



## *Radiocommunication Bureau*

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Circular Letter  
**CCRR/40**

27 April 2009

### **To Administrations of Member States of ITU**

**Subject:** Draft Rules of Procedure

#### **To the Director-General**

Dear Sir/Madam

Please find enclosed proposals for the addition and modification of some Rules of Procedure (Edition of 2009) related to the Annexes 3 and 4 of Appendix **30B** to the Radio Regulations and the treatment of specific and/or typical earth stations pertaining to a satellite network under the procedure of No. **9.21**.

In accordance with No. **13.17** of the Radio Regulations, these proposals are made available to administrations for comment before being submitted to the RRB pursuant to No. **13.14**. As indicated in No. **13.12A d)** of the Radio Regulations, any comments that you may wish to submit should reach the Bureau **not later than 7 June 2009**, in order to be considered at the 51st meeting of the RRB, scheduled for 6-10 July 2009. All e-mail comments should be sent to: [brmail@itu.int](mailto:brmail@itu.int).

Yours faithfully,

Valery Timofeev  
Director, Radiocommunication Bureau

#### **Annexes: 2**

#### **Distribution:**

- Administrations of Member States of the ITU
- Members of the Radio Regulations Board
- Director and Heads of Department of the Radiocommunication Bureau

## ANNEX 1

### Rules concerning Appendix 30B to the RR

#### ADD

<b>An. 3 and An. 4</b>
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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 arcs defined in Annex 4. Although the reference bandwidth of these limits is 1 MHz, the maximum power density which is used for calculation of power flux-density is 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**. This discrepancy between the reference bandwidth for the limits and the averaging bandwidth for submission might lead to overestimation of interference when a few narrow-band carriers e.g. carriers for tracking, telemetry and telecommand, are used. 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 overestimating interference from narrow-band carriers to wideband carriers by integrating the power of narrow-band carriers from 1 Hz to 1 MHz while providing 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 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 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 b) is higher than that in a) shall not cause harmful interference to, or claim protection from, prior assignments recorded in the MIFR.

*Reasons: Following a request from the Administration of Canada, the 49th meeting of the RRB (1 to 5 December 2008) noted the difficulty in the application of the Radio Regulations (WRC-07) relating to examination of power flux-density limits under Annex 3 of Appendix 30B with respect to narrow-band carriers for filings submitted under Article 6 given the information required under Appendix 4 and concluded that additional information was needed to more accurately calculate the power flux-density. Taking into account “instructs the Radio Regulations Board 2” of Resolution 149 (WRC-07), the RRB instructed the Bureau to prepare a Rule of Procedure for the examination of filings under Annex 3 of Appendix 30B for consideration at the 51st meeting of the Board to address this difficulty.*

*In response to the instructions of the RRB, the draft Rule is prepared taking into account the following technical and regulatory aspects.*

*During WRC-07 the power flux-density limit in Annex 3 was established to protect assignments/allotments outside the coordination arc based on the power density of the allotments in  $\text{dB}(W/(m^2 \cdot \text{Hz}))$  averaged over the necessary bandwidth and converted in  $\text{dB}(W/(m^2 \cdot \text{MHz}))$  by adding 60 dB. The maximum power density value in  $\text{dB}(W/\text{Hz})$  averaged over the necessary bandwidth (C.8.h) is also used to protect allotments/assignments within the coordination arc in application of Annex 4.*

*In this regard, the power density used for examination under Annexes 3 and 4 shall be the same to establish the compatibility among assignments and allotments.*

*When narrow-band carriers like those for tracking, telemetry and telecommand are used in accordance with No. 1.23, the submitted assignments in accordance with Appendix 4 might receive an unfavourable finding under Annex 3 and identify unrealistic coordination requirements under Annex 4.*

*Interference to the broadband carriers both inside and outside the coordination arc will be evaluated accurately if the maximum power density, in  $\text{dB}(W/\text{Hz})$ , averaged over the worst 1 MHz band, supplied to the input of the antenna taking into account the numbers of carriers and power level of each carrier to be operated within the averaging bandwidth of 1 MHz is used for calculating the pfd in  $\text{dB}(W/(m^2 \cdot \text{MHz}))$ .*

*Harmful interference to the narrow-band carriers inside and outside the coordination arc can easily be avoided by shifting carriers slightly. However, emission characteristics and assigned frequency can be known only at the stage of notification under Article 8. In addition there is no criterion to be used for establishing coordination requirements between those narrow-band carriers. Therefore, it would be more reasonable for those narrow-band carriers to be operated under a condition not to cause harmful interference and not to claim protection from harmful interference. Administrations concerned would not have difficulty to resolve harmful interference, if it happens, for those narrow-band carriers.*

