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Master Class A

TETRA Today & Tomorrow

Dr Jolly Wong

Visiting Professor, Smart Cities Institute, Shanghai University

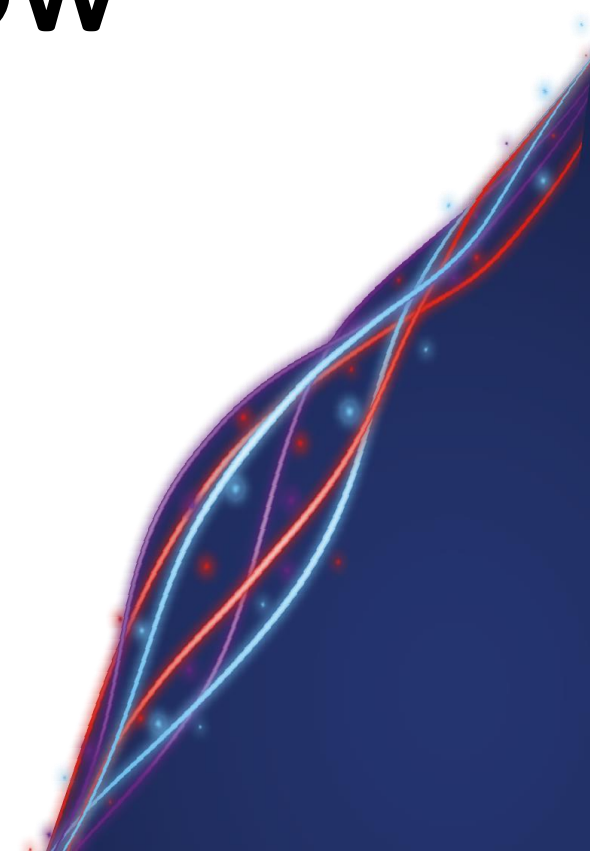
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Policy Fellow, Centre of Science & Policy, University of Cambridge

Advisor, Hong Kong Electric Co. Ltd.

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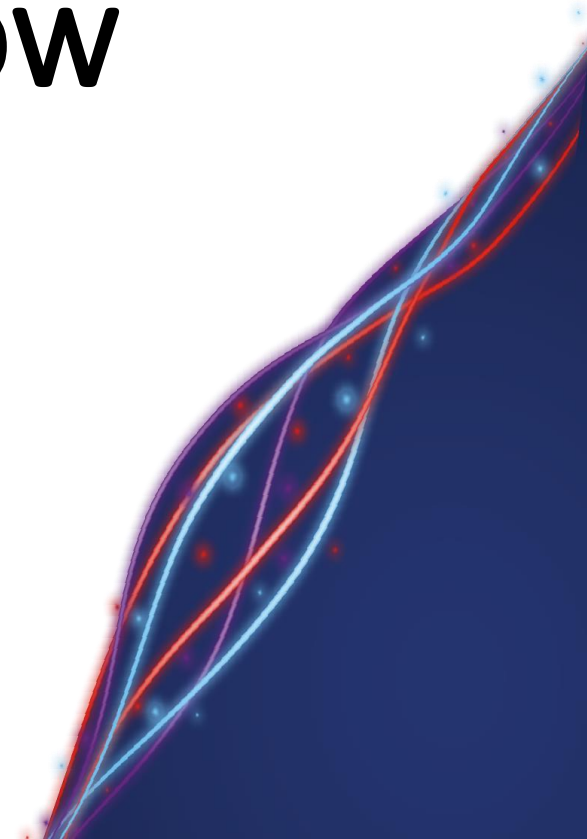
18 June 2019





