



P25: Still relevant after 30 years?

Paul Elmes

Managing Director, Tait Asia Pacific



TAIT FAST FACTS

Founded: 1969

Ownership: Private

(Majority Charitable Foundation)

Global employees: 550+

CEO: Yoram Benit

R&D spend: 15% per annum

Tait is considered a local supplier under the Australia and New Zealand Government Procurement Agreement



Tait HQ
Christchurch, **New Zealand**

Tait Offices:

Americas

Houston, **USA**
São Paulo, **Brazil**

EMEA

Vienna, **Austria**
Paris, **France**
Cambridgeshire, **UK**

Asia Pacific

Brisbane, **Australia**
Melbourne, **Australia**
Wellington, **New Zealand**
Singapore, **Singapore**

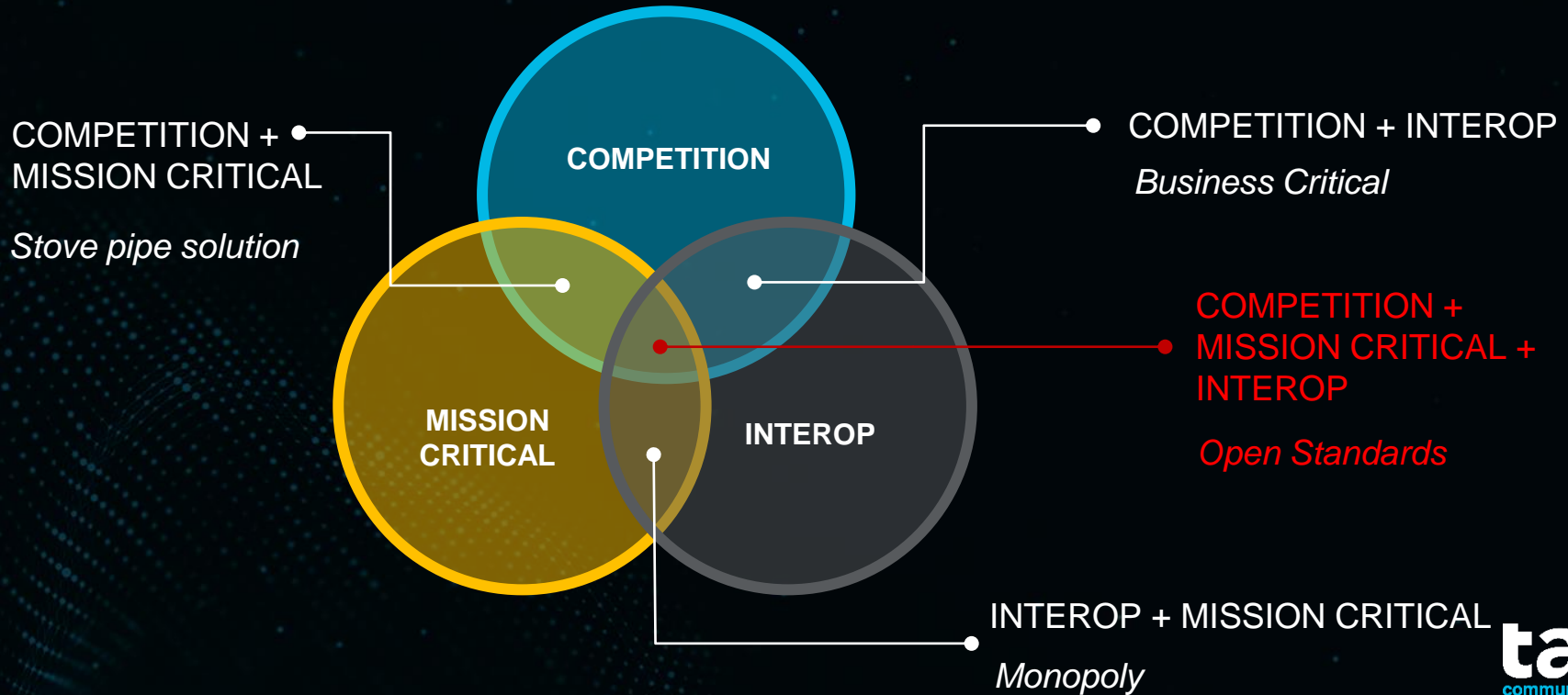
Designed for Public Safety by Public Safety ...

A suite of open standards that define **mission critical** voice communication for emergency services:

- Promote **interoperability**
- Ensure **competition**
- Develop user-friendly equipment
- Maximise spectral efficiency



The triple constraints of critical comms ...





