

# FRMCS

## Future Rail Mobile Communication System *The State of Play in Europe*

*Mobile communication for safe and secure,  
dependable and reliable operation of very high  
speed train services in the EEA \*)*

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**European Conference of Postal  
and Telecommunications Administrations**


– 48 European countries cooperating to regulate posts,  
radio spectrum and communications networks

\*) European Economic Area = CEPT + EU Member States

# ITU-R – Railway Resolutions

*The Global View from ITU-R*

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- The “old” Resolution 236 abrogated by WRC-19
- New Resolution 240 – *Spectrum harmonization for railway radiocommunication systems between Train and Trackside (RSTT) within the existing Mobile-Service allocations* - <https://www.itu.int/en/ITU-R/conferences/wrc/2019/Documents/PFA-WRC19-E.pdf>
- Specifications for RSTT (in Europe named FRMCS) technologies now under development in 3GPP, UIC, ETSI, ERA 
- International standards and harmonized spectrum will provide for enhanced security, reliability and economics of scale in the coming RSTT procurement and operations phase

ITU-R invites Member States, Sector Members, Associates and Academia to submit contributions to the evolvement of RSTT to Working Party 5A


<https://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5a/Pages/default.aspx>

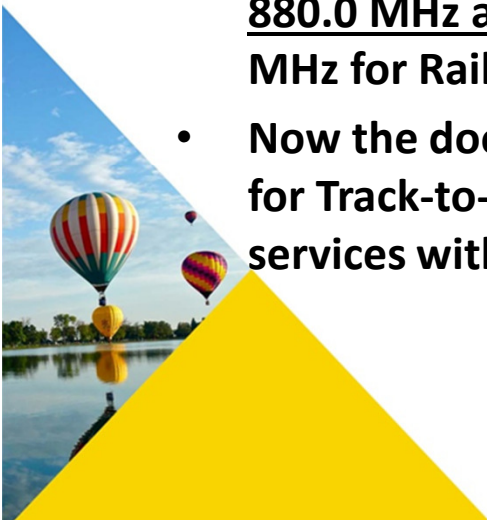


# FRMCS - spectrum



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- **Aim: To resolve the spectrum related** cross-border coordination requirements as rail networks migrate from 900 MHz GSM/GSM-R technologies to newer platforms
- **All spectrum work undertaken by CEPT/ECC/WG FM/FM56**
  - <https://www.cept.org/ecc/groups/ecc/wg-fm/fm-56/client/introduction/> 
- FM56 has developed CEPT Report 76: *“Report from CEPT to the European Commission in response to the EU Mandate on spectrum for the future railway mobile communications system (FRMCS)”*  
<https://docdb.cept.org/download/8eb2170c-724b/CEPT%20Report%2076.pdf>
- FM56 has developed a ECC Decision on 900 MHz and 1900 MHz Railway Mobile Radio (RMR) DEC(20)02, “Harmonised use of the paired frequency bands 874.4-880.0 MHz and 919.4-925.0 MHz and of the unpaired frequency band 1900-1910 MHz for Railway Mobile Radio (RMR)”
- Now the door is open for further work of a broadband (5G LTE (FDD)) standard for Track-to-Train communications and an RMR standard (TDD) for all ground services with wearable devices (shunting radio etc)



# FRMCS

## *The Standard update-ETSI*

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- **New Standardization Request from the EU Commission to ETSI (FRMCS) as Mandate M/570 was accepted Nov 2020 by ETSI under the Railway Interoperability Directive:**
  - DIRECTIVE (EU) 2016/797 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 May 2016 on the interoperability of the rail system within the European Union
  - <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A32016L0797>
- **The ETSI Technical Committee TC RT is now mandated to develop the FRMCS suite of “Harmonized Standards”\*) to replace the current GSM-R technology in Europe**
  - <https://portal.etsi.org/tb.aspx?tbid=549&SubTB=549,841#/>

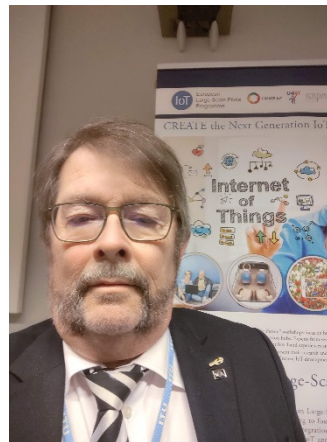
**Interested stakeholders are invited to contribute to this important standardization work, for which now also the spectrum has been identified.**

**NOTE for the WRC-23: AI 1.5:** ....to review the spectrum use and spectrum needs of *existing services* in the frequency band 470-960 MHz in **Region 1** and consider possible regulatory actions in the frequency band 470-694 MHz in **Region 1** on the basis of the review, in accordance with Resolution 235 (WRC-15);


\*) ‘harmonised standard’ means a European standard as defined in point (c) of Article 2(1) of Regulation (EU) No 1025/2012;



**THANK YOU**  
*-and a happy New Year 2021-*



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