

30 April 2013

**EBU's response to the public consultation on the
Draft RSPG opinion on Strategic Challenges
facing Europe in addressing the Growing
Spectrum Demand for Wireless Broadband**

The European Broadcasting Union (EBU) welcomes the opportunity to submit its comments on the Draft RSPG Opinion on Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband.

The EBU represents Public Service Media Organisations in 56 countries, including all 27 EU Member States. The EBU's mission is to defend the interests of public service media (PSM) and to promote their indispensable contribution to modern society. It is the point of reference for industry knowledge and expertise.

The EBU comments specifically address the impact of the RSPG's recommendations, in particular those relevant to the UHF band, on public service media organisations and the digital terrestrial TV platform (DTT) in Europe.

In the current European media landscape the DTT provides universal, free-to-air access to PSM services that seek to inform, educate and entertain European citizens, and contributes significantly to media pluralism. The DTT platform equally supports other business models including commercial broadcasting and pay TV.

The DTT platform is widely supported by manufacturers, network operators, broadcasters, regulators and the public. Indeed, terrestrial networks are a primary means of receiving TV services for more than 50% of the European population¹.

Furthermore, DTT significantly contributes to market competition and consumer choice even in those countries where other broadcast distribution platforms are dominant.

As a result, the terrestrial broadcasting platform generates significant social, cultural and economic benefits. In many EU markets, these benefits cannot be replicated by any other distribution platform for the foreseeable future (which one spectrum authority has defined as 2030²).

¹ Special Eurobarometer 362: E-Communications Household Survey
http://ec.europa.eu/public_opinion/archives/ebs/ebs_362_en.pdf

² Ofcom, UHF Strategy (2012)

Summary

The EBU wishes to highlight in particular the following comments:

- The Draft RSPG Opinion provides no evidence that, to meet future demand for wireless data traffic, mobile services will require access to additional spectrum in the UHF band. Indeed, according to Section I of the Draft Opinion itself, the RSPP target of 1200 MHz for wireless data traffic has already been met and surpassed.
- Mobile broadband spectrum efficiency should be maximised by employing the most efficient technologies across all spectrum that is already available for mobile services before any new spectrum is allocated to mobile services.
- While technical harmonisation of the 700 MHz band for mobile broadband may bring the benefits of economies of scale, when and where this band is used for mobile services, it does not automatically follow that this band must be opened up to mobile use across the EU.
- *Incremental* benefits of the 700 MHz band for mobile industry must be assessed against the costs for the incumbent users and the public.
- Significant difficulties associated with a possible release of the 700 MHz band from the current use must be addressed *before* such a release is considered.
- The UHF is the only spectrum available for the evolution of DTT and it has been shown that spectrum demand for broadcasting services will not decrease before at least 2020. Therefore, there is currently no basis for opening up discussions on the future of the wider UHF band.
- The EBU believes the case has yet to be made for further spectrum allocations to mobile services in order to meet forecast data growth which is increasingly being questioned. However, should this growth be proven, then the following measures might facilitate innovative ways of content delivery:

1. Future use of the 700 MHz band

Where appropriate to individual member states, develop conditions that could be applied for future use of the 700 MHz band that foresee cooperation between broadcast and broadband networks. This would enable implementation of such cooperation as soon as it becomes feasible. In the meantime the 700 MHz band should be maintained for broadcast services and the existing DTT licences should be respected.

2. Devices

Should demand for mobile broadcasting be proven, enable the implementation of broadcast receivers in mobile devices such as smartphones and tablets. This would enable access to all linear and nonlinear audio-visual services from these devices, while maintaining high quality of service and offloading a significant amount of data traffic from wireless broadband networks.

3. Timing

The EU should not mandate the 700 MHz band for use by mobile services until the incremental benefits are proven and impact on incumbents and citizens resolved; this will allow time for further research into the cooperation between terrestrial broadcast and wireless broadband.

The EBU remains available for further information with regard to this submission. Furthermore, the EBU is willing to engage with the RSPG and other stakeholders in finding a viable solution to meet the future spectrum demand for DTT and wireless broadband.

