

UPDATES to the

Rules of Procedure

(Edition of 2012)

approved by the Radio Regulations Board

Revision (Circular No.)	Date	Part	AR/AP	RR No. or other reference ¹	Pages to be removed	Pages to be inserted
1 See CR/339	September 2012	A1	AR5	5.316A*	5	5 (rev.1)
				5.327A**		
				5.397	7-8	7-8 (rev.1)
				5.399		
				5.410*		
				5.444B**	13-15	13-15 (rev.1)
				5.446A		
				Receivability	1, 1.1**, 1.2 2 b)	1-3
AR21	21.16, 3	2	2 (rev.1)			
AP18	AP18*	1-2	-			
AP30	An. 1, 1 b)	14-16	14-16 (rev.1)			
AP30A	An. 1, 4 b)	13-16	13-15 (rev.1)			
AP30B	6.3 a), 2.3 6.16 Art. 8, 8.17**	2-6	2-7 (rev.1)			
		Table of content			1	1 (rev.1)
2 See CR/342	November 2012	A1	AR9	9.2	1-2	1-2 (rev.2)
				9.11A-1	10-11	10-11 (rev.2)
				9.11A-2	16-17	16-17 (rev.2)
				9.21**-9.27	19-22	19-22 (rev.2)
				9.41-9.42**	25	25 (rev.2)
			AR11	11.43A**	19-23	19-23 (rev.2)
		11.44**				
		11.44B**				
		11.47**				
		11.49**				

Revision (Circular No.)	Date	Part	AR/AP	RR No. or other reference ¹	Pages to be removed	Pages to be inserted
3 See CR/346	April 2013	A1	AR9	Council decision 482	1-2	1-1bis (rev.3), 2
			AR11	Appendix 4 (Annex2, A4)***,	1-2	1-1bis (rev.3), 1ter, 2
				11.31	6	6 (rev.3)
			Resolution 51	1-2.2.2	1	-
		A6	GE89	4	2	2 (rev.3)
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4 See CR/351	August 2013	C		1.6 bis	2-6	2-6 (rev.4)
5 See CR/355	January 2014	A1	AR5	5.132A, 5.145A, 5.161A 5.399	3-4 7-8	3-3bis (rev.5)-4 7 (rev.5)-8
			AR11	11.41, 11.41.2 11.44****	19-20 21-22	19 (rev.5)-20 21 (rev.5)-22
			AR21	Table 21-2	1-2	1-1bis (rev.5)-2
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¹ The new Rules or modifications to the existing Rules of Procedure take effect immediately or as otherwise indicated.

* Effective date of suppression: 1 January 2013.

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5.132A

(ADD RRB13/64)

This provision limits the application of the radiolocation service to oceanographic radars operating in accordance with Resolution **612 (Rev.WRC-12)**. The *resolves* part of this Resolution enters into the category “the other provisions” referred to in Nos. 11.31 and is subject to examinations by the Bureau.

Resolves 6 of Resolution **612 (Rev.WRC-12)** specifies the separation distances to be respected for oceanographic radars for “rural” and “quiet rural” areas for the land, sea or mixed propagation paths, unless prior explicit agreements from affected administrations are obtained. Concerning “rural” and “quiet rural” areas, the Bureau has no means to identify whether emissions from oceanographic radars reach a “rural” or “quiet rural” area at the border of another country since the Bureau does not have the relevant topographical data to determine these areas.

As the Bureau has no means for the identification of rural or quiet rural areas, the Board decided that for examination of the notified frequency assignment to a station in the radiolocation service from the view point of its conformity with *resolves* 6 of Resolution **612 (Rev.WRC-12)** the Bureau shall use the separation distances for quiet rural paths listed in Columns 3 and 5, as appropriate, of the Table of *resolves* 6.

5.145A

(ADD RRB13/64)

The comments and decision made under the Rule of Procedure concerning No. **5.132A** apply.

