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| **World Radiocommunication Conference (WRC-19)Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
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| PLENARY MEETING | **Addendum 8 toDocument 68-E** |
|  | **6 October 2019** |
|  | **Original: Arabic** |
|  |
| Qatar (State of) |
| 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**);

Resolution **359 (Rev.WRC‑15)** – *Consideration of regulatory provisions for updating and modernization of the Global Maritime Distress and Safety System*

Introduction

WRC-19 agenda item 1.8 encompasses two separate items. The first is global maritime distress and safety system (GMDSS) modernization addressed under *resolves* *to invite ITU-R* 1 of Resolution **359 (Rev.WRC‑15)**. In this chapter GMDSS modernization is referred to as “Issue A.” The second is the introduction of an additional satellite system into the GMDSS. This is covered under *resolves to invite ITU-R* 2 of Resolution **359 (Rev.WRC‑15)**. The introduction of additional satellite systems into the GMDSS is referred to as “Issue B.”

Proposals

The Qatari Administration proposes Method 4 for Issue B of the CPM Report to satisfy this Conference agenda item.

Method B4

ARTICLE 5

Frequency allocations

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

MOD QAT/68A8/1#50273

1 610-1 660 MHz

|  |
| --- |
| Allocation to services |
| Region 1 | Region 2 | Region 3 |
| 1 613.8-1 621.35MOBILE-SATELLITE(Earth-to-space) 5.351AAERONAUTICALRADIONAVIGATIONMobile-satellite (space-to-Earth) | 1 613.8-1 621.35MOBILE-SATELLITE(Earth-to-space) 5.351AAERONAUTICALRADIONAVIGATIONRADIODETERMINATION-SATELLITE(Earth-to-space)Mobile-satellite (space-to-Earth) | 1 613.8-1 621.35MOBILE-SATELLITE(Earth-to-space) 5.351AAERONAUTICAL RADIONAVIGATIONMobile-satellite (space-to-Earth)Radiodetermination-satellite(Earth-to-space) |
| 5.341 5.355 5.359 MOD 5.364 5.365 5.366 5.367 MOD 5.368 5.369 5.371 MOD 5.372 | 5.341 MOD 5.364 5.365 5.366 5.367 MOD 5.368 5.370 MOD 5.372 | 5.341 5.355 5.359 MOD 5.364 5.365 5.366 5.367 MOD 5.368 5.369 MOD 5.372 |
| 1 621.35-1 626.5MARITIME MOBILE-SATELLITE (space-to-Earth) ADD 5.GMDSS-B4 MOBILE-SATELLITE(Earth-to-space) 5.351AAERONAUTICALRADIONAVIGATIONMobile-satellite (space-to-Earth) except maritime mobile-satellite (space-to-Earth)  | 1 621.35-1 626.5MARITIME MOBILE-SATELLITE (space-to-Earth) ADD5.GMDSS-B4MOBILE-SATELLITE(Earth-to-space) 5.351AAERONAUTICALRADIONAVIGATIONRADIODETERMINATION-SATELLITE(Earth-to-space)Mobile-satellite (space-to-Earth) except maritime mobile-satellite (space-to-Earth)  | 1 621.35-1 626.5MARITIME MOBILE-SATELLITE (space-to-Earth) ADD5.GMDSS-B4MOBILE-SATELLITE(Earth-to-space) 5.351AAERONAUTICAL RADIONAVIGATIONMobile-satellite (space-to-Earth) except maritime mobile-satellite (space-to-Earth) Radiodetermination-satellite(Earth-to-space) |
| 5.341 5.355 5.359 MOD 5.364 5.365 5.366 5.367 MOD 5.368 5.369 5.371 MOD 5.372 | 5.341 MOD 5.364 5.365 5.366 5.367 MOD 5.368 5.370 MOD 5.372 | 5.341 5.355 5.359 MOD 5.364 5.365 5.366 5.367 MOD 5.368 5.369 MOD 5.372 |
| 1 626.5-1 660 MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376 |

