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RSPG REPORT ON FREQUENCY COORDINATION **AND OTHER ISSUES CONCERNING THE DIGITAL DIVIDEND**

RSPG Report on Frequency Coordination and Other Issues Concerning the Digital Dividend

1. Introduction to Report

The vision inspiring this RSPG Report embraces the objectives of the Digital Agenda for Europe (“DAE”) ¹, noting that it makes proposals for actions that need to be taken urgently to ensure that Europe is on track for smart, sustainable and inclusive growth. As outlined in the DAE, and in other relevant policy level communications from the European Commission (e.g. the Europe 2020 Strategy), there are challenges facing the continued development and competitiveness of the Internal Market, which a well-functioning digital economy can address. Central to mobilising such an economy will be the rollout of networks, the creation of content and borderless services, and the demand for services by consumers. The RSPG considers efficient spectrum utilisation to be important in this regard, and that successful frequency coordination for that portion of the digital dividend in the sub-band 790 to 862 MHz (the “800 MHz band”) across Member States is a critical component in achieving and maintaining such efficiency. In particular, the development of this Report was also motivated by the desire to contribute to improving the understanding of the issues arising out of cross-border frequency coordination with non-EU countries, with the aim of increasing the prospects for the fullest possible use of the harmonised digital dividend spectrum in the 800 MHz band across Member States.

Successful international frequency coordination helps foster the introduction of new communications services and products, and thus plays a key role in mobilising the digital economy. It leads to an accepted state of spectrum access rights between administrations, and provides a framework for wireless networks to operate, with established interference management levels.

In certain cases, as in the case of digital dividend spectrum in the 800 MHz band, successful harmonisation within the EU and successful frequency coordination with non-EU countries will avoid the risk of fragmenting the Internal Market. This increases the prospect for economies of scale for equipment manufacture and roaming of services, which will help the competitiveness of the Internal Market and act as a stimulus to a single digital economy.

In considering the matter of cross-border frequency coordination with non-EU countries, the RSPG gives further consideration to an earlier Opinion it developed on “Spectrum Issues Concerning Outer EU Borders”². That Opinion addressed, *inter alia*, the merits of an EU-level assistance mechanism to support and assist individual Member States (or a sub-group of Member States), who need to coordinate spectrum with non-EU countries, on the political level.

¹ [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0245\(01\):EN:NOT](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0245(01):EN:NOT)

² RSPG08-232 on “Radio Spectrum Policy Group Opinion on Spectrum Issues Concerning Outer EU Borders”

Among the updated proposals arising out of the present review by the RSPG is a list of possibilities and concerns specifically related to an EU-level assistance mechanism.

2. Digital Dividend and the Geneva Agreement 2006

In brief, the Geneva Agreement 2006 (“GE06 Agreement”) and associated Plan are the result of a frequency planning process which was carried out under specific assumptions and conditions. The utilisation of the 800 MHz band has to be in conformity with the GE06 Agreement and with the ITU Radio Regulations, which together, specifically with the Plan management procedures, form the relevant governance for frequency coordination, including with non-EU countries.

The relevant Plan management procedures are reviewed below.

2.1 Brief overview of Plan management procedures in GE06

The GE06 Agreement contains procedures which allow modifications to the Plan and implementation of Plan entries in conformity with the rights of those entries set out in the Plan.

Under the Agreement an Article 4 procedure applied by an administration will result in a list of all administrations with which frequency coordination needs to be resolved (i.e. a list of “concerned administrations”). The matter of how frequency coordination is resolved becomes an issue between the administration applying the procedure and the concerned administrations, and the details of these bilateral or multilateral frequency coordination processes are not governed by the GE06 Agreement. In this regard, the RSPG notes that administrations retain full flexibility to agree frequency coordination procedures between themselves to resolve the coordination issue. CEPT ECC Report 142³ on “Rearrangement activities for broadcasting services in order to free the sub-band 790 - 862 MHz” provides advice on the range of issues associated with frequency planning to facilitate mobile/fixed use in the 800 MHz band. The report highlights some relevant considerations in relation to achieving mobile/fixed use in the 800 MHz band (e.g. recognising the equitable access principle). The actions described in Report 142 are to be taken on the bilateral or multilateral level.

Moreover, facilitating a successful frequency coordination result, in the case that concerned administrations include non-EU countries, requires an acceptance by all parties that there may be differing aspirations and/or policies in relation to the overall use of the radio spectrum. In the EU, Member States may adopt a common and coordinated approach in relation to

³ See <http://www.erodocdb.dk/doks/doccategoryECC.aspx?doccatid=4&alldata=1>

spectrum, as in the case of the 800 MHz band, however, there may be no guarantee that a similar approach will be adopted in non-EU countries. Thus, there may be no guarantee of a mutual incentive for a successful frequency coordination outcome.

