|  |  |  |  |
| --- | --- | --- | --- |
| A close up of a sign  Description automatically generated | **World Radiocommunication Conference (WRC-23) Dubai, 20 November - 15 December 2023** | |  |
|  | |  | |
|  | | **Doc. CPG(23)060 ANNEX V-19** | |
| PLENARY MEETING | | **Addendum 19 to Document XXXX-E** | |
|  | | **16 August 2023** | |
|  | | **Original: English** | |
|  | | | |
| European Common Proposals | | | |
| Proposals for the work of the conference | | | |
|  | | | |
| Agenda item 1.19 | | | |

1.19to consider a new primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2, while protecting existing primary services in the band, in accordance with Resolution **174 (WRC‑19)**;

Introduction

This ECP proposes modifications to the Radio Regulations towards facilitating a new primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2, while protecting the services allocated in the band and in adjacent bands.

Proposals

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations  
(See No. 2.1)

MOD EUR/XXXXA19/1

15.4-18.4 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 17.3-17.7  FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) MOD 5.484A MOD 5.516A 5.516B  Radiolocation | 17.3-17.7  FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) MOD 5.484A MOD 5.516A MOD 5.517  BROADCASTING-SATELLITE  Radiolocation | 17.3-17.7  FIXED-SATELLITE (Earth-to-space) 5.516  Radiolocation |
| 5.514 | 5.514 5.515 | 5.514 |

**Reasons:** Introduce the FSS (space-to-Earth) allocation in the frequency band 17.3-17.7 GHz in Region 2 and apply the modified Nos. **5.516A** and **5.517** to this new allocation. Also, No. **5.484A** is modified to extend the use of the frequency band 17.3-17.7 GHz (space-to-Earth) in Region 2, for application of the provisions of No. **9.12** for non-GSO satellite systems.

MOD EUR/XXXXA19/2

5.484A The use of the frequency bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.3-17.7 GHz (space-to-Earth) in Regions 1 and 2, 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary satellite system in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary satellite systems in the fixed-satellite service. Non-geostationary satellite systems in the fixed-satellite service shall not claim protection from geostationary satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary satellite networks, and No. 5.43A does not apply. Non-geostationary satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated.     (WRC‑23)

**Reasons:** No. **5.484A** is modified to extend the use of the frequency band 17.3-17.7 GHz (space-to-Earth) in Regions 1 and 2, for application of the provisions of No. **9.12** for non-GSO satellite systems in order to introduce coordination between non-GSO FSS systems under No. **9.12** in the frequency band 17.3 – 17.7 GHz. In Region 1, non-GSOs are subject to coordination under No. **9.12** as per RoP of No. **9.11A**, Table 9.11A-1. The RoP of No. **9.11A** should be updated by the Radio Regulations Board after WRC-23 to include the frequency bands considered under revised No. **5.484A** which would imply that No**. 9.12** would be applied in both directions by default.

MOD EUR/XXXXA19/3

5.516A In the band 17.3-17.7 GHz, earth stations of the fixed-satellite service (space-to-Earth) in Regions 1 and 2 shall not claim protection from the broadcasting-satellite service feeder-link earth stations operating under Appendix 30A, nor put any limitations or restrictions on the locations of the broadcasting-satellite service feeder-link earth stations anywhere within the service area of the feeder link.     (WRC-23)

**Reasons:** Extend the applicability of this footnote to Region 2.

MOD EUR/XXXXA19/4

5.517 In Region 2, use of the fixed-satellite (space-to-Earth) service in the band 17.3-17.8 GHz shall not cause harmful interference to nor claim protection from assignments in the broadcasting-satellite service operating in conformity with the Radio Regulations.     (WRC-23)

**Reasons:** Extend the applicability of this footnote to the frequency band 17.3 – 17.7 GHz in Region 2.

ARTICLE 22

Space services1

Section II − Control of interference to geostationary-satellite systems

MOD EUR/XXXXA19/5

TABLE **22-1B**     (WRC‑23)

