CONNECTIVITY AS A KEY ENABLER FOR RAILWAYS

Smart Mobility
The Gigabit Era

Smart Operations
Tracks and Trains

Smart Employee
New digital ways of working
FROM GSM-R TO FUTURE RAILWAY MOBILE COMMUNICATION SYSTEM
CRITICAL AND PERFORMANCE APPLICATIONS REQUIRE 5G WITH A DIFFERENT QUALITY SET

Critical Applications
• Core part of future rail operation
• In most countries today required to be based on railway-owned and operated connectivity with dedicated spectrum

Performance Applications
• Supplementary applications for further increased performance and cost efficiency in rail operation
• Potentially using MNO spectrum & connectivity
TOWARDS RAILWAYS 5G SLICES

➢ Aim:
   ➢ FRMCS (Future Railway Mobile Communication System) is a project driven by the International Railway Union (UIC), a worldwide railway association, dedicated to define the successor of GSM-R for a new railways digital radio system. FRMCS will mainly use 3GPP standards such as LTE and future 5G
   ➢ 5G Slicing: develop dedicated slice for each family of applications

➢ Use cases:
   ➢ Critical App: Train to Ground and MCPTT
   ➢ Performance App: CCTV, IoT on bord
NEW MOBILITY SYSTEM

- C-V2X
- Small Cell
- Station 1
- Station 2
- 2.6 GHz TDD
- 4G/LTE
- 5G
- V2I 4G/5G
- Fiber or 60 GHz bakchaul
- Core Network
- Control system
- From 500 m à 2 km

NEW MOBILITY SYSTEM

- CORE NETWORK
- CONTROL SYSTEM
- FIBER OR 60 GHz BAKCHAUL
- V2I 4G/5G
NEW MOBILITY SYSTEM

- C-V2X
- Small Cell
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- 5G 4G LTE

Platooning
Core Network
Fiber or 60 GHz bakchaul
Control system