Key Milestones

First meeting of P25 Task Force

1989

P25 Committees and sub-committees established

1992

P25 Common Air Interface standard published

1995

P25 CAP established

2008

P25 Phase 2 TDMA trunking standard published

2012



Key Milestones

First meeting of P25 Task Force

1989

P25 Committees and sub-committees established

1992

P25 Common Air Interface standard published

1995

9/11

2001

P25 CAP established

2008

P25 Phase 2 TDMA trunking standard published

2012

9/11





Key Milestones

First meeting of P25 Task Force

1989

P25 Committees and sub-committees established

1992

P25 Common Air Interface standard published

1995

9/11

2001

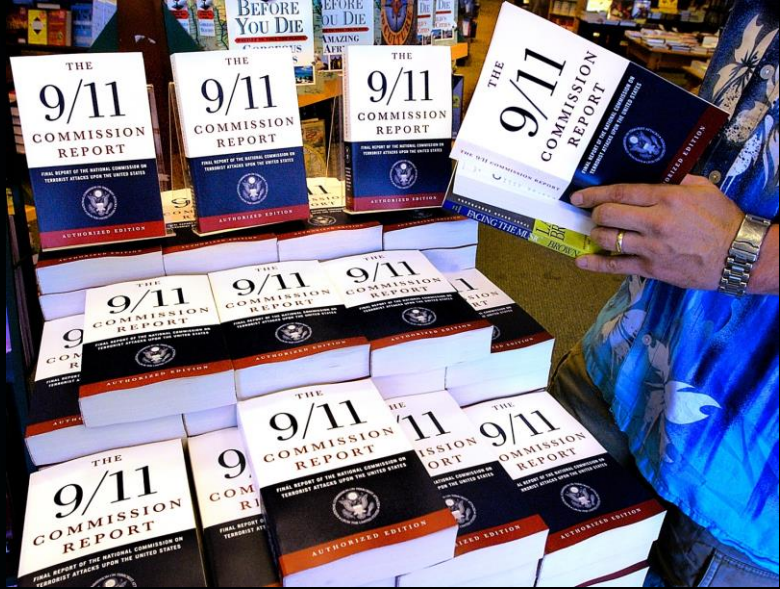
P25 CAP established

2008

P25 Phase 2 TDMA trunking standard published

2012

9/11





Key Milestones

First meeting of P25 Task Force

1989

P25 Committees and sub-committees established

1992

P25 Common Air Interface standard published

1995

9/11

2001

Hurricane Katrina

2005

P25 CAP established

2008

P25 Phase 2 TDMA trunking standard published

2012

Katrina





Key Milestones

- 1989 First meeting of P25 Task Force
- 1992 P25 Committees and sub-committees established
- 1995 P25 Common Air Interface standard published
- 2001 9/11
- 2005 Hurricane Katrina
- 2008 P25 CAP established
- 2012 P25 Phase 2 TDMA trunking standard published

Katrina





Key Milestones

- 1989 First meeting of P25 Task Force
- 1992 P25 Committees and sub-committees established
- 1995 P25 Common Air Interface standard published
- 2001 9/11
- 2005 Hurricane Katrina
- 2008 P25 CAP established
- 2011 Christchurch Earthquake
- 2012 P25 Phase 2 TDMA trunking standard published

