Accelerating Public Safety Mobile Broadband for Emergency Services

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NSW GOVERNMENT

NSW Telco Authority

Public Safety Network

One of the world's largest trunked radio networks

Connectivity leader
Lead strategy and align whole-of-government initiatives

Telecommunication and emergency management
Coordinate response and protect infrastructure

Service Delivery
Operate and maintain the Public Safety Network

Program delivery
Deliver major telecommunications and digital infrastructure

Spectrum management
Oversee and coordinate use of spectrum

2019–20 Bushfires

- 10 mill calls to the PSN
- 11 PSN sites damaged with 2 destroyed
- 13 satellite units, 36 Cells on Wheels and 140 generators deployed
- 175 consecutive days of support to save vital telecommunications infrastructure

2022 Floods

- 800+ commercial telecommunications network impacts
- 14 PSN site outages, 111 mains power issues, 26 link issues
- 6 satellite ground stations, 10 Cells on Wheels and 58 generators deployed
- 46 days of 24/7 support for telecommunications carriers

What ESOs need from a PSMB

The long-term vision for a mission critical PSMB

ESOs need a ***quick*** **mobile broadband service for the transmission of data, video and voice** that:

- is accessible ***wherever*** first responders may be
- ***is always available*** on ***any device*** – even during the ***most severe events; and***
- ***prioritises*** and ***simplifies*** ESO transmissions.

Because without this, lives, livelihoods and property are put at risk.

ESOs need what they have now:

- Essential Mobile Broadband functionality
- Accessible securely on any Device
- Which is delivered using high levels of Network Security

PLUS the following improvements (in priority order):

1. Increased PSMB Coverage everywhere

- With an initial focus on rural and remote areas and high-risk coverage blackspots (such as in-buildings, on highways and in tunnels)

2. Upgrade to mission-critical levels of availability via:

- Improved Resilience
- Priority/Pre-emption access to the network
- Adequate Capacity, Bandwidth and Speed
- Network Transparency

3. Ensure the overall PSMB is designed to meet the following criteria:

- 1% Proof – they are designed to withstand the most severe events
- Seamless in-field operations
- Supports the speedy delivery of operations in the field

How ESOs will use the PSMB

Mission-critical mobile broadband data services will enable:

Improved information flows


Live streaming video


Situational awareness e.g. photos, maps, floorplans, weather


Critical information – health records, weapons permits, vehicle registration


Duress signals and location information

Advanced technology


Heads-up display


Live streaming from drones and aircraft


Facial recognition and artificial intelligence


Advanced telemetry


Vital signs monitoring


Flood and fire sensors

Whole of Government Next Generation Connectivity

We are conducting trials to better understand how to solve statewide connectivity challenges

Our trials are testing emerging connectivity solutions.

New technology can provide greater coverage without heavy infrastructure rollout but requires trials to examine challenges in interoperability, latency, capacity, cost and reliability.

With $3.5 million in funding under the Digital Restart Fund, the trials will inform and guide future investment in next generation connectivity solutions.

National Parks and Wildlife Service

Address visitor and first responder safety in National Parks by improving connectivity in campgrounds and recreational areas that have challenges due to location or topography.

Service NSW

Fit out the Service NSW Mobile Service Centres with satellite capability as they serve remote communities.

Reconstruction Authority

Deploy temporary, high-throughput connectivity rapidly to aid recovery in areas impacted by disaster.

NSW RFS

Provide reliable satellite connectivity for firefighters in areas of low or no coverage, including the ability to remain connected while in transit on fire trails and in dense bushland – a challenge established satellite services have not yet overcome.

NSW SES and ACT Emergency Services Agency

Create coverage areas for missing persons searches that are challenging due to terrain and distance from traditional carrier networks.

Temporary coverage and large area wi-fi networks will be created by using a combination of drone and satellite technology, improving operational outcomes.

PSMB Proof of Concept

NSW Telco Authority led a proof-of-concept PSMB trial that has laid the groundwork for the development of a national PSMB.

- Validated the proposed delivery model using a hybrid combination of commercial carrier networks and dedicated PSMB equipment.
- The four network configurations tested were dedicated RAN, multi-carrier roaming, RAN sharing and deployable coverage.
- Successfully demonstrated interworking functionality between the PSMB 4G/LTE network and an existing P25 network.
- An Australian-first demonstration of a commercial multi-carrier roaming setup with a dedicated PSMB core.
- An Australian-first demonstration of interoperable mission-critical communications between different jurisdictions.
- First trial of its kind in Australia that brought together the Australian Government, all state and territory governments, commercial operators and technical providers.

NSWTA has identified **over 25+ countries with Public Safety Mobile Broadband** (PSMB) projects either completed or underway.

NSWTA is actively engaging with international PSMB agencies and a member of The Critical Communications Association (TCCA) **to collaborate and learn from their experiences**.

Global Best Practice Observations confirms **Australia is trailing behind the rest of the world** who have voice and data capability.

We have a renewed opportunity to kickstart and to **deliver what our communities and our emergency services need** keep them safe.

