

**United States of America**  
**Preliminary Views on WRC-07**

WRC-07 Agenda Item 1.10 to review the regulatory procedures and associated technical criteria of Appendix 30B without any action on the allotments, the existing systems or the assignments in the List of Appendix 30B.

**1) General Views on Agenda Item 1.10**

**Issue**

Appendix 30B delineates allotments within portions of C-band and Ku-band for each country; each allotment provides for national coverage under specific technical conditions (e.g., maximum power densities and minimum antenna sizes). While this plan was intended to preserve the opportunity for all countries to obtain real benefits from use of satellite systems in the geostationary satellite orbit (GSO), the actual number of systems put into operation pursuant to this appendix since its original adoption in 1988 has been quite limited.

Some aspects of the regulatory procedures and technical criteria are outdated and serve to restrict, rather than foster, the development of real, economical systems.

**Background**

Since the adoption, in 1988, of Appendix 30B, satellite technologies have advanced dramatically. And at the same time, many countries have recognized that satellites offer great potential to facilitate access to digital broadband services such as the Internet, thereby leaping past antiquated technologies. Yet, only slight changes have been made to Appendix 30B, rendering it still poorly-suited to satisfy these new technology requirements. WRC-03 has only just begun to address the issue. For example, full account has yet to be taken of the widespread use of digital modulation techniques that facilitate high capacity at substantially lower interference margins than envisaged when the appendix was originally adopted.

WRC-03 made two notable changes to the appendix that involve the technical criteria for analyses carried out from 5 July 2003: 1) the interference criteria for

aggregate and single entry C/I thresholds were relaxed by 3 dB, and 2) an improved earth station off-axis gain pattern was decided to be applied for cases requiring the additional discrimination to resolve interference issues. Based on these decisions, and the instructions of Resolution 146, the BR has prepared a new reference plan reflecting these changes.

WRC-03 also recognized that additional changes to the regulatory procedures and associated technical criteria of Appendix 30B may be productive and thus put this item on the agenda for WRC-07. The CPM referred this topic to WP-4A and the Special Committee (SC) for study and it has been extensively addressed in meetings of both groups in 2004 and 2005. At its April 2004 meeting, WP 4A, as the lead group for this item, considered several contributions, including one from the USA, related to this topic. As a result of work jointly conducted by WP-4A and the SC, prepared a summary of the specific issues to be studied has been developed. These issues will be further considered in the upcoming meetings of WP 4A and the SC in November/December 2005, for which contributions to its next meeting in October are encouraged.

## **U.S. Views**

The U.S. is of the view that the general guidelines in 1 through 6 below should continue to be followed in the work pertaining to this agenda item.

1. The U.S. does not advocate any action on the allotments, the existing systems or the assignments in the List of Appendix 30B.
2. The U.S. supports continued improvements to the regulatory procedures and associated technical criteria of Appendix 30B and is committed to working through the study groups and with other administrations toward that end.
3. The U.S. considers that future technical criteria should be based on realistic parameters that reflect digital communications technology in use today and foreseen for the near future.
4. The U.S. considers that sufficient flexibility should be built in to the regulatory procedures to permit reasonable accommodation of new technologies without requiring additional revisions to Appendix 30B post WRC-07.

5. The U.S. intends to focus its efforts on improvements to the regulatory procedures and associated technical criteria for the Ku-band portion of Appendix 30B, as it considers this offers the greatest opportunity for improvements that can yield cost-effective access to satellite broadband services.
6. The U.S. considers that the bands subject to Appendix 30B should be among those considered for the global broadband satellite systems serving Internet applications addressed under agenda item 1.19.

## **2) Specific Views on Agenda Item 1.10**

Consistently with these above guidelines, the U.S. has submitted contributions on Appendix 30B issues to WP 4A and has actively participated in the discussions of this topic both in WP 4A and in the SC. In particular, as discussed in more detail sections ~~A2~~ and ~~B~~ below, the U.S. is of the view that significant increases in flexibility can be obtained through changes to the regulatory procedures in two specific areas: the definition of additional uses and subregional systems; the processing of the submissions for additional uses and subregional systems.

### A.A. Definition of Additional Uses and Subregional Systems

The orbit/spectrum resources corresponding to the Appendix 30B frequencies are primarily associated with allotments and assignments resulting from the conversion of allotments. Allotments guarantee to each administration the right to use the Appendix 30B frequencies for national coverage and under specific technical conditions, including a nominal orbital location and a Pre-Determined Arc (PDA) within which the orbital location can be selected. Allotments can be converted into assignments without any change to orbital location or other parameter. However, most likely conversion into an assignment will include modification of several parameters of the allotment.

In addition, Appendix 30B frequencies can be utilized by other systems that currently fall into three categories: subregional systems, additional uses and existing systems.

Existing systems are associated with satellite networks that had been filed with the ITU before 8 August 1985 (First Session of the Conference that developed the Appendix 30B Plan). These systems have either been brought into use or the corresponding filings have expired.

