

# 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**

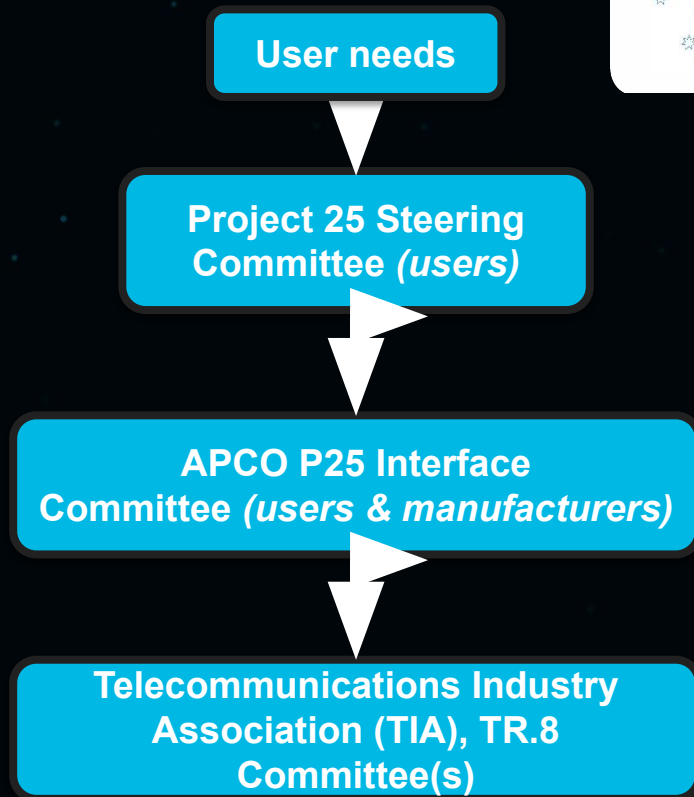
### Asia Pacific

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

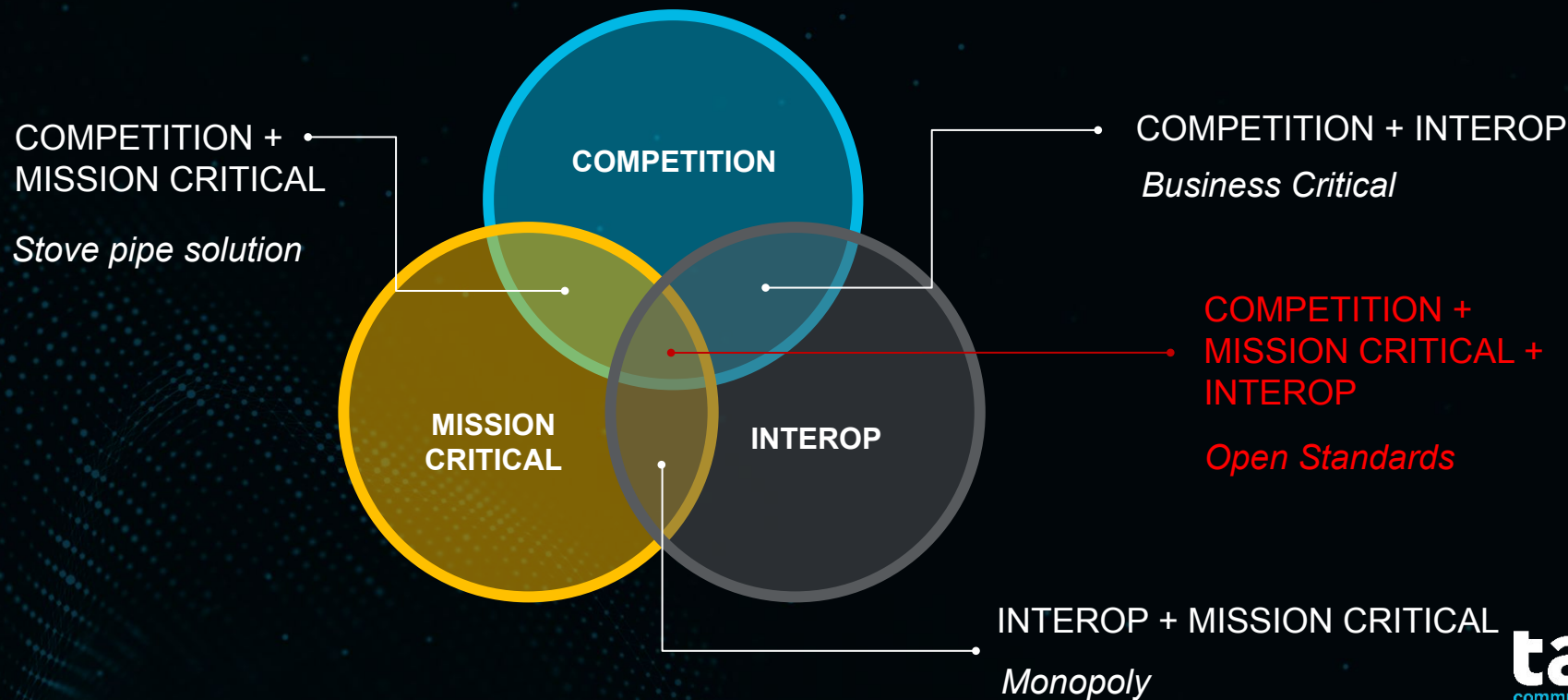
# Designed for Public Safety by Public Safety ...