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TETRA Today & Tomorrow

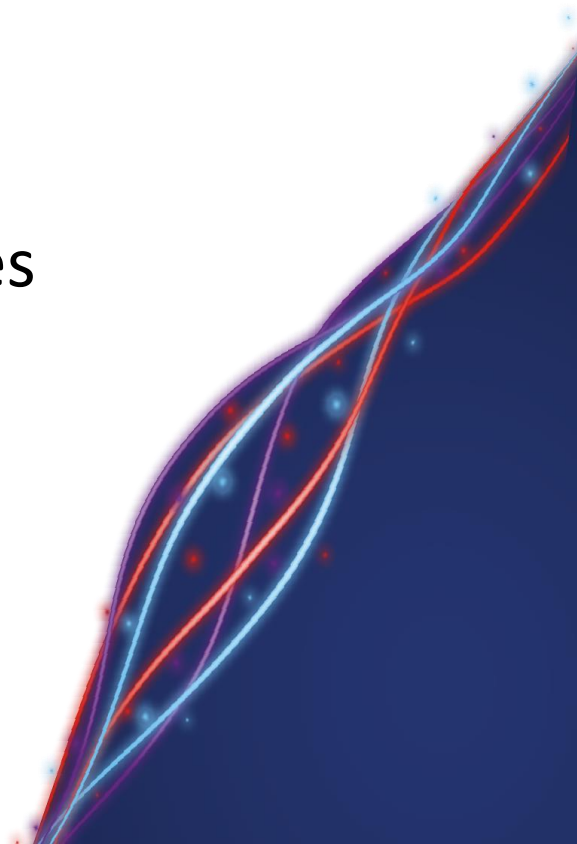




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Introduction

- Review current outstanding TETRA capabilities which make it still the worldwide preferred choice for mission critical voice and narrow band data
- How TETRA is being evolved to be future proofed through integration with broadband and meet emerging challenges

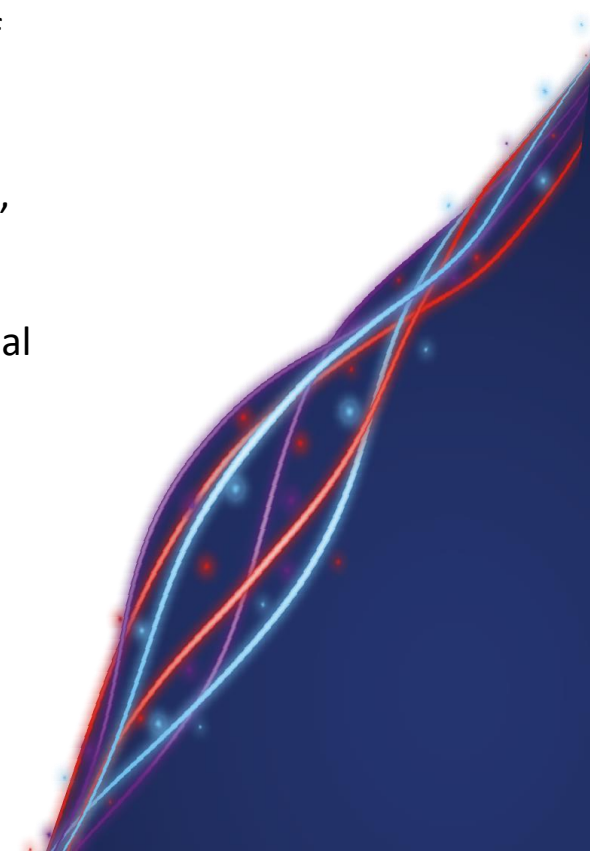




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Agenda

- 09.00-09.05 **Introduction:** **Jolly Wong**, Shanghai University
- 09.05-09.30 **General overview of TIG, TETRA and broadband TCCA Roadmap summary:**
Francesco Pasquali, TIG Chair, TCCA
- 09.30-09.50 **Deploying a TETRA system with 100% coverage:** **Jochen Bosch**, Senior Director of
Engineering, Damm Cellular Systems
- 09.50-10.10 **How to plan and implement a reliable and secure TETRA network:** **Bert Bouwers**,
CTO, Rohill
- 10.10-10.30 **Why TETRA is so essential for transport communications:** **Paul Ward**, International
Sales Director, Etelm
- 10.30-10.50 **The strength of TEDS in mission-critical communication:** **Jochen Bosch**, Senior
Director of Engineering, Damm Cellular Systems & **Michael Piciogros**, CEO, Funk-
Electronic Piciogros GmbH
- 10.50-11.00 Discussion

