

Radiocommunication Bureau (BR)

Circular Letter CCRR/65

27 April 2020

# To Administrations of Member States of the ITU

## Subject: Draft rules of procedure to reflect the decisions of WRC-19

At its 83<sup>rd</sup> meeting, the Radio Regulations Board (RRB) considered the impact of WRC-19 decisions on the current Rules of Procedure and agreed on the schedule for the approval of draft new and modified rules of procedure contained in the Document <u>RRB20-2/1</u> submitted to the 84<sup>th</sup> meeting of the Board. Accordingly, the Bureau prepared a set of draft new or modified rules of procedure annexed to this Circular Letter:

- Annex 1, draft new rule of procedure on No. 5.441B;
- Annex 2, suppression of the existing rule of procedure on No. 5.510;
- Annex 3, modification to the existing rule of procedure on the receivability of forms of notice;
- Annex 4, modification to the existing rule of procedure on No. 9.11A;
- Annex 5, modification to the existing rule of procedure on No. 9.19;
- Annex 6, modification to the existing rule of procedure on No. **11.31**;
- Annex 7, suppression of the existing rules of procedure on § 2A.1.2 and Annex 4 of Appendix **30A**;
- Annex 8, modification to the existing rules of procedure on §§ 6.5 and 6.6 of Article 6 and on § 2.2 of Annex 4 of Appendix **30B**.

In accordance with No. **13.17** of the Radio Regulations, these draft rules of procedure are made available to administrations for comments 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 **8 June 2020**, in order to be considered at the 84<sup>th</sup> meeting of the RRB, scheduled for 6 – 15 July 2020. Comments should be sent either by telefax to +41 22 730 5785 or by email to <u>brmail@itu.int</u>.

Mario Maniewicz Director

Annexes: 8

Distribution:

- Administrations of Member States of ITU

- Members of the Radio Regulations Board

#### **Rules concerning**

#### ARTICLE 5 of the RR

•••

ADD

5.441B

This provision stipulates, *inter alia*, that before an administration brings into use an IMT station in the mobile service in the frequency band 4 800-4 990 MHz, it shall ensure that the power flux-density (pfd) produced by this station does not exceed  $-155 \text{ dB}(W/(m^2 1 \text{ MHz}))$  produced up to 19 km above sea level at 20 km from the coast, defined as the low-water mark, as officially recognized by the coastal State. Resolution **223 (Rev.WRC-19)** applies.

Considering that this provision and Resolution **223 (Rev.WRC-19)** do not specify the propagation model to be used for the calculation of the pfd produced by IMT stations in the band 4 800 - 4 990 MHz, the Board decided that Recommendation ITU-R P.528-4, for 1 % of time, is to be used for this calculation.

**Reasons:** WRC-19 approved the modification of No. **5.441B**. Given the fact that a propagation model is required to calculate the pfd produced by IMT stations and that the path profile is mainly ground-to-air, it is proposed to use Recommendation ITU-R P.528-4, for 1 % of time, for the calculation of this pfd limit.

*Effective date of application of the rule: immediately after the approval of the rule.* 

#### **Rules concerning**

#### ARTICLE 5 of the RR

SUP



**Reasons:** The use of the band 14.5-14.8 GHz for BSS feeder-links in the FSS (Earth-to-space) in Region 2 and the coordination of those assignments and the ones subject to Appendix **30A** in that frequency band is clarified in the following provisions modified by WRC-19: 4.1.1d) of Article 4 of Appendix **30A**, Section 6 of Annex 1 to Appendix **30A**, Article 7 of Appendix **30A** and Section 2 of Annex 4 to Appendix **30A**. Therefore, the rule is no longer necessary.

5

# Rules concerning

# Receivability of forms of notice generally applicable to all notified assignments submitted to the Radiocommunication Bureau in application of the Radio Regulatory Procedures\*

# **1** Submission of information in electronic format

### MOD

#### 1.1 Space services

The Board noted the requirement for mandatory electronic filing and submission of comments/objections and requests for inclusion or exclusion specified in the *resolves* of Resolutions\_55 (Rev.WRC-1519) and 908 (Rev.WRC-15). It also noted that capture and validation software had been made available to administrations by the Bureau, including software to submit information required in Annex 2 of Resolution 552 (Rev.WRC-1519) and in the Attachment to Resolution 553 (Rev.WRC-15). Accordingly, all information indicated in the *resolves* of Resolution 55 (Rev.WRC-1519), in Annex 2 of Resolution 552 (Rev.WRC-1519) and in the Attachment to Resolution 553 (Rev.WRC-15) under § 8 and § 9, shall be submitted to the Bureau in electronic format (except graphical data which can still be submitted in paper form) which is compatible with the BR electronic notice form capture software (SpaceCap\_and GIMS) and comments/objections software (SpaceCom)<sup>1</sup>, using the ITU web interface "e-Submission of satellite network filings" available at https://www.itu.int/itu-r/go/space-submission.