Limits to the epfd↓ radiated by non‑geostationary-satellite systems  
in the fixed-satellite service in certain frequency bands3, 6, 8, X

| Frequency band (GHz) | epfd↓ (dB(W/m2)) | Percentage of time during which epfd↓ may not be exceeded | Reference bandwidth (kHz) | Reference antenna diameter and reference radiation pattern7 |
| --- | --- | --- | --- | --- |
| 17.3-17.7  in Regions 1 and 2;  17.8-18.6 | −175.4  −175.4  −172.5  −167  −164  −164 | 0  90  99  99.714  99.971  100 | 40 | 1 m Recommendation ITU‑R S.1428-1 |
| −161.4  −161.4  −158.5  −153  −150  −150 | 0  90  99  99.714  99.971  100 | 1 000 |
|  | −178.4  −178.4  −171.4  −170.5  −166  −164  −164 | 0  99.4  99.9  99.913  99.971  99.977  100 | 40 | 2 m Recommendation ITU‑R S.1428-1 |
| −164.4  −164.4  −157.4  −156.5  −152  −150  −150 | 0  99.4  99.9  99.913  99.971  99.977  100 | 1 000 |
|  | −185.4  −185.4  −180  −180  −172  −164  −164 | 0  99.8  99.8  99.943  99.943  99.998  100 | 40 | 5 m Recommendation ITU‑R S.1428-1 |
| −171.4  −171.4  −166  −166  −158  −150  −150 | 0  99.8  99.8  99.943  99.943  99.998  100 | 1 000 |

**Reasons:** to extend the applicability in Regions 1 and 2 of Table **22-1B** epfd limits to the frequency band 17.3-17.7 GHz to non-GSO systems to protect downlink operations (space-to-Earth) for the Fixed Satellite Service (FSS) of GSO satellite networks.

ADD EUR/XXXXA19/6

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

X 22.5C.X In Region 2, a non-geostationary-satellite system in the fixed-satellite service, shall meet the limits of this table for the frequency band 17.3-17.7 GHz with respect to geostationary-satellite systems in the broadcasting-satellite service and the reference patterns of Recommendation ITU-R BO.1443-3 shall be used when calculating the equivalent power flux density.     (WRC-23)

**Reasons:** For non-GSO systems operating in Region 2, extend the applicability of Table **22-1B** epfd limits to the frequency band 17.3-17.7 GHz to protect the broadcasting-satellite service. The footnote makes the use of Recommendation ITU-R BO.1443-3 mandatory.

MOD EUR/XXXXA19/7

TABLE **22-3**     (WRC‑23)

Limits to the epfdis radiated by non-geostationary-satellite systems in the fixed-  
satellite service in certain frequency bands19

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Frequency band (GHz) | epfdis (dB(W/m2)) | Percentage of time during which epfdis level may not be exceeded | Reference bandwidth (kHz) | Reference antenna beamwidth and reference radiation pattern20 |
| 10.7-11.7  (Region 1)  12.5-12.75  (Region 1)  12.7-12.75  (Region 2) | −160 | 100 | 40 | 4° Recommendation ITU‑R S.672-4, *Ls* = −20 |
| 17.3-17.7  17.8-18.4 | −160 | 100 | 40 | 4° Recommendation ITU‑R S.672-4, *Ls* = −20 |

**Reasons:** Extend the applicability of Table **22-3** epfd limits to ensure the protection of the assignments of receiving geostationary satellite systems under Appendix **30A** from the interference produced by non-geostationary satellite systems of the fixed-satellite service.

ADD EUR/XXXXA19/8

22.5IA An administration operating a non-geostationary-satellite system in the fixed-satellite service in the frequency band 17.3-17.7 GHz used in Regions 1 and 2 which is in compliance with the limits in Nos. **22.5C** and **22.5F** shall be considered as having fulfilled its obligations under No. **22.2** and No. **5.517** with respect to any geostationary-satellite network in the broadcasting-satellite service or any receiving space station of the fixed-satellite service of Appendix **30A**, as appropriate, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite system and the geostationary-satellite network, provided that the epfd↓ radiated by the non-geostationary-satellite system in the fixed-satellite service into any operating geostationary broadcasting-satellite service earth station does not exceed the operational limits given in Table **22-4B**, when the gain of the earth station is equal to or greater than the values given in Table **22-4B** for the corresponding orbital inclination of the geostationary broadcasting-satellite service satellite. Except as otherwise agreed between concerned administrations, an administration operating a non-geostationary-satellite system in the fixed-satellite service in the frequency band 17.3-17.7 GHz used in Regions 1 and 2 that is subject to the limits in Nos. **22.5C** and **22.5F** and which radiates epfd↓ into any operating geostationary-satellite broadcasting-satellite service earth station at levels in excess of the operational limits given in Tables **22-4B**, when the gain of the earth station is equal to or greater than the values given in Table **22-4B** for the corresponding orbital inclination of the geostationary broadcasting-satellite service satellite, shall be considered to be in violation of its obligations under No. **22.2** and No. **5.517**, and the provisions of Article **15** (Section V) apply. In addition, administrations are encouraged to use the relevant ITU-R Recommendations to determine whether such a violation has occurred. (WRC-23)