This gives rise to the question of whether there may be other incentives which could yield a successful outcome and how these could be introduced into any negotiations based on reaching a mutually acceptable state of rights for the implementation of the Plan entries (i.e. a successful frequency coordination result for the applying administration). The RSPG considers that an EU-level assistance mechanism might be one way to explore such incentives and this is discussed in Section 4 below.

2.2 Implications of implementing the Digital Dividend on GE06 Plan

The GE06 Plan represents a state of equilibrium of the division of the spectrum resource. However, spectrum usage is likely to change and evolve in the course of time to satisfy demands, and implementing the digital dividend in the 800 MHz band is an example of such an evolution.

As set out in the ECC Report 142, possible scenarios that may arise include administrations seeking additional broadcasting Plan entries in the 470-790 MHz band and/or seeking agreement for particular fixed/mobile uses in the 800 MHz band. Guidance on the technical considerations involved in coordination in relation to these and other scenarios are set out in CEPT Report 29⁴ on “Guideline on cross border coordination issues between mobile services in one country and broadcasting services in another country”.

The administration seeking coordination should consider whether it needs a national policy in relation to how it would intend to obtain an acceptable state of rights from the GE06 Plan, noting that potentially it may not be possible to achieve both additional entries lower in the band *and* implement fixed/mobile applications in the 800 MHz band.

There are several examples of multilateral initiatives to ease the frequency coordination issues carried out by their member countries with a view to implementing the digital dividend, e.g. Western European Digital Dividend Implementation Platform (“WEDDIP” group), created in May 2009 by the administrations of the following countries: Belgium, Germany, France, Ireland, Luxembourg, the Netherlands, the United Kingdom and Switzerland. There is also an initiative by a group of central European countries⁵ known as the North-Eastern Digital Dividend Implementation Forum (“NEDDIF” group), created in October 2010, with the objective to ease the cross-border coordination with non-EU countries.

⁴ See <http://www.erodocdb.dk/doks/doccategoryECC.aspx?doccatid=16&alldata=1>

⁵ The Czech Republic, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Poland and Slovakia.

More specifically, these groups aim at achieving mutual compatibility of the spectrum resources to be used in the implementation of the digital dividend in each country, for broadcasting and mobile services and also for other services, where needed. Eventually, this should facilitate any consequential modifications to the GE06 Plan, while respecting the principle of equitable access to spectrum resources in border areas. These groups are also useful for sharing experiences and best practices concerning the implementation of the digital dividend among their members (use of Channel 60, DVB-T2 etc.).

3. Policy level items and priorities

In light of the potential differences in the aspirations and/or policies in relation to spectrum use, the success of a common and coordinated approach to the availability of the 800 MHz band across Member States could, in some cases, hinge on successful frequency coordination results (on a multilateral and/or bilateral basis) with non-EU countries.

Where timescales for the availability of the 800 MHz band across the EU are set by the EC, noting that this could prove valuable in providing further momentum towards the timely availability of the digital dividend in line with the RSPG Opinion on the “Radio Spectrum Policy Programme”⁶, administrations seeking frequency coordination with non-EU countries need to table and agree with the concerned administration, as soon as practicable, appropriate frequency coordination processes.

3.1 Geographic clusters and coordinated timing of Digital Dividend between Member States

The RSPG has already defined the concept of a geographic cluster in the context of coordination with other countries on the outer EU borders to be a geographic region “*formed by one or more EU Member States and one or more non-EU countries where coordination issues that may arise are of a same or similar nature*”.⁷

This is one important example of such a cluster but geographic clusters may also be formed of near-neighbour Member States with a view to achieving synergies in exploiting the digital dividend. The Commission could be invited by Member States in a geographic cluster to assist in the cooperation and exchange of plans in relation to the timing of awards for the 800 MHz band, as there could be synergies to be achieved by cooperation on such a basis between the constituent Member States of such a geographic cluster.

⁶ RSPG10-330 RSPG Opinion on the Radio Spectrum Policy Programme, see §12 in particular.

⁷ Ibid footnote 3.

From the perspective of those parties who may wish to operate networks or provide services in more than one country in the geographic cluster, there would appear to be merits in a coordination of the timing of awards for the release of the digital dividend (e.g. for investment and/or network management reasons). In particular, such an initiative may be valuable in those cases where frequency coordination with non-EU countries would be concerned, as timely cooperation and communication between the Member States involved may ensure the fullest possible use of the spectrum. Any potential blockages in the frequency coordination process arising in the geographic cluster could be analysed between the Member States to produce a revised coordination proposal. The overall objective would be to determine the best strategy to achieve a coordinated release of the 800 MHz band in line with any timetables for such established by the EU institutions.

