

# ITU RADIO REGULATORY FRAMEWORK FOR SPACE SERVICES

During the last 52 years, from the Administrative Radio Conference in 1963 and up to and including the last World Radiocommunication Conference, in 2015 (WRC-15), many ITU conferences have addressed the regulation of spectrum/orbit usage by stations of the space radiocommunication services. The ITU Member States have established a legal regime which is codified through the ITU Constitution/Convention, including the Radio Regulations. These instruments contain the main principles and lay down the specific regulations governing the following major elements:

- frequency spectrum allocations to different categories of radiocommunication services;
- rights and obligations of Member administrations in obtaining access to the spectrum/orbit resources;
- international recognition of these rights by recording frequency assignments and, as appropriate, orbital information for a space station onboard a geostationary-satellite or for space station(s) onboard non-geostationary satellite(s), used or intended to be used in the Master International Frequency Register or by their conformity, where appropriate, with a plan.

The above regulations are based on the main principles of efficient use of and equitable access to the spectrum/orbit resources laid down in No. 196 of the ITU Constitution (Article 44), which stipulates that "*In using frequency bands for radio services, Members shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries*". As indicated in the above provision, further detailed regulations and procedures governing orbit/spectrum use are contained in the Radio Regulations (RR), which is a binding international treaty (No. 31 of the ITU Constitution).

Specific procedures have been established to ensure international recognition of the frequencies used and to safeguard the rights of administrations when they comply with those procedures.

The fact that the ITU Constitution and Convention and the Radio Regulations that complement them are *intergovernmental treaties ratified by governments* - means that those governments undertake:

- to apply the provisions in their countries; and
- to adopt adequate national legislation that includes, as the basic minimum, the essential provisions of this international treaty.

The international Radio Regulations are nevertheless oriented mainly towards matters of a global or regional character, and in many areas offer scope for making special arrangements on a bilateral or multilateral basis.

## 1 Major principles

In the process of establishing the ITU's space-related regulations, emphasis was laid from the outset on **efficient, rational and cost-effective utilization**. This concept was implemented through a "first come, first served" procedure. This procedure ("coordination before use") is based on the principle that the right to use orbital and spectrum resources for a satellite network or system is acquired through negotiations with the administrations concerned by actual usage of the same portion of the spectrum and orbital resource. If applied correctly (i.e. to cover genuine requirements), the

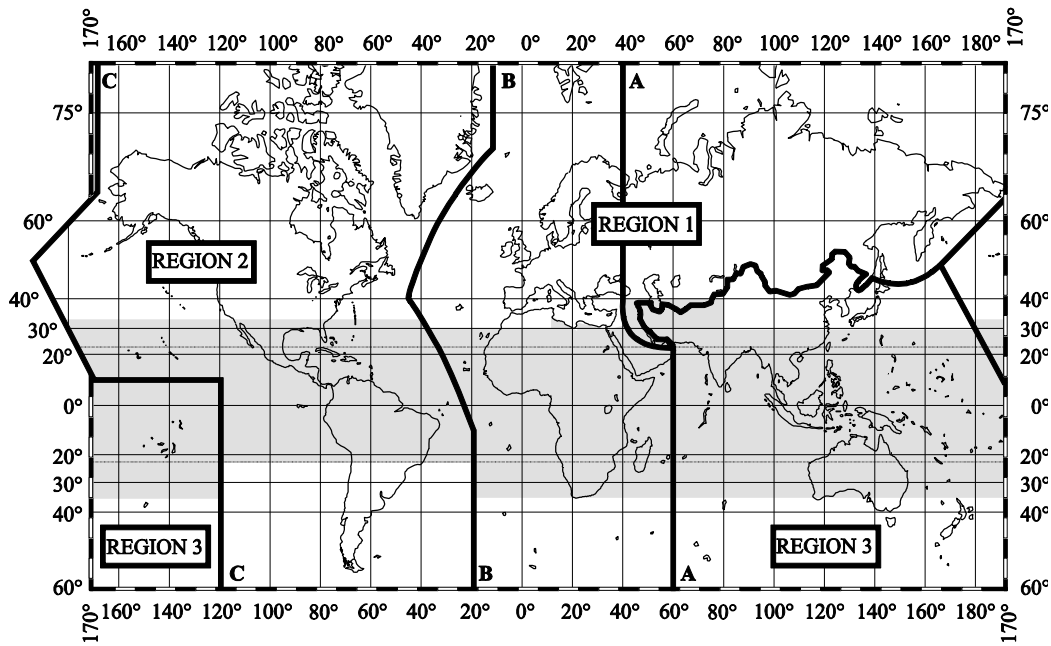
procedure offers a means of achieving efficient spectrum/orbit management; it serves to fill the gaps in the orbit(s) as needs arise. On the basis of the RR, and in the frequency bands where this concept is applied, Member administrations designate the volume of orbit/spectrum resources that is required to satisfy their actual requirements. It then falls to the national administrations to assign frequencies and orbital requirements, to apply the appropriate procedures (international coordination and recording) for the space segment and earth stations of their (governmental, scientific, public and private) networks, and to assume continuing responsibility for the networks. The progressive exploitation of the orbit/frequency resources and the resulting likelihood of congestion of the geostationary-satellite orbit prompted ITU Member countries to consider more and more seriously the question of **equitable access** in respect of the orbit/spectrum resources. This resulted in the establishment (and introduction into the ITU regulatory regime) of frequency/orbital position plans in which a certain amount of frequency spectrum is set aside for future use by all countries, particularly those which are not in a position, at present, to make use of these resources. These plans, in which each country has a predetermined GSO orbital position associated with the free use, at any time, of a certain amount of frequency spectrum, together with the associated procedures, guarantee for each country equitable access to the spectrum/orbit resources, thereby safeguarding their basic rights. Such plans govern a considerable part of the frequency bands available for the space communication services.

During the last 50 years, the regulatory framework has been constantly adapted to changing circumstances and has achieved the necessary flexibility in satisfying the two major, but not always compatible, requirements of efficiency and equity. With the dramatic development in telecommunication services, increasing demand for spectrum/orbit usage for practically all space communication services has been observed. This increase is attributable to many factors. These include not only technological progress, but also political, social and structural changes around the world and their impact on the liberalization of telecommunication services, the introduction of non-geostationary-satellite orbit (non-GSO) satellite systems for commercial communications, growing market orientation, the change in the way this widening market is shared between private and state-owned service providers and the general globalization and commercialization of communication systems. These elements led the ITU Plenipotentiary Conference (Kyoto, 1994) to call in its Resolution 18 for a new in-depth review of the ITU spectrum/orbit resource allocation procedures, the results of which were considered and reviewed by WRCs and led to the introduction of new concepts such as administrative due diligence, which applies to some satellite communication services; and simplification of the advance publication information to be provided to initiate the registration process for a satellite network.

## **2 Allocation structure**

### **2.1 Allocation structure and principles**

The allocation structure (Article 5 of the RR) and associated principles represent a basis for the planning and implementation of radiocommunication services. The current approach is based on a block allocation methodology with footnotes. The regulated frequency band (8.3 kHz - 3 000 GHz) is segmented into smaller bands and allocated to over forty defined radiocommunication services (Article 1 of the RR). The radio services are identified as PRIMARY or *secondary* (the latter shall cause no harmful interference to, or claim protection from, the former) and footnotes are used to further specify how the frequencies are to be assigned or used. The Table is organized into three Regions of the world (see Figure 1) and is supplemented by assignment and allotment Plans for some bands and services, and/or by mandatory coordination procedures.



