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RADIO SPECTRUM POLICY GROUP

[Draft] Opinion for public consultation on

Spectrum Aspects of Intelligent Transport Systems

Draft Opinion on Spectrum Aspects of Intelligent Transport Systems

Background and scope of work

The Radio Spectrum Policy Group (RSPG) is a high-level advisory group that assists the European Commission in the development of radio spectrum policy. The RSPG's "Work Programme for 2016 and beyond" identified a work item developing Europe's spectrum policy for Intelligent Transport Systems (ITS), which includes both ITS for roads and the next-generation railway communications system (to replace GSM-R).

This draft opinion has been prepared by a Working Group that has cooperated closely with working groups on the Internet of things (IoT) and 5G. In developing the recommendations below, it has considered the current state of ITS, spectrum regulatory issues, including access to spectrum and the availability of frequency bands.

Recommendations on ITS for roads

1. The spectrum at 5875-5905 MHz is designated for safety-related ITS¹. A designation is not an exclusive allocation². But the fact that the band is harmonised is fundamentally important to the continued development and deployment of ITS and safety-related ITS applications in the European Union.
2. The spectrum designation in 5875-5905 MHz is technology neutral. The RSPG cannot take a view on the choice of technology since this is not a matter of spectrum regulation. However, we note that the co-existence between different ITS technologies is not guaranteed by the designation. There is a risk that the development of potentially competing technologies for ITS in the same band could impact on the robust and safe operation within 5875-5905 MHz. It is important that in-band co-existence and cross-border operation of ITS is ensured, especially for safety-related ITS.
3. There is no evidence that spectrum availability is currently a constraint on the development of ITS, and there is no immediate need to take regulatory action in this regard. But we recommend that the options for ITS (in particular non-safety related ITS) to expand to share spectrum in the 2x20 MHz above and below the existing designation should be kept available for the time being. We recognise the risk that this could constrain other potential future uses of this spectrum, and recommend that this risk is kept under review.
4. Given the potential future use of the spectrum for ITS, the RSPG recommends that the impact on current and potential future ITS in 5855-5875, 5875-5905 and 5905-5925 MHz

¹ EC Decision 2008/671/EC of 5 August 2008. Commission Decision on the harmonised use of radio spectrum in the 5 875-5 905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS). There is a separate designation for Transport and Traffic Telematics in the 5.8 GHz band (5795-5815 MHz).

² This band is allocated to the Fixed Satellite service (E-s), the Mobile and Fixed services in addition to its harmonised use for short range devices and national uses, which include military applications.

should be taken account of when considering changes to spectrum use in these and adjacent bands³.

5. RSPG notes that mobile networks may provide opportunities for services to complement ITS, in particular using 5G features.
6. RSPG notes that 63-64 GHz is designated for ITS by ECC/DEC/(09)01 in order to enable development and implementation of ITS applications in this frequency band. RSPG fully supports the continued use of this band for ITS on a shared basis.

Recommendations on spectrum for next-generation of railway communications systems

1. The European spectrum arrangement for the railway communications system (GSM-R) should remain in place for the foreseeable future as this provides Member States with a harmonised allocation of 2x4 MHz (876-880/921-925 MHz) for GSM-R and its potential successor. Additionally, member States may also allocate up to 2x3 MHz within the band 873-876/918-921 MHz by using the GSM-R bands and the Extension bands on a national basis where needed.
2. RSPG notes that the current railway communication system (GSM-R) will need to be replaced in due course and that the railways community considers that access to more spectrum may facilitate the transition from one system to another, depending on the options for new systems. The railway community is raising this now, as the transition will be a long a complex process.
3. RSPG notes that there is a wide range of options for the future of railway communications, but that the suitability of these options varies across Member States. These options include but are not limited to
 - a. using the GSM-R band and the extension (E-GSM-R) band (or a part thereof) during the transition or permanently^{4 5}
 - b. using commercial networks
 - c. using other bands
 - d. sharing networks with other users (e.g. PPDR in 700 MHz or 400 MHz)

³ RSPG notes that compatibility studies by CEPT are ongoing as part of the WRC-19 preparation. The WAS/RLAN requirements to be considered at WRC-19, and which were considered within the EC Mandate to CEPT on 5 GHz WAS/RLAN extension band, should include consideration of potential impact from adjacent band or in-band uses of this application. Full account should also be taken of the future evolution of ITS technologies (inter alia 5G LTE-V and existing ITS-G5/IEEE 802.11p).

⁴ RSPG notes that the E-GSM-R extension band is already designated by CEPT for SRD (ERC/REC 70-03). SRDs operate on a non-interference, non-protected basis. Some Member States have already, or are planning to, issue general authorizations for SRD applications in this band.

⁵ RSPG recognises that, based on the Commission Regulation (EU) 2016/919, the relevant equipment specifications for all new, renewed and updated GSM-R cab radios in trains include the requirement to contain the extended GSM-R band. RSPG emphasises that this does not create any requirement for Member States to use the extended band in their GSM-R networks

4. Rail operators are invited to consider the options for the future of railways communications, including those outlined above, with the relevant administrations.
5. In addition, RSPG notes that some Member States have implemented and some may need to implement solutions that allow for cross-border co-operation to address possible spectrum inefficiencies and spectrum shortages, for example in the transition period when GSM-R is being replaced by another system, and in areas where the density of use of railways communications is very high.
6. RSPG notes that the spectrum demand for future rail systems remains uncertain, and will depend on the traffic to be accommodated and on national situations (ie, only train/track signalling and voice, or train/track video communications, rail network density, cross border corridors).