

DRAFT EUROPEAN COMMON PROPOSAL**Proposal submitted by the following administrations**

[....., ...,]

Agenda Item 1.11

Note : The draft ECP which follows is based on the method A of the CPM text and on the elements towards ECP previously developed by CGP/PT2. An alternative version implementing option B of the CPM text has been provided by the UK administration at the CPG/PT2 meeting. Method B was not supported by other administrations, but it was decided to keep this proposal as an attachment of the draft ECP in order to allow more time for administrations to make up their mind.

WRC-07 Agenda item 1.11: to review sharing criteria and regulatory provisions for protection of terrestrial services, in particular terrestrial television broadcasting services, in the band 620-790 MHz from BSS networks and systems, in accordance with Resolution 545 (WRC-03).

Introduction: Resolution 545 (WRC-03) invites the ITU-R to develop sharing criteria and regulatory provisions, prior to WRC-07, for the protection of terrestrial services, in particular terrestrial television broadcasting services, in the 620-790 MHz band from GSO BSS networks and non-GSO BSS satellite networks or systems.

Description of the proposals:

- It is proposed to modify footnote 5.311 related to the BSS assignments service brought into use before 5 July 2003 to include the 8 MHz reference bandwidth,
- It is proposed to add a footnote 5.311bis containing the pfd levels for the BSS assignments brought into use after end of WRC-07 that will ensure the protection of the terrestrial broadcasting service, and deactivating No 22.2.
- It is proposed that, for the BSS networks/systems not brought into use before 5 July 2003, coordination procedure with primary terrestrial services under 9.19 shall not apply to GSO BSS and/or non-GSO BSS earth stations operating under this allocation in order to avoid BSS earth stations claiming protection from primary terrestrial stations. [*editorial note : specific BSS earth stations ?*]
- It is proposed that the use of the band 620-790 MHz by the broadcasting-satellite service is subject to coordination under Nos. 9.12, 9.12A and 9.13.
- It is proposed to [modify or suppress] Resolution 545 (WRC-03). Further consideration is required on this point.

- [editorial note : text needed for the option concerning the protection of radionavigation]

Proposals

ARTICLE 5

MOD EUR/1.11/1

5.311 Within the frequency band 620-790 MHz, assignments to television stations using frequency modulation in the broadcasting-satellite service brought into use prior to 5 July 2005, with the agreement of the administrations concerned and those having services, operating in accordance with the Table, which may be affected (see Resolutions 33 (Rev.WRC-03) and 507 (Rev.WRC-03)), shall not produce a power flux-density at the Earth surface in excess of:

$$\frac{-129 \text{ dB(W/m}^2\text{/8 MHz)}}{\quad} \quad \text{for} \quad \delta \leq 20^\circ$$

$$\frac{-129 + 0.4 (\delta - 20) \text{ dB(W/m}^2\text{/8 MHz)}}{\quad} \quad \text{for} \quad 20^\circ < \delta \leq 60^\circ$$

$$\frac{-113 \text{ dB(W/m}^2\text{/8 MHz)}}{\quad} \quad \text{for} \quad 60^\circ < \delta \leq 90^\circ$$

where δ is the angle of arrival above the horizontal plane (degrees), (see Recommendation 705) within the territories of other countries without the consent of the administrations of those countries. Resolution 545 (WRC-07) applies. (WRC-03).

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5.311bis Within frequency band 620-790 MHz, assignments may be made to television station in the GSO and non-GSO broadcasting satellite service.

The power flux-density at the surface of the Earth produced by emissions from those assignments brought into use after [end WRC-07] shall not exceed the following values:

- Within the territories of countries where analogue terrestrial broadcasting assignments are still recorded in the Master Register, the power flux-density at the surface of the Earth produced by emissions from the BSS satellite shall not exceed:
 - 142 dB(W/m²/MHz) for $0^\circ \leq \delta \leq 30^\circ$,
 - 142 + 0.4 ($\delta - 30$) dB(W/m²/MHz) for $30^\circ \leq \delta \leq 60^\circ$ and
 - 130 dB(W/m²/MHz) for $60^\circ \leq \delta \leq 90^\circ$,
- Within the territories of countries where no analogue terrestrial broadcasting assignment is recorded in the Master Register, the power flux-density at the surface of the Earth produced by emissions from the BSS satellite shall not exceed:
 - 137 dB(W/m²/MHz) for $0^\circ \leq \delta \leq 30^\circ$,
 - 137 + 0.23 ($\delta - 30$) dB(W/m²/MHz) for $30^\circ \leq \delta \leq 60^\circ$ and
 - 130 dB(W/m²/MHz) for $60^\circ \leq \delta \leq 90^\circ$,

where δ is the angle of arrival of the radio-frequency wave.