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FIGURE 1: Regions for purposes of frequency allocation of the RR  
 (The shaded part represents the Tropical Zones as defined in Nos. 5.16 to 5.20 and 5.21 of the RR)

## 2.2 Basic principles related to use of the Table

Using the Table as a starting point, the frequency spectrum management authority of each country selects appropriate frequencies with a view to assigning them to stations of a given service. Before taking the final decision to assign a frequency to a station in a given radiocommunication service in a given frequency band and to issue an appropriate licence, the authority concerned should be aware of all other conditions regulating the use of frequencies in the band concerned, e.g.:

- Are there other mandatory RR provisions governing the use of the frequencies?
- Is the band concerned subject to a pre-established international assignment or allotment Plan? Are the characteristics of the assignment in accordance with the appropriate entry in the Plan? Is there a need to apply the Plan modification procedure prior to issuing a licence?
- Is there a need for effecting the coordination procedure prior to notification of the concerned assignment to the Radiocommunication Bureau (Bureau) or prior to its bringing into use?
- Is the procedure mandatory or voluntary? Is the procedure specified in the RR or in a special agreement?
- Is there a need to notify the frequency assignment to the Bureau, when should such notification be effected, which characteristics are to be notified, what action should be foreseen after the recording or otherwise of the frequency assignment concerned?

## 3 Regulations applying to the use of frequencies and orbits by satellite networks

The specific procedures setting out the rights and obligations of the administrations in the domain of orbit/spectrum management and providing means to achieve interference-free radiocommunications have been laid down by successive WRCs on the basis of the two main principles referred to above: efficient use and equitable access. In order to put these principles into effect, two major mechanisms for the sharing of orbit and spectrum resources have been developed and implemented:

- *A priori* planning procedures (guaranteeing *equitable access* to orbit/spectrum resources for *future use*), which include:

- the Allotment Plan for the fixed-satellite service using part of the 4/6 and 10 - 11/ 12 - 13 GHz frequency bands contained in Appendix **30B**;
- the Plan for the broadcasting-satellite service in the frequency band 11.7 - 12.7 GHz (Appendix **30**) and the associated Plan for feeder links in the 14 GHz and 17 GHz frequency bands (Appendix **30A**).
- Coordination procedures (with the aim of *efficiency* of orbit/spectrum use and interference-free operation satisfying *actual requirements*), which include:
  - geostationary-satellite networks (in all services and frequency bands) and non-geostationary-satellite networks in certain frequency bands governed by No. **9.11A** procedure, which are subject to advance publication and coordination procedures;
  - other non-geostationary-satellite networks (all pertinent services and certain frequency bands), for which only the advance publication procedure is required before notification.

#### **4 Procedures applying to non-planned services**

Coordination procedures are contained in Article **9** "Procedure for effecting coordination with or obtaining agreement of other administrations". This article contains all elements of the procedures as well as refers to the provisions of Article **7** of Appendix **30** for the coordination of the fixed-satellite service (FSS) and the broadcasting-satellite service (BSS) in the 11.7 - 12.7 GHz band and the application of Article **7** of Appendix **30A** for the coordination of the fixed-satellite service (space-to-Earth and Earth-to-space) and broadcasting-satellite service with frequency assignments to feeder links for broadcasting-satellite stations. Associated with the Article **9** are also Appendix **4**, which specifies the various data that must be furnished in any advance publication or coordination request and Appendix **5**, that contains criteria for identification of administrations with which coordination is to be effected or agreement sought.

The coordination procedure is based on the principle of "first come - first served". Successful coordination of space networks or earth stations gives an international recognition to the use of frequencies by these networks/stations. For such frequency assignments, this right means that other administrations shall take them into account when making their own assignments, in order to avoid harmful interference. In addition, frequency assignments in frequency bands subject to coordination or to a plan shall have a status derived from the application of the procedures relating to the coordination or associated with the plan. The relevant provisions involve three basic steps:

- advance publication (Section I, Article **9**);
- coordination (Section II, Article **9**);
- notification (Article **11**).

##### **4.1 Advance publication information (API) procedure modified by WRC-15**

4.1.1 Before initiating any action under Article **11** in respect of frequency assignments for a satellite network or a satellite system **not subject to the coordination procedure** described in Section II of Article **9** below, an administration administrations, shall send to the Bureau a general description of the network or system for advance publication in the International Frequency Information Circular (BR IFIC) not earlier than seven years and preferably not later than two years before the planned date of bringing into use of the network or system (see also No. **11.44**). The characteristics to be provided for this purpose are listed in Appendix **4**. The notification information may also be communicated to the Bureau at the same time, but shall be considered as having been received by the Bureau not earlier than six months after the date of publication of the advance publication information.

4.1.2 Upon receipt of the complete coordination request information sent under No. **9.30**, the Bureau shall publish, using the basic characteristics of the coordination request, a general

description of the network or system for advance publication in a Special Section of the BR IFIC. The characteristics to be published for this purpose are listed in Appendix 4.

4.1.4 The procedure specifies also the cases in which amendments to the information sent in accordance with the provisions of No. **9.1** shall also be sent to the Bureau as soon as they become available. The use of an additional frequency band, or modification of the orbital location for a space station using the geostationary-satellite orbit, the modification of the reference body or the modification of the direction of transmission for a space station using a non-geostationary-satellite orbit, as well as the use of inter-satellite links of a geostationary space station communicating with a non-geostationary space station which are not subject to the coordination procedure under Section II of Article **9**, will require the application of the advance publication procedure.

4.1.5 Upon receipt of the advance publication, administrations should check whether the planned system is likely to affect their existing or planned systems or stations. Administrations which have any comments should send them to the administration responsible for the planned system, with a copy to the Bureau (No. **9.3**).

4.1.6 When it receives such comments under Sub-Section **IA** of Article **9**, the administration responsible for the planned satellite network and the requesting administration shall endeavour to cooperate in joint efforts to solve any difficulties, with the assistance of the Bureau, if so requested.

#### 4.2 Procedure for effecting coordination of frequency assignments

4.2.1 Coordination is a further step in the process leading up to notification of the frequency assignments for recording in the Master Register. It can be initiated not earlier than six months after the date of receipt by the Bureau of the complete information for advance publication (No. **9.1**). If coordination request is not received within 24 months from the date of the receipt of the API, the advanced publication information will be cancelled under the provisions of No. **9.5D**.

Coordination procedure is a formal regulatory obligation both for an administration seeking to assign a frequency assignment in its network and for an administration whose existing or planned services may be affected by that assignment. An agreement arising from this coordination confers certain rights and imposes certain obligations on the administrations concerned; as such, coordination must be effected in accordance with the relevant regulatory procedures laid down in the Radio Regulations and on the basis of technical criteria either contained therein (Appendix **5**) or otherwise agreed to by the administrations concerned.

