Radiocommunication Bureau (BR)

Circular Letter
CCRR/74

16 July 2024

To Administrations of Member States of the ITU

Subject: **Draft rules of procedure to reflect WRC-23 decisions**

At its 96th meeting, the Radio Regulations Board (RRB) considered the impact of WRC-23 decisions and the general practice of the Radiocommunication Bureau on current Rules of Procedure. As a result, the Board agreed on the schedule for the approval of draft new and modified rules of procedure contained in Document RRB24-1/1 Rev.2. Accordingly, the Bureau prepared a set of draft new or modified rules of procedure annexed to this Circular Letter:

- **Annex 1:** Addition of new rules of procedure on Nos. **5.312B, 5.314A, 5.388A** and **5.409A** in association with Resolutions **213 (WRC-23), 218 (WRC-23)** and **221 (Rev. WRC-23);**

- **Annex 2:** Modification to the existing rules of procedure (Section B6 of Part B) to specify methods for identification of potentially affected administrations under No. **9.21** for Nos. **5.295A**, **5.307A**, **5.434A**, **5.457F** and **5.480A**;

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 no later than **14 October 2024**, **1600 UTC** in order to be considered at the 97th RRB meeting, scheduled for 11 – 19 November 2024. Comments should be sent by email to rrb@itu.int.

Mario Maniewicz
Director

Annexes: 2

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Annex 1

Addition of new rules of procedure on Nos. **5.312B**, **5.314A**, **5.388A** and **5.409A** pursuant to Resolutions **213 (WRC-23)**, **218 (WRC-23)** and **221 (Rev.WRC-23)**

Rules concerning

ARTICLE 5 of the RR

ADD

5.312B and 5.314A

1 These provisions stipulate that the use of the frequency bands 694-960 MHz (No. **5.312B**) and 698-960 MHz (No. **5.314A**) by high-altitude platform stations for International Mobile Telecommunication (IMT) base stations (HIBS) shall be in accordance with Resolution **213 (WRC-23)**, including the power flux-density (pfd) limits listed in *resolves 2, 3, 4.1, 4.2* and *4.3* of that Resolution.

2 Considering that neither these RR provisions nor that Resolution specify the propagation prediction model to be used for the calculation of pfd levels produced by HIBS, the Board decided that Recommendation ITU-R P.528-5 is to be used for the calculation of those pfd levels at 1% of time over a smooth-Earth path, produced at a height of:

– 10 m in application of *resolves 2* and *3*; and

– 1.5 m in application of *resolves* 4.1, 4.2 and 4.3.

Reasons: *WRC-23 adopted Nos.* ***5.312B*** *and* ***5.314A*** *to identify the frequency band 694/698-960 MHz for use by HIBS and provided specific pfd limits to be applied in Resolution* ***213 (WRC-23)*** *(see resolves 2, 3, 4.1, 4.2 and 4.3) for the protection of the broadcasting, fixed and mobile services.*

A propagation prediction model is required to calculate the pfd produced by HIBS. Also, for the purpose of the studies on WRC-23 agenda item 1.4, Working Parties (WPs) 3J, 3K and 3M specifically advised WP 5D (see Document 5D/960) to use Recommendation ITU-R P.528-5 if the specific terrain or other surface obstacles are unknown and only smooth-sphere diffraction needs to be considered. Consequently, it is proposed that Recommendation ITU-R P.528-5 be used for both line-of-sight (LOS) and non-LOS propagation paths to calculate pfd levels under worst-case conditions at 1% of time in the application of the indicated resolves parts *of Resolution* ***213 (WRC-23)****. In addition, it is proposed to use a height of 10 m in the application of resolves 2 and 3 of Resolution* ***213 (WRC-23)****, as provided for in those provisions, and a minimum height of 1.5 m above the Earth's surface in the application of resolves 4.1, 4.2 and 4.3. While resolves 4.1, 4.2 and 4.3 of the Resolution do require the calculation of a pfd level per HIBS produced at the Earth's surface, Recommendation ITU-R P.528, however, recommends using a minimum height of 1.5 m.*

Effective date of application of this Rule: 1 January 2025.