The aforementioned initiative of central European countries is the first example of such a cluster approach, taken on a multilateral level.

3.2 Further improvements in the use of the digital dividend

The EC Communication⁸ on “Transforming the digital dividend into social benefits and economic growth” highlights a number of initiatives identified in the study carried out on behalf of the Commission⁹ that could lead to further increases in the potential size and usability of the digital dividend in the long term. The additional capacity that could be obtained would allow the EU to face up to future challenges, such as a sudden increase in demand for spectrum for new and unforeseen applications. Those proposals most relevant to this phase of the RSPG work on the issue are considered below (*using the same numbers and headings as in the EC communication*).

- **“(1) Promoting collaboration between Member States to share future broadcasting network deployment plans (e.g. migration to MPEG-4 or DVB-T2)”**

The RSPG view is that it should be feasible to develop an overall picture of the state of play regarding the current or planned deployment in Member States of networks based on more spectrally efficient standards. CEPT could be mandated to develop common guidelines for implementation or upgrading of such networks. Account should be taken of the implications for consumers of the migration to more efficient technologies. In particular, in relation to free-to-view broadcasting networks, the “upgrade” cost of end-user equipment is directly borne by the consumer. In addition, the “upgrade” timing impacts the consumer directly.

⁸ COM(2009) 586 final. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52009DC0586:EN:NOT>

⁹ http://ec.europa.eu/information_society/policy/ecomm/radio_spectrum/documents//_en.htm#digitaldividend2009: A European approach to the digital dividend September 2009, conducted by Analysys Mason, DotEcon and Hogan & Hartson

- ***“(2) Requiring that all digital TV receivers sold in the EU after a certain date (to be defined) are ready to operate with a digital compression standard of the new generation such as the H264/MPEG-4AVC standard”***

The RSPG view is that the EC should consider how best to facilitate migration of digital TV receivers to a new generation of digital TV technology. If there is a date to be defined it should be the responsibility of individual Member States to define it in accordance with developments in their own market.

- ***“(3) Setting a minimum standard for the ability of digital TV receivers to resist interference (immunity to interference)”***

The RSPG view is that it is essential for Member States to consider interference to digital TV services from electronic communication networks operating in the 800 MHz band. In this regard it is likely that all digital TV receivers in the future will need to have improved rejection of frequencies above 790 MHz and, more broadly, rejection of interference from ECNs in general. This is essential, not only to improve the quality of TV reception but also to reduce the need for other, potentially more costly, interference mitigation measures.

- ***“(4) Considering wider deployment of Single Frequency Networks (SFNs)”***

The RSPG view is that in relation to SFNs and MFNs, experience across Member States varies and to date relatively few Member States have experience regarding deployment of SFNs. The RSPG considers it would be informative for all stakeholders if a report were to be developed by CEPT on the pros and cons of SFNs versus MFNs, reflecting the experiences of Member States with respective approaches to implementation of digital terrestrial television networks.

- ***“(7) Adopting a common position on the potential use of the ‘white spaces’ as a possible digital dividend”***

The RSPG notes that work is ongoing in the RSPG and in CEPT on the potential of cognitive devices, including their use in white spaces. While exploitation of white spaces has potential in terms of improving the efficient use of spectrum, adopting a unilateral approach to the implementation of a regulatory framework on white spaces could have a long-term impact on facilitating a harmonised approach. It is not the intention of this Report to address this issue in detail but it is recommended that those considering use of white spaces (whether the RSPG or Member States) should take this into account, noting also the need to accommodate the spectrum needs of users such as the PMSE industry and other relevant developments, and the need for these cognitive devices to adapt to the development of the primary services in the band.

3.3 Flexibility in spectrum management

The RSPG believes that in the spectrum planning and coordination process, both flexibility and harmonisation of the use of spectrum and technical parameters are desirable. Thus the level of harmonisation should be assessed in relevant cases based on market demand and the benefits and drawbacks of such harmonisation.

The RSPG recognises that avoiding and controlling interference is key to effective spectrum management. The cumulative impact of the increasing volume and density of wireless devices and applications combined with the diversity of spectrum use challenges the current approaches to interference management. These should be examined and reassessed: such an examination should include, *inter alia*, consideration of receiver characteristics and technical standards. Where communications systems and devices are becoming more tolerant of interference, more sophisticated frequency coordination agreements can be negotiated to facilitate deployment of services in adjacent areas.

In order to cope with the challenges of increasing demands for access to spectrum and to exploit the full benefits of technological development, flexible multilateral and bilateral agreements that allow maximum usage of frequency spectrum should be encouraged.

4. Development of a Process to Assist Member States in their efforts to Coordinate Frequencies with Non-EU Countries

The RSPG recommends that competent national authorities should be encouraged to share experiences and best practices, in particular where cases of technical issues have arisen during coordination activities. The aforementioned initiative of central European countries is one example of a useful platform to share such experience and to develop appropriate practices.