**Reasons**: The proposed changes to this rule of procedure reflect the fact that graphical data cannot be submitted in paper format any longer, following the modification of Resolution **55** by WRC-19.

*Effective date of application of the rule: immediately after approval.* 

 <sup>\*</sup> Note: WRC-15 took the decision related to the RoP on the Receivability of forms of notice during the 8<sup>th</sup> Plenary, Par. 1.39 to 1.42 of Doc. CMR15/505, with the approval of Doc. CMR15/416 in relation to Section 3.2.2.4.1 of Doc. 4 (Add2) (Rev1), as follows:

<sup>&</sup>quot;For the submission of a request for coordination under No. **9.30** related to a non-GSO satellite network or system, the notice will be receivable only in the cases described below:

*i)* satellite systems with one (or more than one) set(s) of orbital characteristics and inclination value(s) with all frequency assignments to be operated simultaneously; and,

*ii)* satellite systems with more than one set of orbital characteristics and inclination values with, however, a clear indication that the different sub-sets of orbital characteristics would be mutually exclusive; in other terms, frequency assignments to the satellite system would be operated on one of the sub-sets of orbital parameters to be determined at the notification and recording stage of the satellite system at the latest."

Except comments submitted in accordance with §§4.1.7, 4.1.9, 4.1.10 of Article 4 of Appendix 30 and 30A with respect to additional uses under Article 4 and use of the guardbands under Article 2A of those Appendices in Region 1 and Region 3.

# **Rules concerning**

# **ARTICLE 9 of the RR**

(...)

# 9.11A

(...)

MOD

 TABLE 9.11A-1

 Applicability of the provisions of Nos. 9.11A-9.15-14 to stations of space services

1	2	3		4		5	6	7
Frequency band (MHz)	Footnote No. in Article <b>5</b>	Space services mentioned in a footnote referring to Nos. 9.11A, 9.12, 9.12A, 9.13 or 9.14, as appropriate		Other space services or systems to which Nos. <b>9.12</b> to <b>9.14</b> provisions(s) apply equally, as appropriate		Applicable Nos. <b>9.12</b> to <b>9.14</b> provision(s), as appropriate	Terrestrial services in respect of which No. <b>9.14</b> apply equally	Notes
1 610-1 62 <u>1.35</u> 6. <del>5</del>	5.364	MOBILE-SATELLITE RADIODETERMINATION- SATELLITE (Region 2 (except country in No. <b>5.370</b> ), countries in No. <b>5.369</b> )	Ť	AERONAUTICAL MOBILE- SATELLITE (R) ( <b>5.367</b> )	$\downarrow\uparrow\\\leftrightarrow$	9.12, 9.12A, 9.13		
<u>1621.35 – 1626.5</u>	<u>5.364</u>	MOBILE-SATELLITE RADIODETERMINATION- SATELLITE (Region 2 (except country in No. 5.370), countries in No. 5.369)	<u>↑</u>	MARITIME MOBILE SATELLITE AERONAUTICAL MOBILE- SATELLITE (R) ( <b>5.367</b> )	$\downarrow \\ \downarrow \uparrow \\ \leftrightarrow$	<u>9.12, 9.12A, 9.13</u>		
<u>1621.35 – 1626.5</u>	5.365	MARITIME MOBILE SATELLITE	$\rightarrow$	MOBILE-SATELLITE         RADIODETERMINATION-SATELLITE         (Region 2 (except country in No.         5.370), countries in No.         5.370), countries in No.         5.369) <u>AERONAUTICAL MOBILE-SATELLITE (R) (5.367)</u>		<u>9.12, 9.12A, 9.13, 9.14</u>	FIXED (5.359)	

