



Europe

Position Paper

Draft Response to The Public Consultation/Call for Input in preparation for the Radio Spectrum Policy Programme

Brussels, 9th March 2010

GSMA Europe would like to thank the European Commission for giving stakeholders the opportunity to give input in preparation for the Radio Spectrum Policy Programme (RSPP). In response to the public consultation, we would like to make the following points:

1) Against this background, has a sufficient amount of spectrum been allocated for the rollout of broadband services under technology and services neutral conditions in order to achieve EU's targets in terms of coverage and speed? Regarding already allocated spectrum, should a minimum amount of spectrum be actually assigned by a specific date?

Spectrum is the electromagnetic lifeblood of the mobile economy and the mobile economy will become the driver of the digital economy in Europe. The mobile industry contributes 138 billion euro to GDP, equivalent to a full percentage point of the total GDP for the European Economic Area, and is delivering greater added value per megahertz of spectrum than any other industry¹. Mobile is also the most ubiquitous communications platform in Europe, exceeding fixed line and PCs and Europe has the highest mobile penetration in the developed world.

Achieving the EU targets of broadband for all will be very demanding in terms of capacity AND coverage. Today, mobile industry uses about 4% of all spectrum below 10 GHz in Europe but the spectrum presently available is not sufficient to meet the increasing demand. Data traffic globally grew 280 percent during each of the last two years, and is forecast to double annually over the next five years. Mobile data traffic surpassed voice traffic for the first time in December 2009. Therefore, it is of utmost importance that additional spectrum is made available for mobile broadband communication. The Federal Communications Commission (FCC) presented its National Broadband Plan to Congress on 16th March 2010 where it has proposed making available 500MHz of new spectrum in the next 10 years (of which 300 MHz should be made available for mobile use in five years) to expand mobile broadband coverage across the USA. A European Strategy is required to handle this situation and bring the full power of the Internet to cellular mobile devices and maintain Europe's leadership in information and communication technologies. Here are some of the short term and long term asks from the mobile industry:

Short Term: mandate a 2013 EU wide deadline for the release of harmonized digital dividend spectrum. OR: encourage all Member States to commit to the harmonised release of 790-862MHz by 2012, and ensure the band is available for deployment in all markets by 2015.

Long Term: support the allocation of a total of 1GHz of spectrum by 2020 to wireless communications services. The mobile industry urges the Commission to set ambitious targets for increasing the amount of radio spectrum allocated to wireless communications services. Given increasing demand for such services and to provide higher bandwidths, we believe that a total of 1 GHz spectrum - including the current allocations should be made available to wireless communications services by 2020. All additional spectrum should be identified below 5 GHz with a significant part below 1 GHz, as well as between 1 and 2.5 GHz.

¹ See for example, "The economic impact of the use of radio spectrum in the UK", Europe Economics (2006)

The mobile industry is committed to supporting the Commission by identifying potential bands, and promoting this ambitious agenda at the international and Member State level. Only with sufficient harmonised spectrum will Europe be able to maintain its leadership position in mobile internationally. The next World Radio Communication Conference (WRC), which will take place 2015/2016 – called “WRC-15/16” – will be the appropriate place to allocate more spectrum for mobile broadband purposes. Therefore it is necessary to put a corresponding agenda item on the agenda for the WRC-15/16, which will be decided in WRC-12. Europe should therefore make an input to agenda item 8.2 of the WRC-12 and propose such an agenda item for WRC-15.

Technology neutral licensing should allow for economies of scale to develop efficiently and not create barriers to such harmonisation.

2) Under what conditions should spectrum be assigned to facilitate innovation in equipment and services by small and medium sized enterprises (SMEs)?

Radio spectrum should be assigned to the entity which will provide the best benefit for the society, irrespective whether it is a small or medium sized enterprise or a big one. Spectrum should be awarded in a non-discriminative, fair and transparent manner, allowing for entry on competitive terms by including competitive criteria for spectrum allocations. The amount of spectrum should be adapted to the foreseen application.

3) How and to what extent can the provision of seamless services across borders be supported by a coherent approach in spectrum management?

