

RSPG Opinion on Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband

Qualcomm Response

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Qualcomm welcomes the opportunity to respond to the RSPG on its Opinion on “Strategic challenges facing Europe in addressing the growing spectrum demand for wireless broadband”.

We do support the overall recommendations put forward by the RSPG in its Opinion.

There has been a phenomenal growth in the demand for mobile broadband as the internet went mobile. Mobile data traffic has been approximately doubling every year. All the indications point to this growth continuing unabated. While the projections vary, the goal of “1000x increase” truly captures the future trend. Spectrum, alongside other technology evolutions, will play a pivotal role in coping with this growth.

Qualcomm believes that the Opinion equips Europe with a spectrum roadmap which will help addressing the “1000x increase” and we would like to provide the following complementary views on the frequency bands recommended by the RSPG:

- *UHF Band:* We support the strategic review of the future use of this band in Europe. We believe that the consideration of convergent networks can help bridge the gap between broadcasting and mobile and would enable the establishment of a framework which will be beneficial to both industries;
- *700 MHz:* We consider that the optimal band plan for Europe should be based on a 2x30 MHz channeling arrangement, 703 – 733MHz for uplink paired with 758 – 788 MHz for downlink. This corresponds to the lower duplexer of 3GPP Band 28, the Asian Pacific 700 MHz band plan. Such a decision will enable economies of scale and facilitate roaming globally. In addition, a number of options are available for an efficient use of the remaining part of the spectrum, i.e. 733-758 MHz.

- **1.5 GHz:** We support the use of 1452-1492 MHz for Supplemental Downlink (SDL). A timely release of this band will bring substantial benefits to EU consumers¹. Shortly after CEPT decision on 1452-1492 MHz and the publication of the draft RSPG Opinion, Qualcomm conducted with Orange and Ericsson a demonstration of SDL in 1452-1492 MHz in pre-operational conditions. The demonstration showed the higher data rates and enhanced services that the users will enjoy; it also highlighted the maturity of the technology². The other bands considered by the RSPG in this frequency range, namely 1375-1400 MHz and 1427-1452 MHz, are also valuable resources for mobile broadband and can be released in the future in a phased and complementary manner to 1452-1492 MHz SDL.
- **2.3 GHz:** We support the harmonization and release of this band for mobile broadband, using LSA (Licensed Shared Access). Qualcomm has actively contributed to the development of the ETSI System Reference Document TR 103 113 on “Mobile Broadband Services in the 2300 – 2400 MHz frequency band under LSA”³. We have also conducted with Nokia Siemens Networks a demonstration at the Mobile World Congress in February 2013 showing the benefits of LSA/ASA with live simulated network capacity⁴. Ensuring a successful implementation of LSA will however crucially depend on a robust definition of this concept. We therefore believe that the ongoing work by the RSPG on the LSA Opinion is of great importance and will set the pace for future development in this area. Mobile Operators within the GSMA⁵ and technology providers within DIGITALEUROPE⁶ have expressed concordant views on LSA and in particular on the definition of ‘incumbent’. We urge the RSPG to take those views into account in order to establish a framework which can drive investment and spur innovation.
- **3.8-4.2 GHz:** We believe that this spectrum can play an important role to enhance future capacity requirements in urban areas especially in light of the increased focus on very high data rates and mobile network densification with heterogeneous networks architectures using small cells. This band could substantially contribute to address the surge in data traffic and effectively tackle indoor data usage. The access to this spectrum through an LSA framework would allow maintaining satellite use in the band as required by a number of countries while enabling a rapid release of this resource in dense urban and urban areas.
- **5 GHz:** We support the availability of the bands 5350 – 5470 MHz and 5725 – 5925 MHz for RLANs as it will enable wider bandwidths for Wi-Fi use across a large uninterrupted block of frequencies starting from 5150 MHz up to 5925 MHz. We consider that an appropriate first step is for CEPT to conduct the required sharing studies to assess the compatibility between Wi-Fi and incumbent users in 5350 – 5470 MHz and 5725 – 5925 MHz.

¹ ECC Report 188

² <https://www.youtube.com/watch?v=YONtQ7UC4tg>

³ [http://www.cept.org/Documents/fm-52/10736/FM52\(13\)Info02_LS-on-Latest-Draft-TR-103-113](http://www.cept.org/Documents/fm-52/10736/FM52(13)Info02_LS-on-Latest-Draft-TR-103-113)

⁴ <http://www.qualcomm.com/media/events/mobile-world-congress-2013/demos>

⁵ <http://www.gsma.com/spectrum/licensed-shared-access-lsa-and-authorised-shared-access-asa>

⁶ http://www.digitaleurope.org/DocumentDownload.aspx?Command=Core_Download&EntryId=519