



EBU TECHNICAL

MEDIA TECHNOLOGY & INNOVATION

EP/28/04/09

Geneva, 28 May 2009

TA 132

Re: On-going issues related to the Digital Dividend discussions in the 470-862 MHz band

Dear Colleague,

Following the letter of 07/04/09 from Jean Reveillon and myself (Re: Digital dividend decisions taking place in Europe, Ref DG/470 JR/LV/dc), please find enclosed a summary of major ongoing issues at the European Commission, CEPT and ITU levels related to the Digital Dividend discussions in the 470-862 MHz band.

The EBU is contributing and actively participating to different groups but it is to be mentioned that awareness and support from Administrations on issues related to the protection of broadcasting services from interference from Mobile Services in the 790-862 MHz sub-band are required.

In particular, we would like you to note that

1. CEPT is about to conclude its work on minimum restrictive technical conditions for mobile services in the band 790-862 MHz; the results are now to be approved by ECC in June. EBU Technical has contributed with detailed technical studies and it is our view that, in general, these conditions take already into account to a large extent the protection of the broadcasting services from interference caused by the mobile networks. However, it should be understood that these general measures do not provide full protection of broadcasting services. In order to resolve the remaining cases of interference additional mitigation techniques would be needed on a national/local basis, e.g. by means of a protection clause in the mobile network licence (including, e.g. additional restrictions on mobile networks, specific mitigation techniques, improvement of DVB-T networks etc.). Broadcasters should demand from their administrations to implement such protection clause in the mobile network licence.
2. In the rearrangement of the GE06 Plan below 790 MHz in order to free the sub-band 790-862 MHz a lot of flexibility will be lost for future development of broadcasting services; it is important that broadcasters are involved in the re-arrangement discussions.
3. Some mobile network operators already request additional spectrum below 790 MHz. It seems that the EC and some administrations have a favourable view on these requests. For broadcasting services, it is crucial that it does not happen.

It is essential that you share these concerns with your Administration in order that both in the national decisions and at international level in forthcoming meetings (such as the ITU-R JTG 5-6 group) there is a strong commitment from regulators regarding protection of existing and future broadcasting services.

As mentioned in our previous letter, we depend on you to communicate our key messages to national regulators and decision-makers. We are available to support you in your efforts, so please do not hesitate to contact us (Walid Sami, Darko Ratkaj or Elena Puigrefagut at spectrum@ebu.ch) should you have any further questions or need additional information.

Yours sincerely,

Lieven Vermaele
Technical Director

Summary of on-going issues related to the Digital Dividend discussions in the 470-862 MHz band

Where?	Issue	Time schedule	Broadcasters views	Related documents
European Commission (EC)	Study by Analysis Mason, DotEcon, Hogan&Hartson 'Exploiting the Digital Dividend' – A European approach. The final outcome can be an EC Recommendation or a mandatory Decision on an EU roadmap for coordinated use of the Digital Dividend.	Draft Report: End June09 Final Report: Sept09	<ul style="list-style-type: none"> - Support to a non-mandatory harmonisation of the use of Digital Dividend. Member States should be able to decide on the use of the Digital Dividend depending on their national requirements - Spectrum needs for current and future broadcasting services to be taken into account by Member States - Broadcasting services need to be protected from interference from new services using the 790-862 MHz. 	EBU contributions submitted to consultants and other related documents at http://tech.ebu.ch/EUStudy
EC/RSPG ¹	Open Consultation on RSPG Draft Opinion on the Digital Dividend. Objective: provide strategic policy advice to the EC on how best to support Member States' realisation of a Digital Dividend on a technology and service neutral basis taking into account the potential benefits of an EU coordinated approach	Deadline consultation: 30 June 09		Doc. S/RAP 67 at ftp://rap:rap10@ftp.ebu.ch EBU reply to the open consultation under preparation
EC/Radio Spectrum Committee	The RSC has issued 2 mandates to CEPT on digital dividend. The CEPT responses to the second mandate are to be approved by ECC at the meeting in June 2009.			http://ec.europa.eu/information_society/policy/ecomms/radio_spectrum/manage/eu/rsc/index_en.htm
CEPT ² ECC ³	The ECC guides the activities of its subordinate groups in response to the EC mandates as well as the CEPT activities in preparation for the WRC-11.			http://194.182.137.12/D697CBE5-5527-48C5-A6F6-9342C611D4AD.W5Doc
CEPT	Deliverable C: <i>Report on rearrangement</i>	Deadline: Sept	- Minimise impact in GE06 Plan and minimise constraints for	EBU contributions and