ADD

5.388A and 5.409A

1 No. **5.388A** stipulates that the use of the frequency bands 1 710-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and the frequency bands 1 710-1 980 MHz and 2 110-2 160 MHz in

Region 2 by high-altitude platform stations for International Mobile Telecommunication (IMT) base stations (HIBS) shall be in accordance with Resolution **221 (Rev.WRC-23)**, including the power flux-density (pfd) limits listed in *resolves 1.1, 1.2, 1.3* and *1.4* of that Resolution.

2 No. **5.409A** stipulates that the use of the frequency band 2 500-2 690 MHz in Regions 1 and 2 and the frequency band 2 500-2 655 MHz in Region 3 by HIBS shall be in accordance with Resolution **218 (WRC-23)**, including the power flux-density (pfd) limits listed in *resolves 1.1, 1.2, 1.3* and *1.4* of that Resolution.

3 Considering that neither these RR provisions nor those Resolutions specify the propagation prediction model to be used for the calculation of pfd levels produced by HIBS, the Board decided that Recommendation ITU-R P.528-5 is to be used for the calculation of those pfd levels at 1% of time at a height of 1.5 m over a smooth-Earth path in application of the *resolves* parts of Resolutions **218 (WRC-23)** and **221 (Rev.WRC-23)**.

Reasons: *WRC-23 approved the modification of No.* ***5.388A*** *and adopted No.* ***5.409A****, on the identification of some frequency bands around 2 GHz for use by HIBS, and, in Resolutions* ***218 (WRC-23)*** *and* ***221 (Rev.WRC-23)****, established pfd limits to be applied for the protection of the fixed, broadcasting-satellite and mobile services.*

A propagation prediction model is required to calculate the pfd produced by HIBS. Also, for the purpose of the studies on WRC-23 agenda item 1.4, WPs 3J, 3K and 3M specifically advised WP 5D (see Document 5D/960) to use Recommendation ITU-R P.528-5 if the specific terrain or other surface obstacles are unknown and only smooth-sphere diffraction needs to be considered. Consequently, it is proposed that Recommendation ITU-R P.528-5 be used for both LOS and non-LOS propagation paths to calculate pfd levels under worst-case conditions at 1% of time and at a minimum height of 1.5 m above the Earth's surface, as required by Recommendation ITU-R P.528-5, in the application of the indicated resolves *parts of Resolutions* ***218 (WRC-23)*** *and* ***221 (Rev.WRC-23)****. While Resolution* ***218 (WRC-23)*** *does require the calculation of a pfd level per HIBS produced at the Earth's surface, Recommendation ITU-R P.528, however, recommends using a minimum height of 1.5 m.*

During the preparation of this draft rule of procedure, a possible application of Recommendations ITU-R P.525 and ITU-R P.619-4 was also considered but not pursued. Recommendation ITU-R P.525 (free-space) was excluded because it does not consider diffraction loss and therefore is not applicable to non-LOS propagation paths. Recommendation ITU-R P.619-4 was excluded because specific terrain profile data and data on other surface obstacles are required for its application in order to analyse diffraction loss; these data are, however, not available to the Bureau.

Effective date of application of this Rule: 1 January 2025.

Annex 2

Modification to existing rules of procedure (Section B6 of Part B) to specify methods for identification of potentially affected administrations under No. **9.21** for Nos. **5.295A, 5.307A, 5.434A, 5.457F** and **5.480A**

PART B

SECTION B6

MOD

Rules concerning criteria for applying the provisions of No. 9.36 to a frequency assignment in the terrestrial services whose allocation or identification is governed by Nos. 5.292, 5.293, 5.295, 5.295A, 5.296A, 5.297, 5.307A, 5.308, 5.308A, 5.309, 5.323, 5.325, 5.326, 5.341A, 5.341C, 5.346, 5.346A, ~~5.429D,~~ * ~~5.429F~~, 5.430A, 5.431A, 5.431B, 5.432B, ~~5.434~~ 1 *5.434A, 5.457F, 5.480A and 5.553A