Christchurch





Key Milestones

First meeting of P25 Task Force 1989

P25 Committees and sub-committees established 1992

P25 Common Air Interface standard published 1995

9/11 2001

Hurricane Katrina 2005

P25 CAP established 2008

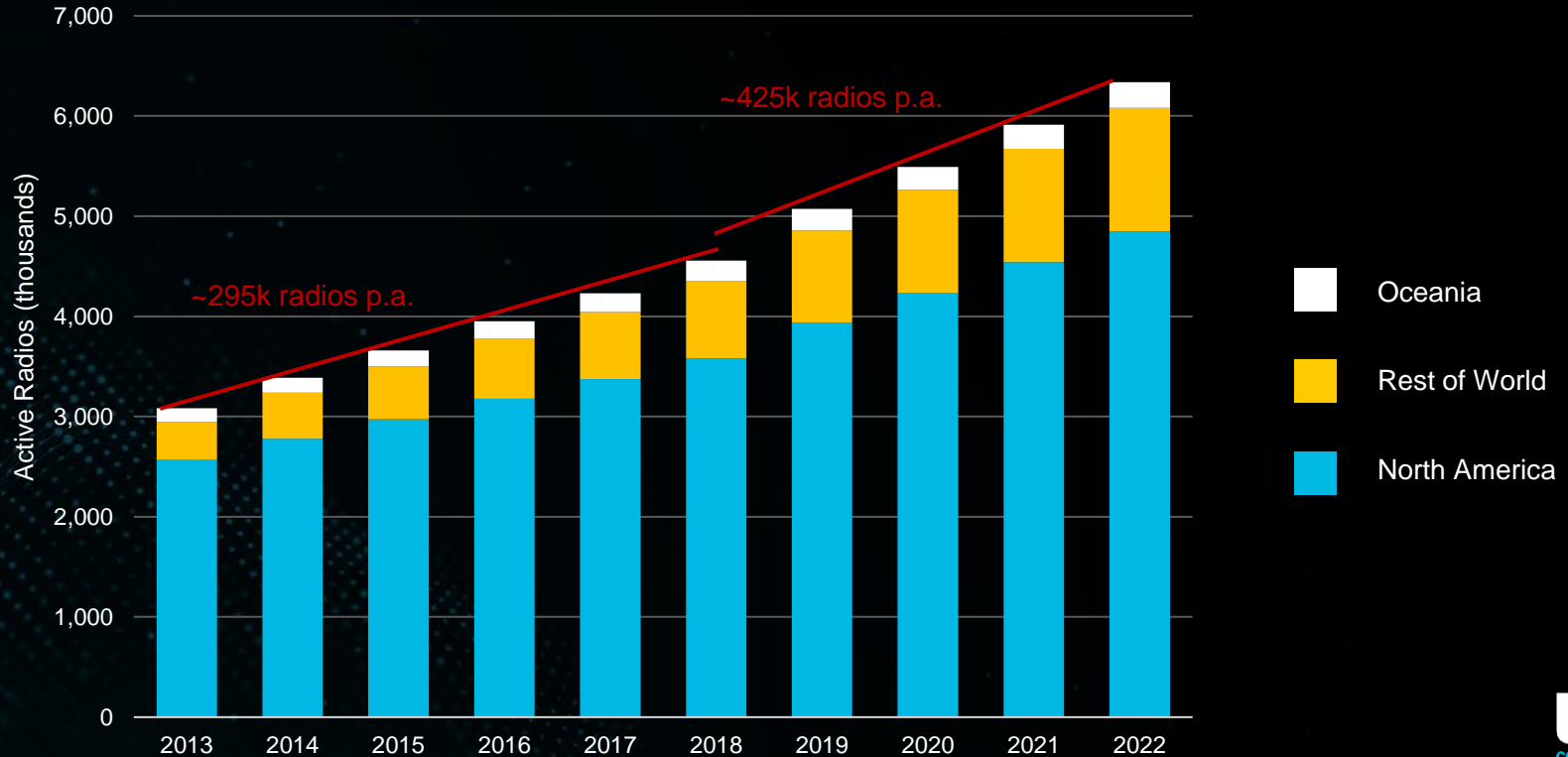
Christchurch Earthquake 2011

P25 Phase 2 TDMA trunking standard published 2012

Christchurch



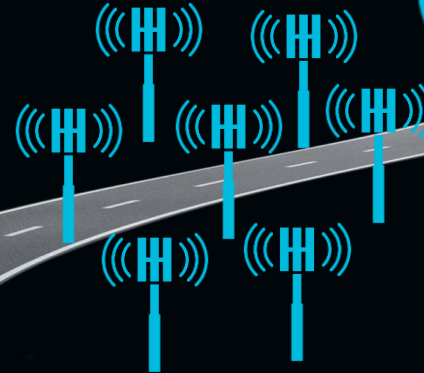
Global P25 installed base



Source: Licensed Mobile Radio Report, Omdia,

DIVERGENCE

2007 - 2017



- Real time PTT voice
- High resiliency
- Direct mode

- Broadband data and video
- Extended coverage
- Device ecosystem

Emergency Services Network UK



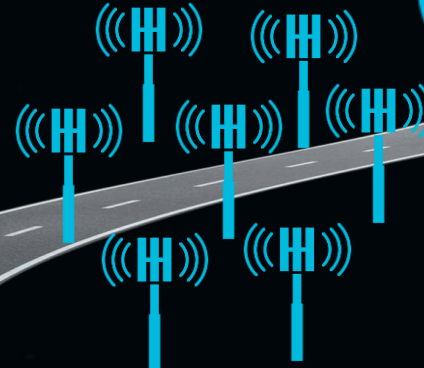
“After eight years and almost £2 billion (\$3.7 Billion), it is extremely worrying that the Home Office does not now know when the Emergency Services Network will be ready or what it will cost.”

Gareth Davies, National Audit Office (UK)

