EBU

OPERATING EUROVISION AND EURORADIO

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EBU's response to the public consultation on the Draft RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G)

The European Broadcasting Union[1] (EBU) welcomes the opportunity to submit its comments on the draft RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G).

Broadcasters are producing a wide range of content and services not only as traditional linear radio and TV but also as time shifted, on demand, hybrid content and data services. The audience thus enjoys a wide choice of content and services (both linear and on demand) that is increasingly available at any time and at any location. That requires using a number of different means of distribution, including traditional broadcasting platforms, such as terrestrial, cable and satellite, as well as broadband networks, both fixed and mobile.

5G developments are still ongoing and there are many issues that will need to be addressed, including technical, market related and regulatory. Nevertheless the large scale delivery of video content is considered to be one of the key 5G applications. Therefore, 5G may become an important delivery platform for the whole range of audiovisual services. Broadcasters are therefore following with great interest 5G developments, in particular whether 5G has the capability of meeting the future requirements of public service media organisations. We would note that in the last two years, the EBU and its members have become actively involved in the work of 3GPP to further our interests in this important area.

We believe that the performance targets proposed for 5G can only be achieved if the system has access to a large amount of radio spectrum and uses large continuous bandwidth (e.g. 100 MHz or more per channel), which can only be found in the higher frequency ranges. The current WRC-19 discussions point towards bands in the range 24.25-86 GHz. **EBU supports the RSPG's draft opinion that considerations of bands above 6 GHz for 5G shall be limited to the bands identified by WRC-15 in order to strength the global harmonisation opportunities.**

Concerning lower frequency bands which could provide enhanced mobile broadband coverage and which the RSPG expects to be the ones where the first major commercial deployment will take place, the EBU has the following comments to the draft RSPG Opinion:

[1] The EBU is the world's leading alliance of Public Service Media (PSM). We have 73 Members in 56 countries in Europe, and an additional 34 Associates in Asia, Africa and the Americas. Our Members operate over 1,800 television and radio channels together with numerous online platforms. Together they reach audience of more than one billion people around the world, broadcasting in more than 120 languages. The EBU operates Eurovision and Euroradio services.

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1. The 700 MHz band: the EBU recognises that the availability of the 700 MHz band will coincide with the introduction of 5G services, and welcomes this innovation. The EBU is, however, concerned about the technical requirements defined for terrestrial systems capable of providing electronic communications services and other uses in the 700 MHz band and included in the Commission Implementing Decision (EU) 2016/687 of 28 April 2016. We note that in its opinion, the RSPG recognises the need to revalidate the technical conditions for use of this and other bands. Those technical conditions were defined to protect broadcasting services below 694 MHz based on 4G/LTE technology. **It is important that future 5G technology will meet the protection requirements of broadcasting services below 700 MHz, and we welcome the recognition that further studies will be needed on this.**

   The 470-790 MHz is the core band of digital terrestrial television (DTT) and wireless microphones. Several European countries have announced the release in the coming years of the 694-790 MHz band for mobile services. At EU level, The European Council and Parliament are discussing draft proposals for the use of the 470-790 MHz frequency band in the Union which include a mandatory release of the 694-790 MHz band. It is therefore crucial to ensure interference free operation in the remaining band, the 470-694 MHz band, which will be the only UHF spectrum for DTT services.

2. The 3400-3800 MHz band: Commission Decisions 2008/411/EC and 2014/276/EU harmonise this band for mobile services across the European Union. It is to be noted that WRC-15 did not harmonise the whole 3400-3800 MHz band in any part of the world and Region 1 did not reach a consensus view across this band; reflecting the value of existing services. In amending the 2008 Decision, Decision 2014/276/EU notes that continued protection should be ensured, “In particular, fixed satellite systems (FSS) including earth stations would require continued protection through appropriate coordination between such systems and wireless broadband networks and services by national authorities on a case-by-case basis”. Additionally, the amendment to Article 2 includes that “Member States shall ensure appropriate protection to systems in adjacent bands”. The technical requirements defined in the EC Decision to protect services in adjacent bands were based on 4G/LTE technology. In this band also, therefore it will be necessary **to study and re-validate the protection that future 5G technology will give to adjacent services below 3400 MHz and above 3800 MHz.**

   International Broadcasters rely on FSS spectrum use between 3400 and 4200 MHz for programme contribution, programme monitoring and programme distribution (including the backbone for DTT networks). Whilst for European broadcasters, the predominant use is outside Europe, there is use in Europe and interference levels have caused problems where new services have been introduced below 3600 MHz. Where possible, many European broadcasters have now moved up to the higher frequencies (3800-4200 MHz) in order to escape this interference, because few countries have regulatory measures in place to license (and therefore provide protection) for the receive-only terminals typically used. It is therefore crucial that solutions are found to provide protection for existing users and for services in adjacent bands in any future use of the 3400 to 3800 MHz band by 5G.