

## **Draft CEPT Brief on agenda item 7.1**

**(Additional items identified (by CPM-06) requiring urgent studies by the ITU-R Study Groups)**

### **Issue**

Consideration of the technical parameters for the possible planning of the broadcasting-satellite service in the band 21.4-22 GHz in Regions 1 and 3 (see Resolution 507 (WARC-79) (Rev. WRC 2003)).

### **Preliminary CEPT position**

In addressing this additional Agenda Item, it is essential that Europe ensures that existing and planned operations are not adversely affected, and that flexible use of the spectrum/orbit resources in the band 21.4-22 GHz is not put at risk. *A priori* planning is not necessary and should be avoided because it freezes access according to technological assumptions at the time of planning and then prevents flexible use taking account of real world demand and developments.

### **Background**

WARC-92 made an allocation in the bands in Regions 1 and 3 (and 17.3 - 17.8 GHz in Region 2) to the broadcasting-satellite service on a primary basis from 1 April 2007. It adopted, by Resolution No. 525, a set of interim procedures to allow HDTV (BSS) to be introduced in Regions 1 and 3 from 1 April 1992.

Resolution No. 525 also stipulates that the frequency band 21.4 - 22.0 GHz shall be used for High-Definition Television (HDTV) in the BSS. It stipulates further that, before a future conference has taken decisions on definitive procedures, the use of the allocated band shall be based on Resolution No. 33 (WARC-79) and Article 27 "Experimental stations", and that after 1 April 2007 the introduction of HDTV systems in this band must be regulated in a flexible and equitable manner until such time as a future competent world radio conference has adopted definitive provisions for this purpose in accordance with Resolution No. 507 (WARC-79).

The interim procedures utilize sections of Resolution No. 33 which apply to the broadcasting-satellite service in bands where plans are not in force but limits the requirements for coordination with the assignments of other countries to systems which exceed certain trigger values. Report ITU-R BO.2007-1 lists a number of characteristics to be considered in the development of BSS (HDTV) systems under these procedures. Resolution 525 makes a distinction between "operational" and "experimental" systems and to systems introduced before and after 1 April 2007. Table 1 of Report ITU-R BO.2007-1 indicates the applicable procedures.

ITU-R Study Group 6 has Question ITU-R 104/6 (1999) "Sharing criteria for BSS networks in the 17.3-17.8 GHz band in Region 2, and in the 21.4-22 GHz band in Regions 1 and 3, and their associated feeder links".

This Question notes that significant technical advancements have been made within BSS since the establishment of Appendices 30 and 30A Plans and that this will likely result in BSS system characteristics in the 17 and 21 GHz bands that are different from those currently in use in the Appendix 30 11/12 GHz bands. Also, such technical advancements will likely lead to improved efficiencies in the use of orbit and spectrum resources. The following questions are identified for study:

**1** What are the technical characteristics of the associated feeder-link networks to be taken into account in the development of these sharing criteria?

**2** What are the technical characteristics of the BSS networks to be taken into account in the development of these sharing criteria?

**3** What intra- and inter-service sharing issues need to be addressed for the 17 GHz and 21 GHz BSS, and what are the appropriate sharing criteria?

WRC-03 decided to introduce the coordination arc concept in all the BSS bands above 17.3 GHz and adopted a provisional value of  $\pm 16^\circ$ . Working Party 6S will review the appropriate value of the coordination arc in the band 21.4-22 GHz.

In Europe, the band 21.4-22 GHz is the subject of new developments. For example, the EUTELSAT W3A satellite, launched in March 2004 and located at  $7^\circ$  E, includes two channels of 108 MHz bandwidth providing a European coverage. [Text to be provided by Luxembourg.]

### **ITU Activities**

WP6S conducted studies on this issue, the results can be found in the following documents:

- Recommendation ITU-R BO.1659 recommends techniques to mitigate rain attenuation to facilitate the introduction of BSS systems in frequency bands between 17.3 GHz and 42.5 GHz, especially in the 21 GHz band;
- Recommendation ITU-R BO.1776 recommends that the value  $-105.0 \text{ dB(W/m}^2 \cdot \text{MHz)}$  be considered as the reference power flux-density (pfd) at the Earth's surface for the sharing study for the BSS in the band 21.4-22.0 GHz in Regions 1 and 3;
- Draft new Recommendation ITU-R BO.[Doc. 6/310] provides a pfd mask for sharing among BSS systems in the band 21.4-22.0 GHz that may be used by administrations to trigger coordination for BSS systems intended to operate in accordance with Resolution **525 (Rev.WRC-03)**;
- Report ITU-R BO.2071 describes system parameters of BSS systems in frequency bands 21.4-22.0 GHz and the associated feeder links.

The ITU-R has concluded that Resolution 525 (Rev.WRC-03) should be revised, taking into account the conclusions stated above, and further study is needed to consider the planning of the BSS band 21.4-22 GHz in Regions 1 and 3.

### **List of relevant documents**

**See section above.Actions to be taken**

None.

**Preliminary positions from organizations outside CEPT**

**APT**

**Preliminary Views**

APT Members support studies on spectrum usage of the 21.4 to 22 GHz band for BSS and its associated feeder link bands. The APT members are of the opinion that a flexible spectrum usage methodology be addressed in the studies, among other options.

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