5.149

There is no allocation to radio astronomy in the bands 73-74.6 MHz (Regions 1 and 3), 1 330-1 400 MHz, 3 260-3 267 MHz, 3 332-3 339 MHz, 3 345.8-3 352.5 MHz, 6 650-6 675.2 MHz, 22.01-22.21 GHz, 22.81-22.86 GHz, 23.07-23.12 GHz, 31.2-31.3 GHz, 36.43-36.5 GHz, 168.59-168.93 GHz, 171.11-171.45 GHz (except for KOR), 172.31-172.65 GHz (except for KOR), 173.52-173.85 GHz (except for KOR) and 195.75-196.15 GHz. Notification of frequency assignments to radio astronomy stations in the bands 73-74.6 MHz (Regions 1 and 3), 1 330-1 400 MHz, 3 260-3 267 MHz, 3 332-3 339 MHz, 3 345.8-3 352.5 MHz, 6 650-6 675.2 MHz, 22.01-22.21 GHz, 22.81-22.86 GHz, 23.07-23.12 GHz, 31.2-31.3 GHz, 36.43-36.5 GHz, 168.59-168.93 GHz, 171.11-171.45 GHz (except for KOR), 172.31-172.65 GHz (except for KOR), 173.52-173.85 GHz (except for KOR) and 195.75-196.15 GHz will be considered by the Bureau not to be in conformity with the Table of Frequency Allocations.

5.161A

(ADD RRB13/64)

The comments and decision made under the Rule of Procedure concerning No. **5.132A** apply.

5.164

Literal interpretation of this provision for an assignment to a land-mobile station in a country listed in the footnote would require recording:

- a symbol to indicate that the assignment is primary with respect to the countries listed in this footnote,
- a symbol to indicate that the assignment is secondary with respect to the broadcasting service for other countries,
- a symbol to indicate that the assignment is primary with respect to fixed and mobile services in countries listed in Nos. **5.165** and **5.171**,
- a symbol to indicate that the assignment is primary with respect to the amateur service in countries listed in No. **5.169**,
- etc.

The Board decided to have such assignments recorded with Symbol R in Column 13B2 and a reference to the footnote concerned in Column 13B1.

5.172

The French overseas departments and communities in Region 2 are the following geographical areas:

Guadeloupe, Saint Barthélemy, the French part of Saint Martin, French Guyana, Martinique and Saint Pierre and Miquelon.

5.233

1 The band mentioned in this provision is allocated in the body of the Table for Region 3 to three services, i.e. fixed, mobile and broadcasting. The Board interpreted this situation as follows:

- a) The successful application of the No. **9.21** procedure to the space services will give them the same status as the fixed and mobile services, i.e. primary.
- b) In respect of the broadcasting service, irrespective of the result of the application of the procedure of the No. **9.21** procedure, the space services can be operated only under No. **5.43**.

2 In accordance with the comments made under No. **5.164**, when an assignment is primary with respect to one service (or country) and secondary with respect to another service (or country), it will be recorded with Symbol R in Column 13B2 indicating this situation and a reference to the appropriate footnote in Column 13B1.

5.257

1 Space telemetry is limited to measurements made in the spacecraft which may be:

- either made by a sensor to detect phenomena outside the spacecraft; or
- related to the functioning of the spacecraft.

The first type normally pertains to services such as the earth exploration-satellite service or the space research service, while the second type pertains to the space operation service. This provision does not indicate the service to which the additional allocation is made. The Board understands it as being limited to space telemetry in the space operation service. Consequently, frequency assignments for telemetry (space-to-Earth) in the space operation service in the band 267-272 MHz may be used on a secondary basis without any condition. They may obtain a primary status within the territory of the notifying administration following the successful application of the procedure of No. **9.21**.

2 The qualification “in their countries” can be easily checked when an earth station is concerned, but it is unclear for a space station. The Board considers that this provision will apply to those space stations having a service area mainly limited to the territory of the notifying administration.

5.281

With respect to the French overseas departments and communities in Region 2, see comments under the Rules of Procedure concerning No. **5.172**.

5.291

This footnote is similar to No. **5.233**; the same Rule applies.

For the second type, it is not clear whether it is spectral mean, or temporal mean, or spatial mean. The Board decided that, on a provisional basis, and until the relevant ITU-R Recommendation is available, the Bureau use a spectral mean e.i.r.p. density when applying this provision. This spectral mean e.i.r.p. will be derived from the mean power density of an assignment, which is obtained from its total power divided by its necessary bandwidth and multiplied by 4 kHz.

5.366

This provision is considered an additional allocation to the aeronautical radionavigation-satellite service. The comments made under No. **5.49** apply. However, when the Special Section is to be published it shall contain an indication that the assignment is for use on a worldwide basis for “airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities”.

5.376

The comments made under the Rules of Procedure concerning No. **5.357** apply.