Spectrum for wireless broadband

The EBU notes a lack of clarity in the Draft Opinion with regard to definitions of the terms “*wireless broadband*” and “*wireless data traffic*”.

Article 3b) of the Radio Spectrum Policy Programme (RSPP) stipulates that:

'to best meet the increasing demand for wireless data traffic... every effort should be made to identify, based on the inventory established pursuant to Article 9, at least 1200 MHz of suitable spectrum by 2015.'

This, in turn, is defined clearly in Section I of this Draft Opinion as including terrestrial, Wi-Fi and satellite components. As a result of this definition, **the Draft Opinion equally clearly states that over 1200 MHz of spectrum has already been identified for wireless broadband** - with over 1700 MHz of spectrum available to support the demand for wireless data traffic.

However, confusingly, Section VIII then proceeds to discuss “wireless broadband” which has a narrower definition which encompasses terrestrial delivery only. It then applies the 1200 MHz target to this new narrower definition with no explanation as to why this would be appropriate. This appears to be inconsistent with the approach set out in Section I.

Considering that the growing demand for wireless broadband data is increasingly met through off-loading methods such as Wi-Fi, the EBU considers that the approach set out in Section I is the correct one and that the quantity of spectrum allocated for Wireless Local Area Networks should, indeed, be included in the definition of “suitable spectrum”. We further emphasise that most of the data traffic is generated indoors and this demand is best served by means of indoor access points, rather than outdoor base stations.

We note that the Draft Opinion has identified a number of reasons why some spectrum remains under-utilised even though it has been harmonised and made available to wireless broadband. We support the RSPG efforts on addressing these issues.

The EBU draws the RSPG’s attention to a recent Cisco report³ showing that Cisco had overestimated the data volume on mobile communications networks in Western Europe by nearly 80% in a forecast made less than one year in advance (forecast of February 2012 for December 2012). These revised forecasts were then challenged by Analysys Mason⁴, who claimed that Cisco still overstated the likely demand for mobile data by a factor of two. Whatever the actual rise in data traffic, this suggests a very high degree of uncertainty of mobile data demand forecasts. This is particularly relevant as earlier Cisco forecasts had been used to justify the allegedly “exponential” growth of the mobile use of the Internet by increasingly data-hungry users.

Furthermore, the EBU would question the extent to which growth in data volume translates into a growing demand for spectrum. Network offloading and Wi-Fi solutions are likely to play a major role in dampening any need for further spectrum releases.⁵

Concerning additional spectrum for wireless broadband, the EBU's view is that such spectrum requirements should be considered only if the already available spectrum is used to its optimal capacity and if there is a proven market demand that cannot equally be satisfied by other means. In particular, the forecasts of data traffic growth should be based on economically viable elements rather than on the assumptions of unconstrained expansion.

The EBU therefore recommends that **the RSPG needs to review the forecasts of data traffic growth on mobile networks and of consequent spectrum requirements.**

³ See http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html

⁴ See <http://www.analysysmason.com/About-Us/News/Insight/Cisco-mobile-data-forecasts-Feb2013/>

⁵ According to European Commission's communication, *Promoting the shared use of radio spectrum resources in the internal market*, in September 2012, “More than half of all smartphone traffic appears to be routed over Wi-Fi networks, and this nomadic traffic is growing 4-6 times faster than mobile traffic”.

Future of DTT

DTT networks will continue to be of critical importance to EU citizens and the broadcasting and content ecology well beyond the time frame addressed by the Draft Opinion (i.e. 2013-2020). We note the recent statement⁶ by Ofcom in the UK that it considers DTT will continue as the primary television distribution platform in the UK until at least 2030.

Regulatory clarity and certainty are required for the DTT platform to evolve and innovate, and for broadcasters, the associated industry, and the public to make the significant long term investments into future technology and services. European spectrum policy should ensure that DTT has sufficient spectrum to evolve and innovate. Responses to the RSPG survey and to the recent questionnaire on spectrum requirements for DTT conducted by the ITU-R Working Party 6A clearly indicate that spectrum requirements for DTT are not likely to decrease in the future.

Furthermore, broadcasting is faced with the potential loss of the 700 MHz band and, as a result, some very significant infrastructure investment decisions may have to be made in the coming years. Any rational decision of this nature will require sufficient degree of certainty concerning the remaining part of the UHF band before committing the necessary resources.