**Reasons:** Extend the applicability of No. **22.5I** to a non-geostationary-satellite system in the fixed-satellite service in the frequency band 17.3-17.7 GHz used in Regions 1 and 2 and to avoid application of No. **22.2** and No. **5.517** in addition to the compliance with the epfd limits.

MOD EUR/XXXXA19/9

TABLE **22-4B**     (WRC‑23)

Operational limits to the epfd↓ radiated by non-geostationary-satellite  
systems in the fixed-satellite service in certain frequency bands21,25

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Frequency band (GHz) | epfd↓ (dB(W/m2)) | Percentage of time during which epfd↓ may not be exceeded | Reference bandwidth (kHz) | Geostationary-satellite system receive earth station antenna gain (dBi) | Orbital inclination of geostationary satellite (degrees) |
| 19.7-20.2 | −157  −157  −155 | 100  100  100 | 40  40  40 | ≥ 49  ≥ 43  25  ≥ 49 | ≤ 2.5  ≤ 2.5  > 2.5 and ≤ 4.5 |
| 19.7-20.2 | −143  −143  −141 | 100  100  100 | 1 000  1 000  1 000 | ≥ 49  ≥ 43  25  ≥ 49 | ≤ 2.5  ≤ 2.5  > 2.5 and ≤ 4.5 |
| 17.3-17.7  17.8-18.6 | −164  −162 | 100  100 | 40  40 | ≥ 49  ≥ 49 | ≤ 2.5  > 2.5 and ≤ 4.5 |
| 17.3-17.7  17.8-18.6 | −150  −148 | 100  100 | 1 000  1 000 | ≥ 49  ≥ 49 | ≤ 2.5  > 2.5 and ≤ 4.5 |

**Reasons:** In order to extend the applicability of Table **22-4B** epfd limits to the frequency band 17.3-17.7 GHz.

APPENDIX 30A (REV.WRC‑19)[[1]](#footnote-1)\*

Provisions and associated Plans and List[[2]](#footnote-2)1 for feeder links for the broadcasting-satellite service (11.7-12.5 GHz in Region 1, 12.2-12.7 GHz  
in Region 2 and 11.7-12.2 GHz in Region 3) in the frequency bands  
14.5-14.8 GHz[[3]](#footnote-3)2 and 17.3-18.1 GHz in Regions 1 and 3,  
and 17.3-17.8 GHz in Region 2     (WRC‑03)

MOD EUR/XXXXA19/10

ARTICLE 7     (Rev.WRC‑23)

Coordination, notification and recording in the Master International   
Frequency Register of frequency assignments to stations in the fixed-satellite service (space-to-Earth) in Regions 1 and 2 in the frequency band 17.3-18.1 GHz and   
in Region 3 in the frequency band 17.7-18.1 GHz, to stations in the fixed‑satellite service (Earth-to-space) in Region 2 in the frequency bands 14.5‑14.8 GHz and 17.8‑18.1 GHz, to stations in the fixed-satellite service (Earth-to-space) in countries listed in Resolution 163 (WRC‑15) in the frequency band 14.5‑14.75 GHz and in countries listed in Resolution 164 (WRC‑15) in the frequency band 14.5-14.8 GHz where those stations are not for feeder links for the broadcasting-satellite service, and to stations in the broadcasting-satellite service in Region 2 in the frequency band 17.3-17.8 GHz when frequency assignments to feeder links for broadcasting-satellite stations in the frequency bands 14.5-14.8 GHz and 17.3-18.1 GHz in Regions 1 and 3 or in the   
frequency band 17.3-17.8 GHz in Region 2 are involved[[4]](#footnote-4)28     (Rev.WRC‑23)