5.399

The Board instructed the Bureau when recording assignments to stations of the radiodetermination-satellite service operating in the frequency band 2 483.5-2 500 MHz to which this footnote applies to place Symbol R in Column 13B2 and a reference to footnote 5.399 in Column 13B1. (MOD RRB13/64)

5.415

1 In this provision, the allocation “is limited to national and regional systems”. The Board concluded that a national system is a system having a service area limited to the territory of the notifying administration. As a consequence of this, the regional system to which reference is made shall be considered to be an aggregate of two or more national systems; they shall be limited to the territories (which are not necessarily restricted to bordering countries) of the administrations concerned and they shall be notified by one of these administrations on behalf of all the administrations concerned. When the allocation is made to more than one Region, a regional system may cover territories in those Regions for which the allocation exists. The Board reached this conclusion keeping in mind No. **5.2.1**, relating to the interpretation of the word “regional” without a capital “R”.

2 In accordance with this provision, the fixed-satellite service is limited for use by national or regional systems in the band 2 500-2 690 MHz in Region 2 and in the bands 2 500-2 535 MHz and 2 655-2 690 MHz in Region 3. Only those assignments which satisfy the following conditions shall be considered to be in conformity with the Table of Frequency Allocations:

- a) The service area for a regional system is within the Region concerned, i.e. in Region 2 only in the band 2 535-2 655 MHz or in Regions 2 and 3 in the other bands between 2 500 and 2 690 MHz and:
 - i) When an administration submits a coordination request for a service area that covers its national territory and extends beyond it, the responsible administration shall submit at the same time the list of administrations that agreed to form the regional system and the service area shall be formed accordingly. If no agreement is obtained, the service area shall be limited to its national territory;
 - ii) When an administration submits a coordination request for a service area that does not include its national territory but only territories of other administrations, it shall submit at the same time the list of administrations that agreed to form the regional system and the service area shall be formed accordingly. If no agreement is obtained, the relevant assignments shall be considered not to be in compliance with the Table of Frequency Allocations and the finding shall be unfavourable.

recorded under No. **4.4**. There are other provisions (e.g. Nos. **11.32A**, **11.33** and **11.41**) which may lead, in given circumstances, to recording when the coordination has not been successfully effected.

11.41 and 11.41.2

(ADD RRB13/64)

The provisions of No. **11.41.2** require the notifying administration, when submitting notices in application of No. **11.41**, to indicate to the Bureau that efforts have been made to effect coordination with those administrations whose assignments were the basis of the unfavourable findings under No. **11.38**, without success. In the absence of such an indication, a resubmission under No. **11.41** after a notice is returned under No. **11.38** shall be considered as not receivable and returned to the administration.

11.43A

1 Modification of a space network may take place during the coordination process; this case is covered in the comments under the Rules of Procedure concerning Nos. **9.27** (§ 3), **9.58**, **11.28** and **11.32**.

2 With respect to applicable procedures for cases of modifications to assignments to satellite networks which are recorded in the Master Register, WARC Orb-88 decided that, in the case of geostationary satellite networks, any modification to the basic characteristics of an assignment, in the application of No. **11.43A** (former RR No. **1548**), should be subject only to the coordination procedure (Section II of Article **9**). On the basis of this decision, the Bureau does not require an administration to recommence the advance publication procedure, for a modification of a frequency assignment recorded in the Master Register, unless the modification concerns a change of orbital location by more than $\pm 6^\circ$ (see also the Rule under No. **9.2**). If the modification concerns the notification of assignment(s) in frequency band(s) not covered by other assignment(s) already recorded in the Master Register, No. **11.43A** does not apply and it will be processed under No. **11.2** or **11.9**, as appropriate.

The purpose of the examination under No. **11.43A** is to determine whether the coordination requirements remained unchanged or, where appropriate, whether the probability of harmful interference has not increased (see also the Rules of Procedure concerning Nos. **11.28** and **11.32**). In these cases, the provisions of No. **11.43B** apply with the effect of maintaining unchanged the status (Findings) and the date of receipt of the assignment. If, due to the modifications, new coordination requirements are identified by comparing the level of interference (such as $\Delta T/T$) resulted from consideration of the initial characteristics and that of modified characteristics, then an unfavourable Finding shall be given and the Form of Notice shall be returned to the notifying administration. The notifying administration should be requested to apply Section II of Article **9**. Findings with respect to No. **11.32** are determined on the basis of the coordination agreements effected to meet the new coordination requirements. In the case, where the provisions of Nos. **11.32A** and **11.33** are applicable and the examinations show an increase in the probability of harmful interference compared with that which resulted from the initial examination, then the Finding is unfavourable and the notice shall be returned in accordance with provision No. **11.38**. See also the Rules of Procedure under No. **11.43B**.

