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| --- | --- |
| **World Radiocommunication Conference (WRC-19) Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
|  |  |
|  |  |
| PLENARY MEETING | **Addendum 2 to Document 12(Add.8)-E** |
|  | **3 October 2019** |
|  | **Original: Russian** |
|  | |
| Regional Commonwealth in the field of Communications Common Proposals | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 1.8 | |

1.8 to consider possible regulatory actions to support Global Maritime Distress Safety Systems (GMDSS) modernization and to support the introduction of additional satellite systems into the GMDSS, in accordance with Resolution **359** (**Rev.WRC-15**);

Issue B

Introduction

The RCC Administrations support introducing additional MSS satellite networks in GMDSS, subject to their approval by IMO.

Taking into account the decisions of the International Maritime Organization (IMO) in regard to GMDSS modernization, including the introduction of IMO-recognized additional satellite systems, the RCC Administrations consider it inappropriate to change the status of the allocation and modify footnotes Nos. **5.364** and **5.365** of the Radio Regulations (RR), while at the same time considering it necessary to develop relevant regulatory actions for the modernization of GMDSS to ensure the protection of existing services and systems.

The RCC Administrations are of the view that any modifications to RR Appendix **15** involving the addition of frequency bands should be subject to the frequency bands in question having primary status.

Proposal

An example of regulatory text based on maintaining RR Appendix **15** unchanged is contained in Annex 1. An example of regulatory text based on the introduction of modifications to RR Appendix 15 is contained in Annex 2.

Annex 1

ARTICLE 5

Frequency allocations

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

NOC RCC/12A8A2/1

1 610-1 660 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 1 613.8-1 626.5  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  Mobile-satellite (space-to-Earth) 5.208B | 1 613.8-1 626.5  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  RADIODETERMINATION- SATELLITE (Earth-to-space)  Mobile-satellite (space-to-Earth) 5.208B | 1 613.8-1 626.5  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  Mobile-satellite (space-to-Earth) 5.208B  Radiodetermination-satellite (Earth-to-space) |
| 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369  5.371 5.372 | 5.341 5.364 5.365 5.366  5.367 5.368 5.370 5.372 | 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369  5.372 |

**Reasons:** Various issues have not been studied, including the regulatory status of the non-GSO MSS system and the potential negative impact of any change to the regulatory status of the system in terms of the use of radio services operating in this band and adjacent bands. This being the case, the RCC Administrations consider it premature to change the regulatory status of the non-GSO MSS system at WRC-19.

NOC RCC/12A8A2/2

APPENDIX 15 (REV.WRC‑15)

Frequencies for distress and safety communications for the Global  
Maritime Distress and Safety System (GMDSS)

**Reasons:** Various issues have not been studied, including the regulatory status of the non-GSO MSS system and the potential negative impact of any change to the regulatory status of the system in terms of the use of radio services operating in this band and adjacent bands. This being the case, the RCC Administrations consider it premature to change the regulatory status of the non-GSO MSS system at WRC-19.

SUP RCC/12A8A2/3#50252

RESOLUTION 359 (REV.WRC‑15)

Consideration of regulatory provisions for updating and modernization of the   
Global Maritime Distress and Safety System