4.2.2 The coordination procedure in Section II to Article **9** contains two approaches, according to whether the request for coordination is sent by the requesting administration directly to the identified administrations (earth station/terrestrial station or earth station/earth station (operating in opposite direction of transmission) coordination listed in Nos. **9.15** to **9.19**), or to the Bureau (space network/space network or space station/terrestrial station coordination listed in Nos. **9.7** to **9.14** and the procedure for seeking agreement in No. **9.21**). In the latter case, the publication of the complete information in the BR IFIC by the Bureau is considered as the formal request for coordination whereas, in the former case, the formal coordination request is the one sent directly to the identified administrations and then processed on a bilateral basis by the administrations.

#### 4.3 Requirement and request for coordination

4.3.1 In accordance with the Radio Regulations (No. **9.6**), before an administration notifies to the Bureau under Article **11** or brings into use a frequency assignment to a space station, an earth station intended for communication with a space station, or a terrestrial station within the coordination area of an earth station, it must effect coordination of the assignment, as required, with any other administration whose space, earth or terrestrial station frequency assignments are likely to be affected. The frequency assignments to be taken into account in effecting coordination or seeking an agreement are identified using the criteria in Appendix **5**. The coordination may be undertaken on a "network basis" using the information relating to the space station, including its service area, and the parameters of one or more typical earth stations located in all or part of the

service area; or on the basis of individual frequency assignments to a space station or an earth station.

4.3.2 For coordination cases listed under Nos. **9.7** to **9.14** and **No. 9.21**, the responsible administration shall send to the Bureau the request for coordination together with the appropriate information listed in Appendix **4**. On receipt of the request for coordination, the Bureau will promptly examine the information in terms of completeness and conformity with the Convention, the Table of Frequency Allocations and other provisions of the Radio Regulations (See Rules of Procedures under No.**11.31**).

The Bureau will then examine the information received with a view to identifying any administration with which coordination under Nos. **9.7** to **9.14** and **No. 9.21** may need to be effected.

4.3.3 In the above cases, the procedure of Article **9** (except for the case of No. **9.21**) requires such coordination with any administration responsible for a frequency assignment to a space station, to an earth station that communicates with such a space station, or to a terrestrial station, situated in the same frequency band as the planned assignment, pertaining to the same service or another service to which the band is allocated with equal rights or a higher category of allocation, which:

- is in conformity with the Convention, the Table of Frequency Allocations and other provisions of the Radio Regulations; and
- is recorded in the Master Register with a favourable finding (including registration under No. **11.41**); or
- coordinated under the provision of Article **9**; or
- included in the coordination procedure with effect from the date of receipt by the Bureau of the characteristics specified in Appendix **4**; or
- where appropriate, in conformity with a world or regional allotment or assignment plan and the associated provisions; or
- for terrestrial stations, operating in accordance with the Radio Regulations, or to be so operated within the next three years from the date of publication of the coordination request, and:
  - is considered to affect or be affected, as appropriate, having regard to the threshold levels and conditions given in Tables 5-1 and 5-2 to Appendix **5**.

4.3.4 The threshold levels and conditions given in Tables **5-1** and **5-2** to Appendix **5** differ according to the specific cases of coordination. For example:

- for GSO/GSO (No. **9.7**), coordination criteria is based on coordination arc and/or  $\Delta T/T$  or pfd depending on the band;
- for GSO FSS/GSO BSS involving Appendix **30** coordination is required when the power flux-density (pfd) of the GSO FSS network on the territory of the BSS administration exceeds specific values given in Appendix **4** to Appendix **30**;
- for GSO/non-GSO (Nos. **9.12** and **9.13**), coordination is based on frequency overlap;
- for GSO BSS/terrestrial stations (No. **9.11**) and GSO or non-GSO/terrestrial stations for the frequency bands covered by No. **9.11A** coordination is based on frequency overlap and visibility, if there exists no pfd hard or trigger limit for the particular band.

For frequency bands below 3 GHz (space-to-Earth), in addition to the overlap condition, coordination of GSO or non-GSO systems is required with respect to terrestrial stations if the pfd produced at the Earth's surface (GSO or non-GSO system) exceeds threshold values shown in Annex 1 to Appendix **5**.

4.3.5 Appendix **5** also defines the conditions under which the agreement of an administration may be required under No. **9.21**, and the cases for which no Article **9** coordination is required.

4.3.6 Finally, the Bureau will publish the complete information (Appendix 4 information and, as appropriate, the names of identified administrations with which coordination may need to be effected), in a special section of its BR IFIC. The list of administrations identified by the Bureau under Nos. 9.11 to 9.14 and No. 9.21 is only for information purposes, to help administrations comply with the procedure. Actual administration with which coordination is required is decided based on comments received from administrations within 4 months and are published in CR/D special section. The list of administrations identified under Nos. 9.7 to 9.7B is the formal list of administrations with which coordination is required, subject to provisions of No.9.41 and 9.42. In addition to the administrations, satellite networks are also identified under No. 9.7 and except the band 21.4-22 GHz, procedures of Nos. 9.41 and 9.42 would apply in establishing the final list of administrations and satellite networks that are included in the coordination procedures and published in CR/E special section.

4.3.7 For cases listed in Nos. 9.15 to 9.19 (earth station/terrestrial station coordination or earth station/earth station (operating in opposite direction of transmission) coordination), for which the coordination request is sent directly by the initiating administration to the identified administrations, the administration receiving the request has 30 days from the date of the request to acknowledge receipt of the information. Should the administration fail to respond to the administration within 15 days of reminder of the request sent then it is possible to seek the assistance of the Bureau. Further, if administration does not respond to a request from the Bureau to acknowledge receipt, then it shall be regarded as unaffected and provisions of Nos.9.48 and/or 9.48 would be applied by the Bureau on relevant frequency assignments. The coordination condition in these cases is generally based on the coordination area of an earth station covering the territory of another administration (Appendix 5).

#### 4.4 Action upon a request for coordination

4.4.1 Having received a coordination request, an administration studies the matter with a view to determining the level of interference likely to be caused to frequency assignments of its networks or stations or caused to assignments of the proposed network or station by its own assignments (No. 9.50). Within a total period of four months from the date of the publication of the request for coordination in the relevant special section or the date of dispatch of the coordination data, as appropriate, it shall:

- communicate its agreement to the proposed coordination (Nos. 9.51 and 9.51A); or
- provide to the notifying administration (with a copy to the Bureau) the technical data upon which its disagreement is based, along with its suggestions for resolving the problem (No. 9.52).

4.4.2 If an administration with which coordination is sought under Nos. 9.11, 9.12 to 9.14 or No. 9.21 fails to respond within the four-month period after the publication, this administration shall be regarded as unaffected (No. 9.52C).

4.4.3 The Bureau's assistance can be requested at the coordination stage of the procedure, by either the notifying or an objecting administration, with a view to resolving any difficulties which may arise. In the particular case of coordination requested under No. 9.14, and within the four-month period from the publication, an administration in need of assistance may inform the Bureau that it has existing or planned terrestrial stations which might be affected and request the Bureau to determine the need for coordination. This request shall be considered as a disagreement, pending the results of the analysis by the Bureau of the need for coordination (No. 9.52A).

4.4.4 As indicated above, there is an obligation for the notifying administration to coordinate with any administration which has initiated the coordination process at an earlier stage. However, there is also a provision (No. 9.53) stipulating that both the notifying administration and the objecting administration shall make every possible mutual efforts to overcome any difficulties which may arise in a manner acceptable to the parties concerned. The intent of this provision is to

facilitate the entry of the newcomer and, even though an administration was first in line, encourage concessions to that end on the basis of mutual cooperation.