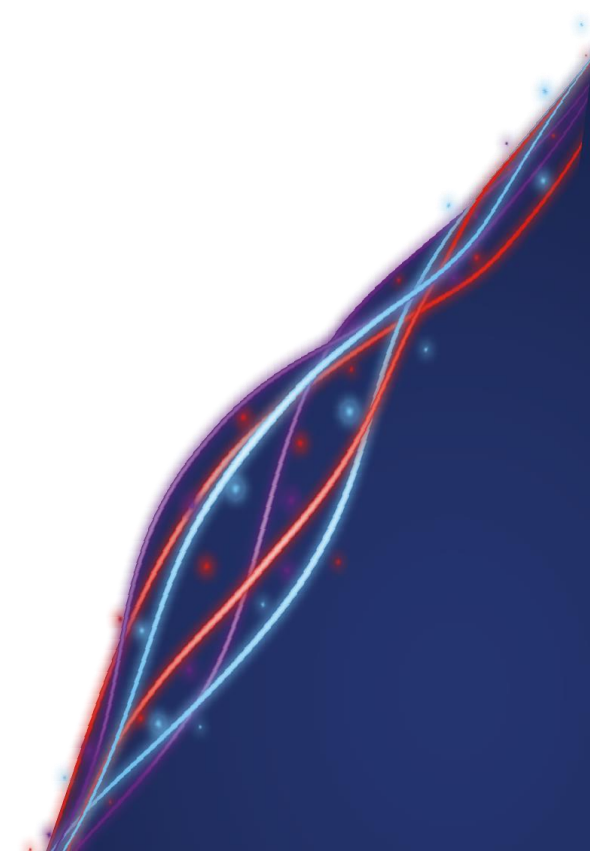




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Agenda

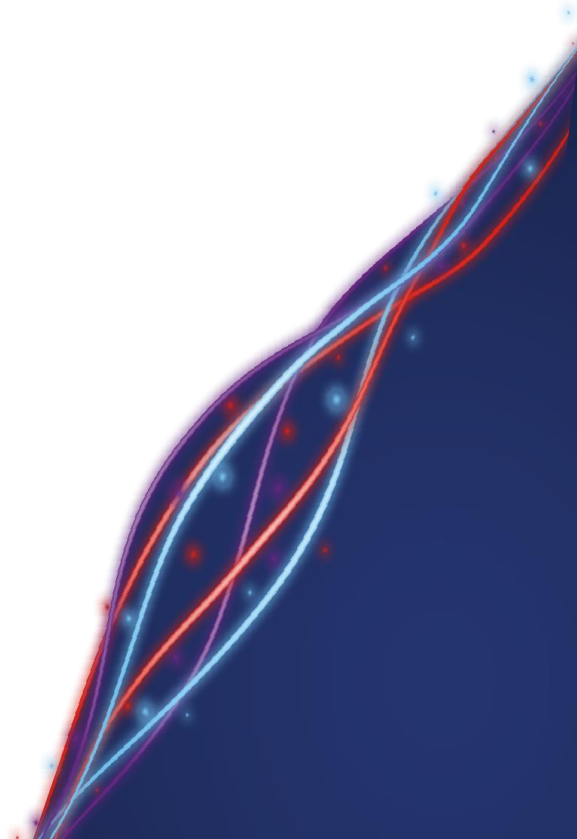
- 11.00-11.15 *Refreshments*
- 11.15-11.35 **TETRA - convergence for innovation, safety and efficiency: Peter Hudson**, Head of TETRA Terminals Product Line, Sepura
- 11.35-11.55 **How TETRA can work together with the latest technologies: Rahim Zaknoun**, Head of Innovation and Developer Ecosystem, Airbus
- 11.55-12.15 **TETRA: today and tomorrow: Sau Ping Lam**, Senior Director, TETRA Devices Product Management, Motorola Solutions & **Steen Petersen**, Director of TETRA Infrastructure Customer Solutions and Product Management, Motorola Solutions
- 12.15-12.30 Discussion and conclusions





Review current TETRA capabilities

- Terrestrial Trunked Radio (TETRA) has been a proven mission critical communications technology standard since 1995.
- TETRA is Trusted, Always and Everywhere.
- Its outstanding capabilities made TETRA still the worldwide preferred choice for mission critical voice and narrow band data.