Section II of Article 6 of Appendix 30B describes the procedure for the introduction of subregional systems while Section III of the same Article 6 contains supplementary provisions applicable to additional uses in the planned bands. Table 1 below summarizes the main characteristics of these two types of use of the Appendix 30B frequency bands.

Table 1. Current Characterization of Subregional Systems and Additional Uses in the Appendix 30B Frequencies

<u>Attribute</u>	<u>Subregional System</u>	<u>Additional Use</u>
<u>Coverage</u>	<u>Necessarily includes 2 or more neighboring countries (see No. 2.5 of AP30B)</u>	<u>Can include one or more countries (see No. 2.6 of AP30B)</u>
<u>Relationship to Allotments</u>	<u>May be associated with the suspension of allotments of one or more of the participating administrations</u>	<u>To be implemented in addition to allotments or assignments (no suspension of allotments foreseen)</u>
<u>Compatibility with Allotments and Assignments</u>	<u>Be compatible with: allotments; assignments in the List; and assignments for which complete information has been received</u>	
<u>Use of the PDA Concept</u>	<u>May change orbital locations of other allotments or assignments within the PDA (see Nos. 6.48 through 6.50 of AP30B)</u>	<u>Is not allowed to changed orbital locations of other allotments or assignments unless authorized by the administrations affected (see No. 6.56 of AP30B)</u>
<u>Period of validity</u>	<u>Not specified</u>	<u>15 years</u>

It can be concluded from the several provisions addressing subregional systems that this option was introduced in order to allow neighboring countries to combine their allotments into a system with regional coverage. This interpretation is consistent with the suspension of allotments associated with subregional systems as well as with other

advantages granted to these systems and not to additional uses (e.g. use of the PDA concept, unlimited period of validity).

However, up to now the submissions for subregional systems have never included requests for suspension or partial suspension of allotments in application of Section II of Appendix 30B and such submissions have been implemented in a way that does not affect allotments in the Plan or assignments in the List. Therefore, subregional systems have actually been implemented as “additional uses” in the sense that they will coexist with allotments and assignments as additional uses do. Moreover, one element in the regulations that might draw a distinction between these two categories (subregional systems are “created by agreement among neighbouring countries” - see No. 2.5 of AP30B) has been recognized as difficult to apply because there is no clear definition for the term “neighbouring countries”.

Given all the above, there is no reason for the distinction between these two types of use of Appendix 30B frequencies and the U.S. is of the view that these two categories should be merged into one category as described below. The new category would still be called “additional uses” and would have the attributes given in Table 2.

**Table 2. Possible New Characterization of Additional Uses  
in the Appendix 30B Frequencies**

<b><u>Attribute</u></b>	<b><u>“Additional Use”</u></b>
<b><u>Coverage</u></b>	<b><u>Can include one or more countries without the need to obtain agreement from other countries included in the coverage area</u></b>
<b><u>Relationship to Allotments</u></b>	<b><u>To be implemented in addition to allotments or assignments</u></b>
<b><u>Compatibility with Allotments and Assignments</u></b>	<b><u>Be compatible with: allotments; assignments in the List; and assignments for which complete information has been received</u></b>
<b><u>Use of the PDA Concept</u></b>	<b><u>May change orbital locations of other allotments or assignments within the PDA (see Nos. 6.48 through 6.50 of AP30B)</u></b>
<b><u>Period of validity</u></b>	<b><u>Not specified</u></b>

As it can be seen from Table 2, the need for obtaining agreement from other countries included in the coverage area that currently applies to subregional systems and to additional uses is being dropped. No rights of an administration A with territory

included in the coverage area are in any way being violated. Any rights of administration A with respect to the use of FSS space stations in the Appendix 30B frequencies are automatically protected because the additional use has to be compatible with allotments; assignments in the List; and assignments for which complete information has been received. Terrestrial systems in the territory of administration A are protected by the power-flux density limits of Article 21 of the Radio Regulations. This regulatory framework is no different than that associated with the operation of an FSS space station in any other frequency band and there is no reason why the treatment of “additional uses” in the Appendix 30B frequencies should deviate from such framework.

In case it is deemed of interest to retain the “subregional systems” category, the regulations should make clear that this category intends to provide flexibility to countries that want to combine their allotments to operate a system with enlarged coverage area, i.e. the allotments of all participating administrations would be suspended in their totality. By introducing this requirement, no loss of flexibility would be imposed on any administration because allotments able to co-exist with the subregional system could, for instance, be proposed as additional use. Further, the requirement for participants to be neighbouring countries could be dropped.

#### B. Processing of Submissions for Additional uses and Subregional Systems

Currently all submissions associated with Appendix 30B frequencies are considered in a single queue. More flexibility can be achieved if submissions are treated differently depending on whether they are associated with “capacity in the Plan” or with “capacity beyond that in the Plan”. Capacity in the Plan would include allotments and submissions for converting allotments into assignments even if the assignments are not within the envelope of the original allotments.

