Radio Spectrum Considerations for Present and Future Rail Communication Systems in the CEPT / Electronic Communications Committee (ECC)

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Overview

• ECC, ETSI, and the EU
• Regulating Spectrum and Equipment in Europe
• Structure CEPT/ECC
• Existing ECC Deliverables
• Process in ECC WG FM
• 2-Step Procedure
• Other items
• New railway communications topic page
The ECC, ETSI and the EU

- Mandate under 676/2002/EC
- CEPT Report
- ECC Electronic Communications Committee
- ETSI European Telecommunications Standards Institute

Technical Exchanges
(MoU)

Technical Requests (e.g. SRDocs)

Memorandum of Understanding (MoU)

ECC to inform the industry of the regulation and the industry has to take it into account in the creation of the HEN.
Regulating Spectrum and Equipment in Europe

From ETSI members, EC etc

- Spectrum requirement
- Creation of SRDoc
- ETSI Liaison Officer
- ETSI Representative
- Candidate Harmonized Standard
- System Reference Document (SRDoc)
- Technical studies Harmonisation

Some boxes are optional – sometimes ‘soft harmonisation’ preferred

- ECC Decision/Recommendation
- ECC Decision
- EC Decision
- Citation in Official Journal of the EC
- National frequency allocations
- National licensing regimes

ETSI

World Class Standards

ETSI

World Class Standards

World Radio Conference (WRC)

Global spectrum allocation

Spectrum allocation with legal certainty
The Working Group Frequency Management (WG FM) is responsible for developing strategies, plans and implementation advice for the management of the radio spectrum.

Working Group Spectrum Engineering (WG SE) is responsible for developing technical guidelines and sharing and compatibility arrangements for radio spectrum use.
Existing ECC Deliverables

- **ECC Report 096**: Compatibility between UMTS 900/1800 and systems operating in adjacent bands
- **ECC Report 146**: Compatibility between GSM MCBTS and other services (TRR, RSBN/PRMG, HC-SDMA, GSM-R, DME, MIDS, DECT) operating in the 900 and 1800 MHz frequency bands
- **ECC Report 162**: Practical mechanism to improve the compatibility between GSM-R and public mobile networks and guidance on practical coordination
- **ECC Report 229**: Guidance for improving coexistence between GSM-R and MFCN in the 900 MHz band
- **ECC/REC/(05)08**: Frequency planning and coordination of GSM 900, GSM 1800, E-GSM and GSM-R systems (currently under revision)
- **ECC/DEC/(02)05**: ECC Decision of 8 March 2013 on the designation and availability of frequency bands for railway purposes in the 876-880 MHz and 921-925 MHz bands
- **ECC/DEC/(02)09**: Free circulation and use of GSM-R mobile terminals 876-880/921-925 MHz for railway purposes
- **ECC/DEC/(02)10**: Exemption from individual licensing of GSM-R mobile terminals 876-880/921-925 MHz for railway purposes
- **ECC/DEC/(04)06**: ECC Decision of 19 March 2004 on the availability of frequency bands for the introduction of Wide Band Digital Land Mobile PMR/PAMR in the 400 MHz and 800/900 MHz bands
- Other railway radio applications (Eurobalise, Euroloop, Level Crossing Radars) are under SRD regulation in ERC Recommendation 70-03 Annex 4. This annex covers frequency bands and regulatory as well as informative parameters recommended for applications specifically intended for use on railways.
- An **Explanatory Paper on 5 GHz RLAN usage in vehicles** (incl. trains) is available.
WG FM is aware of the creation of the draft ETSI SRdoc TR 103 333 as well as the early considerations in the coexistence and migration studies commissioned by ERA, and the project launched by the International Railway Union (UIC) – an ECC LoU partner - to define the successor system to GSM-R.

WG FM intends to open a new (focused) Project Team for future railway mobile communications after arrival of the ETSI system reference document TR 103 333 on future GSM-R network evolution. CEPT administrations are requested to consider volunteering a chairman for the new Project Team.

This new PT may define the need and scope for compatibility and sharing studies to be conducted in the WG on spectrum engineering (WG SE).

CPG PTD process for Agenda Item 1.11 (WRC-19) following Resolution 236 (WRC-15)
In parallel to the compatibility studies, the new FM PT may create a new ECC Report discussing all related aspects which may impact frequency considerations (e.g. possible type of networks (dedicated, hybrid, MNO solutions), network migration, technology aspects, related standardisation activities in ETSI and 3GPP, frequency sharing aspects, interoperability, flexibility in the approach).

After the results of the compatibility studies will become available, a new ECC harmonisation deliverable and/or change/replacement of an existing one (e.g. ECC/DEC/(02)05 and ECC/DEC/(04)06) (ECC Decision or Recommendation) will most likely be created.
Other Items

- Synergies with other ‘mission-critical’ networks (BB-PPDR, see ECC Report 218 and ECC Decision (16)02, or high-voltage smart grids under PMR regulation in 400 MHz discussed in WG FM PT FM54)

- ERC Recommendation 70-03 and Addendum CEPT Report 59 (SRD and RFID usage in 870-876 MHz and 915-921 MHz, section 2.6.3 recognising early GSM-R follow-on considerations) as well as primary use to be protected (military and E-GSM-R)

- Intelligent Transportation Systems (ECC/DEC/(08)01) and Urban Rail systems – on-going process

- Other railway radio applications (Eurobalise, Euroloop, Level Crossing Radars) under SRD regulation in ERC Recommendation 70-03 Annex 4.

- Explanatory Paper on 5 GHz RLAN usage in vehicles (incl. trains)

- ECC CPG Process towards Agenda Item 1.11 at WRC-19, following Resolution 236 (WRC-15)

- Contribution Oct. 2016 to the ITU BR in response to a questionnaire
Thank You

for your attention

New topic page: http://www.cept.org/ecc/topics/railway-communications/

Contains all existing ECC deliverables etc.