29 July 2016

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

RAI welcomes the opportunity to submit its comments on the draft RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G).

RAI Radiotelevisione Italiana SpA is the Italian public broadcaster and one of the largest media companies in Europe. RAI is a holding company under the control of the Italian Ministry of Economy and Finance.

RAI as Italy's national public broadcasting company has a great comprehensive and varied video and audio offering. RAI broadcasts its television and radio programs to the users mainly via digital terrestrial transmission networks and also relying on the satellite platform.

RAI also produces a wide range of contents and services not only as traditional linear radio and TV but also as time shifted, on demand and data services.

RAI is an active member of the EBU – European Broadcasting Union - and fully shares and supports the EBU's position on the issues raised in the draft RSPG Opinion, in particular regarding:

- The need to provide audiences a wide choice of content and services (both linear and on demand), with **increasing quality** (HD and UHD) and with **increasing availability at any time, at any location and to any device**, will require the use of a number of different means of distribution, including traditional broadcasting platforms, such as terrestrial and satellite, as well as broadband networks, both fixed and mobile.
- The fact that 5G developments are still ongoing and **there are many issues that will need to be addressed**, including technical, market related and regulatory. 5G may become an important delivery platform for the whole range of audio-visual services, therefore as Broadcasters we are following with great interest 5G developments and we are supporting the EBU in the work of 3GPP to further our interests in this important area.
- the need, in order to achieve the performance targets proposed for 5G, to access to a large amount of radio spectrum and to use 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. **RAI, as well as the 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**.

- The 700 MHz band: we note that in its opinion, the RSPG recognises the need to revalidate the technical conditions for use of this and other bands. Since, 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**.

  It is crucial to ensure interference free operation in the 470-694 MHz band, which will be the only UHF spectrum for DTT services in the future.

Moreover concerning other frequency bands below 6 GHz, which the RSPG expects to be the ones where the first major commercial deployment will take place, RAI has a specific comment to the draft RSPG Opinion with regards to:

- The 3400-3800 MHz band: Commission Decisions 2008/411/EC and 2014/276/EU harmonise this band for mobile services across the European Union, providing the appropriate protection and continued operation of the existing use in this band by **FS (Fixed Service) and FSS (Fixed Satellite Service) systems**. 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. 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**.

- RAI relies on FS spectrum use between 3600 and 4200 MHz for programme contribution, programme monitoring and programme distribution (including the backbone for DTT networks). RAI agreed with Italian Administration to move up its fixed video links in the sub band 3700-3800 MHz toward the higher frequencies (3800-4200 MHz), **conserving the use of the sub band 3600-3700 MHz**. It is therefore crucial that solutions are found to provide protection for existing users and for services both in the sub band 3600-3700 MHz and in adjacent bands in any future use of the 3400 to 3800 MHz band by 5G, through appropriate coordination between such services and wireless broadband networks by national authorities.