*It should be noted that interference to terrestrial services from submitted FSS assignments will be evaluated using the power flux-density calculated using the maximum power density submitted in  $\text{dB}(W/\text{Hz})$  averaged over 4 kHz (C.8.b.2).*

*The draft Rule is prepared in order to make possible the operation of narrow-band carriers like those for tracking, telemetry and telecommand while placing a mechanism to avoid harmful interference.*

*Effective date of application of the modified Rule: immediately after the approval of the Rule.*

## ANNEX 2

### **Application of No. 9.21 to earth stations in respect of terrestrial stations and other earth stations operating in the opposite direction of transmission**

#### **Modification of the Rule of Procedure concerning No. 9.21**

Coordination of an earth station under Nos. **9.15**, **9.17** and **9.17A** is effected with countries fully or partly covered by its coordination area. Agreement under No. **9.21** for an earth station is sought from countries fully or partly covered by its “agreement area”. In accordance with Appendix **5**, both the coordination area and “agreement area” are constructed using the same calculation method and parameters, those of Appendix **7**, and are thus the same and therefore the same administrations are identified as being potentially affected. Assignments to be taken into account in the coordination process are specified in paragraph 1 of Appendix **5**. Those to be taken into account in seeking agreement are specified in paragraph 2 of Appendix **5**. However, this paragraph 2, more specifically 2a)i), refers back to paragraph 1. So, assignments to be taken into account and constituting a valid reason for initial disagreement under No. **9.52** are the same in both cases.

As can be seen, the processes of earth station coordination under Nos. **9.15**, **9.17** and **9.17A** and of seeking agreement under No. **9.21** are substantially the same. However, they are initiated in different ways. Under No. **9.29**, request for coordination of an earth station is sent by the requesting administration directly to the identified administrations, without the involvement of the Bureau. On the other hand, seeking agreement under No. **9.21** is initiated through the Bureau in accordance with No. **9.30**. Under the current Section 3 of the Rule of Procedure concerning No. **9.21**, this is always done for a satellite network in respect of other satellite networks and for the space station of that satellite network in respect of terrestrial services. However, the procedure of No. **9.21** for earth stations needs to be separately requested and by each individual administration that is part of the service area of the satellite network and on whose territory these earth stations are located. Currently, very few administrations initiate through the Bureau the process under No. **9.21** for earth stations while they regularly carry out the earth station coordination on a bilateral basis. The end result may be that an earth station has been coordinated with all relevant administrations but would have had an unfavourable finding under No. **11.31**, since the agreement process under No. **9.21** was never initiated. There is also the following multiplicative effect of the current Rule. When the service area of the satellite network covers, e.g. 20 countries (which is often the case), all 20 administrations would need to initiate the No. **9.21** process through the Bureau and at the same time carry out earth station coordination in a bilateral manner and, if the process is carried out for specific earth stations, the number of requests would be further multiplied by the number of such earth stations; the Bureau would need to publish the same number of CR/C and CR/D Special Sections.

The Bureau believes that it would be more rational and economical, and in the best interest of administrations, to simplify the above described overly complex duality in the applicable procedures by carrying out the two coordination processes in parallel, at the same time, and directly between administrations. The modification of the Rule provided below is drafted with this in mind; it removes the above described complexity and provides useful guidance to administrations to carry out both processes in parallel.

## MOD

<b>9.21</b>
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- 1 Notification under Article 11 before the completion of the procedure of No. 9.21 (NOC)**
- 2 Secondary services (MOD RRB08/47) (NOC)**
- 3 Coordination of a satellite network**

When an administration communicates Appendix 4 data (AP4/II Notice Forms) for a satellite network to initiate the coordination procedure of No. 9.21, the Bureau will act under Nos. 9.36 to 9.38 for that satellite network with respect to other satellite networks and for the space station of that satellite network with respect to terrestrial services, as appropriate.

~~If the administration requests that No. 9.21 be also initiated for earth stations of the satellite network, the request shall be accompanied with the AP4/III Notice Forms. The Bureau will then establish coordination and/or "agreement" areas, as appropriate, for specific and/or typical earth stations, the administration on whose territory these earth stations are located will establish the "agreement area", which is the same as the earth station coordination area, and shall send the request for agreement under No. 9.21, preferably together with the earth station coordination request, to administrations whose territory is fully or partly covered by the "agreement area", with a copy to the Bureau. The provisions of Nos. 9.52 and 9.52C remain valid for this bilateral process under No. 9.21. At the notification stage, the Bureau will check the existence of agreements under No. 9.21 when carrying out the examination under No. 11.31, on the territory of the requesting administration, and publish the information under No. 9.38. In case horizon elevation data were not provided, as well as in the case of typical earth stations, a value of 0° will be assumed by the Bureau.~~

*Reasons: The reasons are explained in the introduction to the modification of the Rule.  
Effective date of application of the modified Rule: immediately after approval of the Rule.*