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



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## Katrina

109th Congress  
2nd Session

SPECIAL REPORT

S. Rept. 109-322

### HURRICANE KATRINA: A NATION STILL UNPREPARED

SPECIAL REPORT  
OF THE

COMMITTEE ON HOMELAND SECURITY  
AND GOVERNMENTAL AFFAIRS

UNITED STATES SENATE  
TOGETHER WITH  
ADDITIONAL VIEWS





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- 9/11 2001
- Hurricane Katrina 2005
- P25 CAP established 2008
- Christchurch Earthquake 2011
- P25 Phase 2 TDMA trunking standard published 2012

## Christchurch



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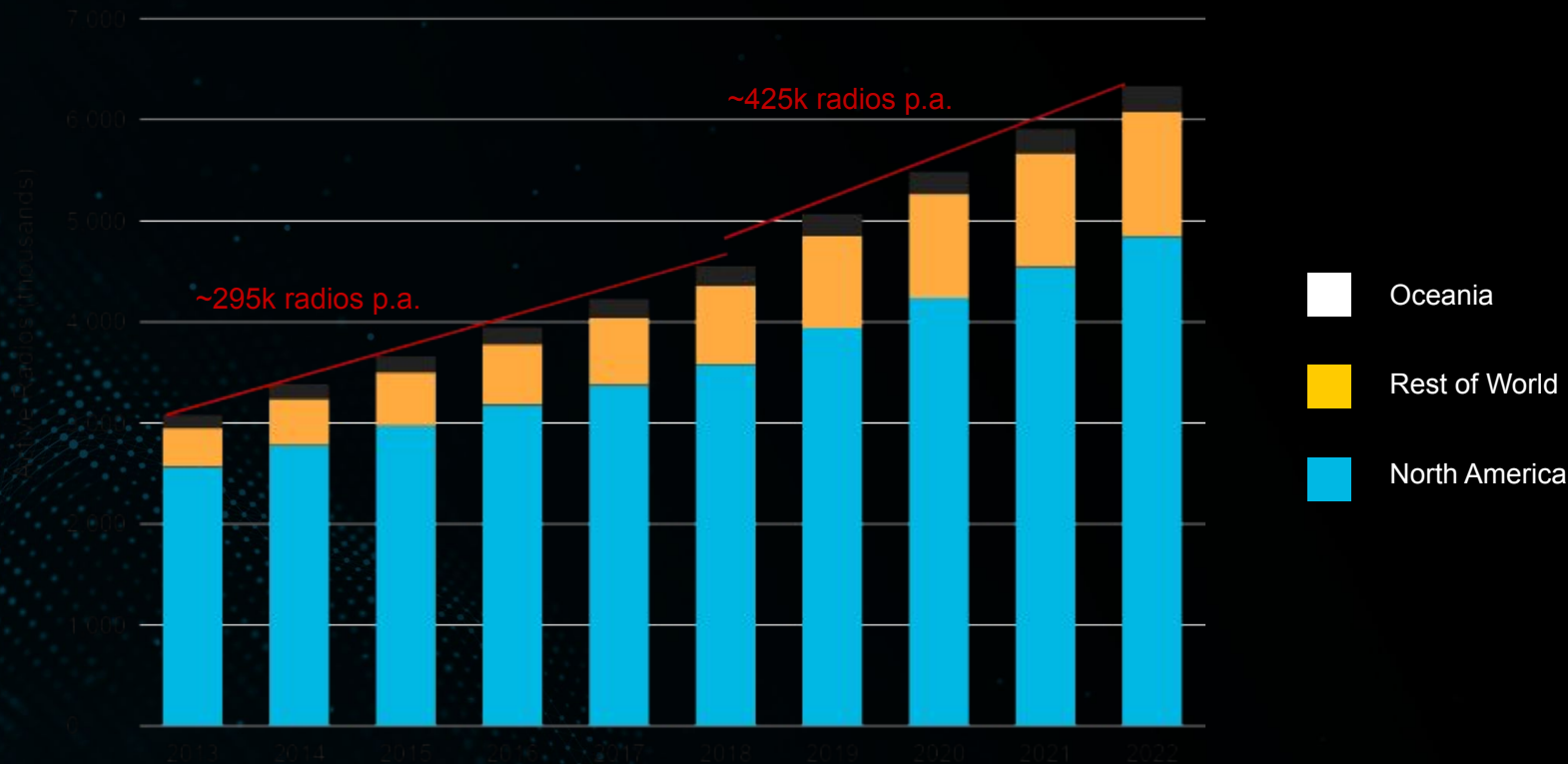
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2012

