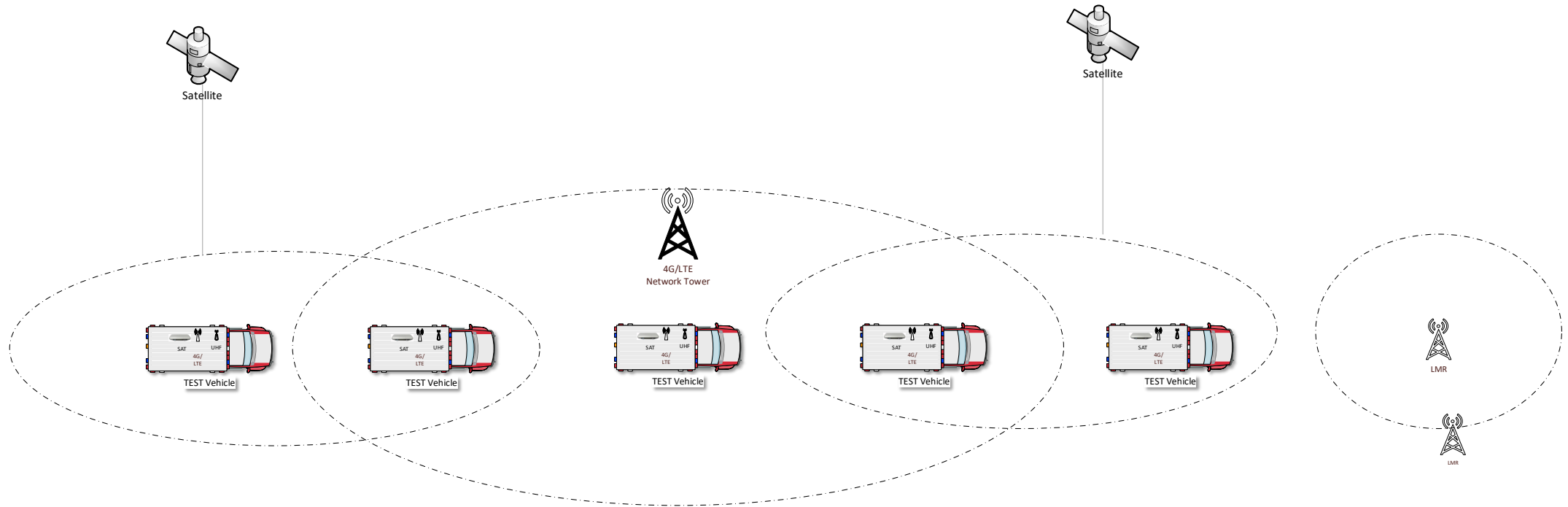
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SAT-LTE-SAT Transition Scenario



