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| A close up of a sign  Description automatically generated | **World Radiocommunication Conference (WRC-23) Dubai, 20 November - 15 December 2023** | |  |
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| PLENARY MEETING | | **Addendum 2 to Document 111(Add.11)-E** | |
|  | | **29 October 2023** | |
|  | | **Original: Chinese** | |
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| China (People's Republic of) | | | |
| Proposals for the work of the Conference | | | |
|  | | | |
| Agenda item 1.11 | | | |

1.11to consider possible regulatory actions to support the modernization of the Global Maritime Distress and Safety System (GMDSS) and the implementation of e‑navigation, in accordance with Resolution **361 (Rev.WRC‑19)**;

Resolution **361 (Rev.WRC-19)** – *Consideration of possible regulatory actions to support modernization of the Global Maritime Distress and Safety System and the implementation of e‑navigation*

Introduction

Resolution **361** **(Rev. WRC-19)** invites WRC-23 to identify three topics to be studied and addressed independently, and, under *resolves to invite the 2023 World Radiocommunication Conference* 3, to consider regulatory provisions, if any, based on the results of ITU-R studies indicated in *invites the ITU Radiocommunication Sector*, so as to support the introduction of additional satellite systems into the Global Maritime Distress and Safety System (GMDSS).

GMDSS is a comprehensive radio system established by the International Maritime Organization (IMO) to better deal with the issues of maritime distress and safety as well as routine communication, and to protect life and property at sea.

BeiDou Message Service System (BDMSS) is a featured functional component of China's BeiDou System. Since 2003, BDMSS has officially provided message communication services in China and in the surrounding Asia-Pacific region. It has been widely adopted in many fields, playing an important role particularly in emergency communication, rescue and disaster relief.

In 2018, application was made by China to IMO for BDMSS to become a GMDSS satellite service provider, with the intention of providing a public service for improving marine safety and crew welfare in the Asia-Pacific region. BDMSS has received support from many countries during the application and IMO assessment process.

Resolution MSC.529(106) of IMO’s Maritime Safety Committee (MSC) “*recognized the maritime mobile satellite services provided by CTTIC through BDMSS*”, limited to the coverage area within 75°E to 135°E longitude and 10°N to 55°N latitude, “*for use in the GMDSS*”.

All implementation issues need to be addressed before the commencement of services, including “*6. WRC-23 to complete the necessary regulatory actions to safeguard the availability and full protection of the spectrum used for BDMSS*” within the ITU framework.

Two examples related to this issue are given by IMO. One is the inclusion of the frequencies used by BDMSS in Appendix **15** of the ITU Radio Regulations, the other addresses the issue of frequency coordination with other systems. The first issue isaddressed by WRC-23 agenda item 1.11, Issue C, concerning giving BDMSS the regulatory status applicable to the GMDSS frequency, which is of great importance to enhancing maritime rescue and the safety of life at sea with continuous, stable and reliable service. The second issue has been worked on by the parties concerned under the relevant provisions of Article **9** of Radio Regulations.

One view expressed in the CPM report requests to take the completion of coordination to be the prerequisite for making changes to the Radio Regulation. However, all procedures for coordination of frequency assignments have already been clearly stipulated in the Radio Regulations. Therefore, the course of action for coordinating the frequency assignments is not directly associated with the changes to the Radio Regulations.

Compatibility with other systems, especially mobile-satellite communication systems, in the same frequency band has been a focus point ever since system design of BDMSS, whose performance keeps improving in the course of upgrades from one generation to another. A variety of technical measures have been adopted to improve compatibility with other MSS systems, including adopting the broadband CDMA schemes, a user terminal transmission signal bandwidth of 8.16 MHz and a received signal bandwidth of 16.32 MHz, in order to reduce the e.i.r.p. density for transmission.

Since 1997, the Administration of China and the BDMSS operator have been engaged in frequency coordination with hundreds of satellite networks of more than 20 countries, and have completed coordination with the majority. Frequency coordination with the relevant mobile-satellite communication systems has been carried out in an active manner.

In accordance with No. **9.6** of the Radio Regulations and the associated Rules of Procedures, the coordination procedure is a two-way process. The coordination of most satellite networks is a long and arduous process and does not happen overnight. This is especially so when two satellite systems have been in operation for a long time. The realization of compatibility requires complex technical analysis and the joint adoption of appropriate technical measures in operation, and it will take some time to get the result. Therefore, both parties need to conduct more in-depth coordination over a protracted period of time, on equal footing and in a cooperative manner, and address compatibility issues through technical measures, which has been a matter of consensus among system operators for a long time. The requirement to complete coordination prior to WRC-23 is therefore unfounded and inconsistent with ITU's practical experience.

China will do its utmost to continuously promote coordination and address the frequency coordination issue of BDMSS before the commencement of GMDSS services. As for the "regulatory action" required by IMO, WRC-23 agenda item 1.11 Issue C is being studied, and China supports the inclusion of the frequency assignment of BDMSS for GMDSS services in Appendix **15** and Article **33** of the Radio Regulations, and the modification of the relevant footnote so that No. **4.10** will apply to the relevant frequency assignment while protecting the regulatory status of the existing safety-of-life service, to fully meet the requirements of the GMDSS safety service.