#### 4.5 Procedure under Nos. **9.7** and **9.11**

The procedure described in Nos. **9.7** and **9.11** is to be used for coordination of frequency assignments to stations in the broadcasting-satellite service (BSS) which are to operate in frequency bands not governed by any plan.

#### 4.6 Procedure under No. **9.21**

The use of space services operating in certain frequency bands is governed by the procedure under No. **9.21**, in addition to coordination under other Article **9** provisions. This supplementary procedure is to be applied in cases where a footnote to the Table of Frequency Allocations requires an agreement with an administration. The proposed assignment may only be deemed to be in conformity with the Table in the context of the footnote concerned after such agreement has been reached. The procedure to be followed is the same as the one described in the above paragraphs. In case all the required agreement could not be reached, it is possible to notify the assignments under the provisions of No. **11.31.1** with respect to the relevant frequency assignments of only those administrations with agreement could not be obtained.

## **5 Notification and recording (Article 11)**

### 5.1 The Master International Frequency Register

The procedure for notification and recording of space network frequency assignments in the Master International Frequency Register (MIFR) is described in Article **11** of the Radio Regulations. The MIFR represents one of the pillars of the international radio regulatory set-up as it contains *all frequency usage notified to ITU*. It should be consulted before selecting a frequency for any new user. For these reasons, *notification of frequency assignments to the Bureau, with a view to their recording in the MIFR, represents an important obligation for administrations, especially in respect to those frequency assignments that have international implications.*

### 5.2 Notification procedures

The process of notification of frequency assignments has been streamlined by the revisions of the RR by all recent WRCs, and the relevant provisions are contained in Article **11**. In order to keep the process workable, the RR specify quite precisely what should be notified, when the notification information is to be submitted to the Bureau and what information has to be submitted.

According to these provisions, any frequency assignment liable to have an international implication has to be notified to the Bureau (*This notice shall reach the Bureau not earlier than three years before the assignments are brought into use*). In other words,

- if an assignment liable to cause interference to existing or future stations in another country or to suffer interference from such stations; or
- if that assignment is to be used for international radiocommunication; or
- if that assignment is subject to the Article **9** coordination procedure or is involved in such a case; or
- if it is desired to obtain international recognition for that assignment; or
- if it is a non-conforming assignment and if the administration wishes to have it recorded for information,

it should normally be notified (submitting its relevant characteristics, as specified in Appendix **4** of the RR) to the Bureau. The Bureau shall publish the notice in PART I-S of the BR IFIC, thereby ensuring that all administrations are informed of the use of the assignments and that they are taken into account in any future planning conducted at the national, regional or international level.

### 5.3 Notification examination by the Bureau and recording in the MIFR



The subsequent processing of a notice varies according to the frequency band and service concerned. Each notice is first examined with respect to its conformity with the Table and the other provisions of the RR (regulatory examination); this examination consists in checking that the assignment (frequency, class of station, notified bandwidth) does indeed correspond to an allocation in the Table or the footnotes thereto and, where appropriate, that it complies with other technical or operating conditions laid down in other articles or appendices of the RR (power limits, authorized classes of emission, minimum elevation angle, etc.). If the result of this examination is *unfavourable* and the administration concerned has not explicitly undertaken that the assignment shall be operated subject to not causing interference to assignments operating in conformity with the RR, making reference to No. **4.4** of the RR, the examination stops there and the notice is returned to the notifying administration after publication of the finding in *PART III-S of the BR IFIC*.

When the result of the first examination (under No. **11.31** of the RR) is *favourable*, the assignment is *recorded in the MIFR*, or examined further, if appropriate, from the viewpoint of its conformity with the coordination procedures (No. **11.32** of the RR) or with a world or regional allotment or assignment Plan (No. **11.34** of the RR).

Following such examinations, the assignment is either recorded in the MIFR and published in *PART II-S of the BR IFIC* (if the finding is *favourable*) or is published in *PART III-S of the BR IFIC* and returned to the administration (if the finding is *unfavourable*). The administrations are normally advised to complete the coordination procedure with the identified administrations, or to apply the relevant Plan modification procedure. However, in some specific cases an administration may resubmit the notice without completing the coordination or Plan modification procedure and the concerned assignment may be recorded in the MIFR under specific conditions.

#### 5.4 Time limits

Most important thing to keep in mind is the regulatory time-limit for bringing a satellite network into use and submitting notices for recording in the MIFR. No. **11.44** stipulates that the notified date of bringing into use of any assignment to a space station of a satellite network shall be no later than 7 years following the receipt of the advance publication information under No. 9.1 in the case of satellite networks or systems not subject to Section II of Article **9** or under No. **9.1A** in the case of satellite networks or systems subject to Section II of Article **9**. WRC-12 introduced further precision and defined bringing into use of a satellite network in GSO as contained in No. **11.44B** which requires that the “ frequency assignment to a space station in the geostationary-satellite orbit shall be considered as having been brought into use when a space station in the geostationary-satellite orbit with the capability of transmitting or receiving that frequency assignment has been deployed and maintained at the notified orbital position for a continuous period of ninety days. The notifying administration shall so inform the Bureau within thirty days from the end of the ninety-day period.” WRC-15 introduced additional precision of bringing into use instructing Bureau that upon receipt of bringing into use information and whenever it appears from reliable information available that a notified assignment has not been brought into use in accordance with No. **11.44** and/or No. **11.44B**, as the case may be, the consultation procedures and subsequent applicable course of action prescribed in No. **13.6** shall apply, as appropriate.

#### 5.5 Responsibilities of the notifying administration after recording in the MIFR

Recording in the MIFR does not mean the end of activities for the notifying administration as regards the concerned frequency assignment. The notifying administration should remain in close cooperation with the licensing authority and satellite operator and any change in the characteristics of the concerned assignment has to be notified to the Bureau so as to be reflected in the MIFR, if necessary following additional coordination with the administrations of other countries concerned.

The notifying administration has also to respond to coordination request of any administration which has initiated the coordination process at a later stage with the objective, on the basis of mutual cooperation, to overcome any difficulties which may arise in a manner acceptable to the parties concerned, as stipulated under No. **9.53**.

Furthermore, the notifying administration should remain in close contact with the monitoring authority so as to check whether the concerned frequency assignment is operated in compliance with the notified characteristics and whether other elements (e.g. frequency tolerance) are kept within the limits prescribed by the RR. The notifying administration should also initiate appropriate monitoring programmes with a view to detecting any operational or technical irregularities in the operation of frequency assignments pertaining to other administrations, and to initiate appropriate actions in this regard, so as to ensure interference-free operation for stations under its jurisdiction.

## **6 The BSS plans and their associated procedures (Appendices 30/30A)**

### **6.1 The BSS and associated feeder-link Plans and Lists**

6.1.1 Appendices **30** and **30A** to the Radio Regulations contain Plans for the broadcasting-satellite service (BSS) in the 12 GHz band and the associated feeder-link Plans in the fixed-satellite service (FSS) in the 14 and 17 GHz bands. These Plans are occasionally referred to as the “BSS and the associated feeder-link Plans” and were established with a view to facilitating equitable access to the geostationary-satellite orbit (GSO) for all countries. In Regions 1 and 3 there are also the Lists of additional uses, which are separated from the Plans and annexed to the Master International Frequency Register (MIFR).

