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# ***WHY TETRA IS SO ESSENTIAL FOR TRANSPORT COMMUNICATIONS***



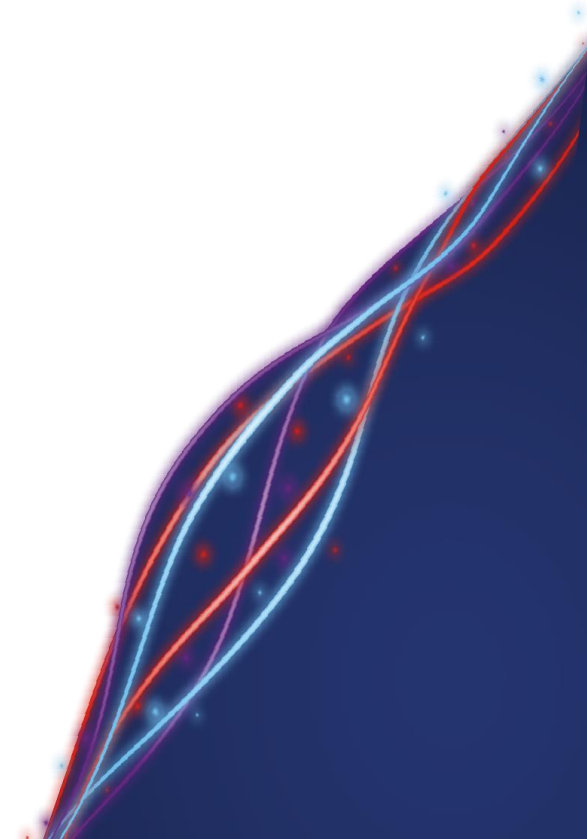
- Paul Ward, Etelm      [paul.ward@etelm.fr](mailto:paul.ward@etelm.fr)

# WHY TETRA IS SO ESSENTIAL FOR TRANSPORT COMMUNICATION



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TETRA Advantages  
Private or Operator Networks  
TETRA for Railways  
TETRA for Urban Transport  
TETRA for Airports  
The Future for Transport Comms

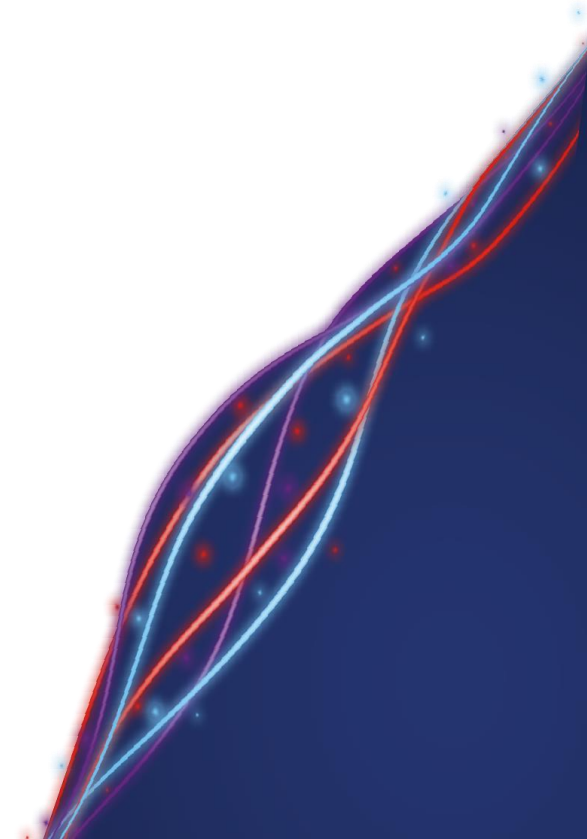


# TETRA ADVANTAGES



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- Established Technology for Secure Communications
- Open International Standard
- Purpose Designed for High Resilience & Availability
- Frequency Efficient – High Density Traffic
- Secure Voice & Data Services
- Priority & Pre-Emption Services
- Call Hand Over
- Dynamic Regrouping
- Direct Mode Operation