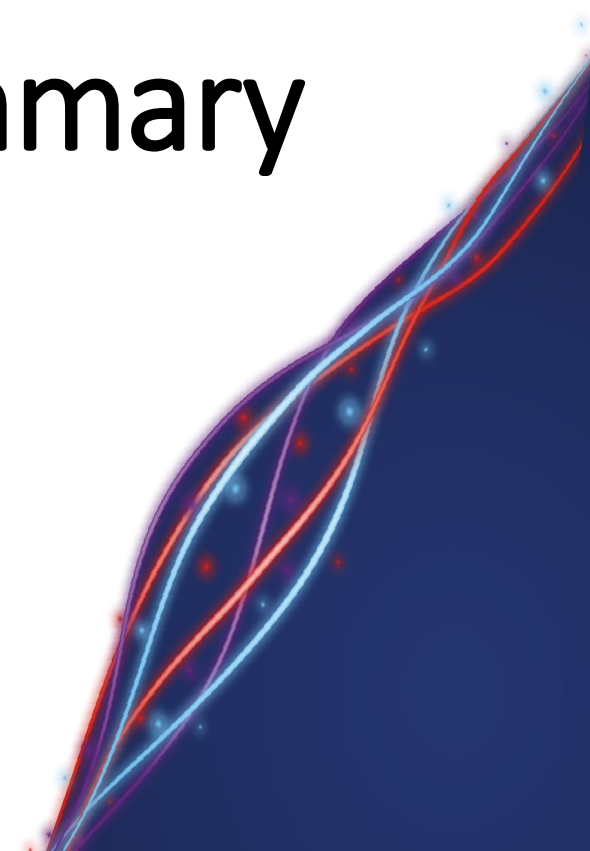




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General overview of TIG, TETRA and broadband TCCA Roadmap summary

Francesco Pasquali
TIG Chair, TCCA



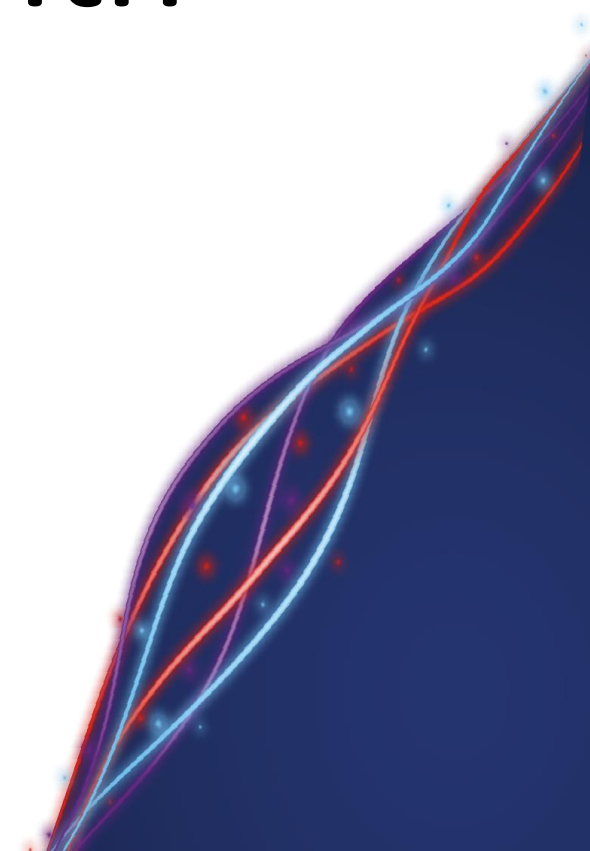


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Deploying a TETRA system with 100% coverage

Jochen Bosch

Senior Director of Engineering, Damm Cellular Systems

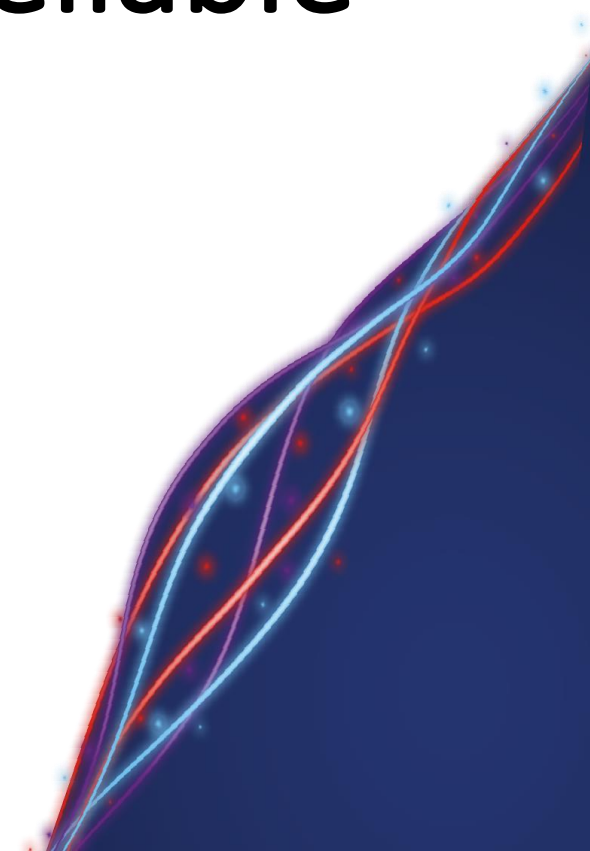




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How to plan and implement a reliable and secure TETRA network