6.1.2 The BSS and associated feeder-link Plans and Lists cover the following frequency bands:

- Region 1: 11.7-12.5 GHz (space-to-Earth);  
14.5-14.8 GHz (Earth-to-space)<sup>1</sup>;  
17.3-18.1 GHz (Earth-to-space);
- Region 2: 12.2-12.7 GHz (space-to-Earth);  
17.3-17.8 GHz (Earth-to-space);
- Region 3: 11.7-12.2 GHz (space-to-Earth);  
14.5-14.8 GHz (Earth-to-space);  
17.3-18.1 GHz (Earth-to-space).

BSS and associated feeder-link assignments in these bands have primary status.

6.1.3 The BSS and associated feeder-link Plans are presented in a tabular form in Articles **10** and **11** of Appendix **30** (hereafter referred to as AP30) and Articles **9** and **9A** of Appendix **30A** (hereafter referred to as AP30A) respectively. The regulatory procedures associated with the Plans are contained in the Articles of those Appendices. They apply to Plan implementation and modification as well as sharing with respect to terrestrial and other space services in the frequency bands of AP30/30A. Several technical annexes exist containing sharing criteria, calculation methods, and technical data relating to the Plans.

6.1.4 The BSS and associated feeder-link Plans are assignment plans. The Plans for Regions 1 and 3 is for national assignments only. In general each country in Region 1 has 10 assignments (channels) and that in Region 3 has 12 assignments (channels) at a single orbital location. Generally, it cannot be changed except under very limited conditions. All other changes such as modifications to assignments to add more channels, change of beam parameters, etc. will be permitted subject to successful application of the coordination procedure of Article **4** of AP30/30A, and once completed will be included in a “List”, called the “Regions 1 and 3 List of additional uses”. Assignments in the List must be compatible with assignments in the Plans.

6.1.5 Proposed modifications to the Region 2 Plan are possible and can only enter the evolving Region 2 Plan after they have satisfied all coordination requirements in accordance with

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<sup>1</sup> For countries outside Europe.

Article 4 of AP30/30A. The Region 2 Plan has direct strappings between feeder-link and downlink assignments.

6.1.6 Characteristics of the national assignments, such as nominal orbital position, ellipse parameters and e.i.r.p. values, are contained in Articles 10 and 11 of AP30 and Articles 9 and 9A of AP30A. More details, like the test points associated to each beam, are included in the SPS database, which is distributed in the BR IFIC (space service) and can be downloaded from the ITU website at: <http://www.itu.int/en/ITU-R/space/plans/Pages/AP30-30A.aspx>

The parameters used in characterizing the Plan can be found in Annex 5 of AP30 and Annex 3 of AP30A. Each assignment in the Plan is based on overall  $C/N$  values of 14 dB 99% of the worst month.

6.1.7 The Regions 1 and 3 List of additional uses was created at WRC-2000. The initial List consisted of satellite networks with:

- notified assignments in conformity with AP30/30A, which had been brought into use and for which the date of bringing into use was confirmed to the Bureau before 1700 hours (Istanbul time) on 12 May 2000; and
- assignments for which the procedures of Article 4 of AP30/30A were successfully completed and for which due diligence information was provided before 1700 hours (Istanbul time) on 12 May 2000, but which had not been brought into use and/or the date of bringing into use had not been confirmed to the Bureau.

There are individual Lists for the downlink and for the feeder-link (14 GHz and 17 GHz). The Lists are separated from the Plans and annexed to the MIFR. Assignments in the Lists must be compatible with assignments in the Plans. The Lists are evolving and are updated and published periodically by the Bureau, e.g. when a new network is added to a List. The detailed characteristics of all the assignments in the List are included in the above-mentioned SPS database.

6.2 Procedure for implementation of Plan or List assignments (Article 5)

6.2.1 The procedure of Article 5 of AP30/30A is applied when an administration notifies to the Bureau the use of its assignments in the appropriate Regional Plans or the Region 1 and 3 Lists using Appendix 4 format.

6.2.2 The Bureau then examines the submission to assure that the information received is complete, that the data elements are in conformity with Appendix 4, that the notified characteristics comply with those of the entries in the Plans or Lists, and the coordination requirements specified in the Remarks column of Article 10 or 11 of AP30 or Article 9 or 9A of AP30A, if any, are satisfied.

6.2.3 If the administration responsible for the Plan or List assignments wants them entered in the Master Register, the notified technical characteristics will have to comply with those listed in the Plans or Lists. The only exception is in limited cases listed in provision 5.2.1 d) of AP30/30A where it is evident that the deviation in its characteristics will not increase its interference potential to other assignments in the Plans or Lists or other services nor claim protection from other assignments in the Plan and/or the Lists.

6.3 Procedures for modifications to the Region 2 Plan or Regions 1 and 3 List (Article 4)

6.3.1 Although these Plans are based on *a priori* frequency assignments, nevertheless there is a possibility to make modifications (changes, additions and cancellations) to the Plans. Modified characteristics can be included in the Region 2 Plan or Region 1 and 3 List after successful application of the relevant procedures of Article 4 of AP30/30A.

6.3.2 The whole process for an assignment entering into the Region 2 Plan or Region 1 and 3 List through the application of Article 4 of AP30/30A can be divided into two stages:

- Stage A: for agreement seeking, relating to a submission under § 4.1.3 and 4.2.6 of AP30/30A and a publication in Part A of Special Section AP30/E/ , AP30A/E or AP30-30A/E/ under § 4.1.5 and 4.2.8 of AP30/30A;

- Stage B: for inclusion into Region 2 Plan or Regions 1 and 3 List of AP30/30A, relating to a submission under § 4.1.12 and 4.2.16 of AP30/30A and a publication in Part B of Special Section AP30/E/ , AP30A/E or AP30-30A/E/ under § 4.1.15 and 4.2.19 of AP30/30A.

### 6.3.3 Procedures for modifications to Region 2 Plan

6.3.3.1 The modification procedures for the Region 2 Plan are stipulated in Section 4.2 of Article 4 of AP30/30A. The submission in Appendix 4 format shall be sent not earlier than 8 years and not later than 2 years before the planned date of bringing into use the assignments of the proposed network. The Bureau examines the submission to assure that the information received is complete. The notifying administration has to provide missing information and clarification if requested by the Bureau. When the submission is considered as complete, its formal date of receipt is established. The Bureau treats the submissions in sequence of receipt.

6.3.3.2 In order to assess whether or not a proposed modification would affect other assignments in the Region 2 Plan, the Bureau has to evaluate the impact on the reference situation of all assignments in the Region 2 Plan using the criteria in § 2 and 3 of Annex 1 of AP30 and AP30A respectively. Additional technical examinations are necessary to determine whether other services (terrestrial, non-planned BSS and fixed-satellite services) and the appropriate Regions 1 and 3 Plan and List assignments that share the same frequency band are affected using the criteria in § 3, 4, 6 and 7 of Annex 1 of AP30 and § 5 of Annex 1 of AP30A. These examinations identify administrations whose services are considered to be affected. This information is published in Part A of Special Section AP30-30A/E/ of the International Frequency Information Circular (BR IFIC).