…

2 For identification of the administrations whose agreement may need to be obtained, in the context of the provisions of Nos. **5.292**, **5.293**, **5.295**, **5.295A**, **5.296A**, **5.297**, **5.307A**, **5.308**, **5.308A**, **5.309**, **5.323**, **5.325**, **5.326**, **5.341A**, **5.341C**, **5.346**, **5.346A**, ~~**5.429D,**~~ * ~~**5.429F**~~, **5.430A**, **5.431A**, **5.431B**, **5.432B**, ~~**5.434**~~ * **5.434A, 5.457F, 5.480A** and **5.553A**, the following criteria are applied:

2.1 the *coordination distance concept* is applied with respect to the services that are allocated according to Article **5** (these services are indicated in the Table below under the heading “Protected service”);

TABLE 1

Applicability of No. 9.21

Footnote	Frequency band (MHz)	Allocated service (No. 9.21)	Protected service
5.292 [1]	470-512	FS, MS	BS
5.293 [1]	470-512 and 614-806	FS, MS	BS
5.295	470-512	LMS (IMT)	BS, FS
	512-608	LMS (IMT)	BS
5.295A[3]	470-694	LMS, MMS	BS
	606-614	LMS, MMS	RAS
5.296A	470-698	LMS (IMT)	BS, FS
	585-610	LMS (IMT)	RNS
5.297	512-608	FS, MS	BS
5.307A	614-694	LMS (IMT), MMS	BS

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~~1 See also Rules of Procedure to Nos. **5.312A, 5.316B, 5.341A** and **5.346**.~~

* WRC-23 deleted reference to No. **9.21** from the modified Nos. **5.429D** and **5.434** as explained in Circular Letter CCRR/73

Footnote	Frequency band (MHz)	Allocated service (No. 9.21)	Protected service
5.308	614-698	MS	BS
5.308A	614-698	MS (IMT)	BS
5.309 [1]	614-806	FS	BS, MS
5.323	862-960	ARNS	FS, MS
5.325 [1]	890-942	RLS	FS, MS
5.326 [1]	903-905	LMS,MMS	FS
5.341A[2]	1 429-1 452 1 492-1 518	LMS (IMT)	AMS
5.341C	1 429-1 452 1 492-1 518	LMS (IMT)	AMS
5.346[2]	1 452-1 492	LMS (IMT)	AMS
5.346A	1 452-1 492	LMS (IMT)	AMS
~~**5.429D***~~	~~3 300-3 400~~	~~LMS (IMT)~~	~~RLS~~
5.429F	3 300-3 400	LMS (IMT)	RLS
5.430A	3 400-3 600	LMS, MMS	FS, FSS
5.431A and 5.432B[1]	3 400-3 500	LMS, MMS	FS, FSS
5.431B	3 400-3 600	LMS (IMT)	FS, FSS
5.434A	3 600-3 800	LMS, MMS	FS, FSS
5.457F	6 425-7 125	LMS (IMT)	FS, MS
5.480A	10 000-10 500	LMS (IMT)	RLS, FS
~~**5.434***~~	~~3 600-3 700~~	~~LMS (IMT)~~	~~FS, FSS~~
5.553A	45 500-47 000	LMS (IMT)	AMS, RNS

[1] Different category of service.

[2] For frequency assignments subject to this provision the No. 9.21 procedure does not apply to those administrations whose territories are outside of the distances specified in the corresponding Rules of Procedure on No. **5.341A** and No. **5.346**.

[3] Secondary service.

3 In the calculation of the coordination distances the following approach is used:

…

3.1*bis* For the protection of the broadcasting (television) service in the frequency band 470-694 MHz in the context of the provisions of Nos. **5.295A** and **5.307A**, the coordination distances are calculated at a height of 10 m above ground level at the border of the territory of any other administration, using the propagation curves provided in the GE06 Agreement at 1% of time and 50% of locations with the coordination trigger field strengths as provided in § 4.1.3.2 of Annex 2 to the GE06 Agreement and given in Table 2*bis*.