## Christchurch



# Global P25 installed base



Source: Licensed Mobile Radio Report, Omdia,

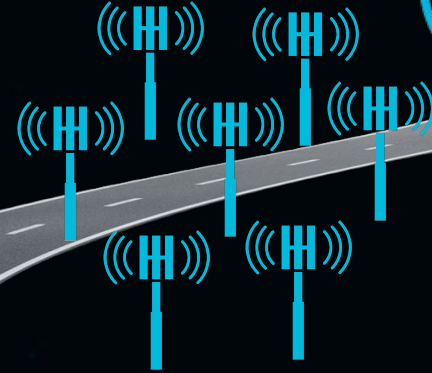


# DIVERGENCE

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)**

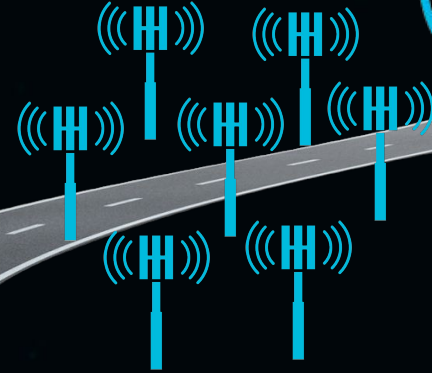
8<sup>th</sup> March 2023

# DIVERGENCE

2007 - 2017



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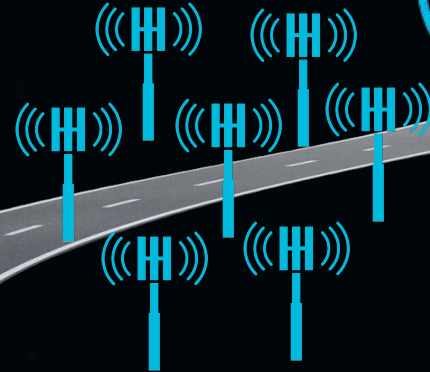
- Broadband data and video
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# CONVERGENCE

