

Ofcom consultation on the future use of the 700MHz band

Qualcomm response

July 2013

Qualcomm welcomes the opportunity to respond to Ofcom consultation on “Future use of the 700MHz band”. Qualcomm supports the overall objective set forth by Ofcom to release the 700MHz band for mobile broadband.

The global and growing demand for mobile broadband services pushes the boundaries of networks capabilities and requires more harmonised spectrum to deliver everywhere these new services to smartphones, tablets and all new possible devices types. Mobile data traffic has doubled every year over the past few years. If this growth rate continues for 10 years, we will see a 1000x increase. Qualcomm's vision to achieve this 1000x capacity is built upon three pillars, which are related to one another and must be pursued simultaneously: additional spectrum in low and high bands, denser networks and greater efficiency across the system. These three pillars are complementary to address data traffic growth in rural, suburban and urban environments.

We believe that additional frequency bands are needed to meet the future demand for mobile broadband services by 2020. In this context, Qualcomm supports the RSPP target to identify at least 1200MHz of spectrum by 2015 in low and high frequency bands to be made available for mobile broadband in the EU. The 700MHz is one key band to fulfil this target as determined by the Radio Spectrum Policy Group in its opinion on “Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband” and the European Commission initiative “Action Plan on Wireless Communications for a Connected Europe”.

The 700MHz frequency range has been considered by many countries of ITU Region 1 as highly beneficial to support significant improvement of their mobile broadband infrastructure for the delivery of broadband services in rural areas. The other two ITU Regions, Region 2 and Region 3, have already identified this band for mobile broadband at previous WRCs and some countries have or are about to award this band. The 700MHz band (694-790MHz) in Region 1 is currently studied by the ITU under Agenda Item 1.2 of the World Radio Conference 2015 (WRC-15).

700MHz band plan for Europe

Global harmonisation of the 700MHz is currently shaping around APT paired band plan, aka 3GPP

Band 28. Many countries in Asia (Australia, Japan, Korea, India, Indonesia, Malaysia, Taiwan, Singapore etc.) and Latin America (Brazil, Venezuela, Chile, Mexico, Columbia, Ecuador, etc.) have taken action towards adoption of 3GPP Band 28.

The full use of 3GPP Band 28 would not be appropriate for Europe as it overlaps with the EU 800MHz band, aka 3GPP Band 20. However, the reuse of the lower duplexer (2x30MHz) currently implemented to support 3GPP Band 28 would maximise the economies of scale and facilitate roaming while being compatible with EU 800MHz band. In doing so, Europe can then leverage the best out of sub-1GHz spectrum with an overall spectrum availability of 2x60MHz in 700/800MHz and with considerable harmonisation with other regions. In Region 1, the United Arab Emirates (UAE) Telecommunications Regulations Authority (TRA) has recently announced its plan to adopt this frequency arrangement for the 700/800MHz as of 2015¹.



Figure 1: Qualcomm proposal for optimal 700/800MHz band plan in Europe

700MHz Out-Of-Band Emissions (OOBE)

In order to make the most out of the harmonisation and economies of scale, Qualcomm would like to encourage Ofcom to consider the same LTE devices OOBE level that has been adopted by Asia-Pacific Telecommunication (APT) to protect the fixed broadcasting reception. Indeed, coexistence analysis based on Monte-Carlo simulations have shown that the -25dBm/8MHz OOBE limit would ensure the protection of the fixed broadcasting service below 694MHz. In CEPT, the "Mobile-DTT correspondence group" is currently working on adjacent band compatibility between mobile networks and digital terrestrial television (DTT) to ensure the protection of the broadcasting services from LTE700 interference in Europe based on agreed parameters defined in JTG5-6, JTG4-5-6-7, 5D and 6A. Qualcomm is contributing to this work and supports the adoption of the same OOBE in APT and in CEPT, i.e. -25dBm/8MHz, in order to foster economies of scale and the availability of affordable devices while ensuring a satisfactory protection of fixed terrestrial digital broadcasting networks already deployed below 694MHz.

Timing for availability

Based on previous experience of the 800MHz release, Qualcomm shares the view from Ofcom that any future release of the 700MHz in UK would largely depend on the international context and coordination with neighbouring countries. 2018 seems to be a realistic timeframe to make this band available for mobile broadband operators and to benefit from the worldwide economies of scale.

¹ http://www.tra.gov.ae/news_UAE_TRA_ANNOUNCES_700_MHZ_BAND_PLAN_FOR_MOBILE_BROADBAND-514-1.php



Qualcomm Europe Inc.

Some countries in Europe (France, Germany) have announced plans to award the 700MHz for mobile broadband earlier than this date.

Transition plan

We believe that it is essential at this stage to define a transition plan which would ensure the availability of the 700MHz for mobile broadband while minimizing any impact on DTT viewers as well current as on current users of the UHF band. In particular, PMSE users in the 470-790MHz would benefit from an early decision on the transition plan so to have visibility on the future availability of spectrum and adapt their technology to the commonly shared objective of releasing the 700MHz band for mobile broadband applications.