3 The reference in Nos. **11.44**, **11.44.1**, **11.47** and **11.48** to the seven year regulatory period should be considered as five years from the date of receipt by the Bureau of the notification of the modification referred to in No. **11.43A**. (See also the comments made under the Rules of Procedure concerning No. **11.44B**). (ADD RRB12/61)

4 Modification of an earth station by changing the associated space station or the associated beam so far as No. **11.32** is concerned is covered in the comments under the Rules of Procedure concerning No. **11.32** in § 2.2.2 and 2.2.3. (MOD RRB12/61)

5 When the modification of a frequency assignment to an earth station is examined in application of Nos. **9.15**, **9.17** and **9.17A**, the coordination distance is calculated in each azimuth and the coordination under Nos. **9.15**, **9.17** and **9.17A** is required only with those countries on whose territory the coordination distance is increased owing to the modification (see comments under the Rules of Procedure concerning No. **9.27** (§ 3.1 and 3.2)). (MOD RRB12/61)

6 When the modification of a frequency assignment is examined in application of No. **9.19**, the power flux-density of the transmitting station (terrestrial station or FSS earth station) with modified characteristics is calculated at the edge of the BSS service area and the coordination under No. **9.19** is required only with those countries where the power flux-density limit at the edge of the BSS service area is increased as the result of modification of characteristics of the transmitting station and is above the permissible level (see comments under the Rules of Procedure concerning No. **9.27** (§ 3.1 and 3.2)). (MOD RRB12/61)

11.43B

1 This provision specifies that a change in the characteristics shall be examined when appropriate with respect to Nos. **11.32** to **11.34**, as appropriate.

1.1 In the case of the examination of space networks under No. **11.32** or **11.32A**, the comments under No. **11.43A** indicate the cases which should not be considered as modifications but as first notifications (with new date of receipt). These examinations should be carried out by checking the application of § 6 a) to 6 c) of Appendix 5. In cases where there is no calculation method and/or criteria to check the application of these provisions (e.g. coordination requirement for Nos. **9.12** and **9.13**), the Bureau shall treat these modifications as new notifications of assignments. Number **11.43B** refers to an increase in the probability of harmful interference. The probability of harmful interference (*C/I*) is calculated in the examination of Nos. **11.32A** and **11.33** only. The examination of No. **11.32** is made using the threshold/condition specified in Appendix 5.

1.2 It should be noted that in the examination under No. **11.32A**, assignments published under No. **9.38** or **9.58** but not yet notified are also taken into account. Therefore, for practical reasons, in application of this provision, these assignments shall be also taken into account in addition to assignments already recorded in the Master Register.

2 This provision makes reference to the “original date of entry in the Master Register”. The Board considers this date to be the date of receipt of the original notice. However, with respect to the notices received prior to 1 January 1999, the Board considers this date equivalent to the date recorded in Column 2A, 2B, or 2D, as appropriate.

11.43C

The Board concluded that the resubmitted assignments will be recorded only if the Finding with respect to No. **11.31** remained favourable.

11.44

(MOD RRB12/61)

1 The information concerning the date of bringing into use is to be provided in the following occasions:

- in AP4 notice forms when submitted under No. **11.15**; and
- in the confirmation of the date of bringing into use under Nos. **11.44.2**, **11.47** and **11.44B**.

It should be noted that the information concerning the date of bringing into use shall be provided for each assignment or group of assignments. (See also the Rules of Procedure concerning No.**11.44B**).

2 The Board considered possible means to ensure that information regarding the bringing into use of frequency assignments to a satellite network under Nos. **11.44/11.44B** corresponds to the deployed space station of the geostationary satellite orbit, with the capability of transmitting or receiving in the assigned frequencies . The Board concluded that whenever it appears from reliable information available that an assignment has not been brought into use in accordance with Nos. **11.44/11.44B**, the provisions of No. **13.6** shall apply. (ADD RRB13/64)

11.44B

(ADD RRB12/61)

1 This provision concerns the bringing into use of a frequency assignment to a space station in the geostationary-satellite orbit. In order to consider such a frequency assignment as having been brought into use, the notifying administration has to inform the Bureau within thirty days from the end of the ninety-day period during which a space station in the geostationary satellite orbit with the capability of transmitting or receiving that frequency assignments has been deployed and maintained continuously at the notified orbital location.