From the wider European perspective support could be provided for individual Member States requesting assistance in solving frequency coordination issues with non-EU countries, in particular when several countries are faced with the same difficulties and where EU policy objectives may be affected, such as on the 800 MHz band. This could be done by means of a 'collective support mechanism' as recommended in the RSPG opinion on the RSPP, whereby a group of experts from Member States would be established with the mandate to provide expert advice.

When a request for assistance is raised in the RSPG by a Member State a group of experts from those Member States prepared to provide assistance would be formed (the Member State Expert Group - "MSEG") in a similar manner to the formation of a working group of the RSPG. MSEG would be chaired by a 'neutral' Member State, i.e., one not affected by the coordination issue.

The RSPG recognises that not all such problems can be solved solely by technical means and there may be circumstances where frequency coordination processes are tabled but agreement cannot be reached. In such cases intervention at the political level may be appropriate. The EC, when called upon to assist, could explore possible solutions at the political level in close cooperation with MSEG and the affected Member State, in order to facilitate progress on the technical discussions. An important role for the EC in such scenarios would be to ensure that an equitable solution prevails in respect of all of the borders between the non-EU country and affected Member States.

In the provision of such assistance, the EU should use all its legal and political powers to promote the implementation of EU policies. Given the political dimension of these negotiations, the RSPG invites the European Commission to propose to the European Parliament and the Council that the principle of such assistance be included as an integral part of the EU's wider international engagements and policy.

5. Conclusions

This report has focused on potential issues arising out of cross-border frequency coordination with non-EU countries, with the aim of increasing the prospects for the fullest possible use of the harmonised digital dividend spectrum in the 800 MHz band and optimising efficient use of the radio spectrum.

In this regard, the following conclusions can be drawn:

- i) There is value in promoting collaboration between Member States to share information regarding their plans for future broadcasting network deployments. CEPT could be mandated by the EC to develop this, notably by establishing common guidelines for implementation, by creating a mechanism to aid the circulation of such information, in particular noting the implications for consumers of the migration to more efficient technologies;
- ii) The EC should consider how best to facilitate migration of digital TV receivers to a new generation of digital TV technology;
- iii) It is essential for Member States to consider interference from electronic communication networks operating in the 800 MHz band, particularly into broadcasting networks below 790 MHz. In this regard, it is likely that all digital TV receivers in the future will need to have improved rejection of frequencies above 790MHz and, more broadly, rejection of interference from ECNs in general;
- iv) Member States' experiences in relation to SFNs and MFNs vary, and to date relatively few have experience regarding deployment of SFNs. The RSPG considers that it would be informative for all stakeholders if a report were to be developed by CEPT on the

Radio Spectrum Policy Group -
Report on Frequency Coordination and Other Issues Concerning the Digital Dividend

pros and cons of SFNs versus MFNs, reflecting the experiences of Member States with the respective approaches to implementation of digital terrestrial television networks;

- v) The exploitation of white spaces has potential in terms of improving the efficient use of spectrum. However, there is concern that adopting a unilateral approach to the implementation of regulatory frameworks on white spaces could impact on a harmonised approach, and this should be taken into account by those considering the use of white spaces, recognising the spectrum needs of users such as the PMSE industry, and the need for these cognitive devices to adapt to the development of the primary services in the band;
- vi) Managing interference is key to effective spectrum management. With the growth in wireless devices and applications and increasing diversity in use of the radio spectrum, the management of the spectrum resource needs to be flexible and adaptable to meet the challenges of managing interference in such an environment. In order to cope with the challenges of increasing demands for access to spectrum and to exploit the full benefits of technological development, flexible multilateral and bilateral agreements that allow maximum usage of frequency spectrum should be encouraged;
- vii) There is value in timely cooperation and communication between Member States in relation to frequency coordination. As is mentioned in the RSPG Opinion on the RSPP, during bilateral negotiations with non-EU countries, including candidate and acceding countries, political and technical support should be provided for individual Member States requesting assistance in solving frequency coordination issues. It is recommended that specific cooperation is based on a 'collective support mechanism' where a group of experts from Member States would be set up with the mandate to provide independent expert opinion. Member States experiencing difficulties achieving successful coordination with non-EU countries could avail of, and therefore benefit from, a 'collective support mechanism', which offered independent expert support and advice; and
- viii) Intervention during bilateral negotiations with non-EU countries at the political level may be appropriate and prove valuable when frequency coordination is proving difficult, or when several countries are faced with the same difficulties and EU policy objectives may be affected. When requested by Member States, the EC could explore possibilities to facilitate progress towards successful frequency coordination by treating the issue at the political level.