Bert Bouwers
CTO, Rohill



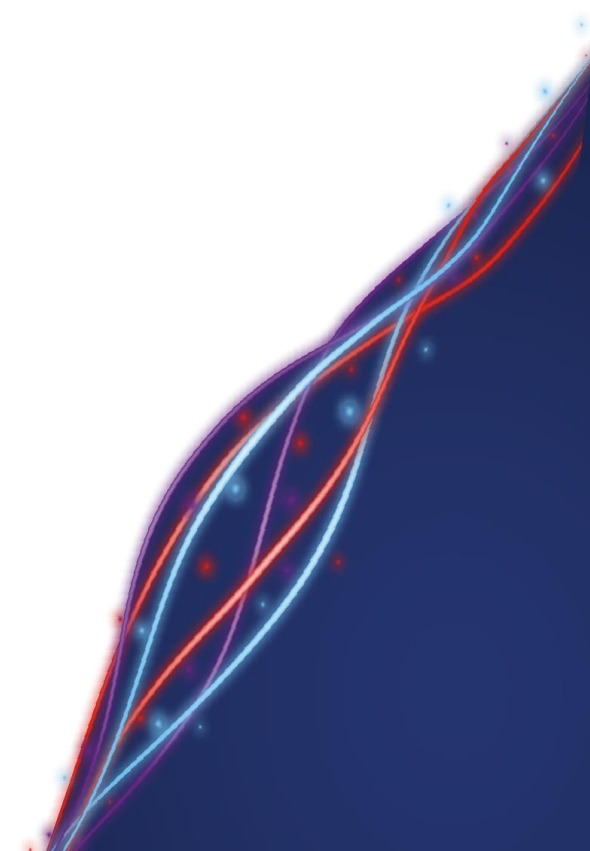


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Why TETRA is so essential for transport communications

Paul Ward

International Sales Director, Etelm





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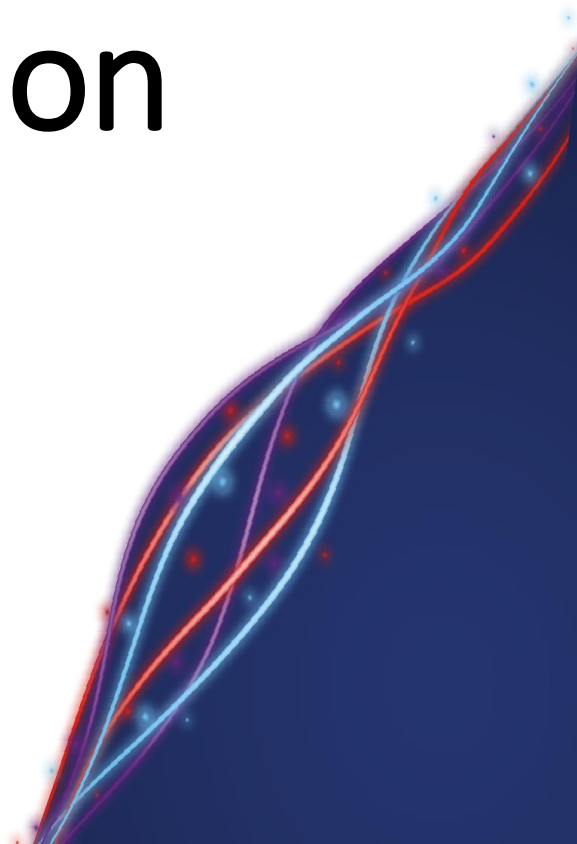
The strength of TEDS in mission-critical communication

