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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 1 to Document 16(Add.9)-E** |
|  | **4 October 2019** |
|  | **Original: English** |
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| European Common Proposals | |
| Proposals for the work of the conference | |
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| Agenda item 1.9.1 | |

1.9 to consider, based on the results of ITU-R studies:

1.9.1 regulatory actions within the frequency band 156-162.05 MHz for autonomous maritime radio devices to protect the GMDSS and automatic identifications system (AIS), in accordance with Resolution **362 (WRC-15)**;

Introduction

Applications with autonomous maritime radio devices (AMRD) reflect a new development in recent times. Due to the rapid technical progress and cost-effective production, more and more of such applications in the maritime environment are created and used.

The aim of this agenda item is to prevent unregulated operation of AMRD in order to enhance safety of navigation and to ensure the integrity of the global maritime distress and safety system (GMDSS) which is the only system for distress, urgency, safety and routine communication for general shipping. Furthermore the integrity of the collisions avoidance system AIS (automatic identifications system), including the AIS VHF Data Link, needs to be ensured.

The technical characteristics of AMRD are provided in Recommendation ITU-R M.[AMRD] “Technical characteristics of Autonomous Maritime Radio Devices in the frequency bands 156-162.05 MHz”. This Recommendation describes AMRD as follows:

An AMRD is a mobile station; operating at sea and transmitting independently of a ship station or a coast station. Two groups of AMRD are identified:

Group A: AMRD that enhance the safety of navigation,

Group B: AMRD that do not enhance the safety of navigation (AMRD which deliver signals or information which do not concern the vessel can distract or mislead the navigator and degrade the safety of navigation).

AMRD Group A that enhance the safety of navigation, should use the frequencies of the current Appendix **18** to the Radio Regulations (RR). These frequencies have been allocated for the operation of vessels. The usage of these frequencies guarantees the integrity of GMDSS and AIS.

Concerning AMRD Group A, CEPT is of the view that only an addition in the RR Appendix **18** note *)* is required to enable AMRD to operate AIS technology.

Information on identification (numbering) and AIS messages used by AMRD Group A are contained in Recommendation ITU-R M.585 (Assignment and use of identities in the maritime mobile service) and in Recommendation ITU-R M.1371 (Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile frequency band).

AMRD Group B that do not enhance the safety of navigation, but also operate in the maritime environment, should not be permitted to use the channel for digital selective calling (channel 70), the channel for distress, safety and calling (channel 16), the AIS channels (channels AIS 1 and AIS 2), and the channels for inter-ship, port operations and ship movement and public correspondence as listed in the current RR Appendix **18**.

For AMRD specified as Group B the following spectrum requirements have been identified:

‒ AIS-technology used by AMRD applications are sufficiently operated on one 25 kHz channel only. There is a low antenna height and the e.i.r.p. will be restricted to 100 mW. A huge amount of AMRD in a certain area cannot be expected. It is unlikely to overload this 25 kHz channel.

‒ AMRD applications using other technologies are sufficiently operated on three 25 kHz channels. There is a low antenna height and the e.i.r.p. will be restricted to 100 mW. If needed, channel sharing is necessary.

Proposals

MOD EUR/16A9A1/1

APPENDIX 18 (REV.WRC‑19)

Table of transmitting frequencies in the  
VHF maritime mobile band

(See Article 52)

| Channel designator | Notes | Transmitting frequencies  (MHz) | | Inter-ship | Port operations  and ship movement | | Public corres-pondence |
| --- | --- | --- | --- | --- | --- | --- | --- |
| From ship stations | From coast stations | Single frequency | Two frequency |
| ... | *…* | … | … | … | … | … | … |
| 2078 | *mm)* |  | 161.525 |  |  |  |  |
| 19 | *m)* | 156.950 | 161.550 |  | x | x | x |
| 1019 |  | 156.950 | 156.950 |  | x |  |  |
| 2019 | *mm)* |  | 161.550 |  |  |  |  |
| 79 | *m)* | 156.975 | 161.575 |  | x | x | x |
| 1079 |  | 156.975 | 156.975 |  | x |  |  |
| 2079 | *mm)* |  | 161.575 |  |  |  |  |
| ... | *…* | … | … | … | … | … | … |

