



Response to IBPT Consultation on access to 790 to 3.4 GHz bands – March 2009

OVERVIEW

The GSMA is very pleased to have the opportunity to respond to this consultation on the future use of spectrum in Belgium. The GSMA will limit its response to the issue of the Digital Dividend, and the need for harmonised spectrum across Europe to control interference and reduce terminal costs.

The GSMA believes that allocating at least 72 MHz (790-862 MHz) from a total of nearly 400 MHz (470 to 862 MHz), will initially lead to the best outcome for Belgian consumers and citizens. This will align Belgium with a growing number of European countries that are moving towards allocating these bands for new services such as mobile broadband. A recent study by SVP¹ looking at the economic impact of using UHF for mobile broadband in Europe stated that, allocating at least some UHF spectrum to mobile operators would generate between €63bn and €165bn (NPV). This is in addition to the estimated €2.5-5 trillion in NPV that mobile generates for the European economy without any UHF spectrum.

The study concludes that although results differ from country to country and between scenarios, allocating at least 92MHz of UHF spectrum to mobile operators would be most likely to maximise additional value for the European economy as a whole.

A number of countries have stated that they will make this spectrum available for mobile broadband, including: France, Sweden, Finland, and Switzerland. The UK and Germany have made significant steps in doing so (the UK is currently consulting² and Germany has allowed trial mobile broadband networks in this band). Com Reg in Ireland has also performed a cost benefit analysis on this issue³. The analysis has shown that allocating between 80 and 120 MHz for mobile broadband would be the optimal solution (see below). Greece recently held a high level workshop⁴ at which the Minister for Telecommunications announced his support for discussing a digital dividend, and its importance for providing Greek citizens with access to the knowledge based economy. He noted that this was particularly important in preventing a

¹ <http://www.spectrumstrategy.com/Pages/GB/perspectives/Spectrum-Getting-the-most-out-of-the-digita-dividend-2008.pdf>

² <http://www.ofcom.org.uk/consult/condocs/800mhz/summary/>

³ http://www.comreg.ie/_fileupload/publications/CP50e.pdf

⁴ http://www.eett.gr/nopencms/opencms/EETT/Events/Events/Imerida240209/Agenda_final.html

digital divide between rural and urban populations. In the GSMA's view, preventing such a digital divide will help strengthen social cohesion in many countries.

The GSMA is also aware of a number of other countries actively considering the issue of future utilization of the UHF-band. Therefore, it is an ideal time for Belgium to reconsider its position and to align with its European neighbours. By so doing, Belgium will contribute to make the implementation of mobile broadband services in other countries far easier. This is because interference control problems will be reduced if all European countries use the same part of this band for mobile broadband.

About the GSMA

Founded in 1987, the GSMA is the global trade association of the mobile industry, representing more than 750 GSM and 3G mobile phone operators across 218 countries and territories of the world. In addition, more than 180 manufacturers and suppliers support the Association's initiatives as associate members.

The primary goals of the GSMA are to ensure that mobile phones and wireless services work globally and are easily accessible, enhancing their value to individual customers and national economies, while creating new business opportunities for operators and their suppliers. The Association's members represent more than 3 billion GSM and 3G connections - over 86% of the world's mobile phone connections.

The GSMA plays a pivotal role in the development of the GSM platform and the global wireless industry. Much of the GSMA's work is focused on two areas: Emerging Services and Developing Markets. The GSMA helps its members develop and launch new services, ranging from mobile instant messaging to video sharing to mobile Internet access, which will work across networks and across national boundaries. At the same time, the GSMA is heavily engaged in the industry's push to extend basic voice, text and broadband access services to more people and assisting Administrations in developing communications infrastructure in their countries.

GSM is an evolving wireless communications standard that already offers an extensive and feature-rich 'family' of voice and data services. The GSM family of technologies consists of today's GSM, General Packet Radio Service ([GPRS](#)), Enhanced Data rates for GSM Evolution ([EDGE](#)) and third generation GSM services ([3GSM](#)) based on W-CDMA and HSDPA access technologies. Together with LTE (Long Term Evolution), these technologies underpin the GSM platform.

The [GSM Association's Board](#) comprises top-level representatives of some of the world's leading mobile operators, such as AT&T, Bharti Airtel, China Mobile, MTN Group, Orange, Orascom and Vodafone.

Discussion

The need for Frequency Harmonisation

We have seen the success of having harmonised standards and frequency bands for GSM which have facilitated pan-European mobile communications and voice terminals for GSM. Terminal prices have dropped from a few hundred dollars when they were first launched (but subsidised by operators in many markets) to less than \$50 now. This has come about because of economies of scale in the production of terminals. The same economies of scale need to come into play to ensure that mobile broadband devices that operate at UHF are low cost. Research by the GSMA has shown that lack of frequency harmonisation can lead to poorer radio performance and terminals that are more than twice as expensive. If this were to happen it would mean that the take up of broadband would be unnecessarily restricted.

In the Ofcom UK's recent consultation document it noted that the benefits of harmonisation amounted to between €2-3 billion in the UK⁵. This is mainly from reduced terminal costs and reduction in inter-country interference. It is therefore very important that Europe implement the same UHF band for mobile broadband. The GSMA therefore supports the IBPT's suggestion of identifying 790 to 862 MHz for the digital dividend in Belgium.