From ~2018

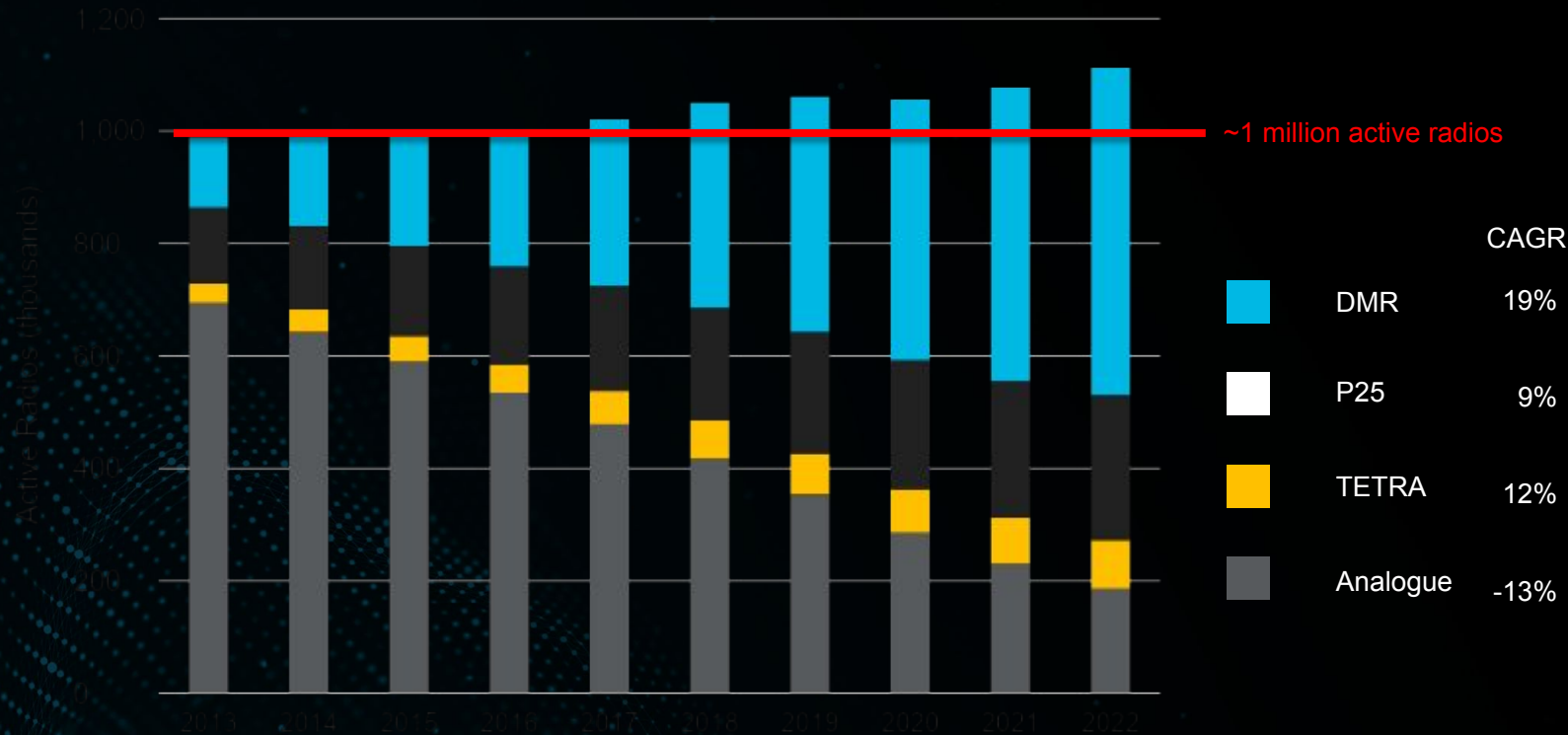


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- High resiliency
- Direct mode



- Broadband data and video
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# 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