Certainty over the future spectrum availability for DTT is a prerequisite for any investment decisions needed to develop and upgrade the networks.

The 700 MHz band

The EBU is greatly concerned by the reference to the 700 MHz band as one of the key bands with the potential for wireless broadband in the medium term. The Draft Opinion gives an impression that a decision on the future of the 700 MHz band has effectively been made, i.e. that this band will eventually be cleared of broadcasting and reallocated to mobile services.

The EBU emphasises that such a decision has not been made. It would therefore be appropriate for the RSPG to propose key indicators and conditions to be met before any reallocation of the 700 MHz band could be considered.

In addition, Section I of the Draft Opinion suggests that the 700 MHz is one of the “bands already earmarked by the European Parliament and the Council”. The 2012 Radio Spectrum Policy Programme did not earmark the 700 MHz band. Unless the RSPG can clarify this statement, the EBU proposes that this reference be deleted from the Draft Opinion.

We agree with the RSPG's findings in Section IX which describes significant impact that a reallocation of this band would have on DTT, both in terms of capacity loss and financially. The Draft Opinion correctly points out the significant difficulties associated with a possible release of this band.

We propose to include in the text the following elements:

- The 800 MHz band (790-862 MHz) is equivalent to 18% of the UHF spectrum available to broadcasting prior to 2007. In the event of reallocation of the 700 MHz band (694-790 MHz) the total loss would be 42% of the UHF broadcasting spectrum. Furthermore, the impact on spectrum actually available to the Member States in the GE06 Plan would be uneven across the EU and extensive bilateral and multilateral coordination would be required to re-establish equitable access to the spectrum.
- The UHF band is the only spectrum available for the evolution of DTT platform in some countries. Even where the VHF Band III is available for DTT, it is often shared with digital radio broadcasting or other (non-broadcasting) services. This is contrary to a large number of frequency bands available for wireless broadband, some of which remain underused.
- The loss of spectrum capacity cannot be compensated by introduction of more efficient transmission and compression technologies (e.g. DVB-T2/HEVC)⁷. These technological upgrades require large investments and would not bring any significant increase in programme capacity as they are likely to be accompanied by the introduction of higher video quality programmes (e.g.

⁶ *Securing long term benefits from scarce low frequency spectrum*, November 2012
http://stakeholders.ofcom.org.uk/binaries/consultations/uhf-strategy/statement/UHF_statement.pdf

⁷ This was also shown by the Study Team at the Workshop on Technology trends in the framework of the Study "Analysis of technology trends, future needs and demand for spectrum in line with Art. 9 of the RSPP" -see <https://ec.europa.eu/digital-agenda/en/news/workshop-technology-trends-framework-study-analysis-technology-trends-future-needs-and-demand>

HDTV and, eventually, UHDTV) which require higher data capacity than the currently prevalent Standard Definition TV.

- Certainty of spectrum access in the long term is a key prerequisite for the necessary investments in DTT to be made.
- Reallocation of the 700 MHz band would have significant implications on the DTT viewers.

It is the EBU's view that the issues identified by the RSPG and those mentioned above must be addressed *before* any release of the 700 MHz band from the current use is considered.

Furthermore, the Draft Opinion correctly concludes in Section V that for wireless broadband *'the overall need for spectrum [in rural areas] will still be much lower than in urban areas...'* The Draft Opinion further recognises that *'using higher frequencies in urban areas, which have a shorter re-use distance and greater capacity, is more efficient'*. Therefore, the incremental value of the 700 MHz band to mobile industry would be rather limited, in particular as the 800 MHz and the 900 MHz bands are already available for the provision of wireless broadband in rural areas.

It is precisely the *incremental* benefits of using the 700 MHz band for wireless broadband that must be weighed against the costs of reallocation that would be incurred by the incumbent users and the public.