1 610-1 626.5	5.364	Radiodetermination-satellite (Region 1 ( <b>5.371</b> ), Region 3, country in No. <b>5.370</b> ))	1		9.12, 9.12A, 9.13		
1 613.8- 1 62 <u>1.35</u> 6.5	5.365	Mobile-satellite	$\downarrow$		9.12, 9.12A, 9.13, 9.14	Fixed ( <b>5.355</b> )	
<u>1 621.35 - 1 626.5</u>	<u>5.365</u>	Mobile-satellite except maritime mobile satellite	₹		<u>9.12, 9.12A, 9.13, 9.14</u>	<u>Fixed (5.355)</u>	
1 626.5-1 660.5	5.354	MOBILE-SATELLITE	1		9.12, 9.12A, 9.13		

**Reasons**: WRC-19 upgraded the allocation to the maritime-mobile-satellite service in the space-to-Earth direction in the frequency band 1 621.35-1 626.5 MHz.

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

1	2	3		4		5	6	7
Frequency band (GHz)	Footnote No. in Article <b>5</b>	Space services mentioned in a footnote referring to Nos. 9,11A, 9,12, 9,12A, 9,13 or 9,14, as appropriate		Other space services or systems to which Nos. <b>9.12</b> to <b>9.14</b> provisions(s) apply equally, as appropriate		Applicable Nos. <b>9.12</b> to <b>9.14</b> provision(s), as appropriate	Terrestrial services in respect of which No. <b>9.14</b> apply equally	Notes
29.9-30	5.484A	FIXED-SATELLITE (non-GSO)	1	MOBILE-SATELLITE (Non-GSO) FIXED-SATELLITE (Non-GSO) in the band 29.999-30 GHz ( <b>5.538</b> )	$\stackrel{\wedge}{\rightarrow}$	9.12		
<u>37.5-39.5</u>	<u>5.550C</u>	FIXED-SATELLITE (non-GSO)	₹			<u>9.12</u>		
<u>39.5-40.5</u>	<u>5.550E</u> (5.550C)	MOBILE-SATELLITE (non-GSO) FIXED-SATELLITE (non-GSO)	Ť			<u>9.12</u>		
40.5-42.5	<u>5.550C</u>	FIXED-SATELLITE (non-GSO)	↓			<u>9.12</u>		
47.2-50.2	<u>5.550C</u>	FIXED-SATELLITE (non-GSO)	⊥			<u>9.12</u>		
<u>50.4-51.4</u>	<u>5.550C</u>	FIXED-SATELLITE (non-GSO)	<u>↑</u>			<u>9.12</u>		

 TABLE 9.11A-1 (continued)

**Reasons**: WRC-19 introduced coordination requirement under No.**9.12** between non-geostationary-satellite systems in the fixed-satellite service in the frequency bands 37.5-42.5 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz (see No.**5.550C**) and between non-geostationary-satellite systems in the mobile-satellite service and in the fixed-satellite service in the frequency band 39.5-40.5 GHz (No.**5.550E**). These two provisions explicitly indicate that No. **9.12** does not apply with respect to non-geostationary satellite systems in other services.

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

## TABLE 9.11A-2

# Applicability of the provisions of No. 9.15 to earth stations of a non-geostationary satellite network and No. 9.16 to stations of terrestrial services

1	2	3	4	5	6	7
Frequency band (MHz)	Footnote No. in Article <b>5</b>	Terrestrial services to which No. <b>9.16</b> applies and in respect of which No. <b>9.15</b> applies	Space services mentioned in a footnote referring to No. <b>9.11A</b> to which No. <b>9.15</b> applies and in respect of which No. <b>9.16</b> applies		Applicable Nos. <b>9.15</b> , <b>9.16</b> provision(s)	Notes
()						
1 610-1 626.5	5.364	Fixed ( <b>5.355</b> )	Radiodetermination-satellite (Region 1 ( <b>5.371</b> ), Region 3, country in No. <b>5.370</b> )	1	9.15	1
1 613.8- 1 62 <del>6.5<u>1.35</u></del>	5.365	Fixed ( <b>5.355</b> )	Mobile-satellite	$\downarrow$	9.15, 9.16	1
<u>1 621.35-1 626.5</u>	<u>5.365</u>	<u>Fixed (5.355)</u>	<u>Mobile-satellite except</u> maritime mobile-satellite	₹	<u>9.15, 9.16</u>	<u>1</u>
<u>1 621.35-1 626.5</u>	<u>5.365</u>	<u>FIXED (5.359)</u>	MARITIME MOBILE- SATELLITE	₹	<u>9.15, 9.16</u>	<u>1</u>
()						

**Reasons**: WRC-19 upgraded the allocation to the maritime-mobile-satellite service in the space-to-Earth direction in the frequency band 1 621.35-1 626.5 MHz.