Seamless services across borders by radio services can best be established by internationally harmonised spectrum allocations and uses. This objective has not always been effectively pursued by the regulatory bodies (e.g. the lack of harmonisation regarding the award of the 2.6 GHz band). More binding stipulations regarding the harmonisation of spectrum use in Europe could also be helpful. Such harmonisation will ease the deployment of networks, enhance the spectrum efficiency and limit the interference risks. Especially the harmonisation of band plans and allocation of uplink/downlink bands is important.

4) While maintaining a large amount of spectrum for the continued development of high quality pluralist broadcasting, should Europe take further action to ensure the complete transition to low/medium power use of the 790-862 MHz band and the provision of wireless broadband in order to ensure the widest possible coverage for EU citizens and business? Should coverage obligations be attached to these spectrum usage rights?

A more binding regulation for the harmonisation of the digital dividend use in Europe would foster the market development and increase the economical benefits of the use of the digital dividend in Europe. This would strengthen Europe’s position on the mobile market and contribute to the European economical development. The band 698-790MHz should also be allocated to the cellular mobile service in order to give the same opportunities in Europe as in the Americas and Asia. Coverage obligations should not be used and the procurement of coverage should be made in a technology neutral way.

5) How can the EU ensure that broadband services effectively contribute to bridging the digital divide, for example by reaching previously underserved areas and segments of the population? How do wired, terrestrial wireless and satellite systems best contribute to this aim?

Mobile is central to European consumers' lives. It is the most ubiquitous, connected, personalised communications platform in Europe, surpassing 121% penetration in 2008. Of EU households, 83% have access to at least one mobile phone, whereas only 49% have PC-based broadband, and 24% are 'mobile-only', with no access to fixed line².

With a sufficient proportion of the digital dividend allocated on fair economic terms, mobile could help to bridge the digital divide, bringing broadband to rural areas. It is approximately 70% cheaper to provide mobile broadband coverage over a given geographic area using UHF spectrum than with the 2100MHz spectrum widely used for mobile broadband today. That characteristic makes this spectrum particularly well suited to providing mobile broadband coverage in rural and suburban areas. Allocating some of the Digital Dividend spectrum to mobile broadband will allow mobile operators to provide blanket broadband coverage to open up the knowledge economy to everyone, even in rural or hard-to-reach areas. For example, using these lower frequencies, 99% of the Australian population now has broadband access. Using this low frequency spectrum will also help operators to provide dependable mobile broadband service in buildings, thus meeting the high expectations of consumers who are increasingly accustomed to ubiquitous mobile voice coverage and always-on Internet access.

Bridging the digital divide in Europe will also require a mix of technologies, wired, terrestrial wireless and satellite systems, that should be used in a technology neutral way. See also the response to question 4 regarding procurement. Funding of such procurement could be from national or EU sources.

Wired access will be needed for fixed high data rate access in most locations, but the use of wireless broadband will not only be used for mobile applications but also, in some cases, replace the use of wired access.

Satellite technologies are even more supplementary and will only be needed in special cases where it is too expensive to provide other connections.

For consumers to reap the full benefits of the digital dividend, governments need to provide clear, early indications of their intentions so that mobile operators can plan their network investments. National regulatory authorities should consider establishing mechanisms to incentivise efficient usage.

6) How can the EU ensure that European citizens get advanced, easy and affordable access to a wide choice of high-quality broadcasting content taking into account innovative technologies and platforms as well as incentives for investment? How do the various types of wired, terrestrial wireless and satellite systems and networks best contribute to this aim?

Policies should ensure that funds used to boost geographic coverage are technology neutral and that any funds awarded to help bridge Digital divide should be done via competitive tender and be non-discriminatory.

The most important issue is that everybody gets a good broadband connection sufficient for distribution of broadcasting content. That should provide a wider choice of broadcasting content than any other distribution form.

² GSMA Polish Focus Group, August 2009

7) How can public users of spectrum in Europe (e.g. agencies or administrations active in safety or security activities) switch to more spectrum efficient technologies and access the appropriate amount of spectrum required for reaching their public service objectives?

The cost efficiency of dedicated networks for this purpose needs serious consideration. Another alternative would be to use applications in public networks on a commercial basis. No specific spectrum should be allocated for this purpose.