8th March 2023

DIVERGENCE

2007 - 2017

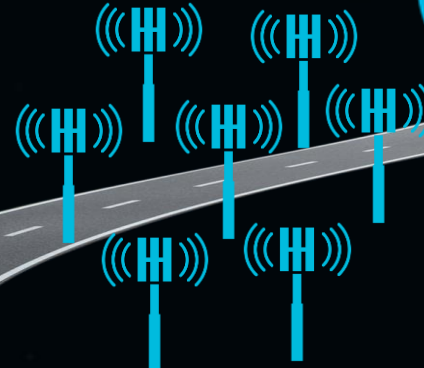


- Real time PTT voice
- High resiliency
- Direct mode

- Broadband data and video
- Extended coverage
- Device ecosystem

CONVERGENCE

From ~2018

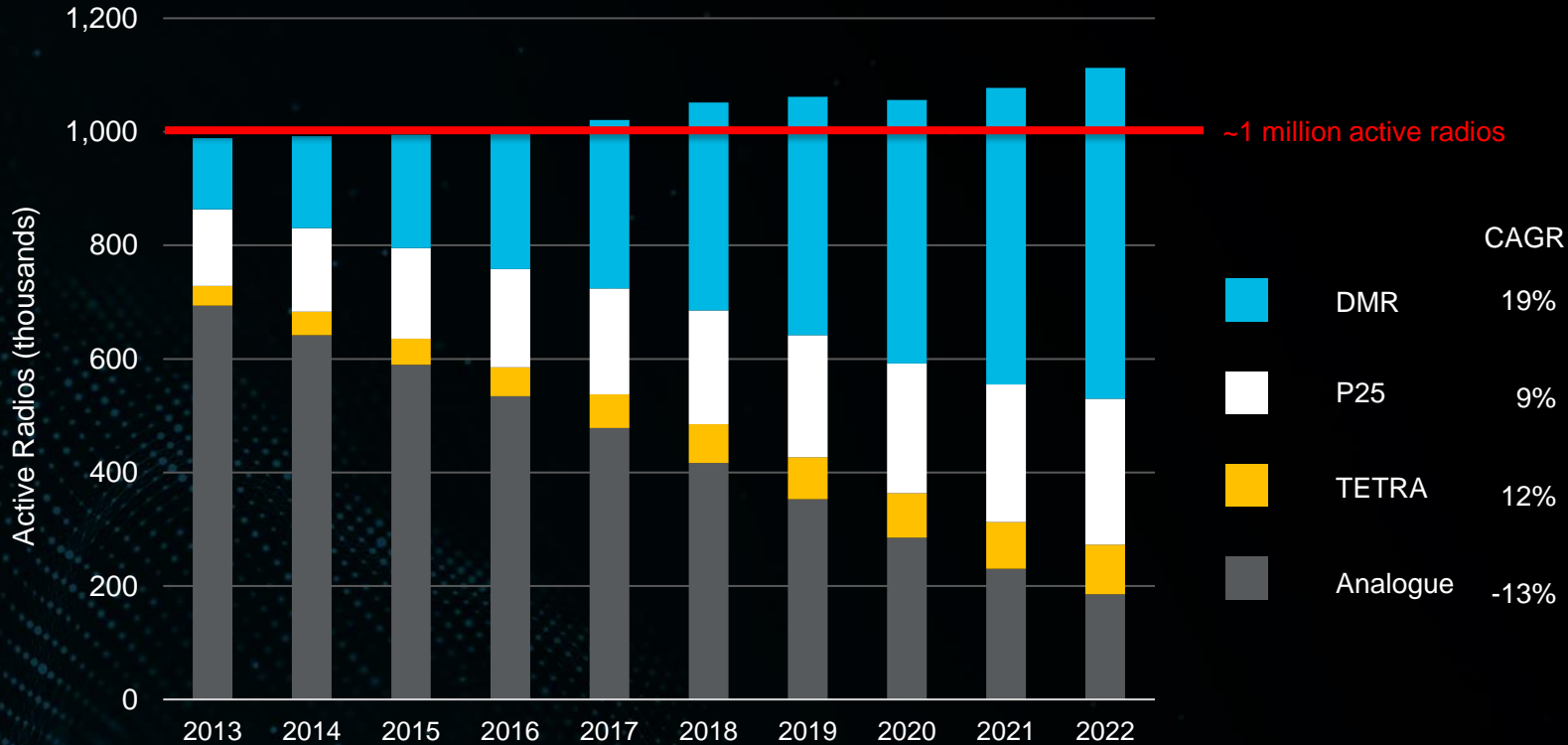


- Real time PTT voice
- High resiliency
- Direct mode

- Broadband data and video
- Extended coverage
- Device ecosystem



Oceania: LMR installed base (by technology)



Source: Licensed Mobile Radio Report, Omdia,



NZ PUBLIC SAFETY NETWORK

- Secure, nationwide network for Police, Fire and Ambulance
- P25 Phase 2
- 450 sites
- 25,000 multiband mobiles and portables



Tait to Deliver P25 Nationwide Critical Communications EMS Network Across New Zealand

criticalcommunicationsreview.com • 2 min read



Ray Smith • 2nd

Design Integration Manager

3mo ...

Curious why NZ is not following other countries who are replacing narrowband like P25 and TETRA with broadband 4.5G LTE solutions.

Like ·  2 | Reply · 6 Replies



Gert Jan R. Wolf (He/Him) **Author**

Founder at The Critical Communications Review & Community

3mo ...

Yes, indeed [Ray Smith](#). There must be a good reason for this. [Sirilal Mallawa Arachchi](#) will you be able to comment?