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

#### **Rules concerning**

#### **ARTICLE 9 of the RR**

MOD	

9.19

This provision relates to the requirements of coordination of transmitting terrestrial stations and transmitting earth stations in the FSS (Earth-to-space) with respect to typical BSS earth stations. To date, there <u>are</u> no ITU-R Recommendations defining the power flux-density (<u>pfd</u>) levels produced by the terrestrial stations and transmitting earth stations in the FSS at the edge of the service area of <u>a BSS satellite in the</u> non-planned <u>frequency bandsBSS</u> to be used for triggering the coordination, with the exception of the pfd criteria in the band 1 452-1 492 MHz, set by Resolution **761 (Rev. WRC-19)**. Until such time that a calculation method and technical criteria are included in the relevant ITU-R Recommendations, in applying this provision, for establishing coordination requirements the Bureau uses the following criteria:

- For transmitting IMT stations notified with nature of service "IM" in the frequency band 1 452-1 492 MHz, in Regions 1 and 3: frequency overlap and the power flux-density of -154 dB(W/(m<sup>2</sup> · 4 kHz)) at the edge of the service area of non-planned BSS, is calculated using Recommendation ITU-R P.452-16 for 20 % of time.
- For transmitting terrestrial stations in other non-planned BSS frequency bands: frequency overlap and the distance from the location of the terrestrial station to the national border of any country included in the service area of the BSS assignment less than 1 200 km;
- For transmitting earth stations in the FSS (Earth-to-space): frequency overlap and, the power flux-density limits in the nearest frequency band(s), where available.

**Note:** WRC 15 took the decision related to the RoP on No. **9.19**, see items 2.9 – 2.13 of the Minutes of the 6<sup>th</sup> Plenary meeting, Doc. CMR15/430, as follows:

#### "The conference agreed:

to confirm the current Bureau's practice for application of provision No. **9.19** of the Radio Regulations related to coordination of transmitting terrestrial stations with respect to typical earth station included in the service area of a space station in the broadcasting satellite service in the bands shared with equal rights between these services as follows:

*"Since the pfd threshold values are only available for the band 11.7-12.7 GHz, and given the fact that different propagation conditions and criteria may apply to the other bands, in examination of frequency notices for terrestrial stations under No. 9.19 the Bureau currently establishes coordination requirements using only frequency overlap as the coordination threshold for the following bands: 620-790 MHz, 1 452-1 492 MHz, 2 310-2 360 MHz, 2 520-2 670 MHz, 17.7-17.8 GHz, 40.5-42.5 GHz and 74 76 GHz."* 

2 the conference invites the relevant ITU-R Study Groups to identify the applicable pfd values and calculation methods for establishing coordination requirements under No. **9.19** in the relevant frequency bands, including 620-790 MHz, 1 452-1 492 MHz, 2 310-2 360 MHz, 2 520-2 670 MHz, 17.7 17.8 GHz, 40.5 42.5 GHz and 74 76 GHz."

Note: WRC-19 took the decision related to the RoP on No. 9.19, see paragraphs 2.14 to 2.16 of the Minutes of the 6<sup>th</sup> Plenary meeting, Doc. CMR19/469, as follows:

"1 Based on the information provided in § 3.1.3.5 of Addendum 2 to the Report of the Director it was noted that the Bureau identifies the coordination requirements for the assignments to terrestrial services vis-à-vis typical earth stations of the broadcasting-satellite service under RR No. **9.19** in eight frequency bands, namely 620-790 MHz, 1 452-1 492 MHz, 2 310-2 360 MHz, 2 520-2 670 MHz, 11.7-12.75 GHz, 17.7-17.8 GHz, 40.5-42.5 GHz and 74-76 GHz.

2 It was further noted that currently the coordination triggers are available only for the band 11.7-12.7 GHz, as contained in Annex 3 of RR Appendix **30**. For all other bands the Bureau uses the Rules of Procedure on RR No. **9.19** establishing the criteria for coordination as a frequency overlap and the coordination distance of 1 200 km with respect to the territories on which typical BSS earth stations are located. It was recognized that 1 200 km would be a very conservative coordination distance that might overestimate real needs for coordination and result in a considerable coordination burden for the administrations.