Regarding the spectrum requirements for GMDSS service, it should be noted that BDMSS is an existing system with a broadband CDMA scheme and has been in operation for 20 years. IMO recognizes that the operating BDMSS meets the requirements of relevant IMO resolutions for a GMDSS service and is capable of providing reliable service for GMDSS. The study of the spectrum requirements for GMDSS service conducted by ITU-R during this study period did not result in a consensus. However, BDMSS requires at least one carrier frequency in the uplink and downlink respectively to provide GMDSS safety communication service. Therefore, consideration of the technical scheme of BDMSS, especially the carrier characteristics and signal scheme, as well as understanding and support from Member States, are eagerly anticipated.

In conclusion, China supports the revision of the Radio Regulations by WRC-23 to meet the requirements of GMDSS modernization, and to further enhance the safety of life at sea and enhance the welfare of crew members.

Meanwhile, China is of the view that the frequency assignment to be used for GMDSS needs to complete coordination under RR Article **9** and the associated Rules of Procedures before the commencement of GMDSS services.

Proposals

The following proposal is provided based on Method C3.

ARTICLE 5

Frequency allocations

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

NOC CHN/111A11A2/1#1781

5.364

**Reasons:** Since footnotes No. **5.364** and No. **5.367** specify the coordination procedures for the mobile-satellite service (MSS) (including the maritime mobile-satellite service (MMSS)) (Earth-to-space) and the aeronautical mobile-satellite (Route) service (AMS(R)S) in the frequency band 1 610-1 626.5 MHz, a WRC‑23 decision on the application of No. **4.10** to MMSS (Earth-to-space) for GMDSS in the frequency bands [1 610.18-1 618.34/1 614.26-1 621.35] MHz will not change the coordination procedures and mutual status of the MMSS (Earth-to-space) and AMS(R)S.

MOD CHN/111A11A2/2#1789

5.368 The provisions of No. **4.10** do not apply with respect to the radiodetermination-satellite and mobile-satellite services in the frequency band 1 610-1 626.5 MHz. However, No. **4.10** applies in the frequency band 1 610-1 626.5 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 frequency bands [1 610.18-1 618.34/1 614.26**-**1 621.35] MHz (Earth-to-space) and 1 621.35‑1 626.5 MHz with respect to the maritime mobile-satellite service when used for GMDSS.     (WRC‑23)

**Reasons:** No. **4.10** applies to the MMSS (Earth-to-space) in the frequency band [1 610.18-1 618.34/1 614.26**-**1 621.35] MHz, making a carrier frequency of BDMSS available for GMDSS safety service.

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 CHN/111A11A2/3#1790

33.50 § 26 Maritime safety information may be transmitted via satellite in the maritime mobile-satellite service using the frequency bands 1 530-1 545 MHz, 1 621.35-1 626.5 MHz and 2 483.59-2 499.91 MHz (see Appendix 15).     (WRC‑23)

**Reasons:** The addition of the frequency band 2 483.59-2 499.91 MHz makes it possible to use the BDMSS carrier for transmitting maritime safety information via satellite.

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

MOD CHN/111A11A2/4#1791

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 frequency 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 frequency bands 1 530-1 544 MHz, [1 610.18-1 618.34/1 614.26**-**1 621.35] MHz (Earth-to-space), 1 621.35‑1 626.5 MHz, 1 626.5-1 645.5 MHz and 2 483.59-2 499.91 MHz are used for this function as well as for distress alerting purposes (see No. **32.2**).     (WRC‑23)

**Reasons:** To apply No. **33.53** to frequency bands [1 610.18-1 618.34/1 614.26**-**1 621.35] MHz and 2 483.59-2 499.91 MHz for use by mobile-satellite service systems approved by the International Maritime Organization to participate in the Global Maritime Safety and Distress System.

APPENDIX 15 (REV.WRC‑19)

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

MOD CHN/111A11A2/5#1792

TABLE 15-2 (*end*)     (WRC‑23)

|  |  |  |
| --- | --- | --- |
| Frequency (MHz) | Description of usage | Notes |
| ... | ... | ... |
| [1 610.18-1 618.34 / 1 614.26**-**1 621.35] | SAT-COM | In addition to its availability for routine non-safety purposes, the frequency bands [1 610.18‑1 618.34/1 614.26-1 621.35] MHz are used for distress and safety purposes in the Earth-to-space direction in the maritime mobile-satellite service. GMDSS distress, urgency and safety communications have priority in this band over non-safety communication within the same satellite system. |
| ... | ... | ... |
| 2 483.59-2 499.91 | SAT-COM | In addition to its availability for routine non-safety purposes, the frequency band 2 483.59-2 499.91 MHz is used for distress and safety purposes in the space-to-Earth direction in the maritime mobile-satellite service. GMDSS distress, urgency and safety communications have priority in this band over non-safety communication within the same satellite system. |
| ... | ... | ... |
| ... | | |

**Reasons:** To add the frequency bands [1 610.18-1 618.34/1 614.26**-**1 621.35]MHz in the Earth-to-space direction and 2 483.59‑2 499.91 MHz in the space-to-Earth direction as being available for distress and safety communications for the Global Maritime Distress and Safety System (GMDSS).