6.3.3.3 The administration proposing to include the modified assignment in the Plan then has to seek the agreement of those administrations whose services/assignments are considered to be affected and who have commented within the four-month period. When no comment is received within the four-month period, it is considered that the administration has agreed to the assignments of the proposed network. After the four-month period, the Bureau will publish the list of administrations whose agreements are required in Part D of Special Section AP30-30A/E/.

6.3.3.4 If agreements have been reached with all objecting administrations or the characteristics are modified to ensure that the identified networks of other administrations are no longer affected, the administration proposing the new or modified assignment can submit the final characteristics of the assignments in Appendix 4 format in order to include them in Region 2 Plan and may continue with the appropriate procedure under Article 5. In cases where an agreement cannot be reached between administrations, there are provisions in paragraphs 4.2.20 to 4.2.21D of Article 4 to enable the matter to proceed further by allowing the assignment to be provisionally included in the Region 2 Plan on a non-interference basis. In order to verify whether the coordination requirements have been fulfilled for successful completion of the Article 4 procedure, the Bureau performs a series of examinations under § 4.2.15 of Article 4 of AP30/30A. The technical examinations verify whether objecting administrations are excluded from the list of affected administrations and that no additional interference is imposed on an administration that has not objected or has previously agreed after an objection. Once the Article 4 procedure is completed, the modification is added to the Plan. If the proposed assignments are not included in the Region 2 Plan or not brought into use within 8 years from the date of receipt of a submission under § 4.1.3 and 4.2.6 of AP30/30A, they will be cancelled.

### 6.3.4 Procedures for modifications to Regions 1 and 3 List

6.3.4.1 The Regions 1 and 3 Plan, however, cannot be changed except under very limited conditions. All other changes such as modifications to assignments, additional channels, change of beam parameters, etc., are permitted subject to the procedures in Section 4.1 of Article 4 and, if successful, are included in the Regions 1 and 3 List of additional uses.

6.3.4.2 Similarly to modification to Region 2 Plan the submission in Appendix 4 format shall be sent not earlier than 8 years and not later than 2 years before the planned date of bringing into

use the assignments of the proposed network. When the submission is considered as complete, its formal date of receipt is established.

6.3.4.3 In order to assess whether or not a proposed modification would affect other assignments, the Bureau has to apply the criteria in § 1 of Annex 1 of AP30 and § 4 of Annex 1 of AP30A (EPM and power flux-density limits) to all entries in the Regions 1 and 3 Plan and List. Additional technical examinations are necessary to determine whether other services (terrestrial, non-planned BSS and fixed-satellite services) and the Region 2 Plan that share the same frequency band are affected. These examinations identify administrations whose services are considered to be affected using the criteria in § 3, 4 and 6 of Annex 1 of AP30 and § 5 and 6 of Annex 1 of AP30A. This information is published in Part A of Special Section AP30/E/ and/or AP30A/E/ of the BR IFIC.

6.3.4.4 Similarly to modification to Region 2 Plan, the administration proposing to include a new or modified assignment in the List then has to seek the agreement of those administrations whose services/assignments are considered to be affected and who have commented within the four-month period. When no comment is received within the four-month period, it is considered that the administration has agreed to the assignments of the proposed network. After the four-month period, the Bureau will publish the list of administrations whose agreements are required in Part D of Special Section AP30/E/ and/or AP30A/E/.

6.3.4.5 If agreements have been reached with all objecting administrations or the characteristics are modified to ensure that the identified networks of other administrations are no longer affected, the administration proposing the new or modified assignment can submit the final characteristics of the assignments in Appendix 4 format in order to include them in Regions 1 and 3 List and may continue with the appropriate procedure under Article 5. In cases where an agreement cannot be reached between administrations, there are provisions in paragraphs 4.1.17 to 4.1.20 of Article 4 to enable the matter to proceed further by allowing the assignment to be provisionally included in the List on a non-interference basis. In order to verify whether the coordination requirements have been fulfilled for successful completion of the Article 4 procedure, the Bureau performs a series of examinations under § 4.1.11 of Article 4 of AP30/30A. The technical examinations verify whether objecting administrations are excluded from the list of affected administrations and that no additional interference is imposed on an administration that has not objected or has previously agreed after an objection.

6.3.4.6 Once the Article 4 procedure is completed, the assignment is added to the List. Assignments in the List have a maximum period of operation of 15 years. However, this may be extended for another 15 years if all the characteristics of the assignment remain unchanged. If the proposed assignments are not included in the Regions 1 and 3 List or not brought into use within 8 years, they will be cancelled.

6.3.5 Space Operation Functions (SOF) in support of the operation of planned BSS networks

Article 2A of AP30/30A stipulates a coordination mechanism for the use of the guard bands of AP30/30A to provide Space Operation Functions (SOF) in support of the operation of planned BSS networks. To use the guard bands advance publication information (API) is not required to be submitted. SOF assignments are to be coordinated with other assignments using the provisions of Nos. 9.7, 9.17, 9.17A, 9.18 and the associated provisions of Section II of Article 9, the provisions of § 4.1.1 d) 4.1.1 e) 4.2.3 d) or 4.2.3 e) of Article 4 of AP30 and § 4.1.1 d) of Article 4 of AP30A or the provisions of Article 7 of AP30/30A, as appropriate. SOF assignments are notified under Article 11.

## **7 The FSS plan and its associated procedures (Appendix 30B)**

7.1 The FSS Plan and the associated List of assignments

7.1.1 Appendix 30B of the Radio Regulations contains the Plan for the fixed-satellite service (FSS) in the 6/4 GHz frequency bands and in the 13/10-11 GHz frequency bands. This Plan is also

referred to as the “ FSS Plan” and was established with a view to facilitating equitable access to the geostationary-satellite orbit (GSO) for all countries.

The FSS Plan covers the following frequency bands:

- 4 500-4 800 MHz (space-to-Earth);
- 6 725-7 025 MHz (Earth-to-space);
- 10.70-10.95 GHz (space-to-Earth);
- 11.20-11.45 GHz (space-to-Earth);
- 12.75-13.25 GHz (Earth-to-space),

resulting in a total bandwidth of 800 MHz in each direction.

FSS assignments in these bands have primary status.

7.1.2 The FSS Plan is contained in Appendix **30B** (hereafter referred to as AP30B) together with its associated regulatory procedures. Several annexes exist containing criteria, calculation methods, and technical data relating to the Plan. The FSS Plan is an allotment plan. Each allotment in the Plan comprises:

- a nominal orbital position;
- a bandwidth of 800 MHz (uplink and downlink) as listed in paragraph 1 above;
- a service area for a national coverage.

Characteristics of the national allotments, such as nominal orbital position, ellipse parameters and power-density values, are contained in Article **10** of AP30B. More details, like the test points associated to each beam, are included in the AP30B database, which is distributed in the BR IFIC (space service) and can be downloaded from the ITU website at:

<http://www.itu.int/en/ITU-R/space/plans/Pages/AP30B.aspx>

The parameters used in characterizing the Plan can be found in Annex 1 of AP30B. Each allotment in the Plan is based on  $C/N$  values of 21 dB and 15 dB for uplink and downlink respectively under rain-faded conditions and availability of 99.95% for the 6/4 GHz frequency bands and 99.9% for the 13/10-11 GHz frequency bands. In addition, the Plan has been prepared with a view to ensuring for each allotment an overall aggregate  $C/I$  value of 21 dB and a single-entry  $C/I$  value of 25 dB under free space path loss conditions.