Coordination under No 9.19 shall not apply to GSO BSS and/or non-GSO BSS earth stations operating under this allocation. [editorial note : specific BSS earth stations ?]

The use of the band 620-790 MHz by the broadcasting-satellite service is subject to coordination under Nos. 9.12, 9.12A and 9.13.
No. 22.2 does not apply.

ADD EUR/1.11/3

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Option 1. To establish “hard limits” in RR to protect aeronautical radionavigation service operating in countries in No. 5.312 :

5.311ter Within the territories of countries listed in **5.312** the power flux-density at the surface of the Earth produced by emissions from assignments under **5.311bis** shall not exceed:

-161 dB(W/m²/4 kHz) for $0^\circ \leq \delta \leq 60^\circ$, and

-160 dB(W/m²/4 kHz) for $60^\circ \leq \delta \leq 90^\circ$,

where δ is the angle of arrival above the horizontal plane, without the consent of the administration of those countries. No. **23.13** of the Radio Regulations shall apply.

Option 2. To apply coordination process for the BSS in respect to ARNS while establishing appropriate coordination threshold under Appendix 5 of RR

MOD EUR/1.11/3

APPENDIX 5 (Rev.WRC-07)

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Identification of administrations with which coordination is to be effected or agreement sought under the provisions of Article 9

TABLE 5-1 (continued) (Rev.WRC-07)

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Reference of Article 9	Case	Frequency bands (and Region) of the service for which coordination is sought ...	Threshold /condition	Calculation method	Remarks
No. 9.11 GSO, non-GSO/terrestrial	A space station in the BSS in any band shared on an equal primary basis with terrestrial services and where the BSS is not subject to a Plan, in respect of terrestrial services	1 452-1 492 MHz 2 310-2 360 MHz 2 535-2 655 MHz (Nos. 5.417A and 5.418) 12.5-12.75 GHz (Region 3) 17.3-17.8 GHz (Region 2) 21.4-22 GHz (Regions 1 and 3)	Bandwidths overlap: The detailed conditions for the application of No. 9.11 in the bands 2 630-2 655 MHz and 2 605-2 630 MHz are provided in Resolution 539 (Rev.WRC-03) for non-GSO BSS (sound) systems pursuant	Check by using the assigned frequencies and bandwidths	

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			to Nos. 5.417A and 5.418 ; and in Nos. 5.417A and 5.418 for GSO BSS (sound) networks pursuant to those provisions.			Formatted
		<u>620-790 MHz</u>	<p><u>Within the territories of countries listed in 5.312 the power flux-density at the surface of the Earth produced by emissions from assignments under 5.311bis exceeds:</u></p> <p><u>-161 dB(W/m²/4 kHz) for 0° < δ < 60°, and</u></p> <p><u>-160 dB(W/m²/4 kHz) for 60° < δ < 90°.</u></p> <p><u>where δ is the angle of arrival above the horizontal plane.</u></p> <p><u>[Resolution 545 (WRC-03) applies in the <u>620-790 MHz band</u>]</u></p>	<u>Check by using the assigned frequencies and bandwidths</u>		<p>Deleted: Resolution 545 (WRC-03) applies in the 620-790 MHz band</p> <p>Formatted: Font: 10 pt</p> <p>Formatted: Indent: Left: -0,25 pt</p> <p>Formatted: Indent: Left: -0,25 pt</p> <p>Formatted: Font: 10 pt</p> <p>Deleted:</p> <p>Formatted: Font: 10 pt</p> <p>Formatted: English (U.S.)</p> <p>Formatted: English (U.S.)</p> <p>Formatted: English (U.K.)</p>

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[MOD/SUP] EUR/1.11/4

RESOLUTION 545

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Attachment**Method B of the CPM text****DRAFT EUROPEAN COMMON PROPOSAL****Proposal submitted by the following administrations**

[..., XX,....]

WRC 2003 Agenda Item 1.11: *to review sharing criteria and regulatory provisions for protection of terrestrial services, in particular the terrestrial television broadcasting service, in the band 620-790 MHz from broadcasting-satellite service networks and systems, in accordance with Resolution 545 (WRC-03)*

Introduction

Geneva 06 puts in place a terrestrial digital broadcasting Plan based on a diverse range of requirements, including the potential to introduce new broadcasting services, like mobile TV and HDTV, or other primary terrestrial services by allowing them to operate under the mask of a Plan entry.

The Plan effectively encapsulates the desire of many countries to maximise the potential use of the band. This approach required multiple coordination agreements to override many of the interference margins associated with traditional planning techniques. In the context of the Plan, overriding these interference margins does not inhibit Plan implementation, but the reduced margins make broadcasting more vulnerable to interference from other sources within the Plan bands.

