

Qualcomm response to the European Commission consultation on transforming the digital dividend opportunity into social benefits and economic growth in Europe

Introduction

Qualcomm welcomes the opportunity given by the European Commission to express its views on the consultation document on *transforming the digital dividend opportunity into social benefits and economic growth in Europe*.

Qualcomm believes that the 800 MHz band, in addition and as a complement to the 900 MHz, will provide ideal coverage to extend broadband access for rural areas and smaller towns and communities in a cost-efficient manner, with the resulting positive impacts on productivity, employment and bridging the digital divide. The release of the 800 MHz at pan European level by 2012, under harmonized technical conditions for spectrum use as defined by CEPT, are of critical importance for the timely development of mobile broadband standards and mass market products in this spectrum.

Accelerating analogue switch off and the release of the 800 MHz by 2012

Qualcomm is in agreement with the assessment done by the Commission that even though all Member States have already decided to phase out analogue broadcasting and despite the target EU date of 2012, the actual final date for complete switch-off remains uncertain. Any delay in the pan-European availability and release of the 800 MHz will negatively impact the development of the broadband market and will stifle the unique opportunity that the 800 MHz band provides for Europe's economic development. Indeed, the 800 MHz band is one of the key components of the EU's objective to achieve the 100 % high-speed broadband coverage for all European citizens.

Qualcomm agrees with the Commission proposal to request Member States which have not yet completed the digital switchover to reaffirm their commitment to the EU target date for the effective switch-off of analogue TV broadcasting by 1 January 2012, and to complete all required preparatory measures necessary in 2011 at the latest in order to meet this deadline.

Furthermore, Qualcomm encourages the Commission to consider the use of community funds to finance the analogue to digital TV switchover in Member States and the 800 MHz spectrum clearance from incumbent users. Member States which would benefit from those funds would release and award in a timely manner the 800 MHz spectrum for the delivery of broadband services. The spectrum award would be based on coverage requirements, rather than sole financial considerations. This approach which fulfills a number of EU and Member States policy objectives is a real win-win opportunity for the telecom as well as the broadcast industries:

- It fosters analogue to digital TV transition in Europe, allowing for the analogue TV switch off to take place by 2012,
- It allows the release of the 800 MHz for broadband services across Europe by 2012,
- It allows the award of the 800 MHz spectrum in a way which achieves the Commission and Member States objectives in terms of broadband coverage,
- It allows the use of community funds to establish a framework which allows fair and efficient competition among operators for the build up of broadband infrastructures.
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Making available the 800 MHz for broadband under harmonised technical conditions

Qualcomm considers that a spectrum policy which would enable sustainable innovation, investment, competition and development in the wireless market, should be based on the pan-European harmonisation of the technical conditions for spectrum use, including channeling arrangements, thus allowing efficient standards competition within a technology neutral regulatory framework.

Qualcomm therefore supports the Commission proposal to submit to the Radio Spectrum Committee (RSC) pursuant to the Radio Spectrum Decision, a draft EC decision on the technical harmonisation of the 790-862 MHz band for regulatory opinion in autumn 2009, followed by the final adoption by the Commission at the beginning of 2010, thus making the 800 MHz band available for low/medium power electronic communications networks, under harmonised technical conditions, on a technology neutral basis.

However, we strongly believe that the EC decision should be based on the technical harmonization measures developed by CEPT following the Commission mandate and should include a single channeling arrangement, i.e. the preferred CEPT FDD band plan. Indeed, a channeling arrangement based on an FDD band plan is the most suitable for the deployment of mobile broadband in the UHF spectrum, it is fully backed by the mobile industry¹, it does

¹ ECC PT1(09)53, ECC PT1(09)91, ECC PT1(09)92 "Strong industry support for FDD as the sole channelling arrangement in 790 – 862 MHz". Source: ETNO, GSMA/E, UMTS Forum, NGMN, Alcatel-Lucent, Bouygues Telecom,

offer a fully technology neutral framework as all technologies have a FDD profile, it would foster economies of scale for affordable user equipments and facilitate global roaming. Any attempt to include in the EC Decision a flexible FDD/TDD channeling arrangement for the 800 MHz band would harm the timely development of mobile broadband in this spectrum as it would lead to market fragmentation and would not provide the necessary guidance and long term certainty to the industry. A flexible FDD/TDD band plan would also considerably increase the risk of interference and would lead to an inefficient use of spectrum due the required guard bands at FDD/TDD boundaries. This would be of critical importance in the 800 MHz since the available spectrum is comprised only of 2 x 30 MHz.