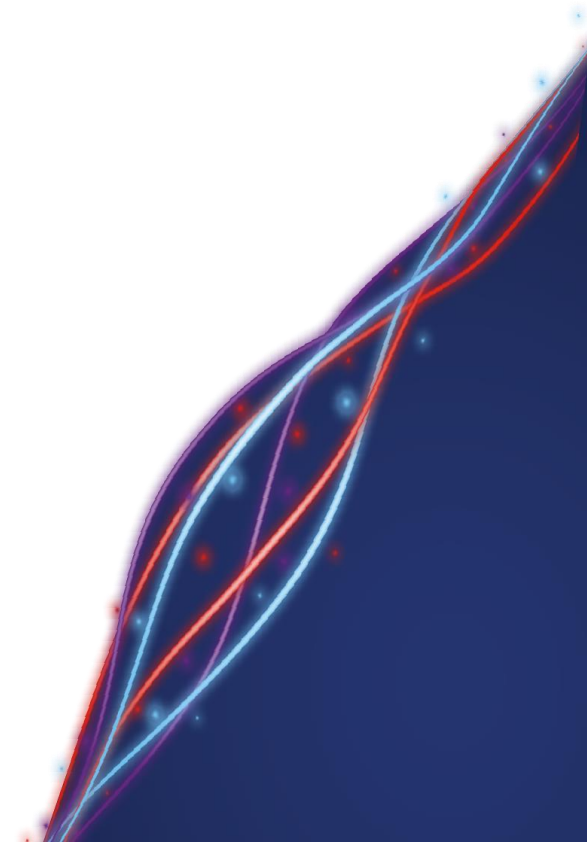
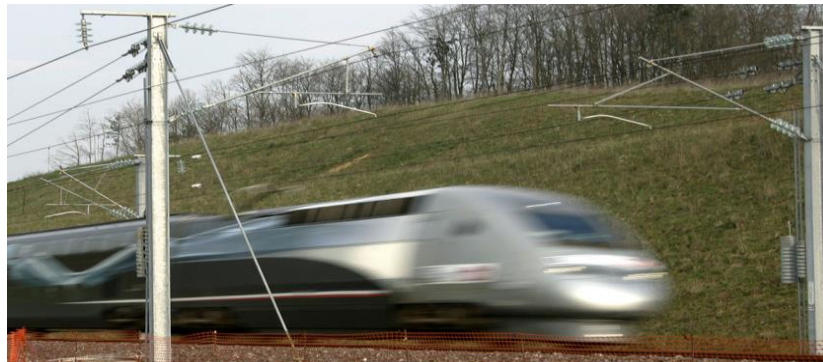


# TETRA FOR RAILWAYS



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- Reliable Communications Approved for Rail Networks
- Secure Voice – Individual, Group with Priorities & Pre-emption
- Data Interfaces with Signalling, Security & Safety Systems
- Real Time Passenger Information Systems
- Control Room Integration - GUI
- Coverage Flexibility – Stations & Tunnels
- Fleet Management – Dynamic Regrouping
- TMO & DMO for Shunting Operations

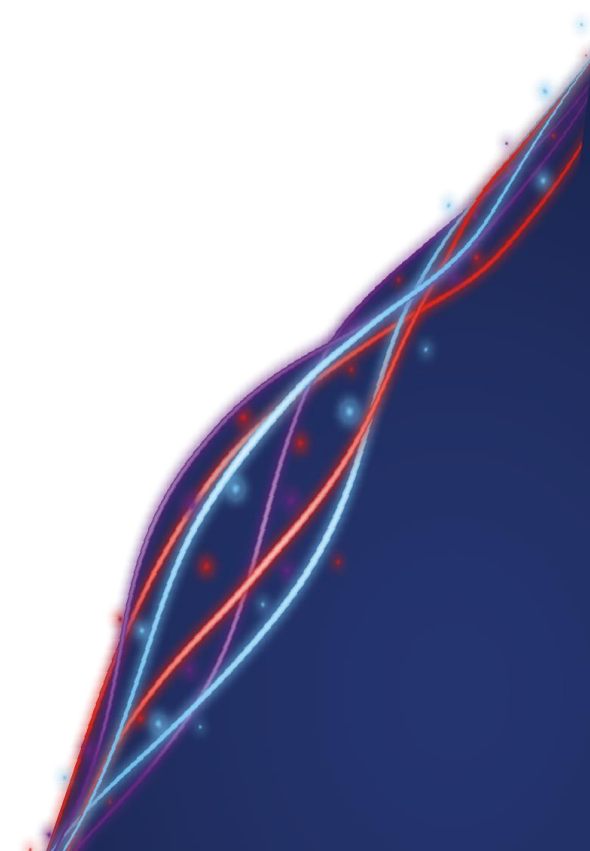


# TETRA FOR URBAN TRANSPORT



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- High Reliability & Availability in Congested Urban Areas
- Data Intensive – Integration with other Systems
- High Speed Polling for Geo Locations
- Real Time Vehicle Information
- Dynamic Groups – Flexibility of Vehicle Fleet
- TETRA for Mission Critical Services
- LTE for Complementary Services i.e. Video Security