2 The Board carefully studied the relationship between the various provisions related to bringing into use of frequency assignments for a GSO satellite network under Nos.**11.43A**, **11.44**, **11.44.2**, **11.44B** and **11.47** and concluded that the Bureau will apply the following procedure.

3 No. **11.44** establishes the seven-year time limit for bringing frequency assignments to a space station into use and states that the Bureau shall cancel those frequency assignments which are not brought into use within the required seven-year regulatory period. A frequency assignment to a space station in the geostationary-satellite orbit shall be considered as having been brought into use under No.**11.44B** only when the notifying administration informs the Bureau within thirty day from the end of the ninety-day period specified in that provision. The Bureau will record the date of the commencement of the ninety-day period defined in No. **11.44B** as the notified date of bringing into use (see No. **11.44.2**). The confirmation of the bringing into use of an assignment not yet recorded in the MIFR will be published in PART II-S of the BR IFIC and/or posted on the BR web page maintained for that purpose, as appropriate. In the absence of the confirmation information under No.**11.44B** at the end of the one hundred and twenty-day period after the end of the period provided under No.**11.44** (i.e., ninety days after the seven-year time limit plus thirty days), the Bureau shall cancel the assignments provisionally recorded in the MIFR under No.**11.44** and/or delete the relevant special sections under No.**11.48**, as appropriate.

4 Frequency assignments for which an administration has submitted notification information for recording in the MIFR without submitting the mandatory information required under provision No.**11.44B**, will be recorded provisionally in the MIFR. Thereafter, at the end of the period provided under No. **11.44**, the Bureau shall act in accordance with the provisions of No.**11.47** and/or No.**11.44B**.

11.47

The reference in No. **11.47** to No. **11.44** and its regulatory period should be considered as five years from the date of receipt of a notice of a change referred to in No. **11.43A**. (See also the comments made under the Rules of Procedure concerning No. **11.43A** and No. **11.44B**)
(MOD RRB12/61)

11.49 and 11.49.1

1 Suspended assignments

1.1 Under the provisions of No. **11.49**, as revised by WRC-12, the Board understands that an administration may inform the Bureau of the suspension of the use of a frequency assignment to a space station for a period not exceeding three years and that during this period the frequency assignment shall still continue to enjoy the protection acquired by virtue of the coordination agreements already obtained. The suspension period of up to three years shall apply to requests for suspension of frequency assignments of a space station received by the Bureau on or after 01.01.2013. (MOD RRB12/61)

1.2 The Board decided that the procedure described below shall apply. The procedure will only be valid for suspended assignments which are not modified before being brought back into use.

2 Recording of a suspension of use

2.1 When the Bureau is informed, either under No. **11.49** or in response to an inquiry under No. **13.6**, that the use of a frequency assignment to a space station recorded in the Master Register is suspended, this information is published in the relevant Part of the BR IFIC and posted on the BR web page maintained for that purpose (in order to inform all administrations) and the entry in the Master Register will be amended to include the expected date of resumption of use indicated by the notifying administration. Whenever the use of a recorded frequency assignment to a space station is suspended for more than six months, the notifying Administration has the responsibility to inform the Bureau, as soon as possible, but no later than six months from the start date of the suspension. When it is determined, via an inquiry from the Bureau under No. **13.6**, that an assignment has not been in use for more than 6 months, the issue shall be addressed under the procedures for No. **13.6** with the understanding that an untimely notice may not be relied upon to extend the suspension period beyond the period provided for in No. **11.49**, and without prejudice to whatever actions the Board may otherwise deem appropriate under No. **13.6**.

Rules concerning

ARTICLE 21 of the RR

Table 21-2

(ADD RRB13/64)

Table **21-2** specifies the frequency bands that are shared with equal rights between space services, on the one hand, and the fixed and mobile service, on the other hand, where the terrestrial station is subject to power limits specified in provision Nos. **21.2** to **21.5A**. These power limits are verified during processing frequency assignments by the Bureau under “other provisions” mentioned in No.**11.31** that are mandatory for verification during regulatory examination.