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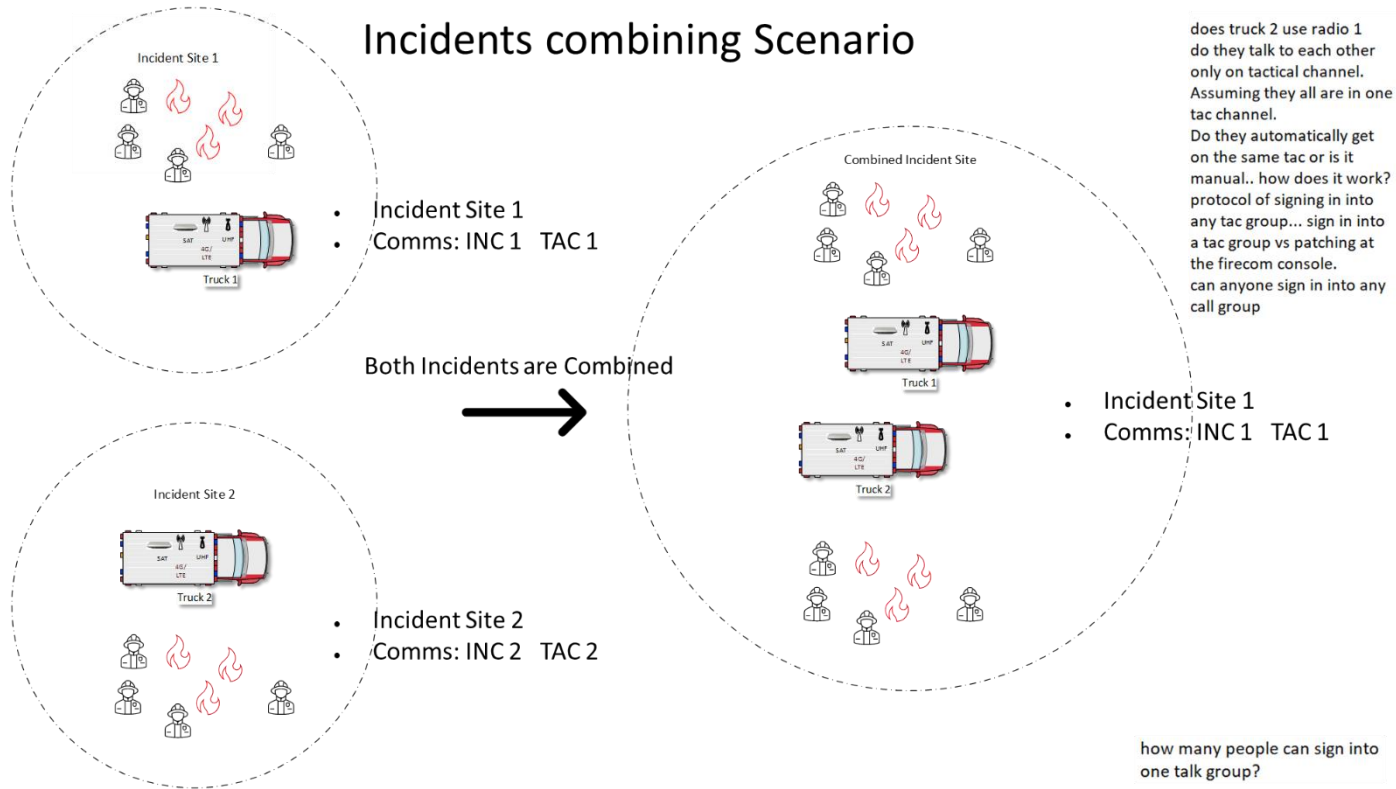
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Incidents Combining Scenario



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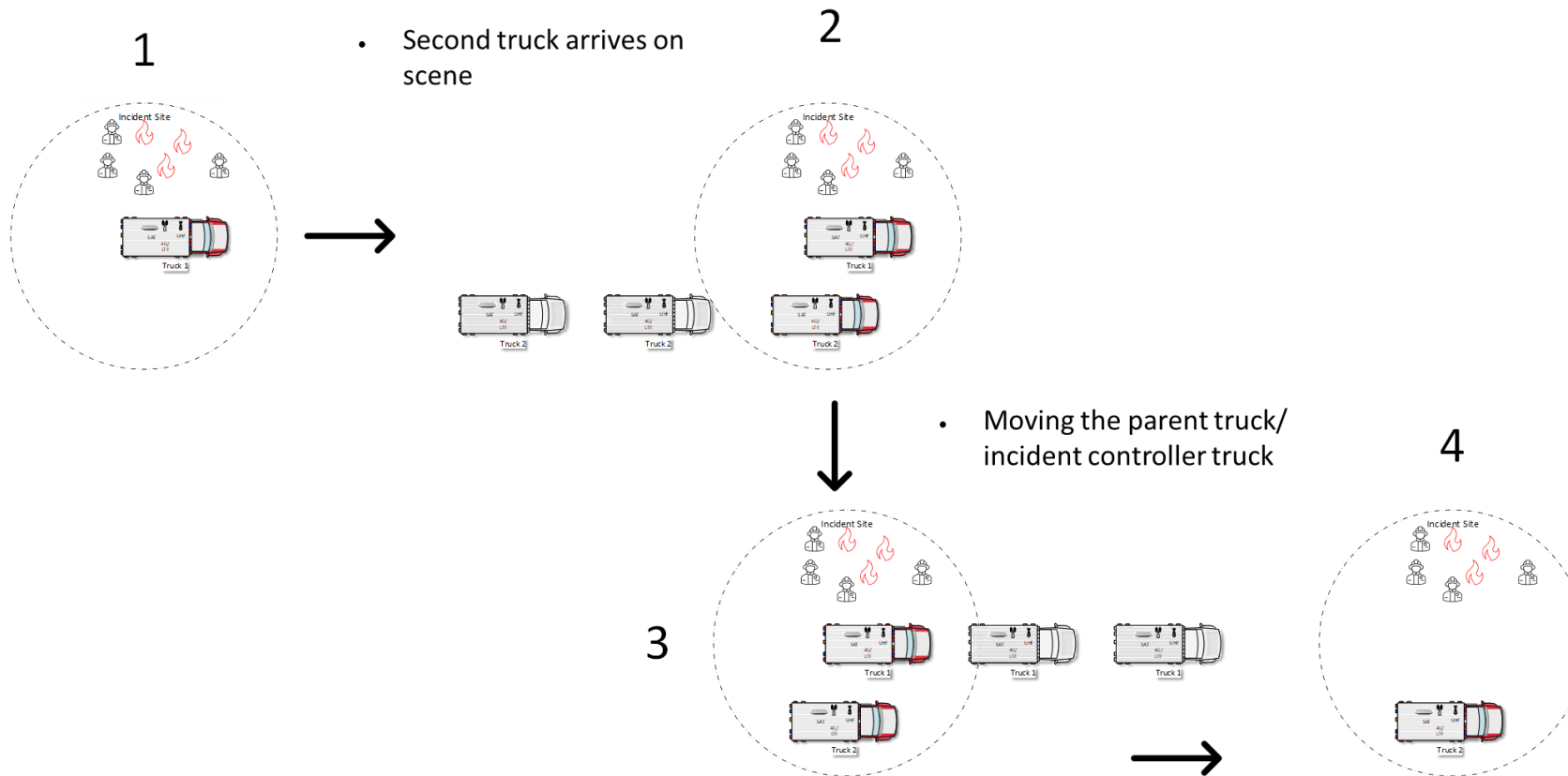
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Incidents Controller Transition Scenario