**tait**  
communications

***“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)



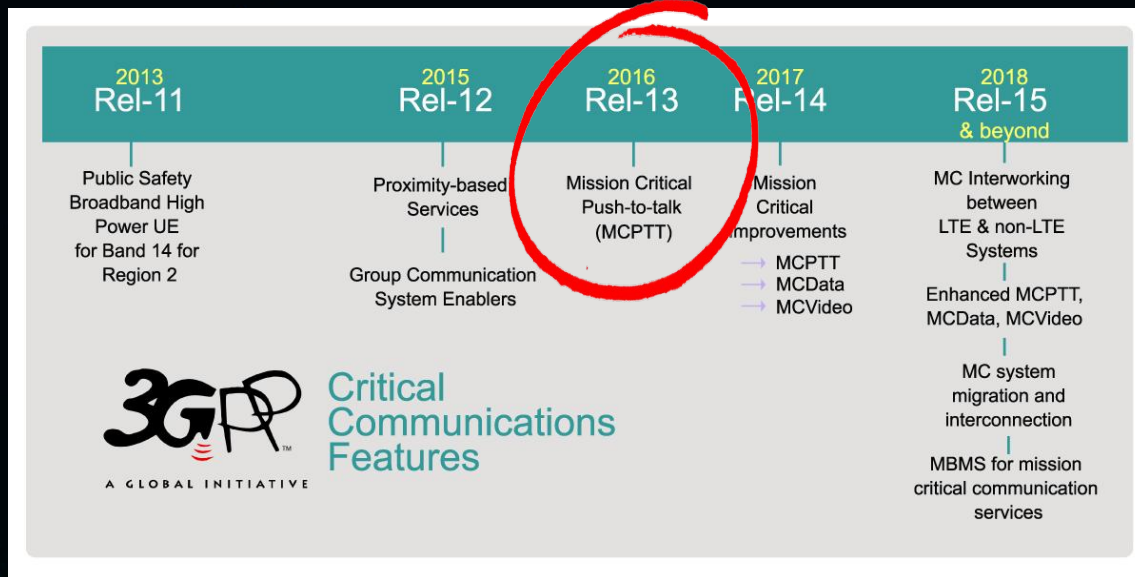
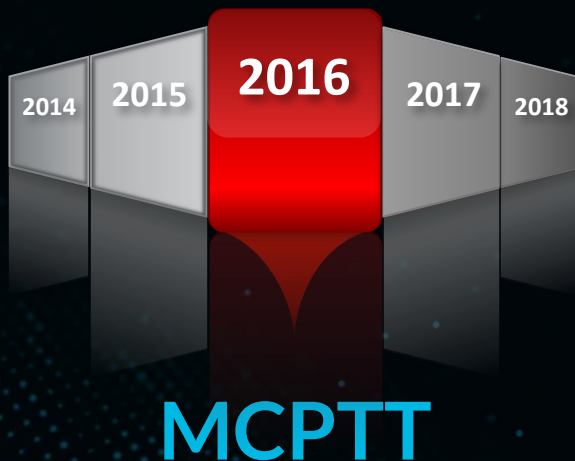
# Some key themes have emerged ...