**Reasons:** No longer relevant.

Annex 2

ARTICLE 5

Frequency allocations

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

MOD RCC/12A8A2/4

1 610-1 660 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 1 610-1 610.6  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION | 1 610-1 610.6  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  RADIODETERMINATION- SATELLITE (Earth-to-space) | 1 610-1 610.6  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  Radiodetermination-satellite (Earth-to-space) |
| 5.341 5.355 5.359 5.364  5.366 5.367 MOD 5.368 5.369  5.371 MOD 5.372 | 5.341 5.364 5.366 5.367  MOD 5.368 5.370 MOD 5.372 | 5.341 5.355 5.359 5.364 5.366 5.367 MOD 5.368 5.369 MOD 5.372 |
| 1 610.6-1 613.8  MOBILE-SATELLITE (Earth-to-space) 5.351A  RADIO ASTRONOMY  AERONAUTICAL RADIONAVIGATION | 1 610.6-1 613.8  MOBILE-SATELLITE (Earth-to-space) 5.351A  RADIO ASTRONOMY  AERONAUTICAL RADIONAVIGATION  RADIODETERMINATION-SATELLITE (Earth-to-space) | 1 610.6-1 613.8  MOBILE-SATELLITE (Earth-to-space) 5.351A  RADIO ASTRONOMY  AERONAUTICAL RADIONAVIGATION  Radiodetermination-satellite (Earth-to-space) |
| 5.149 5.341 5.355 5.359 5.364 5.366 5.367 MOD 5.368 5.369  5.371 MOD 5.372 | 5.149 5.341 5.364 5.366  5.367 MOD 5.368 5.370 MOD 5.372 | 5.149 5.341 5.355 5.359 5.364 5.366 5.367 MOD 5.368 5.369  MOD 5.372 |
| 1 613.8-1 621.35  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  Mobile-satellite (space-to-Earth) | 1 613.8-1 621.35  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  RADIODETERMINATION- SATELLITE (Earth-to-space)  Mobile-satellite (space-to-Earth) | 1 613.8-1 621.35  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  Mobile-satellite (space-to-Earth)  Radiodetermination-satellite (Earth-to-space) |
| 5.341 5.355 5.359 5.364 5.365 5.366 5.367 MOD 5.368 5.369  5.371 MOD 5.372 | 5.341 5.364 5.365 5.366  5.367 MOD 5.368 5.370 MOD 5.372 | 5.341 5.355 5.359 5.364 5.365 5.366 5.367 MOD 5.368 5.369  MOD 5.372 |
| 1 621.35-1 626.5  MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION  Mobile-satellite (space-to-Earth) except maritime mobile-satellite (space-to-Earth)  MARITIME MOBILE-SATELLITE (space-to-Earth) ADD 5.B18 | 1 621.35-1 626.5  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  RADIODETERMINATION- SATELLITE (Earth-to-space)  Mobile-satellite (space-to-Earth) except maritime mobile-satellite (space-to-Earth)  MARITIME MOBILE-SATELLITE (space-to-Earth) ADD 5.B18 | 1 621.35-1 626.5  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  Mobile-satellite (space-to-Earth) except maritime mobile-satellite (space-to-Earth)  MARITIME MOBILE-SATELLITE (space-to-Earth) ADD 5.B18  Radiodetermination-satellite (Earth-to-space) |
| 5.341 5.355 5.359 5.364 5.365 5.366 5.367 MOD 5.368 5.369  5.371 MOD 5.372 | 5.341 5.364 5.365 5.366  5.367 MOD 5.368 5.370 MOD 5.372 | 5.341 5.355 5.359 5.364 5.365 5.366 5.367 MOD 5.368 5.369  MOD 5.372 |

**Reasons:** The frequency band 1 621.35-1 626.5 MHz, used for GMDSS, is allocated to the maritime mobile-satellite service in the Earth-to-space and space-to-Earth directions on a primary basis.

MOD RCC/12A8A2/5#50274

5.208B\* In the frequency bands:

137-138 MHz,  
 387-390 MHz,  
 400.15-401 MHz,  
 1 452-1 492 MHz,  
 1 525-1 610 MHz  
 2 655-2 690 MHz,  
 21.4-22 GHz,

Resolution **739** **(Rev.WRC-19)** applies.     (WRC‑19)

**Reasons:** The parameters ensuring protection for the radio astronomy service which are set out in Resolution **739 (Rev.WRC-15)** for the frequency band 1 613.8-1 626.5 MHz are directly included in the Radio Regulations; this frequency band should therefore be deleted from the list in the footnote.

NOC RCC/12A8A2/6#50267

5.364

**Reasons:** The conditions relating to the mobile-satellite service in RR No. **5.364** should be left unchanged.

MOD RCC/12A8A2/7

5.368 The provisions of No. **4.10** do not apply with respect to the radiodetermination-satellite and mobile-satellite services in the band 1 610-1 626.5 MHz. However, No. **4.10** applies in the band 1 610-1 626.5 MHz with respect to the aeronautical radionavigation-satellite service operating in accordance with No.**5.366** and the aeronautical mobile-satellite (R) service operating in accordance with No. **5.367**, and in the band 1 621.35-1 626.5 MHz with respect to the maritime mobile-satellite service when used for GMDSS.     (WRC‑19)

**Reasons:** The proposed modifications to RR No. **5.368** are in order to avoid any inconsistencies or ambiguity with respect to the regulatory status of the existing safety services operating in accordance with RR Nos. **5.366** and **5.367** upon the addition of the maritime mobile-satellite service, used for GMDSS, in the band 1 621.35-1 626.5 MHz .

MOD RCC/12A8A2/8#50279

5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the band 1 610.6‑1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (including land, aeronautical and maritime mobile-satellite services) (No. **29.13** applies). For the mentioned services non-GSO satellite systems operating in the band 1 613.8-1 626.5 MHz shall not exceed an epfd of −258 dBW/m2/20 kHz in the band 1 610.6-1 613.8 MHz if the data loss resulting from exceeding this limit is less than 2%, and GSO satellite networks operating in the band 1 613.8-1 626.5 MHz shall not exceed a pfd of −194 dBW/m2/20 kHz in the band 1 610.6-1 613.8 MHz, at any radio astronomy station performing observations in this band. The verification of the compliance with the epfd threshold for non-GSO systems shall be done using Recommendation ITU‑R M.1583‑1 and the antenna pattern and the maximum antenna gain given in Recommendation ITU‑R RA.1631‑0.      (WRC‑19)