Jochen Bosch

Senior Director of Engineering, Damm Cellular Systems

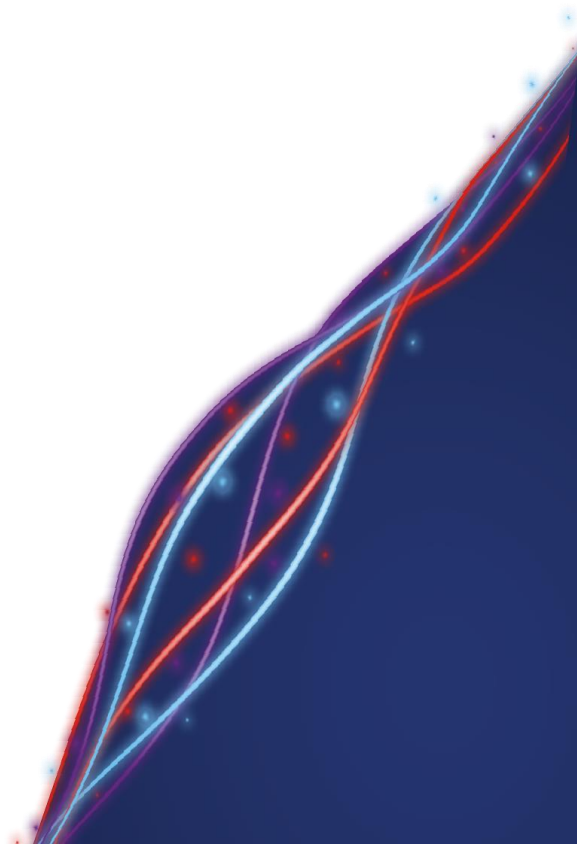
Michael Piciogros

CEO, Funk-Electronic Piciogros GmbH



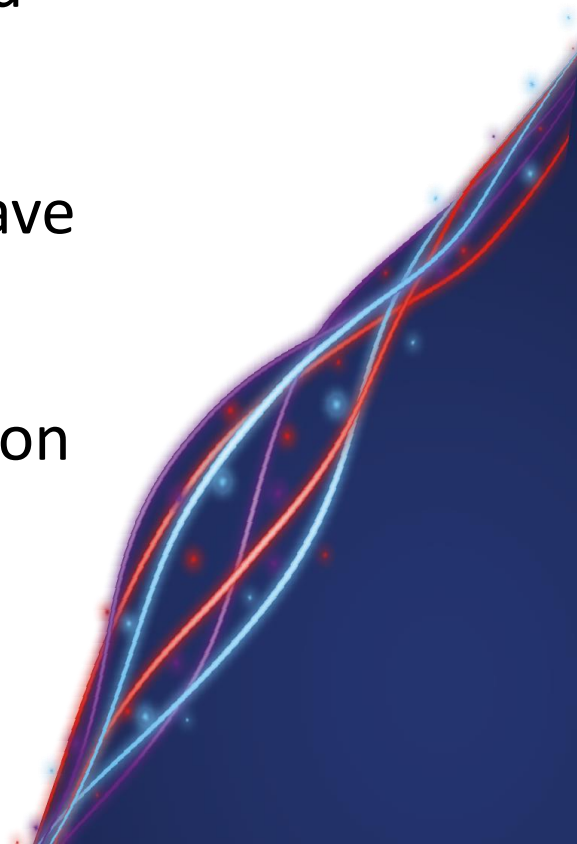
How TETRA is being evolved?

- A significant time period where both critical voice and narrow band data (ie TETRA/ P25) and critical broadband will operate in parallel.
- A standard for interworking is being specified in 3GPP Release 15 & 16 (Stage 2) by 2019 and 2020 respectively.
- Release 15 is the first 5G release, includes the majority of TETRA functionality.
- A window of 10 years (at least in Europe) for managed transition from narrowband to critical broadband is anticipated.



How TETRA is being evolved?

- For many countries in Europe, lifetime of TETRA installed hardware (base stations) is not later than 2030.
- Availability of standard compliant products, between 2020 and 2022, depends on the minimum release level.
- Timeline for rollouts to commercial MNO radio networks as in majority of national public safety organizations which don't have dedicated spectrum depends on national procurement schedules.
- A window of 10 years (at least in Europe) for managed transition from narrowband to critical broadband is anticipated, despite life span of TETRA is far longer than that.



