CER
The Voice of European Railways

Position Paper
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Public consultation on the draft RSPG Opinion on Spectrum Aspects of Intelligent Transport Systems

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Public consultation on the Draft RSPG Opinion on Spectrum Aspects of Intelligent Transport Systems

Reference document

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Introduction

The Community of European Railway and Infrastructure Companies (CER) welcomes the opportunity to provide comments to the Radio Spectrum Policy Group (RSPG) on the draft opinion on Spectrum Aspects of Intelligent Transport Systems.

CER is the leading European railway association bringing together more than 70 European railway undertakings, their national associations as well as infrastructure managers and vehicle leasing companies, thus representing the entire railway system.

CER comments on RSPG recommendations on spectrum for next generation of railway mobile communications systems

1. CER welcomes that the first recommendation indicates that the European spectrum arrangement for the railway communications system (GSM-R) should remain in place for the foreseeable future: frequencies are a critical issue for the fulfillment of the railway mission. Communication services conveyed by the GSM-R network contribute to the safety and proper functioning of the circulation of trains, and any malfunction is resulting in trains that stop with severe consequences for the society. The spectrum allocated to the railways are fully exploited on dense nationwide networks and enable the mobility of around 400 billion passenger-kilometers per year in the European Union on more than 200 000 km of track[1].
2. CER points out that the need for the replacement of GSM-R is driven by the fact of the obsolescence of the GSM-R technology, for both train and trackside. The railway community must anticipate a sharp reduction in industrial supply after 2020 with consequences on the maintainability of the system after 2030. The transition to a new system is also a unique opportunity towards the digitalization in the railway sector and e.g. automatic train operation.

[1] UIC Railway Statistics 2015

Therefore CER respectfully suggests to amend the text in the following way:

RSPG recommendation	CER proposed amendment
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.	RSPG notes that the current railway communication system (GSM-R) **will not be supported by the GSM-R industry beyond 2030 and therefore need** to be replaced in due course. **The** railways community considers that access to more spectrum may facilitate the transition from one system to another **and is required to enable the breakthrough of automatic train operation[2].** The railway community is raising this now, as the transition will be a long and complex process **starting from 2022.**

3. CER wants to make the following comments on the options identified by the RSPG:
   a. Using the GSM-R band and the extension (E-GSM-R) band : The 2 x 3 MHz ER-GSM extension band (873-876 MHz and 918-921 MHz) which is adjacent to the current R-GSM band is a key enabler for rail, in the short term for certain saturated areas and in the long term to enable migration to the new mobile communications systems replacing GSM-R. Being adjacent, it provides an additional degree of freedom during the transition and opens up the possibility of using one of todays technologies for the future system once the GSM-R is phased out, subject to traffic requirements and spectrum availability in the long term (for instance 885-880 MHz paired with 920-925MHz). From the railways perspective the best option is to use an additional dedicated spectrum for the new technology.
   b. **Using other bands will have an economical impact**: Access to spectrum (below 1 GHz) is indispensable to develop cost-effective nationwide coverage for the most critical services (ETCS, radio alarm, ground-train radio). This will enable maximum reuse of existing infrastructure, which represents an investment of over several billion euros in EU with still growing investments in several Member States.
   c. **Using public mobile networks cannot be the unique solution** : The GSM-R successor must combine national coverage, seamless continuity and high availability including rural areas. . Improvements of the radio coverage of public networks along tracks are expected to improve, but remains insufficient to ensure the required quality of service for mission critical communication. In addition, to ensure the performance required (in particular availability) for railway applications, there is actually no other solution than a specifically designed network[3]. Nonetheless, public networks can be used to support non critical applications and also as a best effort solution for local rail tracks which cannot be timely and economically covered by a dedicated communication network.

[2] Automatic train operation (ATO) is expected to further increase safety to the railway system and bring economic benefits to the society in general. To make this mission critical application feasible, harmonized spectrum is required.

[3] Mission critical applications over public networks are not possible since seamless operation require a seamless availability and Quality of Service of the mobile network; given that there are no legal obligations to the public operators to deliver such a service, public networks can not carry the data for the mission critical applications.

d. **Sharing networks with other users (e.g. PPDR in 700 MHz or 400 MHz) could be too complex to organize at the Europe-scale**: Sharing a frequency band with PPDR or other Critical Communication Operators is an option to consider, but seems complex to organize from the operational and legal standpoint. It can also be restrictive, as sharing a common network requires balanced conditions between sharing partners and the assurance that rail operational requirements can be fulfilled, while there is currently no mechanism to ensure the sharing when spectrum has been assigned to PPDR. In addition, no single solution exists for PPDR networks in Europe which might at the end affect the interoperability of railway radio services.

4. Rail operators are happy to engage in a constructive dialogue with the relevant administrations, which is already the case. CER wants to emphasize that **the result of this dialogue cannot be a collection of national solutions**, as the interoperability dimension is an essential asset of the current GSM-R system and political European priority. Arguably, the need for interoperability is comparable with other sectors for which RSPG had underscored the need for harmonization (at least in a flexible way)[4]. Therefore CER respectfully suggests to add to the bullet 4 the following sentence.

RSPG recommendation	CER proposed amendment
Rail operators are invited to consider the options for the future of railways communications, including those outlined above, with the relevant administrations.	Rail operators are invited to consider the options for the future of railways communications, including those outlined above, with the relevant administrations. **RSPG notes that the need for spectrum in the 900 MHz Band and its harmonisation for current and the future rail systems are essential and that these demand is an essential prerequisite for the interoperability and safety of railway operations.**

5. Recommendation 5 calls for no comment.
6. CER points out that the spectrum demand will be justified by the ETSI SRDoc which is in its final phase (Draft TR 103 333 V1.1.1_0.0.6) within ETSI ERM, it identifies the need for railway interoperability and mission critical operation to harmonize over all member states more spectrum in addition to the current 2 x4 MHz of GSM-R.

[4] Eg RSPG 13-540 Report on Sectoral Needs 11.4. Conclusions concerning PPDR The RSPG recognised that the provision of PPDR services, including the associated radiocommunications facilities is a sovereign national matter, and that the broadband PPDR needs of Member States may vary to a significant extent. Therefore, the future harmonisation of the broadband PPDR sector in Europe needs to be flexible enough to respect national sovereignties and different national circumstances such as; the amount of available spectrum and the type of network deployed and used which may be dedicated, commercial or a hybrid solution (a mixture of dedicated and commercial networks). There are requirements to ensure adequate interoperability between the different countries. Also the possibilities of maximising the benefits from the economies of scale should be taken into account.

CER comments on RSPG recommendations on ITS for roads

CER welcomes the recommendation to take into account the current and potential future ITS in 5905-5925 MHz when considering changes to spectrum use in this and adjacent bands. CER points out that the band 5905-5925 MHz has a great potential for CBTC applications which should be considered part of the ITS framework and is actually foreseen to be used in committed urban rail projects.

About CER

The Community of European Railway and Infrastructure Companies (CER) brings together more than 70 railway undertakings, their national associations as well as infrastructure managers and vehicle leasing companies. The membership is made up of long-established bodies, new entrants and both private and public enterprises, representing 73% of the rail network length, 80% of the rail freight business and about 96% of rail passenger operations in EU, EFTA and EU accession countries. CER represents the interests of its members towards EU policy makers and transport stakeholders, advocating rail as the backbone of a competitive and sustainable transport system in Europe. For more information, visit www.cer.be or follow us via Twitter at @CER_railways.

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