**Reasons:** The requirements for protection of radio astronomy in this frequency band are transferred into this provision from Resolution **739 (Rev.WRC-15)**. This is in order to show that the use of part of this band by GMDSS does not signify a relaxation of the obligations regarding the protection of radio astronomy.      (WRC‑19)

ADD RCC/12A8A2/9

5.B18 With the exception of the cases provided for in Appendix **3**, maritime mobile earth stations receiving in the band 1 621.35-1 626.5 MHz shall not claim protection from emissions of maritime mobile earth stations transmitting in the band 1 626.5-1 660.5 MHz.

**Reasons:** It is necessary to guarantee that upgrading of the status of MMSS in the frequency band 1 621.35-1 626.5 MHz will not constrain the operation of GMDSS systems operating in the adjacent frequency band.

NOC RCC/12A8A2/10

5.365

**Reasons:** If the status of the allocation to MMSS (space-to-Earth) is upgraded to primary, it becomes necessary for an administration notifying a non-GSO MSS system that is to be used in the GMDSS to effect coordination with all stations in the satellite and terrestrial radio services that have been notified to the Bureau in the frequency band in question.

ARTICLE 33

Operational procedures for urgency and safety communications in  
the global maritime distress and safety system (GMDSS)

Section V − Transmission of maritime safety information2

33.49 E − Maritime safety information via satellite

MOD RCC/12A8A2/11#50280

33.50 § 26 Maritime safety information may be transmitted via satellite in the maritime mobile-satellite service using the bands 1 530-1 545 MHz and 1 621.35-1 626.5 MHz (see Appendix **15**).     (WRC‑19)

**Reasons:** The inclusion of the new frequency band in GMDSS needs to be reflected in RR Appendix **15**.

Section VII − Use of other frequencies for safety     (Rev.WRC‑19)

MOD RCC/12A8A2/12#50282

33.53 § 28 Radiocommunications for safety purposes concerning ship reporting communications, communications relating to the navigation, movements and needs of ships and weather observation messages may be conducted on any appropriate communications frequency, including those used for public correspondence. In terrestrial systems, the bands 415-535 kHz (see Article **52**), 1 606.5-4 000 kHz (see Article **52**), 4 000-27 500 kHz (see Appendix **17**), and 156‑174 MHz (see Appendix **18**) are used for this function. In the maritime mobile-satellite service, frequencies in the bands 1 530-1 544 MHz, 1 621.35‑1 626.5 MHz and 1 626.5-1 645.5 MHz are used for this function as well as for distress alerting purposes (see No. **32.2**).     (WRC‑19)

**Reasons:** The inclusion of the new frequency band in GMDSS needs to be reflected in RR Appendix **15**.

APPENDIX 15 (REV.WRC‑15)

Frequencies for distress and safety communications for the Global  
Maritime Distress and Safety System (GMDSS)

(see Article **31**)

The frequencies for distress and safety communications for the GMDSS are given in Tables 15‑1 and 15‑2 for frequencies below and above 30 MHz, respectively.

MOD RCC/12A8A2/13#50284

TABLE 15-2     (WRC‑19)

Frequencies above 30 MHz (VHF/UHF)

...

TABLE 15-2 (*end*)     (WRC‑19)

|  |  |  |
| --- | --- | --- |
| Frequency (MHz) | Description of usage | Notes |
| ... | ... | ... |
| 1 621.35-1 626.5 | SAT-COM | In addition to its availability for routine non-safety purposes, the band 1 621.35-1 626.5 MHz is used for distress and safety purposes in the Earth-to-space and space-to-Earth directions in the maritime mobile-satellite service. GMDSS distress, urgency and safety communications have priority in this band.     (WRC‑19) |
| ... | ... | ... |

**Reasons:** The inclusion of the new frequency band in GMDSS needs to be reflected in RR Appendix **15**.

MOD RCC/12A8A2/14#50285

RESOLUTION 739 (REV.WRC-19)

Compatibility between the radio astronomy service and the active  
space services in certain adjacent and nearby frequency bands

The World Radiocommunication Conference (Sharm el-Sheikh, 2019),

…

ANNEX 1 TO RESOLUTION 739 (REV.WRC-19)

…

TABLE 1-1

pfd thresholds for unwanted emissions from any geostationary space station  
at a radio astronomy station