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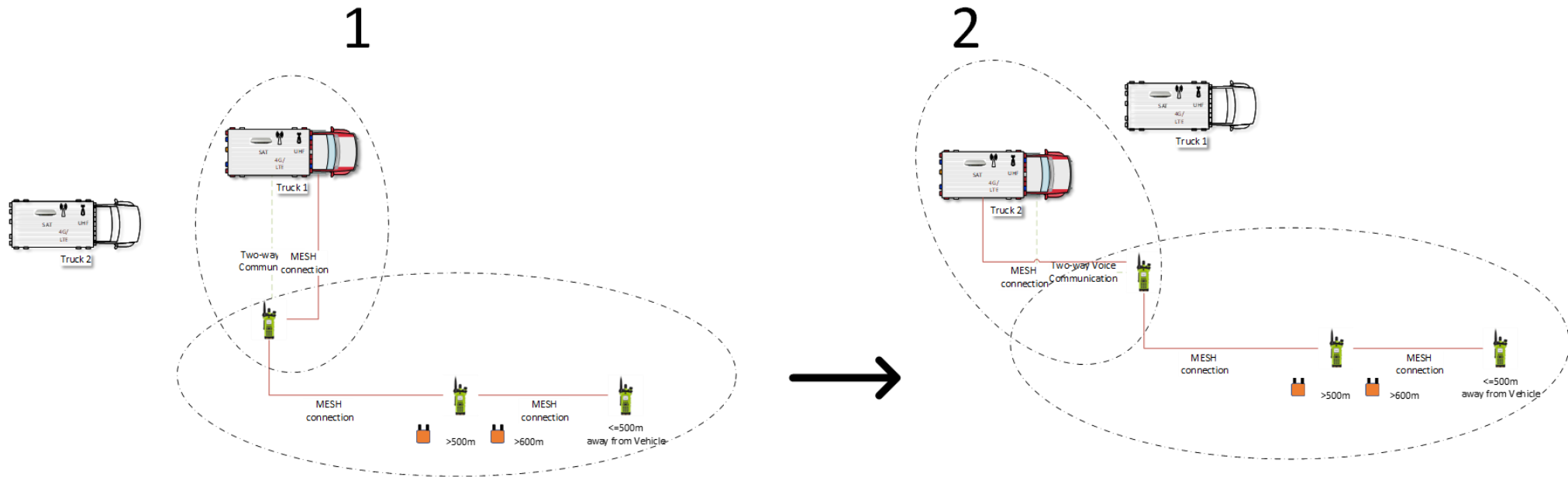
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Test Mesh Transitioning