We therefore propose to:

- Decouple the process of technical harmonisation of the 700 MHz band for a potential introduction of mobile broadband, which is the main objective of the WRC-12 and the WRC-15, from the decisions on the actual use of the band in the EU. Technical harmonisation of the band does not automatically imply opening up the band to mobile services. While the former may bring the benefits of economies of scale, when and where this band is used for mobile services, the latter must be decided in the best interest of the European citizens.
- Maintain the 700 MHz band available to broadcast services. Otherwise the long term viability of the DTT platform could be undermined and the benefits that it provides would be lost, with adverse impact on the whole broadcasting industry and the public.

Furthermore, we propose to change the assessment of the potential of the 700 MHz band for wireless broadband in Annex 1 to the Draft Opinion from *'Medium term potential (>2015)'* to *'Possibly in very long timeframe'*.

As the UHF is the only spectrum universally available to DTT and it has been shown that spectrum demand for broadcasting services will not decrease before at least 2020 there is currently no basis for opening up discussions on the future of the wider UHF band. The EBU therefore suggests that, in Annex 1 to the Draft Opinion, the potential of the band 470-694 MHz for wireless broadband should be changed from *'Possibly in very long timeframe'* to *'Limited or None'*. Consequently, this frequency band should also be removed from Annex 2.

Convergence

The EBU shares the view expressed in Section VII of the Draft Opinion that *'the convergence of services requires the study of the delivery of a range of content towards the end user in the most efficient way'*. In addition, we encourage the RSPG to provide a definition of the terms *'convergence of services'* and *'convergence of technologies'* as they are used in the Draft Opinion.

Indeed, broadcast and broadband technologies are complementary and there are opportunities for their cooperation.

However, we do not share the view that terrestrial broadcasting and mobile broadband would converge, within the time frame covered by the Draft Opinion (i.e. 2013-2020), to a single platform which would use the whole UHF band to carry both wireless broadband traffic and broadcast media content.

Even if such converged networks become technically possible, they would need to demonstrate their capability to deliver economic, cultural and social benefits above and beyond those already provided by broadcast and broadband platforms. Otherwise, investments in converged networks would not be justified. Until such evidence becomes available, assumptions on possible future capabilities of converged technologies cannot credibly be used to determine the future use of the UHF band.

We have noted that the Draft Opinion does not address other areas where cooperation between broadcast and broadband would be beneficial, such as offload of broadband traffic onto broadcast

networks and integration of broadcast receivers in mobile terminals. Both examples could enhance the delivery of content and services to the end user.

We propose to reflect in the Draft Opinion that the DTT platform already plays an important role in the development of converged media delivery platforms where broadcast and broadband are combined in new innovative services, such as the successful HbbTV initiative, YouView in the UK, and MHP in Italy.

Specific EBU's comments on the RSPG recommendations

Recommendation 1

On the basis of the analysis in Annex 1 and the roadmap for future broadband spectrum in Annex 2 of this Opinion a strategic plan should be developed by the Commission to make the necessary spectrum available to meet the future demand for wireless (terrestrial & satellite) broadband services in the time frame 2013-2020, including the intermediate target in the RSPP of at least 1200 MHz of spectrum by 2015.

EBU comment:

We note with some concern the use of the term “*intermediate target*” when referring to the 1200 MHz. The use of this term in the Draft Opinion suggests that more spectrum than 1200 MHz will be required for use by wireless data traffic by 2020. However not only is this term not used in the text of the RSPP, the notion that *more* than 1200 MHz will be required to support wireless data traffic is not substantiated in the Draft Opinion.

We therefore seek further clarity from the RSPG as to what is underpinning its call for a “*strategic plan*” bearing in mind that:

- It appears to confirm that more than adequate spectrum is already available to meet the demand for wireless data traffic (based on the target set out by the RSPP); and
- There is no evidence provided to set out how much spectrum is actually needed to meet growth in data demand.

As noted in our introductory comments, the Draft Opinion clearly states that over 1200 MHz of spectrum has *already* been identified for wireless broadband.