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*Specific notes*

*f)* The frequencies 156.300 MHz (channel 06), 156.525 MHz (channel 70), 156.800 MHz (channel 16), 161.975 MHz (AIS 1) and 162.025 MHz (AIS 2) may also be used by aircraft stations for the purpose of search and rescue operations and other safety-related communication. The frequencies 156.525 MHz (channel 70), 161.975 MHz (AIS 1) and 162.025 MHz (AIS 2) may also be used by autonomous maritime radio devices Group A for digital selective calling respectively AIS-technology. Such use should be in accordance with the most recent version of Recommendation ITU‑R M.[AMRD].     (WRC‑19)

*…*

*mm)* Transmission on these channels is limited to coast stations. If permitted by administrations and specified by national regulations, these channels may be used by ship stations for transmission. All precautions should be taken to avoid harmful interference to channels AIS 1, AIS 2, 2027\* and 2028\*.

In addition channels 2078, 2019 and 2079 may also be used for autonomous maritime radio devices Group B for non-AIS technologies as described in the most recent version of Recommendation ITU‑R M.[AMRD], subject to coordination with affected administrations. AMRD Group B operation shall not cause harmful interference to, or claim protection from, stations operating in the fixed and mobile services. The e.i.r.p. of AMRD Group B shall be limited to 100 mW.     (WRC‑19)

\* From 1 January 2019, channel 2027 will be designated ASM 1 and channel 2028 will be designated ASM 2.

*…*

*r)* In the maritime mobile service, this frequency is reserved for usage of autonomous maritime radio devices Group B using AIS-technology as described in the most recent version of Recommendation ITU-R M.[AMRD]. This frequency also may be used for future AIS-technology applications or systems on an experimental basis. If authorized by administrations for AIS-technology based autonomous maritime radio devices Group B or experimental AIS-technology applications, their operation shall not cause harmful interference to, or claim protection from, stations operating in the fixed and mobile services. The e.i.r.p. of AMRD Group B shall be limited to 100 mW.     (WRC‑19)

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**Reasons:** Amendments in the table:

The channels 2078, 2019 and 2079 are not suitable for port operation and ship movement service in simplex mode. In case of using these frequencies by ship stations the AIS on board the transmitting vessels will be discontinued. It is proposed to use these channels for AMRD Group B.

*Note f:* AMRD Group A are identified to enhance the safety of navigation. Consequently AMRD Group A need to be operated on the ordinary frequencies for digital selective calling and AIS on order to enable vessels to detect it.

*Note mm:* It is proposed that for AMRD Group B using other technologies than AIS technology three 25 kHz channels are sufficient to be operated. The channels 2078 (161.525 MHz), 2019 (161.550 MHz) and 2079 (161.575 MHz) are not usable on board vessels for simplex communication because of interference to AIS. Due to the restriction of the e.i.r.p. to 100 mW, the maximum antenna height of 1 m and the duty cycle restricted to 10% the risk of interference to coast stations operating the duplex channels 78, 19 and 79 using the transmitting frequencies 161.525 MHz (Ch. 78), 161.550 MHz (Ch. 19) and 161.575 MHz (Ch. 79) is acceptable and very low. AMRD Group B will not provide telephony applications.

*Note r:* It is proposed that for AMRD Group B for AIS technology one 25 kHz channel is sufficient. channel 2006 (160.900 MHz) has already been identified for future applications or systems.

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RESOLUTION 362 (WRC-15)

Autonomous maritime radio devices operating in the frequency band 156‑162.05 MHz

**Reasons:** It is proposed to suppress Resolution **362 (WRC-15)** since it will become superfluous after the studies are completed and the identification of frequencies in order to enhance maritime radiocommunication has been made by WRC-19.

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