WRC-12 allocated the frequency band 24.75-25.25 GHz to the fixed-satellite service in the Earth-to-space direction in Region 1. As a result, this band is shared with equal rights between the fixed-satellite service (Earth-to-space) and the fixed service; however, this situation is not reflected in Table **21-2**. Recognizing the need for a consistent approach in protection of the fixed-satellite service in Regions 1 and 3, the Board decided that the power limits specified in Nos. **21.3** and **21.5** shall apply to the frequency assignments of the fixed service in the band 24.75-25.25 GHz in Region 1.

21.11

1 When the agreement of an administration concerned is not obtained, the assignment is not in conformity with the Radio Regulations. In order to identify the administrations concerned, the Bureau shall calculate a nominal contour based in all azimuths on the limits specified under No. **21.8** and compare it with the appropriate contour resulting from the notified e.i.r.p. and the antenna diagram. In any azimuth where the second contour exceeds the first one, an agreement under this provision is required with any administration having a territory which lies within the contour. The communication to the Bureau of the agreement of this administration is required for the formulation of a favourable Finding under No. **11.31**.

2 In accordance with this provision, any frequency assignment having an e.i.r.p. that exceeds the limits by more than 10 dB will receive an unfavourable Finding under No. **11.31**.

21.14

Elevation angles lower than 3° would create a high value of the e.i.r.p. towards the horizon. The Board concluded that this provision is to be used together with Section III of Article 21. This means the following:

Irrespective of the e.i.r.p. of the earth station, an elevation angle lower than 3° is subject to the agreement of the administrations concerned. In the case of receiving earth stations, to identify the administrations concerned, a nominal coordination contour is drawn at a 3° elevation angle and compared with the contour for the notified elevation angle. In any azimuth where the second contour exceeds the first one, an agreement under this provision is required with any administration having a territory which lies within the coordination area. The Bureau shall formulate a favourable Finding under No. 11.31 only when it is informed of the formal agreement of these administrations.

21.16

Application of power flux-density (PFD) limits to steerable beams

1 Use of steerable beams is becoming widespread. PFD values produced by assignments in steerable beams often exceed the applicable hard PFD limits for some or all positions of those beams. In these cases, administrations tend to state that PFD limits will be met and sometimes provide appropriate technical description as to how it would be done.

2 For the purpose of transparency and to set an upper limit on the acceptable extent of the PFD control and avoid subjectivity in the evaluation of the PFD control method, the Board concluded that until the time that a relevant ITU-R Recommendation is available, the following Rule will apply on a provisional basis.

3 In cases where frequency assignments in steerable beams of a satellite network, except the frequency assignments under the Appendix **30B**, exceed the applicable hard PFD limits, the Bureau will establish a favourable Finding only if: (MOD RRB12/60)

- a) there is at least one position of the steerable beam where the applicable PFD limits are met without any reduction of the notified power density; and
- b) the administration states that the applicable PFD limits will be met by applying a method, the description of which should be submitted to the Bureau. One possible example of such a method is described in the Annex to this Rule.

ANNEX 1

Method to be applied to meet the regulatory PFD limits when steerable beams are used

Where steerable beams are used in satellite networks, operational measures may be needed to adjust space station transmit power density so that the applicable regulatory PFD limits for specific beam positions are met. In such cases, administrations may apply the following method for each specific steerable beam position and for each assignment in such beam:

Step 1: For a specific beam position, produce a plot of beam gain contours on a map of the Earth that shows equal elevation lines.

Step 2: Using the notified power density of the particular assignment, determine if PFD produced at beam peak or any other point on the Earth exceeds the applicable PFD limits. If so, determine the maximum amount of PFD excess (i.e. find the point with largest excess over the limit).

Step 3: Adjust, i.e. reduce, the operational power density of the assignment by at least the maximum amount determined in Step 2 above, so that PFD produced on any point on the Earth meets the applicable PFD limit.

For non-GSO satellites in elliptical orbits, its distance towards points on the Earth also changes as the satellite travels along the orbit. To find the maximum amount of PFD excess in this case, Steps 1 and 2 above need to be repeated for various orbital positions of the satellite.

The application of this method is illustrated in the following example. Assume that the steerable beam is positioned as shown in the figure below.