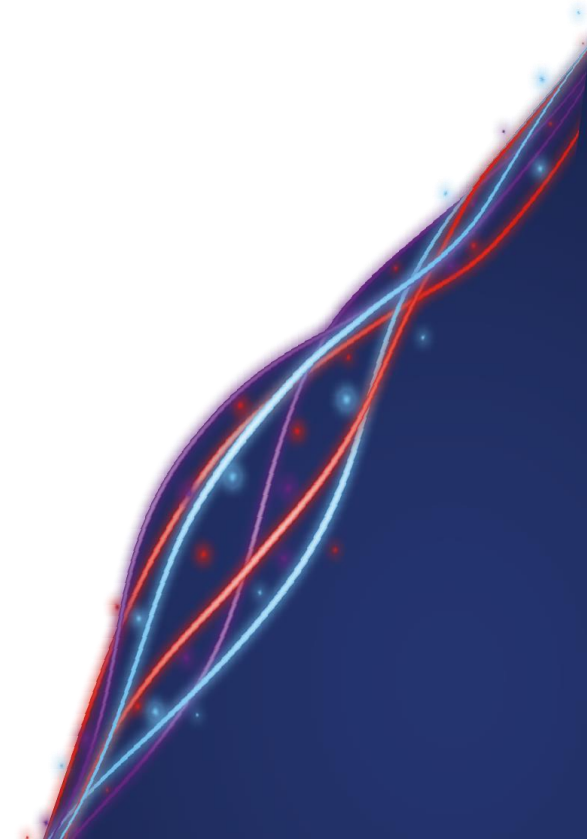


# TETRA FOR AIRPORTS



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- Internal and External coverage
- Complex Coverage Internal/External – dynamic environment
- Receiver Diversity
- Small Cell Requirements
- High Traffic & Regular Call Handover Demands
- Dynamic Flight Management - SDS Messaging & DGNA
- Direct Mode Operation



# Typical Transport Users



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## AIRPORTS

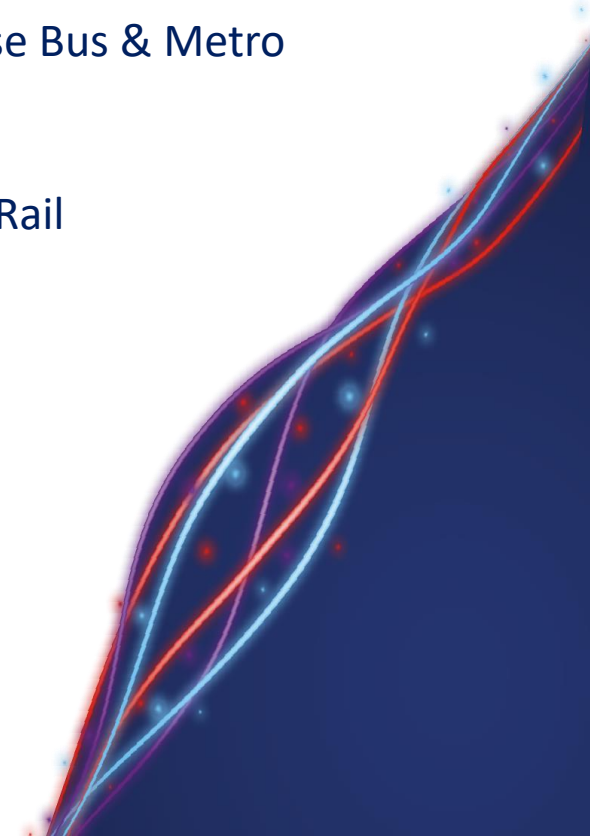
- Malaysia MAHB Airports
- Hong Kong International Airport
- Charles de Gaulle, Paris
- Heathrow Airport – Terminal 5
- Stuttgart Airport
- Birmingham Airport
- Schiphol Airport

## RAILWAYS

- KZT Railways, Kazakhstan
- SNCF, France
- Finland Railways
- Taipei Mass Rapid Transport
- DSB, Danish Railways
- Russian Railways
- MRT, Malaysia

## URBAN TRANSPORT

- Beijing Metro
- Santiago Metro, Chile
- Budapest Metro
- Tisseo – Toulouse Bus & Metro
- MRTA, Bangkok
- Lisbon Trams
- Mumbai Mono-Rail



# ***THE FUTURE FOR TRANSPORT COMMS***



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- Private Systems Traditionally Preferred by Transport Users
- Availability of Private Spectrum
- TETRA Mission Critical Services
- LTE for Complementary Services
- Private Hybrid Systems
- Inter Connected TETRA (Private) & LTE Systems (Operator)
- Mission Critical LTE - Future Availability