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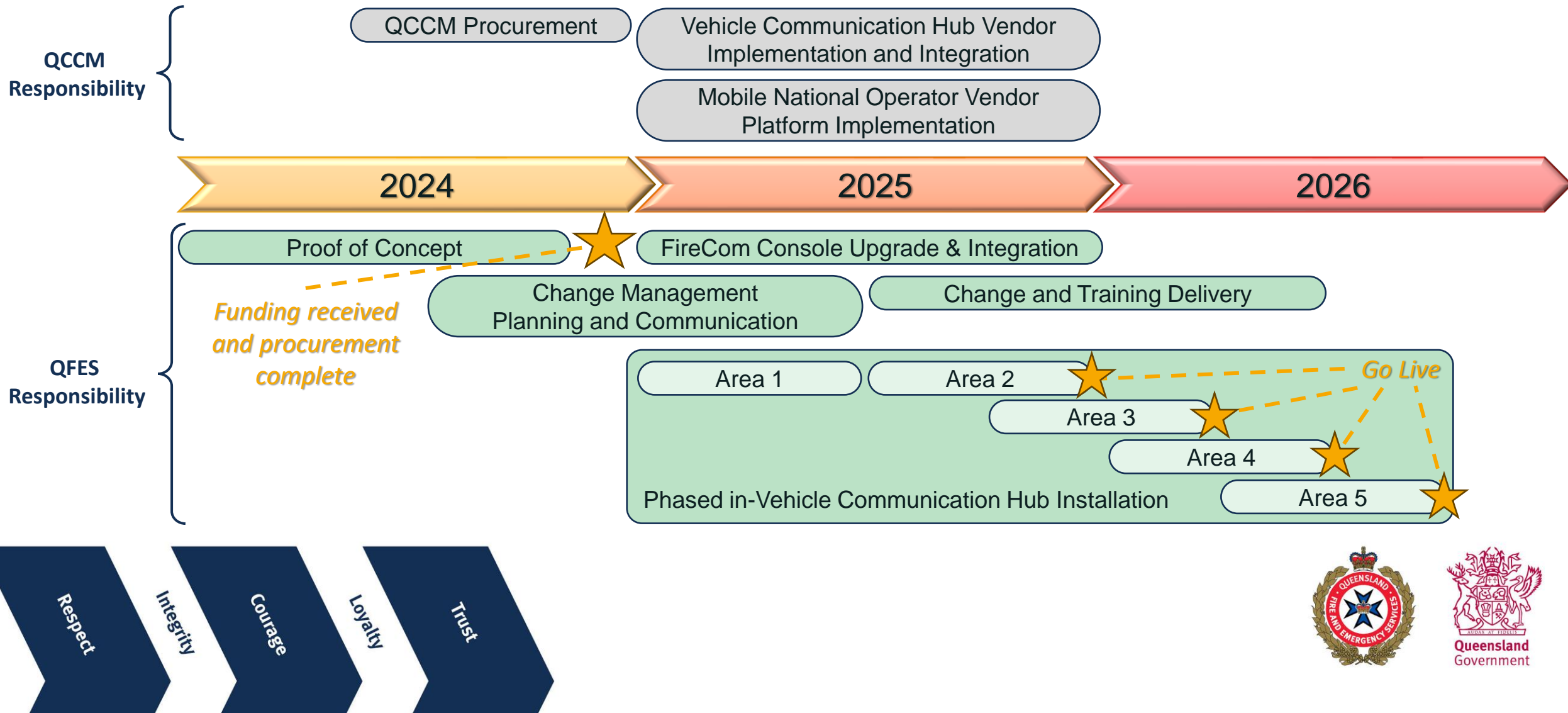
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The Timeline (subject to change)