An. 3 and An. 4

1 WRC-07 revised Appendix **30B** and introduced power flux-density limits in Annex 3 of Appendix **30B** in order to protect FSS allotments and assignments from interference which may be caused by FSS assignments located outside the orbital arcs defined in Annex 4. Although the reference bandwidth of these limits in Annex 3 is 1 MHz, the maximum power densities which are used for the calculation of power flux-densities are submitted in dB(W/Hz) averaged over the necessary bandwidth (C.8.h) and 4 kHz (C.8.b.2) in accordance with Appendix **4**. The discrepancy between the reference bandwidth for the limits and the averaging bandwidth for submission might lead to the overestimation of interference when a few narrow-band carriers are used, e.g. carriers for tracking, telemetry and telecommand. On the other hand, a narrow-band carrier might cause significant interference to other narrow-band carriers if these carriers are accidentally overlapping with each other.

2 In order to avoid the overestimation of interference from narrow-band carriers into wideband carriers caused by integrating the power of narrow-band carriers from 1 Hz to 1 MHz and to provide a mechanism to resolve unexpected interference between narrow-band carriers, the Board decided on the following course of action.

2.1 In the case when:

a) the maximum power density, in dB(W/Hz), averaged over the worst 1 MHz band, supplied to the input of the antenna taking into account the number of carriers and power level of each carrier to be operated within the averaging bandwidth of 1 MHz;

is lower than;

b) the maximum power density, in dB(W/Hz), averaged over the necessary bandwidth (C.8.h);

2.2 the power density value as described in 2.1 a) above shall be provided by a notifying administration together with the relevant Appendix **4** information;

2.3 the Bureau shall use the submitted power density value as described in 2.1 a) above for its examination under Annexes 3 and 4 and publish it in the relevant Special Section;

2.4 those operating assignments whose power density value as described in 2.1 b) is higher than that in 2.1 a) shall not cause harmful interference to, or claim protection from, prior assignments recorded in the MIFR.

Annex 4

(ADD RRB13/64)

Criteria for determining whether an allotment or an assignment is considered to be affected

2.2

1 In order to adequately protect the existing networks in their entire service area, WRC-07 introduced the examination over the service area under § 2.2 of Annex 4 of Appendix **30B**.

2 As indicated in footnote 19 to § 2.2 of Annex 4 of Appendix **30B**, the reference values within the service area are interpolated from the reference values on the test points. The following interpolation formula and condition shall be used to calculate the interpolated values at grid points⁴ within the service area:

$$V_{Eg} = \frac{\sum_{h=1}^{Nt} R_{Th} \times (d_{Th})^{-2}}{\sum_{h=1}^{Nt} (d_{Th})^{-2}} \quad (1)$$

where:

- Th*: test point number h of the wanted downlink service area;
- Eg*: point number g of the grid of examination points on the wanted downlink service area;
- Nt*: total number of test points;
- d_{Th}*: distance between the test point *Th* and the grid point *Eg*;
- R_{Th}*: single entry *C/I* reference value (dB) at the test point *Th*;
- V_{Eg}*: interpolated single entry *C/I* reference value (dB) at the grid point *Eg*.

If the value $(R_{Th} - ((C/N)_{d,Th} - (C/N)_{d,Eg}))$ is lower than R_{Th} , then $(R_{Th} - ((C/N)_{d,Th} - (C/N)_{d,Eg}))$ shall be used in (1) instead of R_{Th} ,

where:

- $(C/N)_{d,Th}$: the downlink *C/N* value at test point *Th*;
- $(C/N)_{d,Eg}$: the downlink *C/N* value at grid point *Eg*.

3 If the interpolated value V_{Eg} is higher than $(C/N)_{d,Eg} + 11.65$ dB, $(C/N)_{d,Eg} + 11.65$ dB shall be used as the reference value for grid point *Eg*. Otherwise, the interpolated value is the reference value.

⁴ The service area is regularly covered by a grid of points so that the average distance between points is set to a value proportional to the area size, with a maximum of 600 km and a minimum of 100 km. To ensure good coverage of irregularly shaped areas, points are also added on the border of the service area.

Annex 2**Technical elements and criteria used in the development of the Plan
and the implementation of the Agreement****Appendix 2.1
Section A2.1.8.1**

(ADD RRB13/64)

This Section deals with the mixed path interpolation factor A used for calculating the field strength for path crossing multiple propagation zones. The interpolation factor A is a function of basic interpolation factor A_0 whose value is determined by reading from the curve in Figure A.2.1-2. This may result in different interpretations of A_0 values. Such situation could lead to different field strength values calculated for path crossing multiple propagation zones and therefore different list of administrations potentially affected by proposed modifications to the Plans. Therefore, the Board concluded that the basic interpolation factor $A_0(F_s)$ as shown in Fig. A.2.1-2 shall be calculated using the following formula:

$$A_0(F_s) = 1 - (1 - F_s)^{2/3}$$

The application of this formula is consistent with the method adopted by RRC-06 Conference, recommended in Recommendation ITU-R P.1546 and currently used by the Bureau in implementing the GE06 Agreement.