Like ·  1 | Reply



Sirilal Mallawa Arachchi • 1st

Principal Technical Adviser - Mission Critical Communications...

3mo ...

Broadband solution is not able to deliver MC PTT voice end to end solution to meet ES user requirements. May be in 2030???

Like ·  2 | Reply

LinkedIn

November 2022

“We see enough cell phone failure, especially at the large events. We don’t trust them yet to be reliable enough. We think that especially when we really, really need them is when they’re going to go down”

(EMS-S-003)





Some key themes have emerged ...

- LMR will remain the main technology for public safety voice communication.
- LMR and LTE will coexist and will provide complementary services.
- LTE will augment and extend the LMR voice network.
- Interoperability (interworking) between LMR and LTE will be critical.

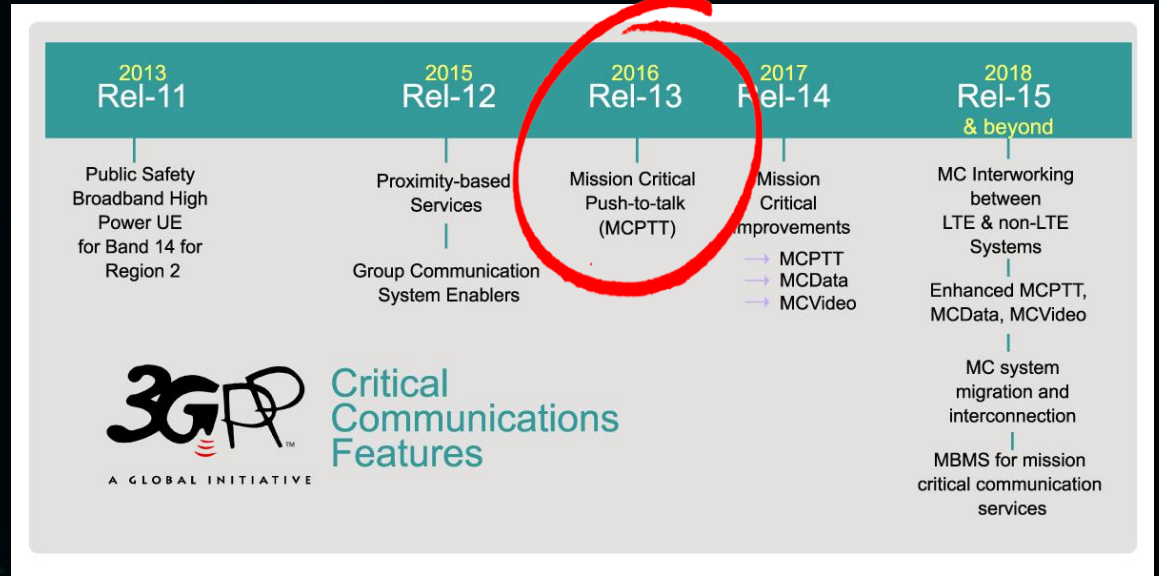
TAIT AXIOM TWX550

- Compact, rugged, wearable device that uses a broadband network to access cloud-based applications
- Optionally performs as a powerful radio speaker mic, adaptively switching networks as needed





MCPTT





Interworking



Release 15

- NR
- The 5G System – Phase 1
- Massive MTC and Internet of Things (IoT)
- Vehicle-to-Everything Communications (V2x) Phase 2
- Mission Critical (MC) interworking with legacy systems
- WLAN and unlicensed spectrum use
- Slicing – logical end-2-end networks
- API Exposure – 3rd party access to 5G services
- Service Based Architecture (SBA)
- Further LTE improvements
- Mobile Communication System for Railways (FRMCS)



Triple Constraints

- Mission Critical
 - Rapid
 - Reliable
 - Resilient
 - Secure
- Competition
- Interoperability