8) How can Europe ensure that systems such as Galileo and the Global Monitoring for Environment and Security (GMES) have appropriate access to spectrum?

GSMA Europe is not aware of any problem in this area.

9) How and to what extent should the production and use of radio equipment increase its environment-friendly aspects? What are the trade-offs in terms of costs?

The mobile industry's growth will continue to be accompanied by significant efforts to reduce its own direct emissions from the radio network, buildings, energy consumption and emissions from transport, and by initiatives to reduce emissions from other sectors. The mobile industry forecasts that it will reduce its total global greenhouse gas emissions per connection³ by 40% by 2020 compared to 2009. Previous analyses have shown how the mobile and ICT sector can enable emission reductions from other sectors that are five times larger than its own greenhouse gas footprint⁴. For further details, please refer to our Green Manifesto which is available online at: http://gsmworld.com/our-work/mobile_planet/mobile_environment/green_manifesto.htm#nav-6.

The number of mobile connections is set to rise by 70% to 8 billion by 2020 as the industry builds out a new generation of mobile broadband networks bringing billions of people into the information economy. Despite this growth, the mobile industry forecasts that its total emissions will remain constant at 245 mega-tonnes of carbon dioxide equivalent (Mt CO₂e) - equivalent to 0.5%⁵ of total global emissions in 2020, or the greenhouse gas emissions of the Netherlands. Mobile operators plan to work with handset vendors to ensure that the energy consumed by a typical handset is reduced by 40% in standby and in use by 2020. Mobile operators will also work with equipment vendors to ensure that the life cycle emissions of network equipment components are reduced by 40% in the same timeframe.

Mobile technologies are already being used to reduce greenhouse gas emissions and costs across a wide range of sectors of the economy, using SIM cards and radio modules embedded in machines and devices to deliver smart, intelligent solutions. By 2020 we estimate that mobile technologies could lower emissions in other sectors by more than 4.5 times its own footprint, the equivalent of taking one of every three cars off the road⁶. Mobile communications can also make it straightforward for individuals to monitor their own carbon footprint, while being an effective channel for advice and suggestions to consumers on how to change their behaviour to cut their emissions. The mobile industry could enable greenhouse gas emissions reductions of 1,150 Mt CO₂e - twice the emissions of the United Kingdom⁷ in 2020. These emission reductions would originate in sectors such as power (350 MtCO₂e), buildings (350 Mt CO₂e), transportation and logistics (270 Mt CO₂e), and dematerialisation (160 Mt CO₂e).

In order to assist the mobile industry to enable emissions reductions in other sectors, it is vital that policymakers consider the following:

³ Connections do not include Machine to Machine SIMs

⁴ SMART 2020, The Climate Group and GeSI, "Enabling the low carbon economy in the information age", 2008

⁵ Irbaris analysis; SMART 2020, The Climate Group and GeSI, "Enabling the low carbon economy in the information age", 2008

⁶ The mobile industry's 1,150mt CO₂e emission reduction is equivalent to 285m cars out of 900m cars on the road worldwide in 2009, assuming annual emissions per car of 4,000 kg CO₂e

⁷ UNFCCC data, 2009

- Including mobile solutions in government policies and programmes with respect to smart grids, buildings and transport.
- Facilitating a common framework to measure the mobile industry's energy and environmental performance, and that of other sectors, for example by aligning national and regional methodologies with those being developed by ETSI and ITU in conjunction with the mobile industry and other private sector players.⁸
- Supporting broadband infrastructure deployment that has become as important today as roads, railways and ports were in the 20th century, by ensuring the mobile industry has access to newly available harmonised spectrum and by supporting the roll out of energy efficient networks through the streamlining of planning approval and the provision of investment incentives.
- Encouraging cross-sector collaboration between the mobile and other ICT sectors and the transport, buildings and power sectors, especially with respect to the development of open standards to ensure interoperability and drive scale efficiencies.
- Demonstrating leadership by greening operations in the public service, e.g., by procuring embedded mobile-enabled smart building technologies in schools and government departments, and promoting increased teleworking amongst public sector employees.
- Building awareness of mobile and other ICT technologies, through education of users, and helping to facilitate the behavioural changes that will create transformative reductions in greenhouse gas emissions.
- Supporting the development and piloting of new technologies by incentivising the increased deployment of embedded mobile solutions with respect to smart grids, buildings and transport.