- 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









# 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

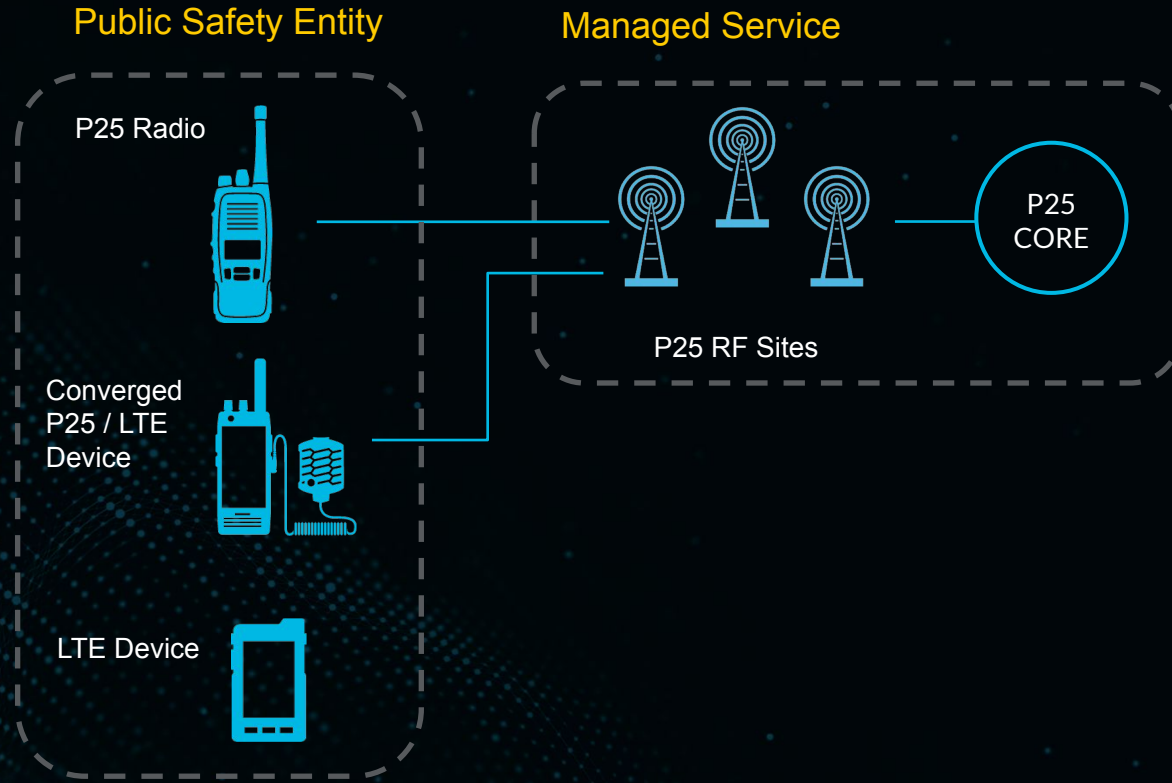


## P25 / LTE Interworking

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

# P25 / LTE Interworking

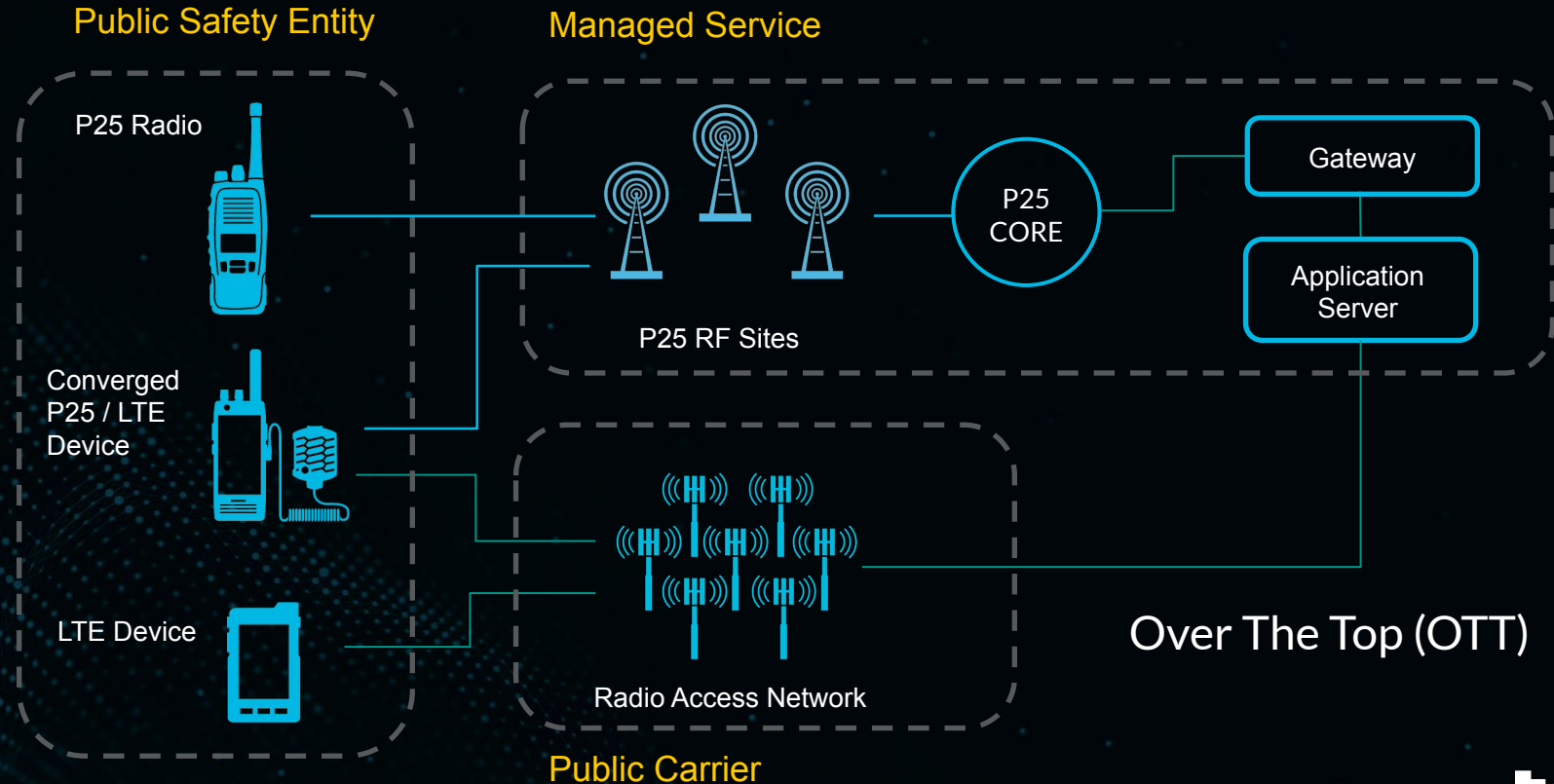
Open standard