**Appendix 3.1
Table A3.1-3**

This Table also applies to the geographical areas XGZ and XWB.

**Appendix 3.1
Table A3.1-8**

This Table also applies to the geographical area AOE, except channels 4 and 5.

Appendix 3.3

Section A.3.3.4 of this Appendix provides information on the protection ratios for analogue television. However, this section does not provide any information on the protection ratios for the case when the analogue television is interfered with by assignments in other primary terrestrial services. Calculations requested in application of § 4.2.4.11 and 4.2.4.12 of the Agreement shall be made by using Recommendation ITU-R SM.851-1, for the cases covered by this Recommendation. For the other cases not covered by that Recommendation, the pertinent ITU-R Recommendations may be used.

Annex 3
Table 3

Data for assignments to stations of other primary terrestrial services

No. 7.1 of this Table specifies that, for the application of Article 4 of the Agreement, the regular hours (UTC) of operation of the frequency assignment (cross-referenced as item 10B in Appendix 4 of the RR) are mandatory if used as a basis to effect coordination with another administration (character “C”). On the other hand, this data item is indicated as mandatory for the application of Article 5 of the Agreement (character “X”). Therefore, for the examinations under § 5.2.2 of the Agreement, where the regular hours of operation are mandatory, the Bureau needs to ascertain that the notified hours of operation are compliant with those resulting from the successful application of the procedure contained in § 4.2 of the Agreement. In view of the above, the Board concluded that the item “regular hours (UTC) of operation of the frequency assignment” would need to be considered as mandatory for all submissions under Article 4 of the Agreement for assignments to stations of other primary terrestrial services.

Annex 4**Section I: Limits and methodology for determining when agreement with another administration is required****2.1**

Step 3 of this Section specifies that any assignment in the other primary service is selected for consideration, if it belongs to an administration within the 1 000 km contour, provided that the assignment is contained in the List or the coordination procedure under Article 4 of the GE06 Agreement for its inclusion into the List has already been initiated. The Board concluded that Bureau shall take into account only those eligible frequency assignments in other primary services that have frequency overlap with relevant broadcasting assignment/allotment (i.e., the proposed modification to the Plan).

2.2

This Section specifies the general methodology for constructing the coordination contours for the application of the coordination procedure referred to in § 4.2 of the Agreement. Given the fact that the frequency assignments in the other primary service (OPS) include transmitting and receiving stations, the methodology takes account of the impact of the transmitting station in the OPS to the broadcasting service, as well as the likely impact of the broadcasting service to the receiving stations in the OPS. Therefore, this Section specifies the need for constructing separate coordination contours for the same assignment: for the transmitting stations and for the receiving stations. This Section further specifies that, for identification of affected administrations, the larger of the two contours is to be taken into account.

Given the variety of situations which could be covered by assignments in OPS, there may be situations where the constructed coordination contours for the transmitting stations and for receiving stations of the same assignment are not overlapped or partially overlapped. Therefore, the Board decided that for the cases where the coordination contours for the transmitting stations and for receiving stations of the same assignment are not overlapped or partially overlapped, the combined result of the two coordination contours is to be taken into account for the identification of affected administrations.

5.1.2

This Section indicates Tables A.1.2 to A.1.8 of Appendix 1 to this Section as tables that contain the coordination trigger field-strength values for protection of other primary terrestrial services, applying the procedure of Article 4 of the GE06 Agreement (construction of coordination contours). However, § A.2 to A.4 of Appendix 1 to Section I, which include Tables A.1.2 to A.1.8, do not provide information on the trigger values to be used for protection of other primary terrestrial services from analogue television assignments. Such values are necessary for the application of the procedure of Article 4 of the GE06 Agreement (see § 4.1.2.8 *a*) and 4.1.2.3). Calculations requested in application of § 4.1.2.8 *a*) of the Agreement shall be made using the pertinent ITU-R Recommendations and the indications therein. Recommendations ITU-R F.758-4, ITU-R F.759, and ITU-R SM.851-1 are to be used in this regard. As Recommendation ITU-R F.758-4 does not contain information relating to