Recommendation 2

The strategic plan should include: -

- a detailed analysis of the usage of all bands identified in Annex 2, including the 700 MHz, 1.5 GHz, 2.3 GHz and 3.8-4.2 GHz bands, in Member States and their potential for wireless broadband services on a harmonised basis, prioritising the bands in accordance with their potential and timeframe in which they are likely to be available;*
- further exploration of the economic and social implications of the various options at macro level;*
- the spectrum needs for SAB/SAP (both audio and video applications);*
- an analysis of the need for licence exempt spectrum for WBB.*

EBU comment

The EBU considers that the Commission’s ongoing work on spectrum inventory, as required by Article 9 of the Radio Spectrum Policy Programme (RSPP), needs to be considered in item *i*). The inventory will gather detailed information on current spectrum use in EU Member States, analyse efficiency using technical, economic and social criteria and identify candidate bands where efficiency could be improved.

The EBU wishes to highlight the cultural implications of spectrum planning, and notes that this was specifically recognised as one of the policy objectives of the 2012 RSPP. Article 3(a) of the RSPP goes as follows: “*encourage efficient management and use of spectrum to best meet the increasing demand for use of frequencies reflecting the important social, cultural and economic value of spectrum.*”

The EBU therefore proposes the following amendment of item *ii*) in this recommendation;

“... the economic, cultural and social implications ...”.

Recommendation 3

In addition to the above, the RSPG recommends the development by the Commission, in cooperation with the Member States, of a long-term strategic policy on the future use of the UHF band (470-790 MHz), taking account of, in particular, the spectrum needs of the DTT platforms in the EU, the spectrum needs of PMSE, and the possible benefits arising from future convergent broadcasting/mobile platforms to deliver linear media/audio-visual services and high-audience video and data to mobile devices (smartphones, tablets, etc.).

EBU comments

The EBU represents public service media organisations with a clear interest in the future of the UHF band. We are unclear as to why a strategic review of this band has been recommended, given the lack of harmonisation for any service in 470-790 MHz other than broadcasting. In contrast, we note that despite the fact that the 1452-1492 MHz band has been identified as being suitable for future mobile services, there has been no call for strategic review of the wider L-Band.

However, any proposed strategic UHF assessment would clearly need to consider the downsides as well as the benefits that alternative future use, including convergent platforms, would bring. Even if such converged networks become technically possible, they would need to demonstrate their capability to deliver economic, cultural and social benefits above and beyond those already provided by broadcast and broadband platforms.

It is the EBU's view that such converged platforms are unlikely to become viable in the time frame until 2020. Furthermore, the UHF is the only spectrum available to DTT and it has been shown that spectrum demand for broadcasting services will not decrease before 2020. Therefore, there is currently no basis for opening up discussions on the future of the wider UHF band.

Recommendation 4

In developing this strategic policy for the future use of the UHF Band the Commission should in the short-term, develop:

- a) a common European policy objective in time for WRC-15 on the refinement of the lower band edge and on possible channelling arrangements for mobile services in the 700 MHz band; and*
- b) an EU-wide strategy to be discussed at political level on the future use of the 700 MHz band. This strategy should consider elements such as duration of broadcasting licenses, the necessity to transition to new technologies, the variety of digital terrestrial platforms in Member States and cross-border frequency coordination issues; and*
- c) a clear policy to facilitate any migration which may ease making available the 700 MHz band to wireless broadband while allowing Member States to take measures relating to TV receivers in order to mandate more efficient technologies (e.g., DVB-T2, HEVC); and*
- d) a review of ETSI and CENELEC standards applicable to DVB-C and DVB-T reception. This includes a need for a clear EU policy on improving spectrum efficiency, where it would be an essential requirement to construct TV receivers so as to avoid harmful interference;*

EBU comment

While the EBU recognises that any decisions on the future use of the 700 MHz band will be made at a political level, these decisions must be informed by a rigorous cost/benefit analysis taking into account the very different circumstances in which each Member State finds itself. These should include not only the cost of clearing DTT from the 700 MHz band in each Member State, but consideration of the *incremental* value to be gained from use of the 700 MHz band by mobile networks after the use of the 800 MHz and the 900 MHz band has been taken into account. If, as stated in the Draft Opinion, over half of smartphone traffic is already carried on Wi-Fi networks, and that such traffic is growing 4-6 times faster than mobile traffic, the need for low-frequency LTE networks should be re-assessed in the light of experience from the 800 MHz and the 900 MHz band network deployments.