MOD QAT/68A8/2#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)

ADD QAT/68A8/3#50275

5.GMDSS-B4 The use of the band 1 621.35-1 626.5 MHz by the maritime mobile-satellite to support GMDSS is subject application of No. **9.11A** and its associated Rules of Procedure requiring, *inter alia*, to coordinate with all space and terrestrial services in this band and the adjacent bands, having allocation with primary status.     (WRC‑19)

**Reasons:** The downlink of the non-GSO MSS system using the band 1 613.8-1 626.5 MHz or part thereof is currently on a secondary basis. Consequently, according to the footnote to Annex 1 of Appendix **5** of the Radio Regulations (RR), coordination is not required with any space or terrestrial service of primary status. However, should a primary status (on a provisional or permanent basis) be granted to this 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 effect 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 the Maritime Mobile Satellite Service.

For the regulatory example of RR No. **5.364** under Method B4, 2 options are proposed:

Option 1:

MOD QAT/68A8/4#50276

5.364 The use of the band 1 610-1 626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth‑to‑space) is subject to coordination under No. **9.11A**. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of −15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. **5.366** (to which No. **4.10** applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed −3 dB(W/4 kHz). Except when used for maritime distress and safety purposes in the band 1 621.35-1 626.5 MHz by satellite networks in the maritime mobile-satellite service (see Appendix **15**), stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. **5.366** and stations in the fixed service operating in accordance with the provisions of No. **5.359**. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. **5.366**.     (WRC‑19)

Option 2:

NOC QAT/68A8/5#50277

5.364

**Reasons:**

Under section 5, Regulatory and procedural considerations, a point was raised regarding apparent inconsistency between RR No. **5.364** (adopted several years ago) and RR No. **5.367** (adopted at WRC-12).

To address this apparent inconsistency, proponent of Method B1 proposed certain modification to RR No. **5.364**.

It was emphasized that no such inconsistency was reported to the Director of the Radiocommunication Bureau. Moreover to address such an apparent inconsistency, there were two agenda items which could have been used, namely agenda items 3 and 7 of WRC-19, noting that such inconsistency was not raised under these agenda items, neither to WRC-15 nor to ITU-R Study Groups dealing with these agenda items.

It should be borne in mind that current agenda items of WRC-19, namely agenda items 3, 7 and 9.1 still could be used to report the matter to WRC-19.

It is further emphasized that the proposed modification to RR No. **5.364** would result in an implicit super primary to up-link of non-GSO MSS under consideration to support GMDSS if used as maritime mobile satellite service which adversely affect the primary station of AMRS which is a safety of life service at sea, land and air. Such implicit super primary status is also in contradiction to the objectives of No. **4.10** of the Radio Regulations accorded to all safety services including AMRS.

In view of the above, in order to avoid such negative consequences, it is proposed NOC for RR No. **5.364** as an option for Method B4.

For Method B4 (continued)

MOD QAT/68A8/6#50278

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

MOD QAT/68A8/7#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 dB(W/(m2 · 20 kHz)) in the band 1 610.6-1 613.8 MHz unless 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 dB(W/(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)

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 QAT/68A8/8#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)

MOD QAT/68A8/9#50281

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

MOD QAT/68A8/10#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)

MOD QAT/68A8/11#50261

APPENDIX 15 (REV.WRC‑19)

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 QAT/68A8/12#50284

TABLE 15-2 (*end*)     (WRC‑19)

|  |  |  |
| --- | --- | --- |
| Frequency(MHz) | Descriptionof 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) |
| ... | ... | ... |

MOD QAT/68A8/13#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 servicefrequency band | Radio astronomyfrequency 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 |
| BSSMSS (space-to-Earth) | 1 452-1 4921 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 |
| BSSFSS (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 servicefrequency band | Radio astronomyfrequency 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. |

SUP QAT/68A8/14#50252

RESOLUTION 359 (REV.WRC‑15)

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

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