10) How can the protection of human health be further improved regarding the use of radio spectrum? Are further/different research efforts necessary?

Human health is affected by spectrum use in three main ways, via the 'human factors' issues that arise from the use of radio devices; from the benefits accruing from e-health technology and from the safety considerations relating to the design and installation of network technology.

- Human factors: There is an emerging consensus that the use of handheld mobile technology, while driving on public highways, can be distracting to the extent of causing of accidents and injuries. Member States and some countries abroad are increasingly responding to this issue although there remains a positive case for better public information and guidance on the subject.

- e-health: The Commission has recognised the potential benefits of e-health technology and little more need be said here except to re-affirm its considerable long-term potential - especially with populations starting to age in some member States.

- Transmission technology: The design and installation of transmission technology for all RF applications is governed by a framework of European Directives and Recommendations supplemented, in some cases, by more stringent national regulation.

Transmission technology: exposure limits and science

The scientific consensus is that the use of electro-magnetic frequencies (EMF), in compliance with current EU legislation and standards, does not constitute a public health risk. The latest opinion from the independent Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), adopted on January 19, 2009, and updating its 2007 opinion, does not identify any scientific evidence of health risks, from wireless network EMF, that would require modification of the limits established by the Council Recommendation 1999/519/EC. The European Commission should continue to support science-based EMF exposure limits and encourage member states to review policies to remove non-

⁸ Four of Europe's leading industry associations, representing the global ICT and high tech sectors, have joined forces to drive global energy efficiency initiatives and launch an industry-led ICT for Energy Efficiency (ICT4EE) Forum in Europe and will report directly to the Commission. For more information about ICT4EE, visit: www.ict4ee.eu.

scientific restrictions. This is in line with the European Parliament vote of April 2009 calling for a continued review of EMF recommendations and siting policies determined by scientific criteria⁹.

Public concern

Meanwhile, stricter public EMF limits would result neither in public health benefits nor a lessening of public concern but certainly would require considerable additional infrastructure investment in mobile networks. Research shows that lower limits - and other precautionary measures - can *increase* public concern about potential health effects by suggesting hidden government concern about an actual health risk. This is supported by a Eurobarometer survey of 2007 which showed that almost all EU Member States with tighter EMF limits have above [EU] average levels of public concern. Thus, the Commission should continue working with the member states and the public in providing up-to-date information that is understandable to non-specialists.

Impact on networks

Lowering exposure limits has two major effects on a network: (A) the output power of antennas must be reduced (or heights increased) and (B) the compliance distances need to be greatly extended. Therefore, without extensive network modification, there will not be sufficient geographical coverage in rural or urban areas and especially not in buildings. In order for a network of 'mobile cells' – base stations - to provide cellular mobile services at any location, wide geographical coverage is required or calls get missed. Lowering limits requires network operators to build many more base stations to cover the same geographic area. Another effect is that many fewer antennas of different technologies (GSM, UMTS etc) or from different operators can be co-located at the same site (e. g. a roof top). This requires more antenna sites with additional lease contracts, masts and technical equipment - and thus public protest.

Lower exposure limits will also hamper rollout of new mobile broadband services (3G/UMTS, 4G/LTE) especially in urban areas. A new antenna site costs in average about € 100,000. Depending on the network, frequency - and whether it is a rural or urban site - enormous investment would have to be undertaken by mobile operators to change tens of thousands of sites throughout the EU.

Technology neutrality

While the public health competence relating to network technology is reserved to member States, the Commission will still need to ensure that all national legislation conforms to the requirements set out in the Telecoms Framework Directive¹⁰. This requires that "restrictions on the principle of technology neutrality should be appropriate and justified" (Recital 35). There is no scientific or public health case to be made, on technical grounds, for the selective regulation of particular services/network systems existing within the community of technologies that operate between 300 MHz to 300 GHz. The sole legitimate criteria for ensuring public health are frequency and power level.

11) Is there a need to increase the protection afforded to spectrum used for space exploration against interference by terrestrial activities? Should a coherent plan be developed at EU level to coordinate efforts for the protection of spectrum used for the promotion of space exploration?