<u>3</u> The relevant ITU-R Study Groups are invited to develop more specific criteria for establishing coordination requirements under RR No. **9.19** in the bands 620-790 MHz, 1 452-1 492 MHz, 2 -310-2 -360 MHz, 2 520-2 670 MHz, 17.7-17.8 GHz, 40.5-42.5 GHz and 74-76 GHz."

Note by the Secretariat: WRC-19 suppressed provision No. **5.311A** on allocation of the frequency band 620-790 MHz to the BSS.

**Reason**: WRC-19 modified Resolution **761 (Rev.WRC-19)** by providing the coordination criteria for protection of the BSS in the form of a power flux density for IMT stations in the frequency band 1 452-1 492 MHz.

*Effective date of application of the rule: immediately after the approval of the rule.* 

#### **Rules concerning**

### ARTICLE 11 of the RR

MOD

# 11.31

(...) [Note: no change is proposed to §§ 1 and 2 to 2.5]

2.6 The list of these "other provisions", referred to in No. **11.31.2**, applicable to space services, is given below so far as Articles **21** and **22** are concerned:

(...) [Note: no change is proposed to §§ 2.6.1 to 2.6.5]

2.6.6 conformity with the single-entry limit specified in No. 22.5L for non-geostationarysatellite systems in the fixed-satellite service;

2.6.<u>76</u> conformity with the limit of power flux-density (pfd) from earth stations produced at the GSO as stipulated in provision No. **22.40**;

2.6.<u>87</u> conformity with the limit specified in Nos. **22.8**, **22.13**, **22.17** and **22.19**.

(...) [Note: no change is proposed to §§ 3 to 7]

**Reasons**: Noting that No. **11.31.2** indicates that the "other provisions" examined under No. **11.31** "shall be identified and included in the Rules of Procedure", the new limit adopted by WRC-19 and contained in No. **22.5L** should be added as a new section 2.6.6 of the rule of procedure on No. **11.31**.

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

#### **Rules concerning**

### **APPENDIX 30A to the RR**

Art. 2A

Use of the guardbands

SUP

2A.1.2

**Reasons**: The content of the rules has been superseded by the modification of the Remarks column concerning No. 9.7 in Table 5-1 of Appendix **5**, decided by WRC-19.

SUP

An. 4

# Criteria for sharing between services

**Reasons**: The content of the rules has been superseded by the modification of Paragraph 2 of Annex 4 of Appendix **30A**, decided by WRC-19.

#### **Rules concerning**

# **Rules concerning**

# **APPENDIX 30B to the RR**

Art. 6

# Procedures for the conversion of an allotment into an assignment for the introduction of an additional system or for the modification of an assignment in the List

MOD

# 6.5

1 The planning exercise and the interference analysis were made by WARC Orb 88 for the whole band of 300 MHz (6/4 GHz) or 500 MHz (13/11 GHz) on a co-channel basis. It may happen that two administrations conclude agreement on the shared use of the frequency bands. In the compatibility examination by the Bureau, the mutual interference between non overlapping frequency assignments shall not be taken into consideration in formulating findings.

21 The Board, in reviewing the implementation of the regulatory procedures of Appendix **30B**, noted that there is no provision to prohibit the implementation of non-simultaneous transmissions within the context of that Appendix. The Board further noted that this approach is used within the context of Appendices **30** and **30A** by means of the grouping concept as defined in Articles 9 and 9A of Appendix **30A**, Articles 10 and 11 of Appendix **30** and **Rulerules** of Procedure procedure relating to § 4.1.1 *a*) and 4.1.1 *b*) of Appendices **30** and **30A**.

32 In view of the above, the Board decided that the same grouping concept can also be applied within the context of §§ 6.5, and 6.21 and 6.22. The Board's understanding of the grouping concept is that in the interference calculation to entries (allotments or assignments) that are part of the group, only the interference contribution from entries that are not part of the same group are to be considered. On the other hand, for the interference calculation from entries belonging to a group into entries that are not part of the same group, only the worst interference contribution from that group is to be taken into consideration.

43 The Board did not find any regulatory basis to extend the use of groupings involving multiple orbital positions. However, grouping of networks in different orbital positions may be used before the inclusion of the assignments in the List to modify the orbital position of a network.

54 Interference between assignments to the "existing systems" as referred to in *considering* b and c) of Resolution **148** (WRC-07) shall not be taken into consideration in single-entry calculation for consistent implementation of *instructs the Radiocommunication Bureau* 2 of that Resolution.

65 See also *Note by the Secretariat* relating to the "multi-beam networks" as indicated in column 10 of the tables in Article 10 of Appendix **30B**.