¹ Radio Spectrum Policy Group <http://rspg.ec.europa.eu>

² European Conference of Postal and Telecommunications Administrations

³ Electronic Communications Committee

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ECC TG4	<i>activities for broadcasting services in order to free the sub-band 790-862 MHz – Reply to 2nd EC Mandate</i>	09	<p>future evolution of Broadcasting services</p> <ul style="list-style-type: none"> - It is not possible to relocate a significant proportion of the relevant Plan entries within the band above 790 MHz to the band below, while maintaining the coverage requirements and service quality which served as the basis for the establishment of GE06 Plan during RRC06. Very dense networks will be required to cope with additional interference. - Countries keeping the 790-862 MHz sub-band for broadcasting will need to formulate and bring forward their additional requirements in the band 470-790 MHz and be actively involved in the coordination activities from the start in order to retain equal opportunities compared to those administrations that have decided in favour of mobile services in the upper sub-band. 	other related documents at ERO web site www.ero.dk
CEPT ECC TG4	<i>Deliverable D: Measurements on the performance of DVB-T receivers in the presence of interference from the mobile service (especially from UMTS) Reply to 2nd EC Mandate</i>	Deadline: May-June09	<ul style="list-style-type: none"> - Measurement results should be the basis to determine technical and operational conditions for mobile services on a national basis, in addition to the conditions set by the CEPT, in order to effectively protect broadcasting services. - The current document is mainly based on measurements of UMTS interference into DVB-T. Further studies are required to assess the impact of the future LTE services to be implemented in the band 790-862 MHz. - DVB-T receiver specifications need to be reviewed and possibly updated in order to be able to cope with the interference coming from the mobile networks in the band 790-862 MHz. 	EBU contributions and other related documents at ERO web site www.ero.dk
CEPT ECC TG4	<i>Deliverable B: Recommendation on the best approach to ensure the continuation of existing Program Making and Special Events (PMSE) services operating in the UHF (470-862 MHz), including the assessment of the advantage of an</i>	Deadline: May-June09	<ul style="list-style-type: none"> - Broadcasters indicate a lack of frequencies allocated for SAB/SAP⁴ applications to satisfy all requirements and difficulties in finding frequencies within the tuning range of the equipment. - The 470-862 MHz band is one of the bands with major 	EBU contributions and other related documents at ERO web site www.ero.dk

⁴ Services Ancillary to Broadcasting/Services Ancillary to Programme making

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	<p><i>EU-level approach.</i> Reply to 2nd EC Mandate</p>		<p>difficulties. Bands IV/V are crowded with analogue TV, DVB-T and other services and it is difficult to find enough frequencies in some areas (big cities) for major events.</p> <ul style="list-style-type: none"> - In some countries, there are reserved channels within the 790-862 MHz band for audio applications (radiomicrophones, in-ear monitoring, portable audio links and talkback equipment). In case that in the future this sub-band is allocated to non-broadcasting services, all equipment will have to be changed to other frequencies. - It is necessary to define spectrum requirements for SAB/SAP to ensure that adequate spectrum is made available to those applications. 	
CEPT ECC TG4	<p>Subject to confirmation by the ECC, an additional report will be developed: <i>Measurements on the performance of DVB-T receivers in the presence of interference from the mobile service (especially from LTE)</i></p>			
CEPT ECC PT1	<p>Leading group for the development of channelling arrangements for Mobile Services in the 790-862 MHz. ECC PT1 main conclusions are:</p> <ul style="list-style-type: none"> - the FDD (2 x 30 MHz) frequency arrangement is the preferred harmonised frequency arrangement within CEPT; - other solutions are possible (e.g. TDD) - 1 MHz frequency separation (790-791 MHz); - Duplex gap of 11 MHz (821-832 MHz) between uplink and downlink; <p>ECC Decision:</p> <ul style="list-style-type: none"> - the ECC Decision designates the band for the provision of Mobile/Fixed Communications 	<p>The draft ECC Decision will be forwarded to the ECC for adoption for Public Consultation at its June 2009 meeting</p>	<ul style="list-style-type: none"> - 1 MHz of frequency separation between mobile services and broadcasting services do not guarantee protection of broadcasting services below 790 MHz - At national level and in order to guarantee protection of broadcasting services using frequencies below, additional mitigation techniques to be imposed to Mobile Services (e.g. power limitations, critical spectrum mask, separation distance, etc) are to be considered on a case-by-case basis. 	<p>ERO web site www.ero.dk</p>
CEPT	<p>Leading group for the development of least</p>	<p>CEPT Report to</p>	<p>- The out-of-band emissions of Base stations and Mobile</p>	<p>EBU contributions and</p>