The EBU notes that the matter of broadcasting licences is one for Member States and outside the competence of the EU (see Article 4.8 of RSPP) so any discussion within the proposed strategy could, at most, be advisory only.

We would welcome further clarity on what is envisaged by a policy to “*facilitate migration*” given that the RSPP (Article 6.5) affirms the rights of Member States to cover migration costs. Furthermore, the term ‘*migration*’ presumes that a political decision has been taken to reallocate the 700 MHz band to wireless broadband, which is currently not the case.

The EBU also notes that any policy on spectrum efficiency should also include a requirement to construct mobile base stations and handsets in such a way as to avoid harmful interference.

Modification of TV receiver standards may be appropriate, but only at an appropriate time (for example, it would be wholly inappropriate to mandate inclusion of filtering of frequencies above 694 MHz until such time as those frequencies were no longer in use for TV broadcasting).

Furthermore, mobile broadband spectrum efficiency should be maximised by employing the most efficient technologies across all spectrum already available for mobile services before any new spectrum is allocated to mobile services.

Recommendation 5

For the band 1452-1492 MHz, noting that CEPT has established a project to develop harmonised implementation measures for SDL applications, the Commission should consider adopting complementary measures to further promote the use of this band for SDL, while preserving the possibility for Member States to use part of this band for other uses such as broadcasting.

EBU comment

The EBU notes that some EBU members still use or are planning to use the L-band allocations for T-DAB broadcasting.

The EBU further notes that in the event that the band 1452-1492 MHz is used for SDL only, there may be scope for combining it with adjacent bands for a wider mobile allocation.

Recommendation 6

In the case of the 2GHz bands identified for use by Mobile Satellite Services with Complementary Ground Component (1980-2010 MHz/2170-2200 MHz), if future actions taken by Member States in relation to Decision 2011/667/EU result in the withdrawal of licences, the Commission should consider re-allocation of the bands to terrestrial mobile services.

EBU comment

The EBU has no comments on this proposal.

Recommendation 7

For the band 2300-2400 MHz, noting that CEPT has established a project to develop harmonised implementation measures for MFCN in the band, the Commission should consider adopting complementary measures to further promote shared and flexible use of the band between wireless broadband applications and other services, based on LSA regulatory provisions, facilitating the long-term incumbent use of the band in the territory of those Member States that wish to maintain such use.

EBU comment

The EBU agrees with the Draft Opinion's statement in Section IV that "wireless connections over short distances are more spectrally efficient as it allows for greater re-use of spectrum." Accordingly, relatively higher frequencies such as those at 2300-2400 MHz could prove to be the most useful in meeting significantly increased demand for data services in areas of high use.

Recommendation 8

The frequency range 3800-4200 MHz may play a role in the provision of ECS to enhance future capacity requirements especially in urban areas. The Commission should study the possibility of sharing in Europe between the FSS and terrestrial wireless broadband services in this frequency range, while recognizing that the situation within and outside Europe may differ, thus not enabling worldwide harmonisation for shared use of the band by wireless broadband services.

EBU comment

The EBU notes that in some countries (e.g. Italy) the 3800 - 4200 MHz band is used for microwave links for video/audio contribution services and for distribution backbone of DTT networks. Coexistence between similar fixed links and MFCN (Mobile/Fixed Communication Networks) in the frequency band 3400-3800 MHz is currently studied by ECC PT1. The EBU proposes to include fixed links in the sharing studies proposed by the above recommendation.

The EBU further notes that some EBU members' activities in international broadcasting (particularly outside Europe) rely on satellite downlink frequencies in the 3800 - 4200 MHz band for programme distribution.

Recommendation 9

In considering the harmonisation of frequency bands for wireless broadband the Commission should take into account the fact that the actual use of bands for wireless broadband in Member States will vary, depending on the national requirements for broadband access and for other services.

EBU comment

The EBU welcomes the recognition by the RSPG that some Member States may, on account of national requirements, continue to use frequency bands for services other than mobile services. Therefore, full and mandated harmonisation may not be appropriate in *any* band without the unanimous consent of Member States. We look forward to further proposals on the basis of the principles set out in the 2011 RSPG Report on Improving Broadband Coverage.