TABLE 2*bis*

Coordination trigger field strengths for protection of BS, in the context of Nos. 5.295A and 5.307A

Service to be protected	Trigger field strength (dB(μV/m))	
	470-582 MHz	582-694 MHz
BS	13.229	15.229

Reason: *The frequency band 470-694 MHz was allocated to the mobile, except aeronautical mobile, service under No.**5.295A** on a secondary basis and under No. **5.307A** on a primary basis in some Region 1 countries subject to agreement obtained under No. **9.21**. To initiate coordination with respect to the broadcasting service, the coordination trigger field strengths are as provided in § 4.1.3.2 of Annex 2 to the GE06 Agreement in accordance with Nos. **5.295A** and **5.307A**.*

…

3.8 For the protection of the fixed and fixed-satellite services in the frequency bands between 3 400 MHz and 3 ~~700~~800 MHz from the mobile, except aeronautical mobile, service in the context of the provisions of Nos. **5.430A**, **5.431A** and **5.432B**, and from IMT in the context of the provisions of Nos. **5.431B** and ~~**5.434**~~* **5.434A**, the power flux-density of –154.5 dB(W/m^2 · 4 kHz)[2] produced at the height of 3 m above ground level is used.

Based on the above pfd value the coordination distances are calculated using Recommendation ITU-R P.452-~~16~~18 ~~for~~ at 20% of time with a smooth Earth terrain profile.

Reasons: *To reflect the upgraded allocation of the frequency band 3 600-3 800 MHz to the mobile, except aeronautical mobile, service on a primary basis in Region 1 subject to agreement obtained under No. **9.21** in accordance with No. **5.434A**.*

…

3.10 For the protection of stations in the radioastronomy service in the frequency band 606-614 MHz from the radio services indicated in Column 3 of Table 1, in the context of the provisions of No. **5.295A**, coordination trigger distances of 1 053 km for a base station in the mobile service and 445 km for a land mobile station in the mobile service are used with respect to the border of a neighbouring country.

Reason: *The frequency band 470-694 MHz was allocated to the mobile, except aeronautical mobile, service in some Region 1 countries on a secondary basis subject to agreement obtained under No. **9.21**. The frequency band 608-614 MHz is allocated to the radioastronomy service in the African Broadcasting Area on a primary basis by No. **5.304**; in Region 1, except the African Broadcasting Area, and in Region 3, it is allocated on a secondary basis. To initiate coordination with respect to the radioastronomy service, the coordination trigger distance criteria are given based on the study results contained in Annex 3 to Document 6-1/130.*

3.11 For the protection of the fixed and mobile services in the frequency band 6 425-7 125 MHz from IMT, in the context of the provisions of No. **5.457F**, a coordination trigger distance of 200 km with respect to the border of a neighbouring country is used.

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2 This value was decided by WRC-07 based on the protection of a typical earth station in the fixed-satellite service.

***Reason**: To reflect the requirements in relation to No. **5.457F**, which identifies the frequency band 6 425-7 125 MHz for IMT subject to agreement obtained under No. **9.21**, it is proposed to use the most stringent value of 200 km for the identification of affected administrations for the protection of the fixed and mobile services under No. **9.21**, taken from results of Study C of Annex 4.16 to Document 5D/1776, taking into account the worst-case fixed-service system parameters provided in Recommendation ITU-R F.758-7.*

3.12 For the protection of stations in the fixed and radiolocation services in the frequency band 10-10.5 GHz from IMT as indicated in Column 3 of Table 1, in the context of the provisions of No. **5.480A**, a coordination trigger distance of 500 km with respect to the border of the neighbouring country is used.

***Reason:** To reflect the requirements in relation to No. **5.480A**, which identifies the frequency band 10-10.5 GHz for IMT subject to agreement obtained under No. **9.21**, it is proposed to use the most stringent value of 500 km taken from Annexes 4.20 and 4.23 to Document 5D/1776 for the protection of the fixed and radiolocation services in the frequency band 10-10.5 GHz, where that separation distance was obtained by Monte Carlo simulations using Recommendations ITU-R P.528 at 5% of time and for IMT stations with an e.i.r.p. of 17.5 dBi and a radar system at a height of 9 000 m, and using a −6 dB protection ratio (I/N), 6 dB noise figure and 42 dBi antenna gain.*

Effective date of application of this Rule: 1 January 2025.

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