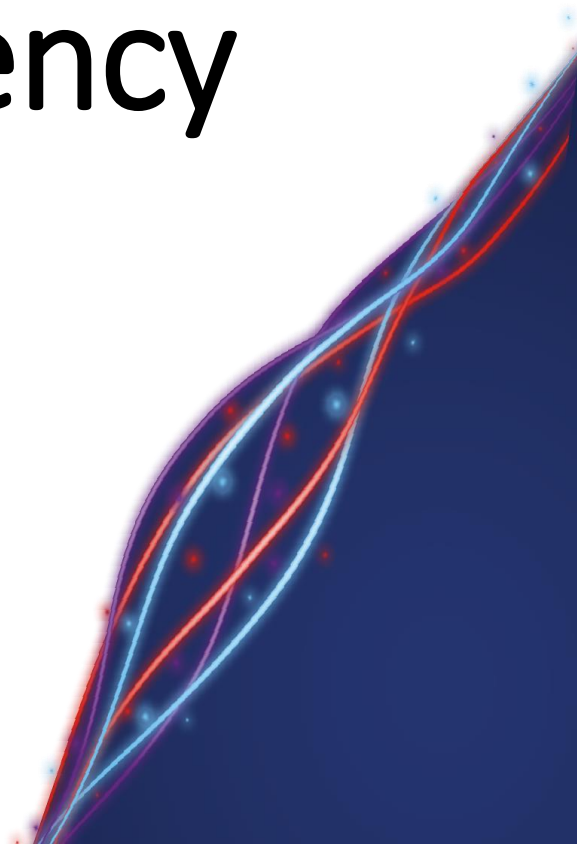


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TETRA - convergence for innovation, safety and efficiency

Peter Hudson

Head of TETRA Terminals Product Line, Sepura

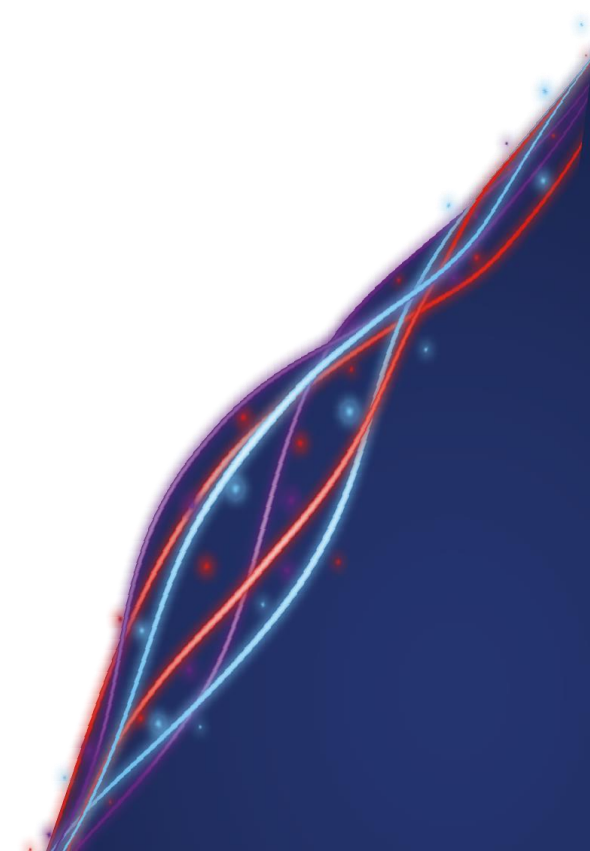




How TETRA can work together with the latest technologies

Rahim Zaknoun

Head of Innovation and Developer Ecosystem, Airbus





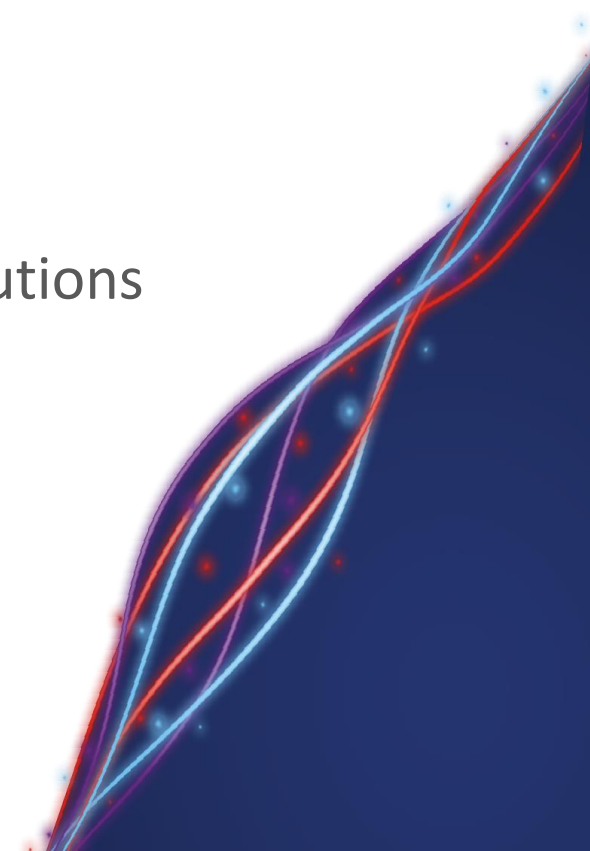
TETRA: today and tomorrow

Sau Ping Lam

Senior Director, TETRA Devices Product Management, Motorola Solutions

Steen Petersen

Director of TETRA Infrastructure Customer Solutions and Product Management, Motorola Solutions