Section I – Coordination of transmitting space or earth stations in the fixed-satellite   
service or transmitting space stations in the broadcasting-satellite service  
with assignments to broadcasting-satellite service feeder links

MOD EUR/XXXXA19/11

7.1 The provisions of No. 9.7[[5]](#footnote-5)29 and the associated provisions under Articles 9 and 11 are applicable to transmitting space stations in the fixed-satellite service in Regions 1 and 2 in the frequency band 17.3-18.1 GHz, to transmitting space stations in the fixed-satellite service in Region 3 in the frequency band 17.7-18.1 GHz, to transmitting earth stations in the fixed-satellite service in Region 2 in the frequency bands 14.5-14.8 GHz and 17.8‑18.1 GHz, to transmitting earth stations in the fixed-satellite service in countries listed in Resolution **163 (WRC‑15)** in the frequency band 14.5-14.75 GHz and in countries listed in Resolution **164 (WRC‑15)** in the frequency band 14.5-14.8 GHz where those stations are not for feeder links for the broadcasting-satellite service, and to transmitting space stations in the broadcasting-satellite service in Region 2 in the frequency band 17.3-17.8 GHz.     (WRC‑23)

**Reasons:** Extend the applicability of the provisions in Appendix **30A**, Article 7, to the FSS (space-to-Earth) in the frequency band 17.3-17.7 GHz in Region 2.

APPENDIX 5 (REV.WRC‑19)

Identification of administrations with which coordination is to be effected or  
agreement sought under the provisions of Article 9

MOD EUR/XXXXA19/12

TABLE 5-1 (*continued*)     (Rev.WRC‑23)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Reference of Article 9 | Case | Frequency bands (and Region) of the service for which coordination is sought | Threshold/condition | Calculation  method | Remarks |
| … | … | … | … | … | … |
| No. **9.7** GSO/GSO (*cont.*) |  | 2*bis*) 13.4-13.65 GHz (Region 1) | i) Bandwidth overlap, and  ii) any network in the space research service (SRS) or any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±6° of the nominal orbital position of a proposed network in the FSS or SRS |  |  |
|  | 3) 17.7‑19.7 GHz, (Region 3),  17.3-19.7 GHz  (Regions 1 and 2) and 27.5‑29.5 GHz | i) Bandwidth overlap, and  ii) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS |  |  |
|  | 3*bis*)19.7-20.2 GHz and 29.5-30 GHz | i) Bandwidth overlap, and  ii) any network in the FSS or in the mobile-satellite service (MSS) and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS or in the MSS. |  |  |
|  |  |  |  |  |
| … | … | … | … | … | … |

**Reasons:** Covers the coordination of two GSO networks of the FSS (except earth stations operating in opposite directions of transmission) under No. **9.7**.

SUP EUR/XXXXA19/13

RESOLUTION 174 (WRC‑19)

Primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2

1. \* The expression “frequency assignment to a space station”, wherever it appears in this Appendix, shall be understood to refer to a frequency assignment associated with a given orbital position.     (WRC‑03) [↑](#footnote-ref-1)
2. 1 The Regions 1 and 3 feeder-link List of additional uses is annexed to the Master International Frequency Register (see Resolution **542 (WRC‑2000**)\*\*).     (WRC‑03)

   \*\* *Note by the Secretariat*: This Resolution was abrogated by WRC‑03. [↑](#footnote-ref-2)
3. 2 This use of the band 14.5-14.8 GHz is reserved for countries outside Europe.

   *Note by the Secretariat*: Reference to an Article with the number in roman is referring to an Article in this Appendix. [↑](#footnote-ref-3)
4. 28 These provisions do not replace the procedures prescribed in Articles **9** and **11** when stations other than those for feeder links in the broadcasting-satellite service subject to a Plan are involved.     (WRC‑03) [↑](#footnote-ref-4)
5. 29 (SUP – WRC-19) [↑](#footnote-ref-5)