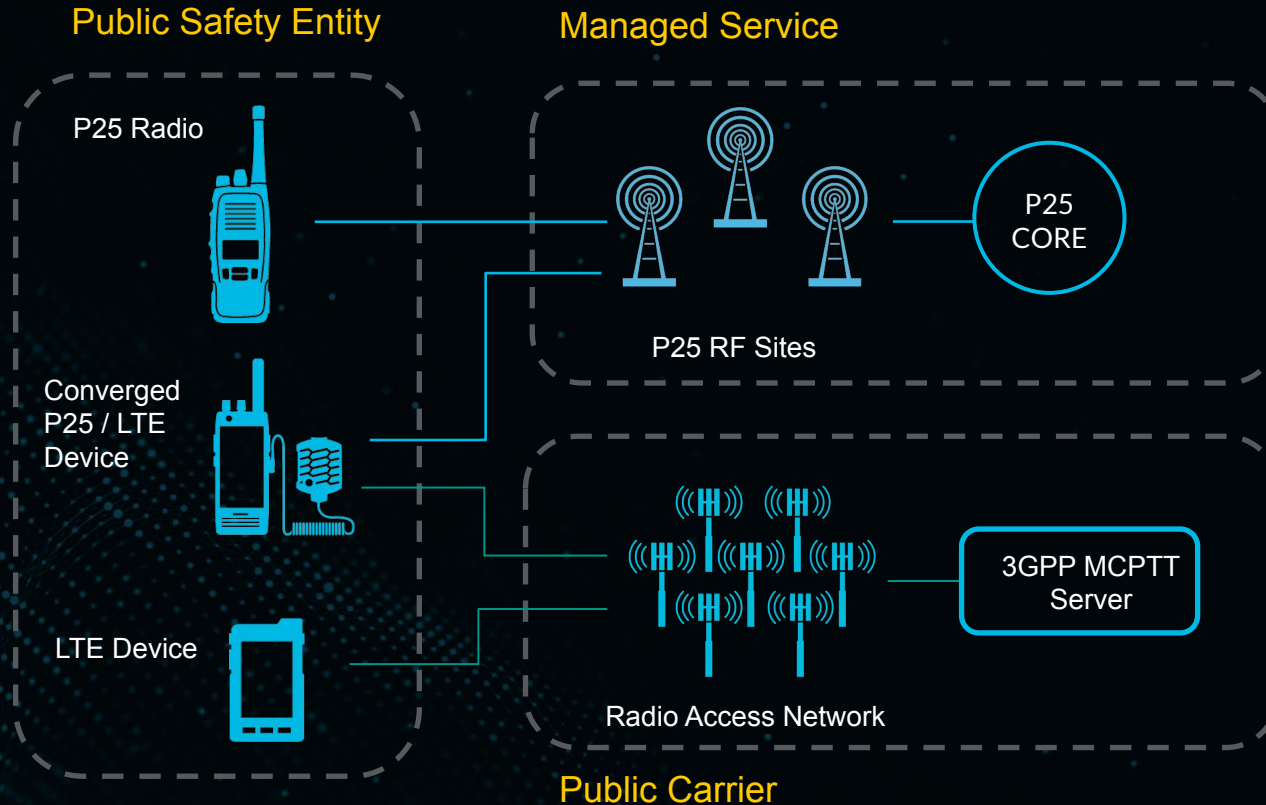
# P25 / LTE Interworking

— Open standard  
— Proprietary



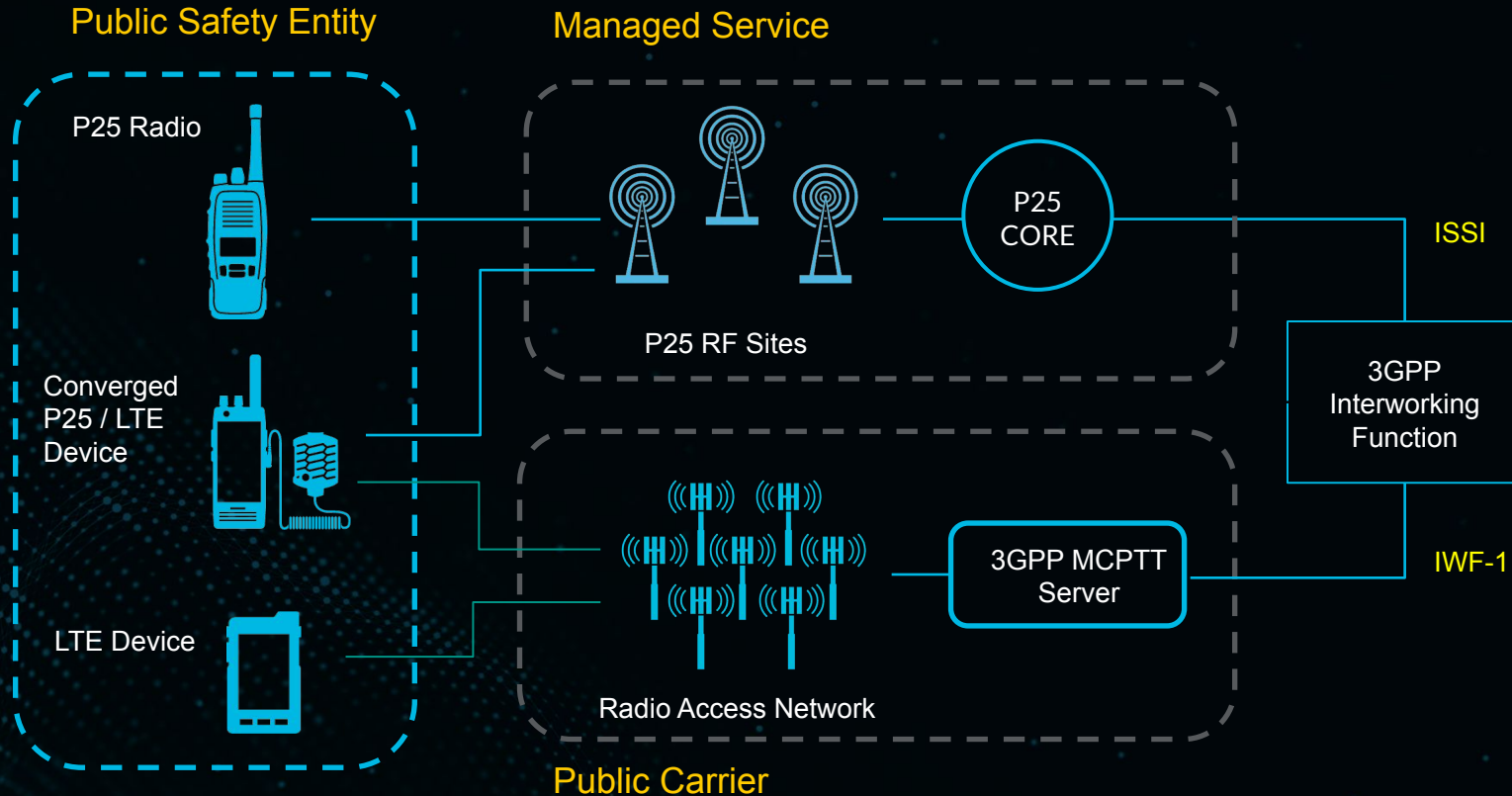
# P25 / LTE Interworking

- Open standard
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# 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 photograph of a city at sunset. The sun is low on the horizon, casting a warm orange glow over the city and creating long rays of light. The city is densely packed with buildings, and a river or body of water is visible in the foreground. A digital pattern of blue dots and lines is overlaid on the bottom left corner of the image.

# Thank you



QUESTIONS?