7.2 Procedure for implementation of allotment in the Plan or introduction of an additional system

7.2.1 Before the orbital position and frequency resources of an allotment can be utilized by a satellite system, the national allotment has to be converted into an assignment through the application of the procedures of Article **6** of AP30B. The assignments are then recorded in the AP30B List (hereafter referred to as List), and they are entitled to protection against systems received by the Bureau at later date.

7.2.2 Additional systems can also be included in the List after successful application of the relevant procedures of Article **6** of AP30B. In the context of this Appendix, an additional system is a system for which the assignments are not the result of conversion of an allotment into assignments. When an administration submits an additional system, the allotment of that administration in the Plan is retained.

7.2.3 The whole process for an assignment entering into the List through the application of Article **6** of AP30B can be divided into two stages:

- Stage A: for coordination/agreement seeking, relating to a submission under § 6.1 of AP30B and a publication in Special Section AP30B/A6A/ under § 6.8 of AP30B;
- Stage B: for inclusion into the List of AP30B, relating to a submission under § 6.17 of AP30B and a publication in Special Section AP30B/A6B/ under § 6.23 of AP30B.

The detailed characteristics of all the assignments in the List are included in the above-mentioned AP30B database.

7.2.4 After being entered in the List of AP30B, an assignment can be notified in accordance with Article 8 of AP30B for its inclusion into the Master Register.

7.3 Procedure for inclusion of assignment in the List (Article 6)

7.3.1 The procedure of Article 6 of AP30B is applied when an administration submits to the Bureau either: the conversion of an allotment into an assignment, the introduction of an additional system or the modification of an assignment in the List that has already been brought into use. The submission shall be sent not earlier than 8 years and not later than 2 years before the planned date of bringing into use the assignments of the proposed network. The Bureau examines the submission to assure that the information received is complete and the data elements are in conformity with the requirements of Appendix 4 and the Table of Frequency Allocations. The notifying administration has to provide missing information and clarification if requested by the Bureau. When the submission is considered as complete, its formal date of receipt is established. The Bureau treats the submissions in sequence of receipt.

7.3.2 The Bureau first examines the submission against the limits in Annex 3 of AP30B as well as other limits contained in Articles 21 and 22 of the Radio Regulations. Following a favourable finding, the Bureau further evaluates the impact of the proposed assignments on the reference situation of allotments in the Plan, the assignments in the List and the assignments that the Bureau has previously examined, using the method and criteria of Annex 4 of AP30B. This examination under § 6.5 of AP30B identifies administrations whose networks are considered to be affected. The Bureau also identifies the administrations whose territories have been partially or wholly included in the service area of the assignments under examination in accordance with § 6.6 of AP30B. The submitted information and the names of the identified administrations are published in a Special Section AP30B/A6A/ of the BR IFIC together with the relevant AP30B database.

7.3.3 The administration whose networks are identified as being potentially affected (under § 6.5 of AP30B) should send its comments to the Bureau and to the notifying administration (directly or through the Bureau) within four months following the publication of the AP30B/A6A/ Special Section. When no comment is received within the four-month period, it is considered that the administration has not agreed to the assignments of the proposed network unless an assistance under § 6.13 to § 6.15 of AP30B is requested by the notifying administration.

7.3.4 The notifying administration may request the above-mentioned assistance in respect of an administration that is considered to be affected but has not commented within the above-mentioned four-month period. If the identified administration fails to reply within 30 days after the Bureau's reminder, it shall be deemed to have agreed to the proposed assignments.

7.3.5 The comments from the administrations whose territories are included in the service areas of the published assignments can be sent at any time during or after the above-mentioned four-month period. The notifying administration must obtain explicit agreement from those administrations before the assignments are included in the List.

7.3.6 For the purpose of entering into the List, the administration proposing the new or modified assignments has to either reach agreement with affected administrations or modify the characteristics of its assignments to ensure that the identified networks of other administrations are no longer affected. The final characteristics of the proposed assignments should be submitted to the Bureau in accordance with § 6.17 of AP30B together with the names of administrations with which agreements have been reached. The Bureau checks if required agreements from the identified administrations are obtained (examinations under § 6.19 and § 6.21 of AP30B). If not, an unfavourable finding is given to the assignments and the whole notice is returned to the administration. In the examination under § 6.22 of AP30B the Bureau uses the method and criteria in Annex 4 of AP30B to identify the newly affected networks due to the changes of characteristics. If all the examinations lead to favourable findings, the submitted assignment is entered in the List

and is published in a Special Section AP30B/A6B/ of the BR IFIC. If the examination leads to unfavourable findings, the submitted notice is returned. However, if a notice is returned due to unfavourable findings under Annex 4 of AP30B examination with respect to assignments, but the findings with respect to the allotments in the Plan are favourable, the submitted assignments can be provisionally entered in the List after resubmission of the notice by the notifying administration, together with a commitment indicating that its assignments shall not cause unacceptable interference to nor claim protection from the assignments for which agreement still needs to be obtained (see A.19a of Appendix 4).

7.3.7 If the proposed assignments are not included in the List within 8 years from the date of receipt of a submission under § 6.1 of AP30B, they will be cancelled.

7.4 Procedure for inclusion of assignment in the MIFR (Article 8)

7.4.1 Any assignment for which the relevant procedure of Article 6 of AP30B has been successfully applied shall be notified to the Bureau in accordance with Article 8 of AP30B not earlier than 3 years before the assignment is brought into use.

7.4.2 The Bureau first examines the notification to verify its compatibility with the Table of Frequency Allocations, the Plan, and other relevant provisions of the Radio Regulations and then examines its conformity with the characteristics of the corresponding assignment in the List. A new assignment is included in the Master Register and published in Parts I-S and II-S of the BR IFIC if the examinations lead to favourable findings. If the examinations lead to unfavourable findings, the assignment is published in Part III-S, and returned.

7.4.3 If an assignment is not notified and brought into use within the eight-year regulatory period, the assignment in the List will be cancelled. If the cancelled assignment is the result of a conversion from an allotment, this allotment shall be reinstated with the same characteristics as the cancelled assignment, except for its service area which should be the national territory.

7.5 Procedure for the addition of a new allotment for a new Member (Article 7)

7.5.1 An administration that has joined the Union as a new Member State and does not have a national allotment in the Plan or an assignment stemming from the conversion of an allotment can obtain a national allotment in application of Article 7 of AP30B. That administration shall submit its request for an allotment to the Bureau, with the following information:

- the geographical coordinates of not more than 20 test points for determining a minimum ellipse to cover its national territory;
- the height above sea level of each of its test points;
- any special requirement which is to be taken into account to the extent practicable.

7.5.2 The request for a new allotment is processed ahead of submissions received under Article 6 of AP30B which have not yet been examined. The Bureau proposes appropriate technical characteristics and associated orbital positions for the new allotment and informs the requesting administration, who should respond to the Bureau's proposal within 30 days.