Answers to specific questions raised on Digital Dividend

Question 8 – what parts of the band 790 – 862 MHz should be used for mobile, broadcasting, or public safety and security?

The GSMA would recommend that the spectrum from this band should be made available according to the forthcoming CEPT band plan. Services that use the band should be consistent with such a band plan, and make the best use of the spectrum for Belgian citizens.

From the current work in CEPT this would seem to imply 2 x 30 MHz with 5 MHz channel blocks (as the consultation notes). The band has been identified for IMT (mobile broadband services) by the ITU, and that would seem to offer the best way of achieving the overall policy objective of described above. As noted in the SVP study (see above) allocating at least 92 MHz initially to mobile operators would maximise the benefits to Europe as a whole.

This would seem to imply that the entire band (790 to 862 MHz) should be made available to mobile broadband, or at least that mobile operators should have the chance to compete for the whole band in any award process.

The GSMA therefore believes that mobile operators should be free to compete for the whole 790 – 862 MHz band, and that none of the spectrum

⁵ <http://www.ofcom.org.uk/consult/condocs/800mhz/summary/>

should be reserved for services that are incompatible with mobile broadband services.

Question 9 – award process for this band

The GSMA has no view on if an auction or a comparative selection should be used for this band. Each can have merits depending on the policy objectives of an administration. However the overriding objective must be a fair, and transparent award process. All rules associated with the process should be non-discriminatory and proportionate to the overall aims and objectives. Any objectives should be properly costed with a robust cost benefit analysis.

Question 10 –Should TDD be use in this band

The GSMA believes that any use of TDD should be consistent with any CEPT band plan. However we believe that the major benefit of this band is for extending rural coverage because of the favourable propagation characteristics of UHF. These propagation characteristics are better exploited by FDD as opposed to TDD (all other things being equal). TDD requires significant time guard bands between uplink and downlink transmissions to prevent interference. For small cells in city centres this is not such an issue. In large rural cells this could be more problematic. For example Ericsson quote a 3-6 dB HSPA advantage from FDD, vs TDD with 50-25% uplink transmission. Given that the advantage of UHF over 2.1 GHz (currently used for 3G) is about 8 dB, this could be a significant loss.

There is also the added complication that FDD and TDD systems do not operate well in close proximity, and cause significant interference. Required guard bands depend on assumptions, but 5 MHz might be a reasonable starting assumption. This would be required for every FDD/TDD boundary, and would rapidly erode a 2 x 30 MHz band to almost nothing.

In theory a TDD network could be deployed in the centre portion/duplex gap (which is likely to be between 12 and 10 MHz wide). However such a small amount of spectrum would make a wide area TDD network deployment very difficult, It must also be remembered that this will also create uncertainty in the minds of any potential FDD license holders. This could affect the efficiency of any award process. A detailed cost benefit analysis would need to be done to take account of these issues to see if such a measure warranted the effort.

From a GSMA viewpoint it would appear that the major value of this spectrum is for wide area coverage and hence FDD should be the primary concern, Any award process is likely to reflect this and adding extra complexity to accommodate a theoretical demand for TDD in this band might be wasted effort. If Belgium were to be amongst a very few countries (or more correctly part of a small potential UHF TDD market) then the likelihood of mass market terminals being developed would seem limited.

Question 12 When should the spectrum be made available

A 2007 report by Spectrum Value Partners⁶ highlighted a four year delay in the release of spectrum would cost €20bn in Europe. Delay has a cost and the Belgian authorities are encouraged to manage the digital migration by 2012 and to encourage the release of the digital dividend spectrum to support the Mobile Broadband for all initiatives shortly after.

Question 14 Spectrum Initiatives

The GSMA believes that these UHF bands are complimentary for other mobile bands and not a replacement. An operator requires two general types of spectrum:

1. For capacity – higher bands tend to be better because more spectrum is available and range is not. This is primarily for city centers where demand is high.
2. Spectrum to provide rural coverage and indoor coverage

Spectrum in the higher bands is best for capacity, because more spectrum tends to be available in these bands. Spectrum from UHF is very good for providing rural coverage and indoor coverage. Having access to UHF spectrum will not be a replacement for higher bands but complimentary to them. An operator that has both types of spectrum will be able to better handle traffic demand, and do so in a more cost effective way. For example an operator would be able to use UHF to deploy a “thin” capacity network initially, and then deploy higher capacity cells using higher bands when demand warranted it. This would mean that capital expenditure could be delayed in some circumstances, saving on the costs of interest. For very rural areas the number of cells required for coverage would be reduced by around 70%. This would be a very substantial saving.

Conclusion

The GSMA therefore supports the IBPT’s suggestion of identifying 790 to 862 MHz for the digital dividend in Belgium, and making this available for mobile broadband services.

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You can see more information about the Digital Dividend on our web site at :
<http://www.gsmworld.com/our-work/public-policy/spectrum/digital-dividend/index.htm>

⁶ <http://www.spectrumstrategy.com/Pages/GB/perspectives/Spectrum-Getting-the-most-out-of-the-digital-dividend-2008.pdf>