Public Safety Entity



P25 / LTE Interworking

- Multi-vendor eco-system of devices
- Interoperability between devices

Public Safety Entity

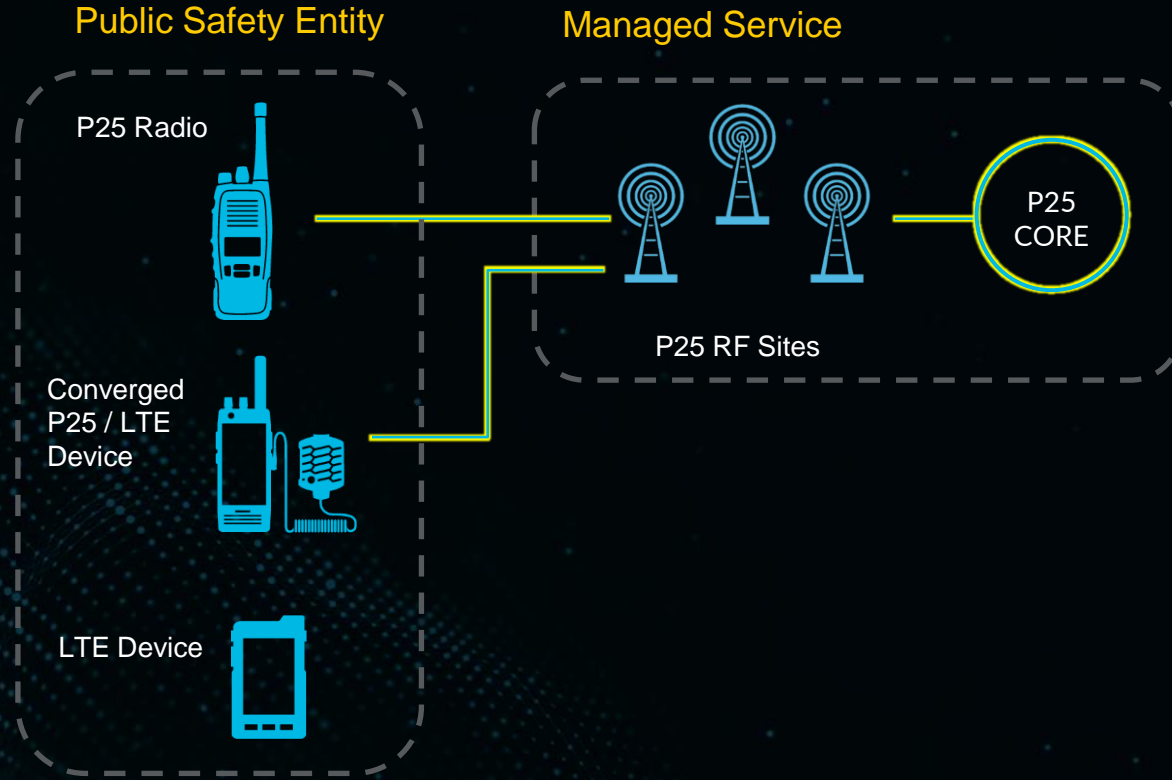


P25 / LTE Interworking

- ✓ Multi-vendor eco-system of devices
- ✓ Interoperability between devices

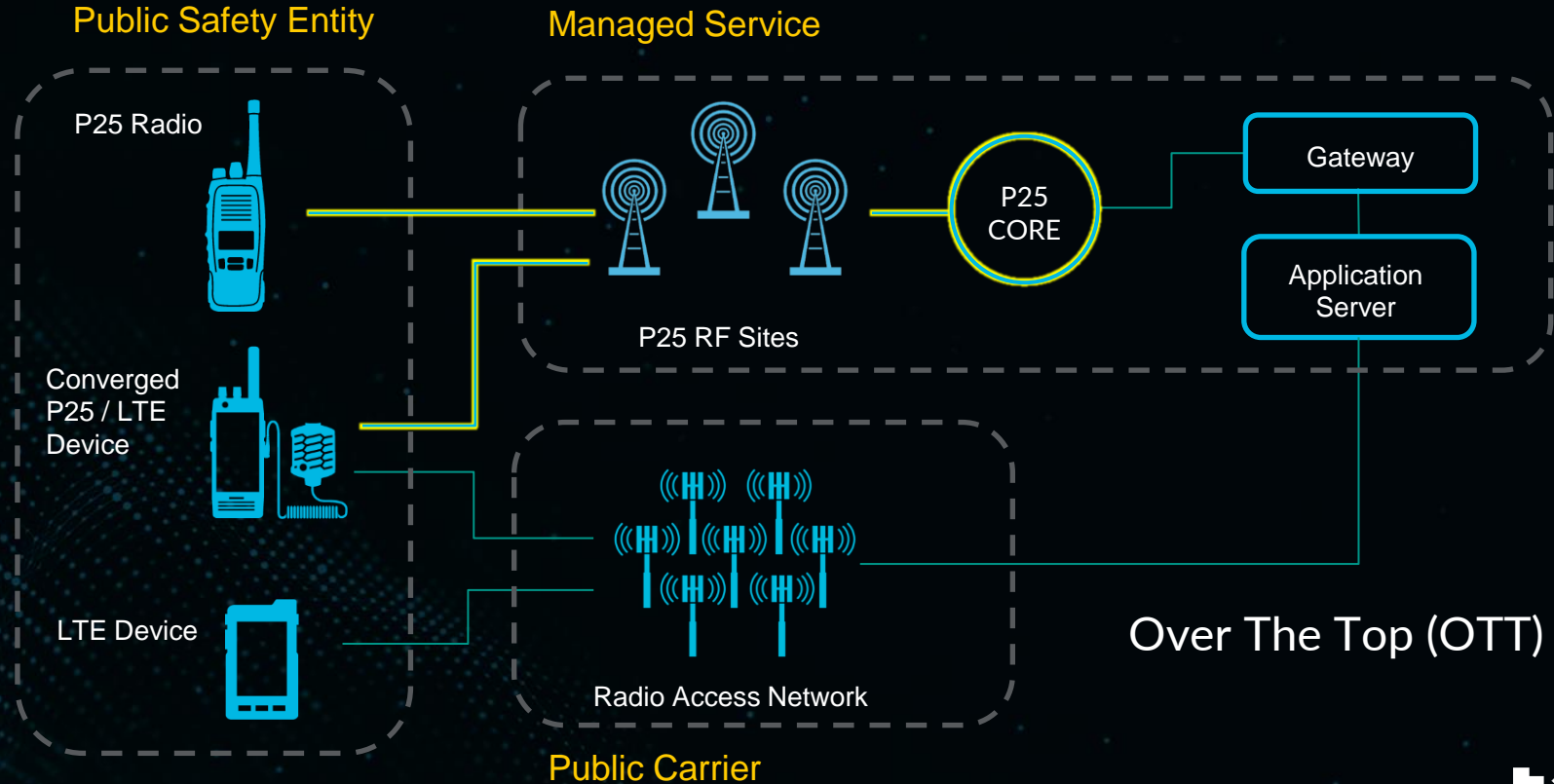
P25 / LTE Interworking

— Open standard



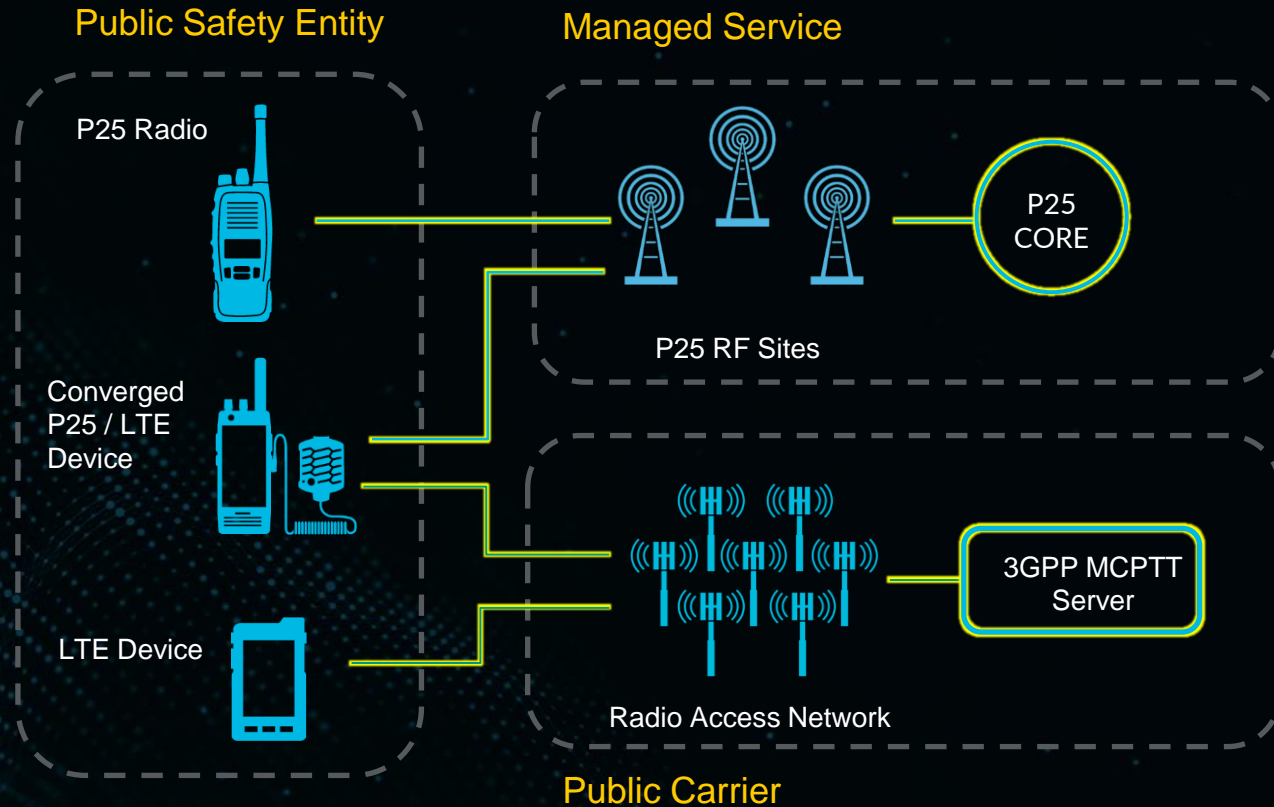
P25 / LTE Interworking

— Open standard
— Proprietary



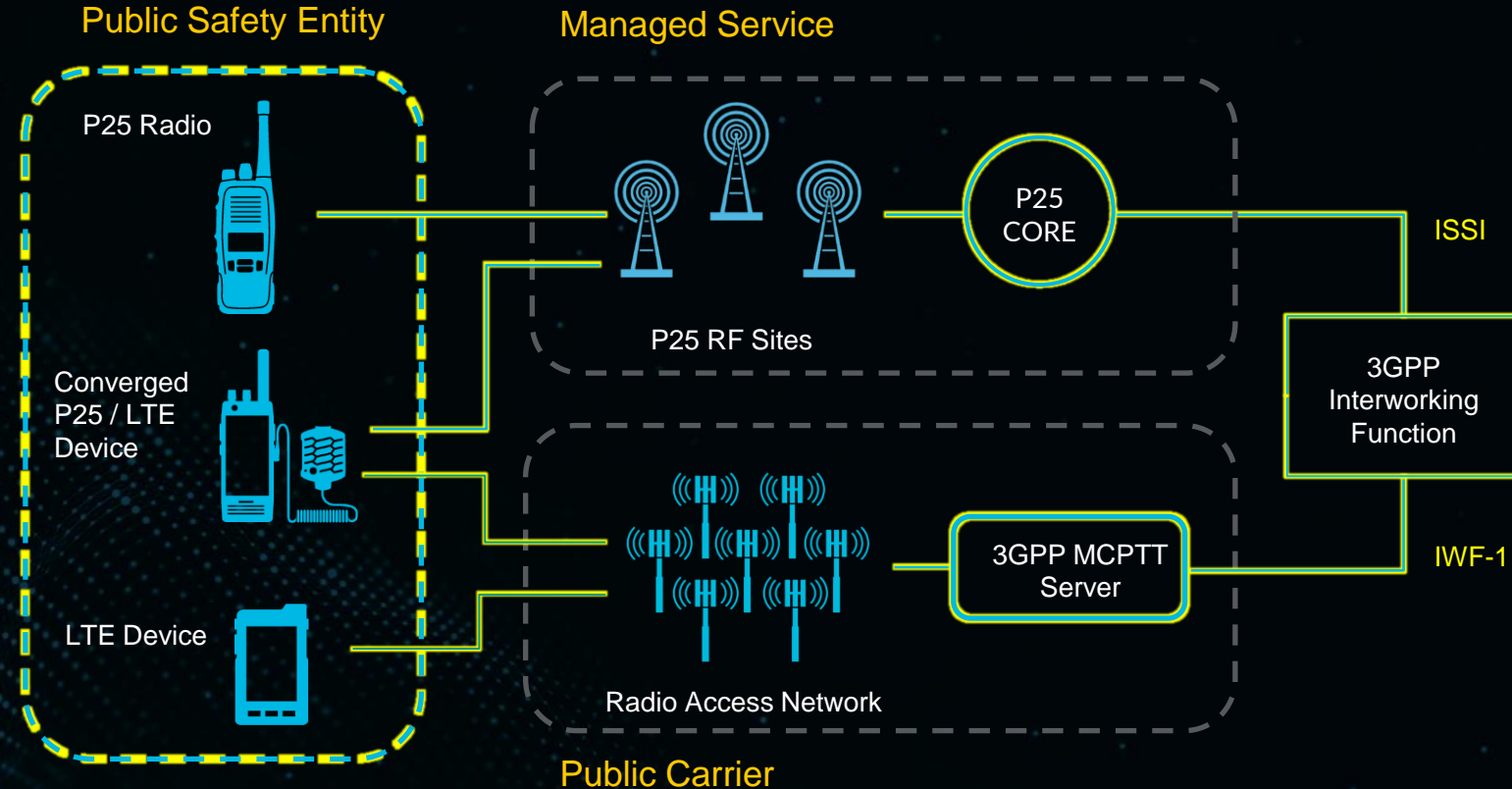
P25 / LTE Interworking

— Open standard
— Proprietary



P25 / LTE Interworking

— Open standard
— Proprietary





In summary ...

- P25 is here to stay
- Apply the triple constraints
 - Mission Critical
 - + Competition
 - + Interoperability
 - = Open Standards
- It's not about manufacturer

“The idea of emergency alerting on radios is absolute crap. It’s a theory and a concept that was created in an air-conditioned room on a whiteboard, but when you’re scared to death, you’re going to do what you do 99.9% of the time, and that is you’re going to hit the side button”.

(FF-R-008)



An aerial view of a city at sunset, with a digital grid overlay in the bottom left corner. The sun is low on the horizon, casting a warm glow over the city. The grid is composed of small blue dots and lines, creating a pattern that fades into the background.

Thank you

A silhouette of a person's head and right arm with the hand raised, set against a dark background with a horizontal blue light source. The scene is dimly lit, with some faint blue dots and lines on the left side.

QUESTIONS?