We also believe that the timeline for the adoption of the EC Decision should not lead to any delay in Member States' (France, Germany, UK) ongoing plans to award the 800 MHz as of the beginning of 2010, based on the harmonized technical conditions developed by CEPT.

Adopting a common position on the "White Spaces"

Qualcomm believes that licensed spectrum is the most suitable for the provision of mobile broadband services with the required quality of service at a reasonable cost. Past experiences indicate that services based on unlicensed spectrum have largely been unsuccessful to provide wide area services, whereas mobile broadband access is flourishing in licensed bands. In addition, the award of UHF spectrum for licensed services brings considerably more value to the European economy than authorizing its use on a license exempt basis.

Unlicensed devices have been, on the other hand, successful in providing short range services to consumers and businesses. However, it should be noted that such services are intrinsically local services using high frequency bands which enable to reduce the risk of interference. Those services and their evolution can be accommodated in the existing large license-exempt spectrum. Operation at lower frequency bands could actually be counter-productive for such services, as interference would be propagated further away from the local service area.

Qualcomm believes that the UHF band and its favorable propagation condition should be allocated to licensed wireless broadband services which have proved to be very efficient in their use of the spectrum. In particular, we believe that the extension of the digital dividend

below 790 MHz would be mostly valuable for Europe if it was released based on the clustering/harmonized sub-bands concept.

Based on the above and the ongoing technical studies conducting by CEPT on the white spaces, Qualcomm supports the Commission proposal to develop with the Member States a coordinated approach to the regulatory treatment of the usage rights for the white spaces in Europe.

Ensuring high quality standards for terrestrial digital television receivers in Europe

Qualcomm supports the protection of TV services below 790MHz. As demonstrated by the CEPT, the coexistence between broadcasting and mobile broadband at 790MHz is possible but will require careful planning and deployment in areas where the 782-790MHz channel is used by broadcasting. This is mostly due to the fact that TV receivers are designed to receive signals up to 862MHz, offering no filtering against signals in the 790-862MHz.

Future TV receivers could very easily filter out signals from the 790-862MHz band, as it will be an adjacent band to their receiving band. This is very similar to mobile phones filtering out the uplink band to avoid self-interference, with much lower filtering requirement however then in the mobile phones case. Technologies, such as SAW or FBAR filters, would offer field-proven, sub-1 euro, mass-scale compatible solutions, with no energy efficiency impact on TV receivers. This would remove any restriction on mobile broadband deployment scenarios and would suppress remaining risk of terminal to DTV receiver interference.

Qualcomm encourages the European Commission to drive the development of new TV reception standards as soon as possible. An aggressive timeline should be adopted since the corresponding modifications to DTV receivers are straightforward; however, some time is required to ensure sufficient penetration of the DTV market. Such an easy implemented and forward looking measure can significantly facilitate and speed up the deployment of mobile broadband across Europe.

Increasing the size of the digital dividend through further spectrum efficiency gains

Qualcomm supports increasing the size of the digital dividend for low/medium power electronic communications services based on the clustering/harmonized sub-bands concept. We support in particular the Commission's study conclusion that a significant part of the total potential spectrum efficiency gains could be achieved economically by encouraging a



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coordinated deployment at EU level of Single Frequency Networks (SFNs) over Multiple Frequency Networks (MFNs) for broadcasting networks.

Qualcomm also agrees that 'frequency agile' mobile communications systems would allow in the future simplifying the extension of the digital dividend and the transitional measures. However, there are considerable technical challenges which are still to be overcome before those systems become commercially viable. There has been considerable research into those systems and we agree that this research should be supported further.