7.5.3 Upon receipt of a reply on the selection of an orbital position and technical parameters from the requesting administration, the Bureau verifies its compatibility with allotments, assignments in the List and the assignments which have been examined as well as the conformity with the Table of Frequency Allocations and other provisions of the Radio Regulations.

7.5.4 The new allotment is then included in the Plan and published in a Special Section (AP30B/A7/) of BR IFIC if the above-mentioned examinations lead to favourable findings.

7.5.5 If affected administrations are identified in this process, the corresponding agreements are required. If the calculated *C/I* values of the new allotment are below the required criteria, the requesting administration has to accept the excess degradation. Otherwise, the request for a new allotment in the Plan will be treated as a submission under Article 6 of AP30B and processed ahead of other Article 6 submissions which have not yet been examined by the Bureau.



## 8 Administrative due diligence (Resolution 49 (WRC-12) and Resolution 552 (WRC-12))

8.1 Following one of the recommendations in the report by the Director of the BR on **Resolution 18 (Kyoto, 1994)**, WRC-97 adopted **Resolution 49**, which has been modified by subsequent WRCs, on the administrative due diligence applicable to some satellite communication services as a means of addressing the problem of reservation of orbit and spectrum capacity without actual use. This resolution will apply to any satellite network of the fixed-satellite service, mobile-satellite service or broadcasting-satellite (except in 21.4-22 GHz band) service in frequency bands subject to coordination under Section II of Article 9, as well as modifications of the Appendices 30 and 30A Plans and additional uses in the Appendix 30B planned services.

8.2 For the above cases, an administration shall send to the Bureau due diligence information relating to the identity of the satellite network (name of the satellite, notifying administration, reference to the special section publication, frequency range, name of the operator, orbital characteristics) and the spacecraft manufacturer (name of the manufacturer, date of execution of the contract, delivery window, number of satellites procured); this information is to be submitted as early as possible before bringing into use, but must in any case be received before the end of the seven-year period established as a time-limit for bringing into use a satellite network. Before notifying its satellite network for recording in the MIFR, the administration shall also send to the Bureau information relating to the launch services provider (name of the launch provider, date of execution of the contract, anticipated launch or in-orbit delivery window, name of the launch vehicle, name and location of the launch facility).

8.3 After verifying its completeness, the Bureau will publish the information in a special section of the BR IFIC. Should an administration fail to supply the complete required due diligence information in time, the networks concerned shall be cancelled (cancellation of the coordination request or modification to the Plan or entry in the MIFR) and shall not be recorded in the MIFR.

8.4 **Resolution 552 (WRC-12)** contains due diligence procedure for BSS in the band 21.4-22 GHz. The Resolution is entitled “Long term access to and development in the band 21.4-22 GHz in Region 1 and 3”. The content of this resolution is somewhat similar to **Resolution 49** and new data elements are required to be submitted by administration under this Resolution, which are listed in Annex 2 to the resolution. Under this resolution administrations have to submit due diligence information not only when the space station is brought into use for the first time but also submit information about any further change, like deorbiting of the satellite or moving of the satellite to another orbital location. Further, this Resolution requires ITU to provide an ITU-ID for each of physical satellite network brought into use in this band and this satellite ID remains same for the life time of the satellite irrespective of the orbital location of the satellite or its responsible administration till it is deorbited.

## 9 Cost recovery

9.1 In accordance with **Resolution 88 (rev Marrakech, 2002)** of the Plenipotentiary Conference and Council **Decision 482**, cost recovery is to apply to satellite network filings received by the Bureau after 7 November 1998. Additionally the WRC-03 and WRC-07 adopted provisions referring to **Decision 482**, as amended, under which a satellite network filing is cancelled if payment is not received in accordance with the provisions of this decision.

9.2 The cost recovery for satellite network filings is consistent with the general principles for cost recovery adopted in **Resolution 91 (Minneapolis, 1998)**, in particular *resolves* 4 and the need to ensure that no more than the actual costs of providing products and services are recovered: <http://www.itu.int/ITU-R/go/space-cost-recovery/en>

9.3 It's applicable for the production of the special sections of the BR IFIC (space services) concerning advance publication(API), and their associated requests for coordination (Article 9 of the RR) and requests for modification of the space service plans and lists contained in Appendices

**30, 30A and 30B** to the RR, received by the Bureau after 7 November 1998. It's also applicable to all satellite network filings concerning notification for recording of frequency assignments in the MIFR (Article **11** of the RR, Article **5** of Appendices **30/30A** to the RR and Article **8** of Appendix **30B** to the RR) received by the Bureau on or after 1 January 2006 if, they refer to advance publication or modification of the space service plans or lists, as appropriate, received on or after 19 October 2002 and for all requests for the implementation of the fixed-satellite service plan (former Sections IA and III of Article **6** of Appendix **30B** to the RR) if, they have been received by the Bureau on or after 1 January 2006.

9.4 Each Member State shall be entitled to the publication of special sections or parts of the BR IFIC (space services) for one satellite network filing each year without the charges referred to above. Each Member State in its role as the notifying administration may determine which network shall benefit from the free entitlement.

9.5 Publication of special sections for the amateur-satellite service, the notification for recording of frequency assignments for earth stations, for the conversion of an allotment into an assignment in accordance with the procedure of former Section I of Article **6** of Appendix **30B**, the addition of a new allotment to the plan for a new Member State of the Union in accordance with the procedure of Article **7** of Appendix **30B** and submissions under *resolves 3 and 4* of **Resolution 555 (WRC-12)** shall be exempt from any charges.

## **10 Conclusions**

“With a concerted effort, we can reduce, and to the extent possible remove, all obstacles impeding the development and bringing into operation of new satellite networks; we have to think carefully about how we can continue to use and improve satellite access to help connect the unconnected, and make the world a better and a fairer place for all”

## **11 Acronyms**

ITU - International Telecommunication Union - <http://www.itu.int/>

CS - Constitution of the ITU

CV - Convention of the ITU

RR - ITU Radio Regulations

Administration - Any governmental department or service responsible for discharging the obligations undertaken in the CS and CV of the ITU and in the Administrative Regulations

Bureau - Radiocommunication Bureau of the ITU

ITU-R - Radiocommunication Sector of the ITU

WRC - World Radiocommunication Conference of the ITU

GSO - Geostationary-Satellite Orbit

Non-GSO - Non-Geostationary-Satellite Orbit

Table - Table of Frequency Allocations as contained in Article 5 of the RR

MIFR - Master International Frequency Register of the Bureau

BR IFIC - International Frequency Information Circular of the Bureau

## **12 References**

ITU Constitution, Collection of the Basic Texts of the International Telecommunication Union adopted by the Plenipotentiary Conference, <https://www.itu.int/pub/S-CONF-PLEN-2011>

ITU Radio Regulations, Edition of 2016 <http://www.itu.int/pub/R-REG-RR/en>

[Final Acts WRC-15: http://www.itu.int/pub/R-REG-RR/en](http://www.itu.int/pub/R-REG-RR/en)

Preface to the BR IFIC (Space services): <http://www.itu.int/ITU-R/go/space-preface/en>

ITU-R Space Services Department (SSD): <http://www.itu.int/ITU-R/go/space/en>

Space Network List (SNL) online: <http://www.itu.int/ITU-R/go/space/snl/en>

Space Network System (SNS) online: <http://www.itu.int/sns/>

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