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Space service | Space service frequency band | Radio astronomy frequency band | Single dish, continuum observations | | Single dish, spectral line observations | | VLBI | | Condition of application: the API is received by the Bureau following the entry into force of the Final Acts of: |
| pfd(1) | Reference bandwidth | pfd(1) | Reference bandwidth | pfd(1) | Reference bandwidth |
| **(MHz)** | **(MHz)** | **(dB(W/m2))** | **(MHz)** | **(dB(W/m2))** | **(kHz)** | **(dB(W/m2))** | **(kHz)** |
| MSS (space-to-Earth) | 387-390 | 322-328.6 | −189 | 6.6 | −204 | 10 | −177 | 10 | WRC-07 |
| BSS MSS (space-to-Earth) | 1 452-1 492 1 525-1 559 | 1 400-1 427 | −180 | 27 | −196 | 20 | −166 | 20 | WRC-03 |
| MSS (space-to-Earth) | 1 525-1 559 | 1 610.6-1 613.8 | NA | NA | −194 | 20 | −166 | 20 | WRC-03 |
| RNSS (space-to-Earth) | 1 559-1 610 | 1 610.6-1 613.8 | NA | NA | −194 | 20 | −166 | 20 | WRC-07 |
| BSS FSS (space-to-Earth) | 2 655-2 670 | 2 690-2 700 | −177 | 10 | NA | NA | −161 | 20 | WRC-03 |
| FSS (space-to-Earth) | 2 670-2 690 | 2 690-2 700 (in Regions 1 and 3) | −177 | 10 | NA | NA | −161 | 20 | WRC-03 |
|  | **(GHz)** | **(GHz)** | − | − | − | − | − | − |  |
| BSS | 21.4-22.0 | 22.21-22.5 | −146 | 290 | −162 | 250 | −128 | 250 | WRC-03 for VLBI, and WRC-07 for other types of observation |
| NA: Not applicable, measurements of this type are not made in this frequency band.  (1) Integrated over the reference bandwidth with an integration time of 2 000 s. | | | | | | | | | |

TABLE 1-2

epfd thresholds(1) for unwanted emissions from all space stations of a non-GSO satellite system   
at a radio astronomy station

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Space service** | **Space service frequency band** | **Radio astronomy frequency band** | **Single dish, continuum observations** | | **Single dish, spectral line observations** | | **VLBI** | | **Condition of application: the API is received by the Bureau following the entry into force of the Final Acts of:** |
| **epfd**(2) | **Reference bandwidth** | **epfd**(2) | **Reference bandwidth** | **epfd**(2) | **Reference bandwidth** |
| **(MHz)** | **(MHz)** | **(dB(W/m2))** | **(MHz)** | **(dB(W/m2))** | **(kHz)** | **(dB(W/m2))** | **(kHz)** |
| MSS (space-to-Earth) | 137-138 | 150.05-153 | −238 | 2.95 | NA | NA | NA | NA | WRC-07 |
| MSS (space-to-Earth) | 387-390 | 322-328.6 | −240 | 6.6 | −255 | 10 | −228 | 10 | WRC-07 |
| MSS (space-to-Earth) | 400.15-401 | 406.1-410 | −242 | 3.9 | NA | NA | NA | NA | WRC-07 |
| MSS (space-to-Earth) | 1 525-1 559 | 1 400-1 427 | −243 | 27 | −259 | 20 | −229 | 20 | WRC-07 |
| RNSS (space-to-Earth)(3) | 1 559-1 610 | 1 610.6-1 613.8 | NA | NA | −258 | 20 | −230 | 20 | WRC‑07 |
| MSS (space-to-Earth) | 1 525-1 559 | 1 610.6-1 613.8 | NA | NA | −258 | 20 | −230 | 20 | WRC-07 |
| NA: Not applicable, measurements of this type are not made in this frequency band.  (1) These epfd thresholds should not be exceeded for more than 2% of time.  (2) Integrated over the reference bandwidth with an integration time of 2 000 s.  (3) This Resolution does not apply to current and future assignments of the radionavigation-satellite system GLONASS/GLONASS-M in the frequency band 1 559-1 610 MHz, irrespective of the date of reception of the related coordination or notification information, as appropriate. The protection of the radio astronomy service in the frequency band 1 610.6‑1 613.8 MHz is ensured and will continue to be in accordance with the bilateral agreement between the Russian Federation, the notifying administration of the GLONASS/GLONASS-M system, and IUCAF, and subsequent bilateral agreements with other administrations. | | | | | | | | | |

**Reasons:** It is not necessary to keep the information relating to the band 1 613.8-1 626.5 MHz in this Resolution since these conditions have been transferred into the Radio Regulations.

SUP RCC/12A8A2/15#50257

RESOLUTION 359 (REV.WRC‑15)

Consideration of regulatory provisions for updating and modernization of the   
Global Maritime Distress and Safety System

**Reasons:** IMO has to date approved only one satellite network for incorporation in GMDSS. Since studies in respect of this network have been completed, there is no need to maintain this Resolution.

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