Space exploration protection implies an effect on neighbouring services, that will reduce their spectrum / increase their costs / reduce their service quality. Any increase in the protection of one service has an opportunity cost that should be properly costed first.

⁹ Health concerns associated with electromagnetic fields, 2009, European Parliament

¹⁰ Online link: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0037:01:EN:HTML>

12) What are the requirements and priorities to make spectrum available for a modernised air traffic control system in Europe and beyond?

Spectrum for transport, including air traffic control, should not be dealt with in any other way than other applications. A modernised system should be more efficient than old systems. No additional spectrum should be necessary.

13) How can EU policy priorities best be defended throughout the negotiations at WRCs to guarantee effective solutions, and how is the EU position to be expressed to EU negotiating partners?

CEPT positions should be used wherever possible, but there may be two different roles for EU to play. Firstly to coordinate EU member states positions in preparation for CEPT negotiations and secondly as a fall back in cases where there is no agreement on a common CEPT position.

14) How could the EU contribute and support Member States in improving coordination of the use of the digital dividend and other important spectrum bands with non EU neighbouring countries?

EU might facilitate such agreements if problems in this area are brought up when other issues are negotiated and might result in an informal package deal.

15) What measures, in particular regarding assignment of spectrum, could be needed at EU level to ensure that spectrum refarming best promotes service and technology innovation and progress?

Assignment of spectrum is in general a national task. For the framework of authorisation CEPT recommendations should be used as a basis.

16) Are measures necessary at EU level to ensure that competition between operators in the downstream service markets is not affected by spectrum refarming?

There are different situations in different countries, and EU competition rules should be used as they are at a national level.

17) In order to improve flexibility in spectrum use and to stimulate competition, what steps should be taken to introduce spectrum trading in specific frequency bands? Is there a need for other harmonised assignment conditions? In order to avoid anticompetitive behaviour, what steps should be taken to prevent spectrum hoarding?

Spectrum trading as well as measures to avoid spectrum hoarding are part of the new regulatory telecoms framework. This regulation should now be put in practise. We do not see any need for amendment at this stage.

Making larger amounts of spectrum available will make spectrum trading more likely to occur and also make spectrum hoarding less interesting.

Regulatory uncertainty affecting the value of spectrum is hampering the development of spectrum trading. Each award process tends to reevaluate the allowed spectrum holdings and the consequences of trading are not possible to predict.

Additional Issue: EMC and improved compatibility of systems

GSMA Europe believes that the protection of spectrum as well as the improved compatibility of systems are important general issues which also need to be addressed by the RSP. It is not sufficient to facilitate the access to spectrum or to make spectrum use more flexible, it is also important to safeguard interference free use of spectrum. This is normally done by “Harmonised Standards” and “EMC Standards”. Unfortunately, the development of EMC standards today is more or less driven by the manufacturers of electric and electronic equipment (mainly non-radio industry) who are mainly interested to reduce cost and results in the tendency to agree relaxed EMC-limits. We believe that a more balanced approach concerning radiation limits is needed to the benefit of the protection of spectrum. Therefore the development of these standards and EMC-limits needs to be given more attention by the Commission and by regulators.

In addition compatibility of systems and system components need to be improved. The current discussion concerning the future use of the band 790-862 MHz by mobile broadband shows that the immunity of cable TV systems and connected receivers and the selectivity of TV receivers are vital parameters regarding the coexistence of radio or wire-line systems. Thus network and receiver components have to be regarded as part of an overall telecommunication eco-system and not as stand alone objects. At least some minimum requirements for receivers and networks have to be defined and respected to enable coexistence of all parties involved.

About GSMA Europe

The GSMA represents the interests of the worldwide mobile communications industry. Spanning 219 countries, the GSMA unites nearly 800 of the world's mobile operators, as well as more than 200 companies in the broader mobile ecosystem, including handset makers, software companies, equipment providers, Internet companies, and media and entertainment organisations. The GSMA is focused on innovating, incubating and creating new opportunities for its membership, all with the end goal of driving the growth of the mobile communications industry. In the European Union the GSMA represents 103 operators providing over 630 million subscriber connections across the region. For more information on GSMA, please visit: www.gsmworld.com and www.gsmeurope.org