Uses of Appendix 30B frequencies would then fall into two categories: “the Plan” and “additional uses” (with the class of additional uses redefined to also include subregional systems as discussed in Section A above<sup>1</sup>). As a result, there is a need to set the rules that

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<sup>1</sup> In case it is decided to maintain the category of subregional systems, the treatment of submissions being proposed here for additional uses would apply to both additional uses and subregional systems.

define the coexistence between satellite networks within each category as well as the coexistence between satellite networks in different categories.

Within “the Plan”, the current rules continue to apply. This means that vis-à-vis allotments and assignments resulting from the conversion of allotments any future submission for conversion of an allotment will follow the current rules. This would maintain unchanged the rights of allotments and assignments resulting from the conversion of allotments.

Within the “additional uses” category, co-existence would be governed by the rules of Articles 9 and 11 of the Radio Regulations, more broadly by the provisions of the Radio Regulations applicable to non-planned FSS bands. This seems to be a natural way to treat these uses of the Appendix 30B frequencies since they are actually associated with “capacity beyond that in the Plan”.

In particular, the need for coordination between two additional uses will be determined by the rules applicable in non-planned FSS bands. As a result, for instance, a submission in the “additional uses” category will be allowed to have a pending coordination with respect to another additional use submission with an earlier date of submission. Not being able to obtain a coordination agreement within a limited period of time does not constitute grounds for returning the filing to the administration that had originated it. This treatment contrasts with the current situation in which a non-implemented additional use that has successfully entered the List of assignments (see 5.5 in Article 5 of Appendix 30B) may block the consideration of subsequent additional uses. For instance, if one of these subsequent additional uses AU2 is not compatible with the additional use AU1 already in the List and cannot either modify its parameters or coordinate with AU1 within a limited period of time, then the submission of AU2 is discarded.

In view of the above, the BR will have to maintain two different lists. List A will include: (i) allotments; (ii) assignments resulting from the conversion of allotments; and (iii) additional uses that meet two conditions: (a) have been determined to be compatible with allotments and assignments resulting from the conversion of allotments; and (b)

have completed all required coordinations with all additional uses (both in List A as well as in List B defined below).

List B will include additional uses that have been determined to be compatible with all allotments and assignments resulting from the conversion of allotments but have not yet obtained agreements from all other additional uses with which there is a need for coordination. Additional use submissions not compatible with allotments and assignments resulting from the conversion of allotments would still be treated as in the current rules.

The reference situation that will be used to verify compatibility with allotments and assignments resulting from the conversion of allotments is based only on List A. Taking into account additional uses in List B in the calculation of the reference situation would have the drawback of distorting this reference situation with many additional use submissions that may never be able to complete the required coordinations or being ultimately implemented.

### **Additional U.S. Views**

The U.S. is of the view that:

21) Consistent with these above -guidelines, ~~that~~ significant increases in flexibility can be obtained through changes to the regulatory procedures in two specific areas: the definition of additional uses and subregional systems; the processing of the submissions for additional uses and subregional systems.

23) With regard to the definition of additional uses and subregional systems, there is no reason for the distinction between these two types of use of Appendix 30B frequencies and that these two categories should be merged into one category that would continue to be called “additional uses” and would have the following attributes:

- a) Coverage: Can include one or more countries without the need to obtain agreement from other countries included in the coverage area.

- b) Relationship to Allotments: Would be implemented in addition to allotments or assignments.
- c) Compatibility with Allotments and Assignments: Would be compatible with allotments, assignments in the List, and assignments for which complete information has been received.
- d) Use of the PDA Concept: May change orbital locations of other allotments or assignments within the PDA
- e) Period of Validity: Not specified.

34) In case it is deemed of interest to retain the “subregional systems” category, the regulations should make clear that this category intends to provide flexibility to countries that want to combine their allotments to operate a system with enlarged coverage area, i.e. the allotments of all participating administrations would be suspended in their totality.

45) With regard to the processing of submissions, uses of the Appendix 30B frequencies would fall into two categories: “the Plan” and “additional uses”. With the Plan, the current rules continue to apply. Within the “additional uses” category, co-existence would be governed by the rules of Article 9 and 11 of the Radio Regulations, more broadly by the provisions of the Radio Regulations applicable to non-planned FSS bands.

56) Taking into consideration items 32, 43 -and 54, above, the BR would be required to maintain two lists. List A will include: (i) allotments; (ii) assignments resulting from the conversion of allotments; and (iii) additional uses that meet two conditions: (a) have been determined to be compatible with allotments and assignments resulting from the conversion of allotments; and (b) have completed all required coordinations with all additional uses (both in List A as well as in List B defined below).

List B will include additional uses that have been determined to be compatible with all allotments and assignments resulting from the conversion of allotments but have not yet obtained agreements from all other additional uses with which there is a need for coordination. Additional use submissions not compatible with allotments and

assignments resulting from the conversion of allotments would still be treated as in the current rules.

The reference situation that will be used to verify compatibility with allotments and assignments resulting from the conversion of allotments is based only on List A.

In the case that category of- “subregional systems” is maintained, the treatment of submissions being proposed for “additional uses” would apply to both additional uses and subregional systems.