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| **World Radiocommunication Conference (WRC-19) Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
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|  | CPG(19)143 ANNEX VIII-08B |
| PLENARY MEETING | **Addendum 2 to Addendum 8 to Document 16-E** |
|  | **3 July 2019** |
|  | **Original: English** |
|  | |
| European 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**);

**Part 2 – Additional satellite systems for GMDSS**

Introduction

Taking into account the studies performed during this study period under Resolution **359 (Rev.WRC-15)** *resolves to invite ITU-R* 2 and the recognition of the Iridium mobile satellite system for use in the Global Maritime Distress Safety Systems (GMDSS) by International Maritime Organisation (IMO), CEPT proposes some regulatory actions to introduce an additional satellite system into the GMDSS as follows:

* the frequency band 1621.35-1626.5 MHz used for GMDSS is allocated to the maritime mobile-satellite service (for both space-to-Earth and Earth-to-space) on a primary basis;
* regulatory provisions are reinforced in order to ensure the protection of services operating in the frequency bands concerned and in adjacent frequency bands.

Proposals

ARTICLE 5

Frequency allocations

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

MOD EUR/16A8A2/1

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  MARITIME MOBILE-SATELLITE (space-to-Earth) ADD 5.B18  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  Mobile-satellite (space-to-Earth) except maritime mobile-satellite (space-to-Earth) | 1 621.35-1 626.5  MARITIME MOBILE-SATELLITE (space-to-Earth) ADD 5.B18  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) | 1 621.35-1 626.5  MARITIME MOBILE-SATELLITE (space-to-Earth) ADD 5.B18  MOBILE-SATELLITE (Earth-to-space) 5.351A  AERONAUTICAL RADIONAVIGATION  Mobile-satellite (space-to-Earth) except maritime 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 |

**Reasons:** The frequency band 1621.35-1626.5 MHz used for GMDSS is allocated to the maritime mobile-satellite service (for both space-to-Earth and Earth-to-space) on a primary basis.

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5.208B[[1]](#footnote-1)\* 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-15)** applies.     (WRC-19)

**Reasons:** The values contained in Resolution **739 (Rev.WRC-15)** for the frequency bands 1 613.8-1 626.5 MHz are now included directly in the RR, therefore this frequency bands could be deleted from this footnote.

NOC

5.364

**Reasons:** The conditions in RR No. **5.364** related to MSS should remain unchanged.

NOC

5.365

**Reasons:** The downlink of the non-GSO MSS system using the frequency band 1 613.8‑1 626.5 MHz or part thereof is currently on secondary basis. Consequently, according to the footnote to Annex 1 of Appendix **5** of the Radio Regulations, coordination was not required with any space or terrestrial service of primary status. However, should a primary status be granted to the maritime mobile-satellite service (MMSS) allocation, it is fundamental that the notifying administration of the non-GSO MSS system, if used as maritime mobile-satellite service to support GDMSS, would have to proceed with the required coordination with all space and terrestrial services submitted to the Bureau at the date of coming into force of the new primary allocation to MMSS.

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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 1 610-1626.5 MHz with respect to the aeronautical radionavigation-satellite service when operating in accordance with No. **5.366**, the aeronautical mobile satellite (R) service when 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.

**Reasons:** Modification of provision RR No. **5.368** in order to avoid any inconsistency and ambiguity about the regulatory status of the existing safety services operating in accordance with provisions RR Nos. **5.366** and **5.367** when adding the maritime mobile-satellite service in the band 1 621.35-1 626.5 MHz for GMDSS.

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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 (No. **29.13** applies). For the mentioned services non-geostationary 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 frequency band 1 610.6-1 613.8 MHz unless the data loss resulting from exceeding this limit is less than 2%, and geostationary satellite networks operating in the band 1 613.8-1 626.5 MHz shall not exceed a pfd limit of –194 dBW/m²/20 kHz in the frequency band 1 610.6‑1 613.8 MHz, at any radio astronomy station performing observations in this frequency band. The verification of the compliance with the epfd threshold for non-geostationary 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 values contained in Resolution **739 (Rev.WRC-15)** for the frequency bands 1 613.8‑1 626.5 MHz are now included directly in this footnote. The upgrade of the allocation for Iridium shall not be interpreted as a relaxation of its obligation to protect the radio astronomy. In this respect, it is noted that the secondary status of Iridium did not prevent interference to radio astronomy due to the fact that there are no regulatory limits protecting effectively the radio astronomy services. Therefore, it is proposed to define in the Radio Regulations the unwanted emission limits ensuring the protection of radio astronomy. A regulatory limit is considered as much more protective than the existing secondary status of MSS downlink in this frequency band.

ADD EUR/16A8A2/5

5.B18 Except as provided for in Appendix **3**, maritime mobile earth stations receiving in the frequency band 1 621.35 ‑ 1 626.5 MHz shall not claim protection from emissions of maritime mobile earth stations transmitting in the frequency band 1626.5 – 1660.5 MHz.      (WRC‑19)

**Reasons:** To ensure that the elevation of the status of the frequency band 1 621.35 - 1 626.5 MHz will not create new constraints to the GMDSS operations in the adjacent frequency band.

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 EUR/16A8A2/6

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

**Reasons:** Consequential change due to the inclusion of the new GMDSS frequency bands in the Appendix **15**.

Section VII − Use of other frequencies for safety     (WRC‑07)

MOD EUR/16A8A2/7

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:** Consequential change due to the inclusion of the new GMDSS frequency bands in the Appendix **15**.

APPENDIX 15 (REV.WRC‑15)

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

MOD EUR/16A8A2/8

TABLE 15-2     (WRC‑15)

Frequencies above 30 MHz (VHF/UHF)

…

TABLE 15-2 (*end*)     (WRC‑19)

|  |  |  |
| --- | --- | --- |
| Frequency (MHz) | Description of usage | Notes |
| … | … | … |
| \*1 544-1 545 | D&S-OPS | Use of the band 1 544-1 545 MHz (space-to-Earth) is limited to distress and safety operations (see No. **5.356**), including feeder links of satellites needed to relay the emissions of satellite emergency position-indicating radio beacons to earth stations and narrow-band (space-to-Earth) links from space stations to mobile stations. | |
| 1 621.35-1 626.5 | SAT-COM | In addition to its availability for routine non-safety purposes, the frequency 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. |
| … | … | … |

…

**Reasons:** Inclusion of the frequency bands used by the GMDSS in RR Appendix **15**.

RESOLUTION 739 (Rev.WRC-15)

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

MOD EUR/16A8A2/9

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

Unwanted emission threshold levels

…

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:** The values contained in Resolution **739 (Rev.WRC-15)** for the frequency bands 1 613.8-1 626.5 MHz are now proposed to be included directly in the RR footnote **5.372**. Therefore the reference of this frequency bands in tables 1-1 and 1-2 can be deleted.

SUP EUR/16A8A2/10

RESOLUTION 359 (REV.WRC‑15)

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

**Reasons:** This Resolution is proposed to be suppressed considering the finalisation of the studies on WRC-19 Agenda item 1.8 covered by the *resolves* 2 (introduction of new satellite provider for the GMDSS).

1. \* This provision was previously numbered as No. 5.347A. It was renumbered to preserve the sequential order. [↑](#footnote-ref-1)