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SE42	restrictive technical conditions for the use of the 790-862 MHz sub-band by Mobile/Fixed services. The principles and assumptions for the studies leading to the derivation of BEM (Block Edge Mask) for ECNs (Electronic communication Networks) adjacent to terrestrial broadcasting at 790 MHz are under discussion.	be finished by end May and to be forwarded to the WG SE for adoption for Public Consultation at its June 2009 meeting	terminals that fall in the broadcasting channels should be kept at a sufficiently low level to ensure protection of the broadcasting service. The in-band power of the base station and the mobile terminal should also be limited. Suitable levels are proposed by the EBU and finally the minimum restrictive technical conditions for mobile services defined by SE42 take into account to a large extent the protection of the broadcasting services from interference caused by the mobile networks. - A clause of protection is requested in the national licences to solve the possible remaining interference cases.	other related documents at ERO web site www.ero.dk
CEPT CPG PTD	Leading group for preparing CEPT position regarding WRC-11 Agenda Item 1.17 ⁵ . Current CEPT position is that from a regulatory point of view, the GE-06 Agreement contains all the required regulatory mechanisms (e.g coordination procedures) for the protection of the broadcasting service from the mobile service in a neighbouring country in the case where both countries have signed the GE-06 Agreement. Such regulatory mechanism is yet to be developed for the protection of the broadcasting service in the GE-06 area from the mobile service operating in the countries outside GE-06.	Final CEPT position expected by 2010	- General characteristics necessary to carry out the coordination can be found in Annex 2 of the GE06 Agreement (technical elements and criteria used in the development of the Plan and implementation of the Agreement) for the specific systems included in Annex 2 (excluding the 'generic' systems). For future systems, the technical parameters to carry out the coordination are yet to be defined (e.g. through new ITU-R Recommendations and/or Reports, as appropriate, based on sharing studies). The technical parameters provided for the 'generic' cases may not be suitable for use in the assessment of the protection of broadcasting during the coordination between Administrations. - It is necessary that the coordination procedure between broadcasting services and Mobile services be carried out using the suitable technical parameters. The output text from WRC-11 should be clear with regard to the source of the technical material that could/should be used when applying the regulatory procedure described in GE06. Alternatively, the text	Available in the EBU wiki at http://workspace.ebu.ch/display/Spectrum/WRC-11+AI+1.17+Sharing+studies+in+the+band+790-862+MHz

⁵ World Radiocommunication Conference 2011 Agenda Item 1.17 will consider results of sharing studies between the mobile service and other services in the band 790-862 MHz in Regions 1 and 3, in accordance with Resolution 749, to ensure the adequate protection of services to which this frequency band is allocated, and take appropriate action.

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			<p>should indicate how to avoid such a possible mistake in using (or misuse of) the available technical material of GE06.</p>	
<p>ITU-R JTG 5-6</p>	<p>Leading ITU-R group regarding WRC-11 Agenda Item 1.17³. The scope of work still under discussion: should sharing studies be done or can coordination procedures (such as the GE06 procedures) be enough to deal with compatibility between both services in the 790-862 MHz sub-band?</p> <p>The following issues are under consideration:</p> <ul style="list-style-type: none"> - methodology for the compatibility studies between Broadcasting and Mobile services - Parameters/characteristics of broadcasting services and of mobile services to be studied - Development of solutions to satisfy the agenda item to be proposed to the WRC-11 	<p>2010</p>	<ul style="list-style-type: none"> - Detailed sharing studies are to be done between broadcasting services and mobile services. Interference issues such as adjacent channel interference, image channel interference and overloading of DVB-T receivers need to be studied - Support to methodology as it follows EBU's proposals - Parameters for different Mobile systems (UMTS, LTE, WiMAX, etc.) should be well defined. Similarly, relevant protection ratios of all the systems with respect DVB-T need to be defined. - With respect current CEPT position and EBU comments see row above. - The possibility of defining maximum field strength at the border areas to be imposed to Mobile services in order to protect broadcasting services could be a possibility to satisfy the agenda item. EBU will give further consideration to this option. 	<p>EBU contributions and other related documents at http://www.itu.int/ITU-R/index.asp?category=study-groups&rlink=rjtg5-6&lang=en</p>
<p>CEPT SE43</p>	<p>Leading group to define technical and operational requirements for the operation of cognitive radio systems in the white spaces of the UHF broadcasting band (470-790 MHz) to ensure the protection of incumbent radio services/systems and investigate the consequential amount of spectrum potentially available as "white space".</p>	<p>May 2010</p>	<ul style="list-style-type: none"> - Cognitive radio systems using the white spaces in the 470-790 MHz band should protect current and future broadcasting services. - The use of white spaces by unlicensed devices is not supported. - White spaces are already used by SAB/SAP applications and those services are also to be protected by cognitive radio systems. 	<p>Available soon</p>