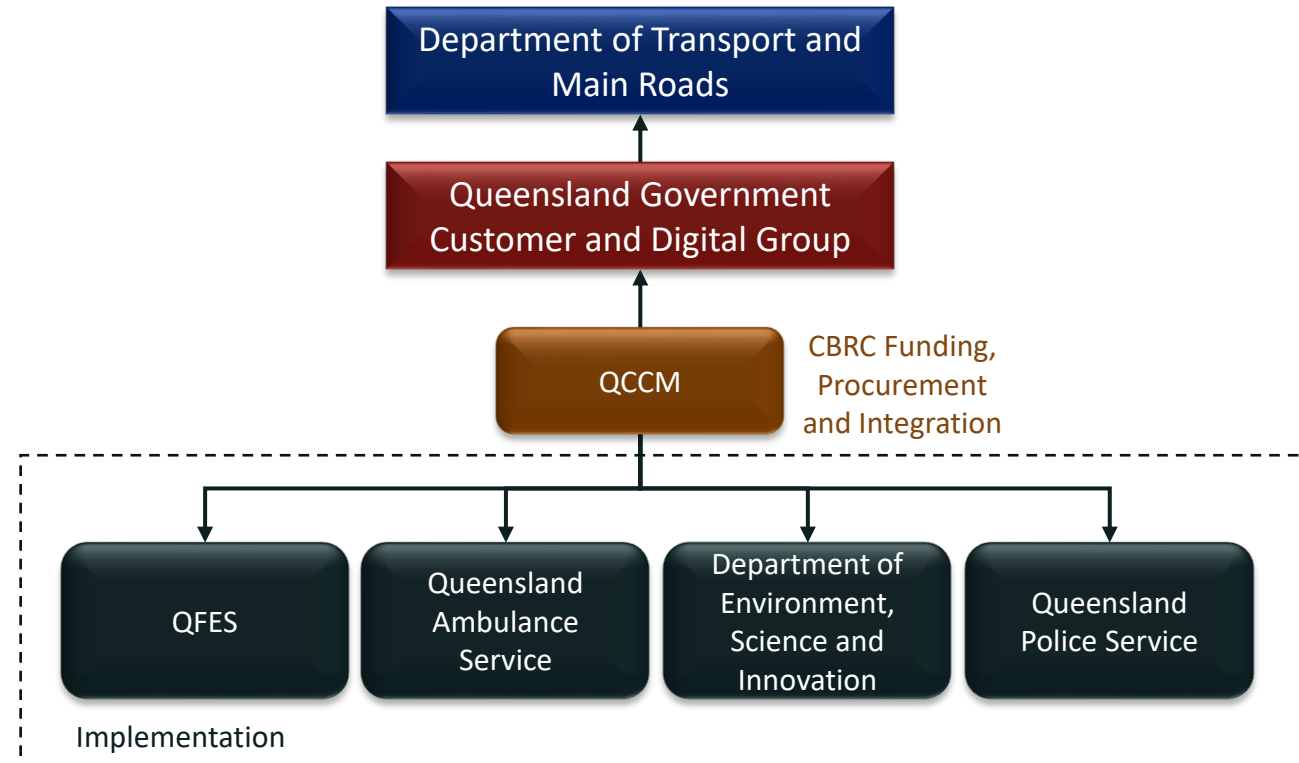


The Queensland Critical Communications Modernisation Project (QCCM)

QCCM Vision

To provide a whole of government public safety communications network that is secure, reliable, resilient and scalable, enabling public safety professionals to communicate:

- from any location in Queensland or other jurisdictions*
- using an appropriate medium for the context*
- in a timely manner*
- with whoever they need*
- using real-time access to voice and data*



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Radio Firmware Upgrade Project: South-West Region

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Field radio comms will be impacted, if we don't upgrade firmware.

- Motorola has stopped supplying the old batteries and QFES' stock of batteries is running out.
- New batteries are incompatible with existing radio firmware.
- Causes a persistent low battery alarm, regardless of actual battery charge status.
- The alarm sounds regularly during operation and may impact effectiveness of radio communications in the field.



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We have secured simple, fast and free upgrades for you.

- This is an operational maintenance activity.
- Motorola have agreed to provide technicians to upgrade for free.
- Firmware needs to be upgraded in GQ network radios only.
- 6,700 Motorola portable radios in 760 FRS, RFS and SES locations.

A minimal impact approach

- 1 Radio Upgrade Hub**
Stations within a 100-110 km radius of a 'Hub' need to take radios into 'hub'
- 2 Exchange Program**
Stations outside of the 100-110 km radius will use the 'Radio Exchange Program'

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We have some constraints.

- Delivery timeframes are tight – 30 June 2024.
- Delivery approach has been endorsed.
- Motorola's schedule is fixed.
- Training was not considered viable.
- Only small radio cache available for Radio Exchange.

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Stations need to commit a few hours to preserve safety comms.

- Each radio takes 5 minutes per radio to upgrade.
- Total 1-3 hours for each Brigade.
- No time 'offline'.
- Brigades are still within range to respond to critical incidents.

How the Radio Upgrade Hub Works

- 1 Bring the radio into the Hub.
- 2 Register radios for audit.
- 3 A Motorola technician will upgrade radio firmware.
- 4 Wait...
- 5 Radio will be returned on the day.

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Queensland
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Thank you



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