The view that digital systems are more resistant to the effects of interference, than the analogue systems they replace, ignores the necessity to perform this assessment on a case by case basis and the practical realities of exceeding the interference threshold. Also, unlike analogue systems where the picture can still be viewable despite interference causing significant degradation, digital systems generally show no indication of interference until they fail. Failure of DVB-T does not require loss of all carriers and the loss of the critical minimum number of carriers can be spread over the channel. Loss of DVB-T carriers can therefore arise from a single dominant interferer or a number of interfering sources operating in the same or different parts of the DVB-T channel.

Within the Planning area satellite systems in the band 620-790 MHz are a potential major source of interference that threatens both the implementation of the Plan and its development. Satellite systems were not included within the GE06 agreement, but the Conference passed Resolution 1(RRC-06) inviting WRC-07 to ensure the protection of the Plan and its future development, to which 120 countries are signatories. Although it has been argued that the BSS can protect the GE06 Plan a number of concerns have been identified including the need to include beam tilt and an implementation margin to ensure protection.

Satellite systems can have a significant impact in fringe reception areas and their transmissions will not be affected by the effects of height loss, which for terrestrial broadcasting is in order of 10-12dB for portable/mobile reception. In addition, the current BSS proposals have wideband spectral issues which could impact large areas across many channels that could limit administrations ability to develop the Plan.

Although interference from the BSS is unlikely to cause sustained failure in reception of a DVB-T signal, it will degrade the available margins and make DVB-T reception more susceptible to failure from the aggregated sources of interference, like electrical impulses or other sources of radio interference. In addition to a combination of interference sources as a cause of potential failure of reception of a DVB-T signal, an even greater cause for concern is a gradual erosion of margins by the combined impact of multiple sources of interference, making it very difficult to point the finger at any particular emission, and hence very difficult to fix. Simply raising all terrestrial broadcasting transmitter powers is not a universal solution. Apart from increasing the potential for self-interference and causing timing problems, increasing transmitter power in one area can simply translate to an increase in the noise floor in other areas/countries.

Consequently it is considered that the only way to fully comply with Resolution 1(**RRC-06**) and fully protect terrestrial broadcasting in the band 620-790 MHz is to suppress the existing footnote No. **5.311**. This approach also ensures that in the future any unforeseen regulatory issues are avoided.

Proposals

The proposed regulatory procedure to satisfy the agenda item consists of the suppression of No. **5.311 (WRC-03)**, and a draft new Resolution **XXX/GSO BSS satellite Networks (WRC-07)** to be adopted by WRC-07 to recognize the rights and obligations of the use of the frequency band 620-790 MHz by satellite networks notified and the date of bringing into use confirmed before the end of WRC-03.

SUP EUR/1.11/1

No. 5.311 (WRC-03)

Reason: To protect the GE06 Plan and its development in accordance with Resolution 1(**RRC-06**).

ADD EUR/1.11/2

Draft Resolution [620-790MHz] (WRC-07)

Use of frequency band 620-790 MHz for existing assignments to broadcasting-satellite service

The World Radiocommunication Conference 2007 (WRC-07)

considering

- a) that Regional Radiocommunication Conference ,Geneva 2006 (RRC-06) has adopted an Agreement and associated Plans for digital terrestrial broadcasting for Region 1, except Mongolia, and the Islamic Republic of Iran in the frequency bands 174-230 MHz and 470-862 MHz,
- b) that the above-mentioned Conference, in its Resolution 1 (**RRC-06**) invited WRC-07 ,when considering Agenda Item 1.11, **to** ensure that the Plan (s) established shall be effectively protected , *inter alia*, from the BSS GSO and non-GSO broadcasting satellite networks/systems operating or to planned be operated in frequency band 620-790 MHz.

c) that many administrations have extensive infrastructure for the transmission and reception of analogue and digital television signals between 620 MHz and 790 MHz;

recognizing

a) that in accordance with current provisions No. **5.311**, adopted at previous WARC several decades ago, two assignments to “Stationar t” and “Stationar t2 BSS networks in the band 620-790 were notified, brought into use and their date of bringing into use confirmed before the end of the World Radiocommunication Conference (Geneva, 2003) (WRC-03),

b) that, according to the records of the Bureau, there has been no complaint of any harmful interference to or request for claiming protection for these two assignments from the terrestrial television systems of any administration

further recognizing

a) that there is a need to authorize these two assignments to continue their operation in providing the broadcasting satellite service to their intended service area

b) that this Conference has suppressed the provision No. **5.311**, in the light of the protection requirements of the terrestrial television systems mentioned in considering a),

b) and c) above

resolves

1 to authorize the above mentioned two assignments to continue their operation and providing the broadcasting satellite service to their intended service area.

instructs the Director of the Radiocommunication Bureau

to implement this Resolution.

Reason: To allow continued operation of existing systems