**Reasons**: WRC-19 has decided that administrations can submit and bring into use any of the 250-MHz sub-bands (10.7-10.95 GHz or 11.2-11.45 GHz for downlink and 12.75-13.0 GHz or 13.0-13.25 GHz for uplink). Therefore, the first paragraph of the rule is no longer relevant and should be supressed. Consequently, other paragraphs should be re-numbered. As the examination under § 6.22 considers aggregate C/I values, the grouping concept should also be applied.

*Effective date of application of the rule: immediately after approval.* 

# MOD

# 6.6

# Agreement of an administration whose territory is partially or wholly included in the service area of an assignment

The Board decided that the administrative agreements of the administrations whose territories are partially or wholly included in the intended service area of an assignment under examination are explicitly required and shall be obtained when entering the assignment in the List, irrespective of whether or not their allotments in the Plan or their assignments are identified as affected under § 6.5. If an identified administration does not make comment nor reply to the notifying administration's request for seeking agreement under § 6.6, it shall be considered that the former administration disagrees to the inclusion of its territory in the intended service area of the assignment.

In the examination of a satellite network submitted under § 6.17, if the Bureau finds that the territory of an administration is wholly or partially included in the service area of the network without obtaining having obtained an explicit agreement from that administration\_prior to the submission under § 6.17, it shall request the notifying administration to exclude the territory and the associated test points from the service area. If the notifying administration insists on keeping the service area unchanged, the finding of the examination under § 6.19 a) shall be unfavourable.

An administration that agreed to include its territory in the service area of an assignment may at any time withdraw its agreement in accordance with § 6.16.

**Reasons**: The proposed modifications aim at aligning the rule with the text of § 6.19 a), as modified by WRC-19.

*Effective date of application of the rule: immediately after approval.* 

MOD

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

#### 2.<u>21</u>

1 In order to adequately protect the existing networks in their entire <u>downlink</u> service area, WRC 07 introduced the <u>an</u> examination <u>based on a single-entry criterion</u> over the <u>downlink</u> service area <u>was introduced</u> under § 2.12 of Annex 4 of Appendix **30B**.

As indicated in footnote 19 to § 2.12 of Annex 4 of Appendix **30B** as modified by WRC-19, the reference values within the <u>downlink</u> service area are interpolated from the reference values on the <u>corresponding</u> test points. The following interpolation formula and condition shall be used to calculate the interpolated values at grid points<sup>4</sup> within the <u>downlink</u> service area:

$$V_{Eg} = \frac{\sum_{h=1}^{Nt} R_{Th} \times (d_{Th})^{-2}}{\sum_{h=1}^{Nt} (d_{Th})^{-2}}$$
(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 (i.e. 26.65 dB, or  $(C/N)_d + 11.65$  dB, whichever is the lowest);

 $V_{Eg}$ : 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 Footnote 10 to § 2.1 of Appendix 1 to Attachment 1 to Resolution **170** (WRC-19) refers to the same interpolation method as above. Therefore, when applying§ 2.1 of Appendix 1 to Attachment -1 to Resolution **170** (WRC-19), the method contained in §§ 2 and 3 above shall be used

<sup>&</sup>lt;sup>4</sup> The service area is regularly covered by a grid of points <u>located on land and inside the service area.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.</u>

to calculate the interpolated values at grid points within the downlink service area with the following modifications:

<u> $R_{Th}$ </u> shall be defined as the single entry *C/I* reference value (dB) at the test point *Th* (i.e. 23.65 dB, or (*C/N*)<sub>*d*</sub> + 8.65 dB, or any already accepted value, whichever is the lowest);

a value of  $(C/N)_{d, Eg}$  +8.65 dB shall be used instead of  $(C/N)_{d, Eg}$  +11.65 dB.

**Reasons**: The proposed changes aim at incorporating in the rule the modifications of Annex 4 of Appendix **30B** decided by WRC-19. The proposed modification to footnote 4 reflects the decision of WRC-19 that the grid points at sea shall not be considered (as a consequence, it may not be possible to add grid points on the border of service areas; furthermore, the spacing between grid points cannot be described as being simply proportional to the area size, since the part of the service area located on land where good coverage by grid points has to be ensured, may significantly differ from the overall service area). The proposed new paragraph 4 explains the modifications to the methodology that are necessary for the implementation of Resolution **170 (WRC-19)**.

*Effective date of application of the rule: immediately after approval.*