

Qualcomm input to the Radio Spectrum Policy Group 2010 Work Programme

Qualcomm welcomes the opportunity to comment on the Radio Spectrum Policy Group 2010 Work Programme. Qualcomm applauds the RSPG for the continuous excellence and relevance of its action. The Opinions of the RSPG have set, thanks to their strategic long term vision, the basis of spectrum usage harmonisation in Europe. Qualcomm looks forward to RSPG future work in shaping the European Union spectrum policy, in its enhanced role under the new regulatory framework.

Three major trends currently characterise the evolution of internet usage in Europe and globally: mobility, higher data rates and an increased diversity of connected devices (phones, laptops, e-readers, cameras, etc.). Mobile data traffic has already surpassed voice traffic on 3G networks and will continue to grow rapidly. By the end of 2011, mobile broadband subscribers are forecasted to surpass fixed broadband subscribers and will constitute, by the end of 2012, more than 70% of all broadband subscribers. By 2014, mobile data traffic is projected to grow by 4500% and to generate nearly 100 Billion Euros in operators' revenues.

The long term success of mobile broadband services in Europe will be predicated on the access to radio spectrum, a valuable finite resource. Spectrum harmonization at European and international levels is key for the emergence, development and competition of global standards. Fragmented small markets from a spectrum perspective hinder the development and implementation of new technologies as it increases equipment price and complexity and creates considerable cross-border interference issues. Harmonized band plans and technical spectrum usage rights are also key to 1) Support the development of lower cost and smaller terminals, 2) Enable more coverage and 3) Ensure an interference-free environment and Quality of Service.

Within the scope or in addition to the policy items currently included in the RSPG 2010 Work Programme (Multiannual Radio Spectrum Policy Programme, Harmonised EU participation in international negotiations, Digital Dividend, Competition Aspects in spectrum assignment and usage, Technology impact on spectrum management including Cognitive Radio), Qualcomm

believes that most benefit could be obtained from the inclusion of the following topics in the RSPG 2010 Work Programme:

- Digital Dividend: Roadmap for a Europe wide allocation and release of the 800 MHz for mobile and the initiation of a strategic review of the longer term use of the UHF spectrum;
- L-band: Strategic review of the 1452-1479.5 MHz enabling its harmonised use for mobile multimedia downlink systems;
- 2.3GHz: Strategic review of the 2300 – 2400 MHz in view of its future harmonised use for mobile broadband services;
- C band: Strategic review of the 3.4 – 3.8 GHz band in view of the reengineering of this spectrum to enable its optimal use for wide bandwidth IMT-Advanced systems.

Digital Dividend

Qualcomm embraces the goal to increase the spectrum efficiency and spectrum utilisation. Qualcomm believes that it is urgent for Europe to start the implementation of a roadmap ensuring the completion of analogue TV switch-off by 2012 and the Europe wide allocation of the 800 MHz band to mobile as early as possible.

The strategic review of the longer term use of the UHF band has also to be initiated based on a win-win cooperation between broadcast and mobile to cope with the increased demand for convergent services driven by users' behaviour. Users are in the driver seat in influencing the successful market trends and services. Qualcomm recommends the RSPG to start studying potential extension of the Digital Dividend, taking into account international harmonisation trends. Specifically, Qualcomm highlights that the Commission proposals from the EC Communication *'Reaping the full benefits of the digital dividend in Europe: A common approach to the use of the spectrum released by the digital switchover'* provides elements to extend the current 800 MHz (790-862MHz) band in a time and nationally flexible manner. In particular, the identification of an optional downlink sub-band as an extension below 790 MHz of the current 800 MHz downlink (791-821 MHz) would allow extending the mobile broadband capacity and the development of mobile multimedia services in countries where the corresponding need exists. This downlink extension band could also correspond to internationally planned mobile downlink bands. Finally, this downlink extension could further solve any potential interference issue at the border between broadcast and mobile bands, through the adoption of appropriate technical constraints.

L-band (1452-1479.5 MHz)

Qualcomm recommends the RSPG to strategically review the future harmonised use of the L-band taking into account that it offers an opportunity for Europe to develop innovative mobile multimedia downlink systems on a European-wide basis. The 1452-1479.5 MHz band is indeed:

- Subject to harmonised technical spectrum usage rules under the Maastricht Agreement,
- A sub 1.5 GHz band which offers good propagation characteristics for mobile services,
- A wide band well suited to provide significant multimedia services,
- A spectrum band particularly well suited for the deployment of Single Frequency Networks.

2.3GHz band

Qualcomm encourages the RSPG to review the future use of the 2300 – 2400 MHz band while assessing the benefits for Europe to harmonise and allocate this spectrum to mobile in order to support the increased demand for mobile broadband services in the coming years. Qualcomm believes that this band is important for Europe considering the expected development of TD – LTE (LTE in TDD mode) and the corresponding economies of scale driven by the global use of this band.

3.4-3.8 GHz

The development of mobile broadband will lead to an exponential increase of traffic, especially in hot-zones (e.g. business areas, commercial centres). Such traffic can be sustained efficiently with very wide bandwidth spectrum. The 3.4-3.8 GHz band offers this unique characteristic for the mid to longer term and will allow in particular accommodating an optimal development of IMT-Advanced systems in Europe. However, this spectrum is currently fragmented and sub optimally used in Europe (narrow bandwidth compared to IMT-Advanced required optimal bandwidths, Fixed Wireless Access licences, regional licences...), Qualcomm therefore recommends the RSPG to strategically assess the future use of the 3.4 – 3.8 GHz in view of ensuring its efficient longer term sustainable use for mobile services which would require a reengineering of the band and the spectrum usage rights.