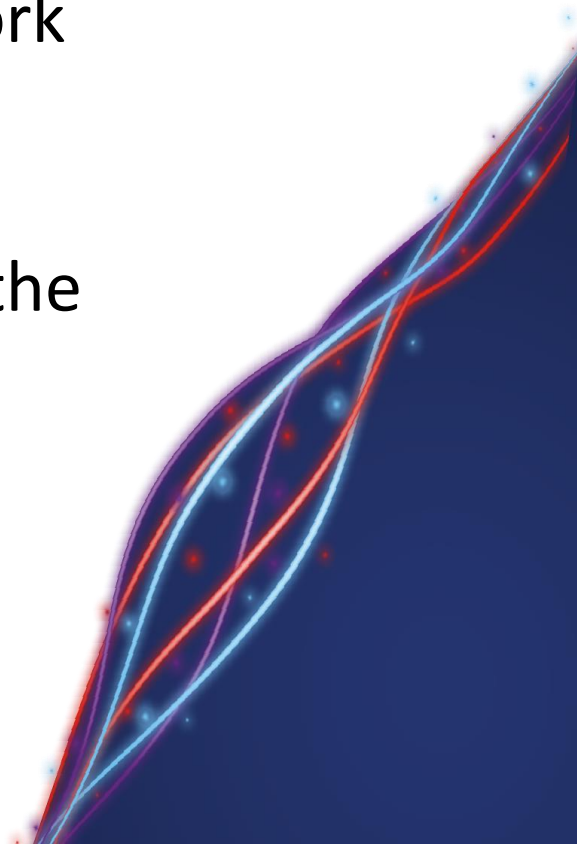




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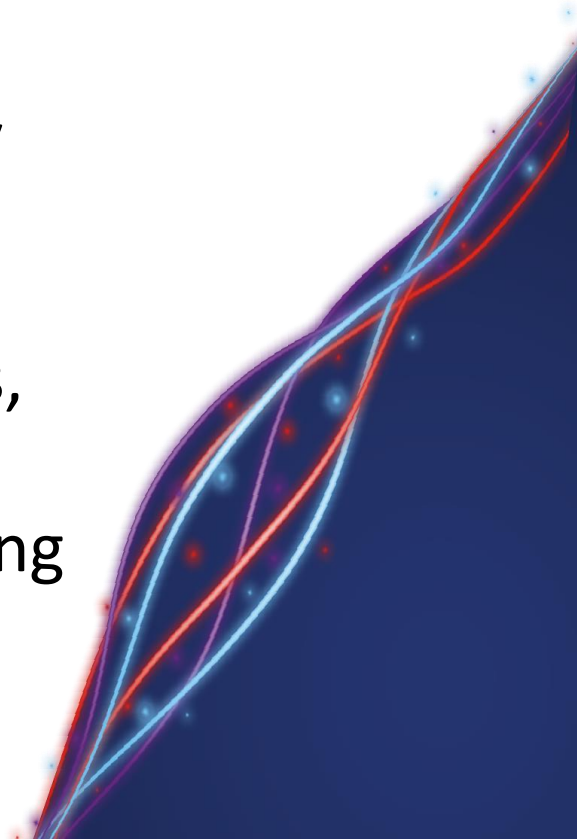
Questions for Discussion

- Taking one of the sectors using TETRA for critical communications, such as first responders, mining, utilities, transport, how do you see services developing and network transitioning in the future?
- Comparing the different business innovation models for delivering broadband services, what do you think will be the winning solution?



Conclusions

- TETRA is a proven technology and preferred choice for secured, trusted, interoperable and mission critical capable radio networks.
- TETRA is being evolved to be future proofed through integration with 3GPP 5G broadband under Release 15 by 2019.
- TETRA networks managed transition is, by and large, determined by technical lifetime of installed base stations, and that's around 10 (to 15) years in most cases.
- There is no time limit to the continued use of TETRA as long as spectrum is available.





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Thank you for your attention

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