Most developed nations either have a PSMB or are currently building one

United States

The US has a fully developed hybrid PSMB model with network delivered by AT&T

France

France has a Multi-Operator Core Networks (MOCN) set up with two operators to deliver their PSMB

South Korea

South Korea has a dedicated PSMB model incl. dedicated spectrum

United Kingdom

United Kingdom has a hybrid PSMB model with a dedicated core managed by carrier and commercial spectrum

Germany

The BDBOS PSMB network has more than 1M subscribers and handles approx. 50 million calls each month

Qatar

Qatar's PSMB went live in 2012

Canada

The Canadian Government reserved 20MHz of 700MHz band for public safety, 3GPP Band 14 for its PSMB

Belgium

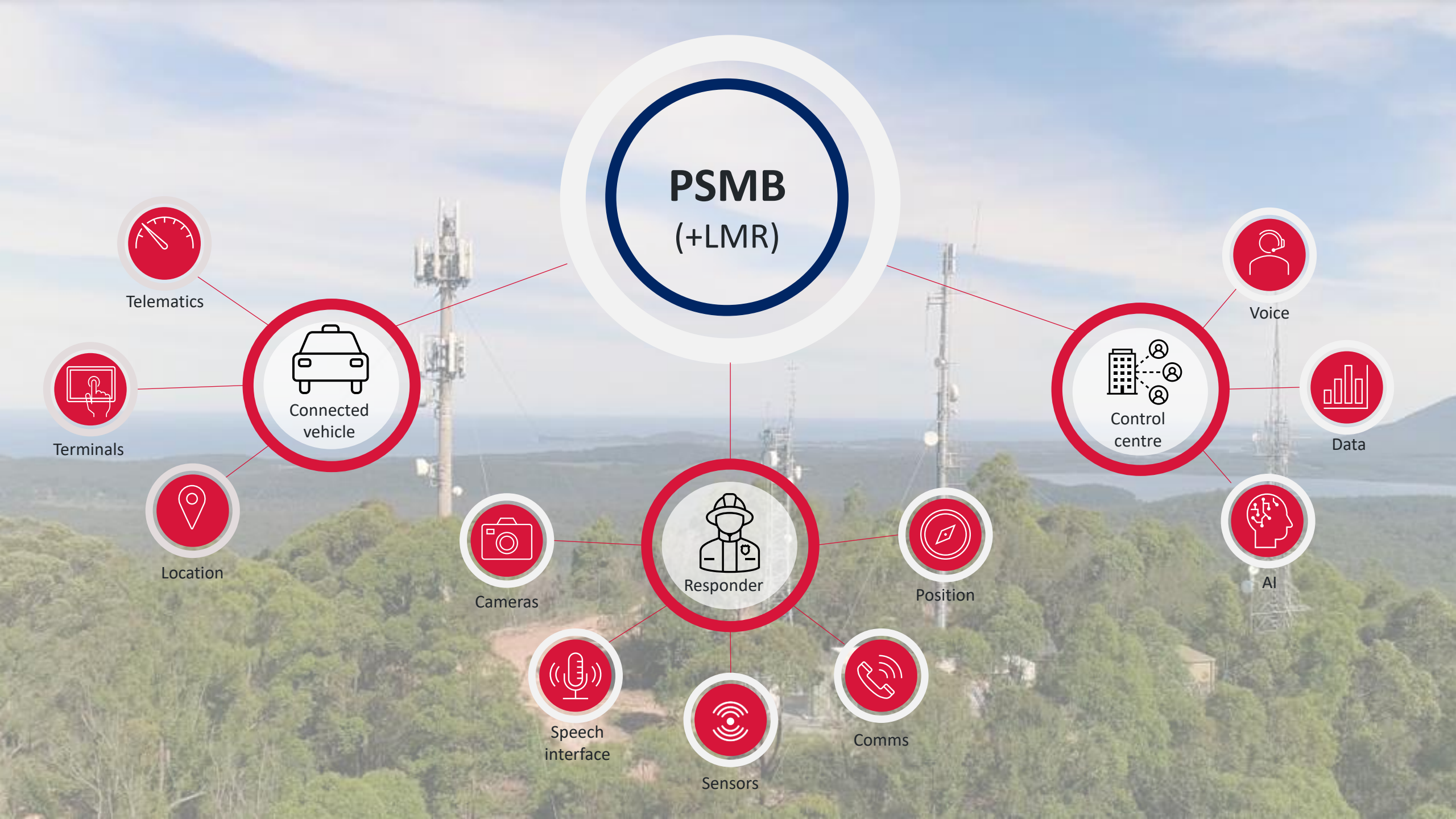
Belgium has achieved a single nationwide common PSMB for all public safety services (TETRA network with 55K radios in use)

New Zealand

New Zealand are currently developing and scoping partners and solutions for their PSMB

Finland

VIRVE PSMB (TETRA) has been in operational use since 1998. Finland was one of the world's first to replace analogue technology with digital


PSMB
(+LMR)
Telematics
Terminals
Location
Connected vehicle
Cameras
Speech interface
Sensors
Responder
Position
Comms
Control centre
Voice
Data
AI

INTEROPERABILITY

CONTINOUS ROAMING

QUALITY OF SERVICE,
PRIORITY AND
PRE-EMPTION

RESILIENCE

TRANSPARENCY

Thank you

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