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| **World Radiocommunication Conference (WRC-23) Dubai, 20 November - 15 December 2023** | A close up of a sign  Description automatically generated |
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| Source Document: APG23-6/OUT-53 | **Addendum 10 to Document xx(Add.25)-E** |
|  | **19 August 2023** |
|  | **Original: English** |
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| Asia-Pacific Telecommunity Common Proposals | |
| Proposals for the work of the conference | |
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| Agenda item 10 | |

to recommend to the ITU Council items for inclusion in the agenda for the next world radiocommunication conference, and items for the preliminary agenda of future conferences, in accordance with Article 7 of the ITU Convention and Resolution **804 (Rev.WRC-19)**

Resolution **804 (Rev.WRC-19)** - Principles for establishing agendas for world radiocommunication conferences

**Issue: WRC-27 preliminary agenda item 2.10 contained in Resolution 812 (WRC-19)**

**Proposals**

ADD ACP/xxA25A10/1

RESOLUTION [ACP/AI10\_WRC-27\_Agenda] (WRC‑23)

Agenda for the 2027 World Radiocommunication Conference

The World Radiocommunication Conference (Dubai, 2023),

…

resolves

to recommend to the Council that a WRC be held in 2027 for a maximum period of four weeks, with the following agenda:

1 on the basis of proposals from administrations, taking account of the results of WRC‑23 and the Report of the Conference Preparatory Meeting, and with due regard to the requirements of existing and future services in the frequency bands under consideration, to consider the following items and take appropriate action:

1.x improving the utilization and channelization of maritime radiocommunication, in accordance with Resolution **363 (Rev.WRC-23)**;

….

ADD ACP/xxA25A10/2

RESOLUTION 363 (WRC-23)

**Improving the utilization and channelization of maritime radiocommunication in the MF, HF and VHF bands, including Appendices 17 and 18**

The World Radiocommunication Conference (Dubai, 2023),

*considering*

*a)* that the ITU Radiocommunication Sector (ITU-R) is conducting ongoing studies on improving efficiency in the use of Appendix **18**, including the use of digital technologies, to respond to the emerging demand for new uses and to ease congestion;

*b)* that transitional arrangements from analog voice to digital voice VHF radios may take a long time,

*c)* that use of existing maritime mobile service allocations, where practicable, for ship, port security and enhanced maritime safety would be preferable, particularly where international interoperability is required, and should not prejudice future use;

*d)* that VHF data exchange system (VDES) ranging mode (R-Mode) is a radionavigation system that is intended to provide a contingency system in case of temporary global navigation satellite system (GNSS) disruption,

*recognizing*

*a)* that Appendix **17** identifies frequencies and channelling arrangements in the HF bands for the maritime mobile service;

*b)* that Appendix **18** identifies frequencies to be used for distress and safety communications and other maritime communications on an international basis;

*c)* that it is desirable to enhance maritime safety and ship and port security via spectrum-dependent systems;

*d)* that ITU and relevant international organizations have initiated related studies on the use of digital technologies for maritime safety and ship and port security;

*e)* that studies will be required to provide a basis for considering possible regulatory provisions to improve maritime safety and ship and port security, which may need access to spectrum for experimental use;

*f)* that, in order to provide worldwide interoperability of equipment on ships, there should be harmonized technologies, or interoperable technologies, implemented under Appendix **18**;

*g)* that administrations’ and some relevant international organizations’ efforts to continue the development of R-Mode to support the implementation of e-navigation may require a review of the Radio Regulations,

*noting*

*a)* that WRC-12, WRC-15 and WRC-19 have reviewed Appendix **18** to improve use and efficiency for data communication using digital systems, e.g. for the introduction of the VDES;

*b)* that maritime on-board communication systems have implemented digital technologies for voice communication as described in Recommendation ITU-R M.1174 to improve efficient use of the frequency band 450-470 MHz;

*c)* that digital systems have been implemented in the land mobile service;

*d)* that WRC-23 reviewed MF and HF bands in Article **5** and Appendix **17** to introduce ACS,

*resolves to invite the ITU-R to conduct and complete in time for WRC-27*

1 studies on spectrum needs and possible changes to Appendix **18** in order to enable digital voice VHF technologies in the maritime mobile service;

2 to study sharing and compatibility of, and identify spectrum needs for, possible changes to the Radio Regulations for a new allocation to the maritime radionavigation service to implement VDES R‑Mode;

3 studies on possible changes to the Radio Regulations for effective use of maritime MF and HF bands,

*resolves to invite the WRC-27*

1 to consider the results of ITU-R studies as described in *resolves to invite the ITU-R to conduct and complete in time for WRC-27;*

2 to consider possible changes to Appendix **18** in order to enable use of VHF maritime frequencies in the MMS for future implementation of new technologies;

3 to consider possible changes to the Radio Regulations for implementation of VDES R-Mode;

4 to consider possible changes to the Radio Regulations in the maritime mobile MF band to improve use and efficiency;

5 to consider possible changes to Appendix **17** to improve use and efficiency,

*invites administrations*

to participate actively in the studies as described in the *invites ITU-R to complete in time for WRC-27* and provide the information required for the studies by submitting contributions to ITU‑R,

*invites relevant international organizations*

to participate actively in the studies by providing requirements and information that should be taken into account in ITU-R studies,

*instructs the Secretary-General*

to bring this Resolution to the attention of IMO and other international and regional organizations concerned.

**Reasons:**

WRC-19 developed a preliminary agenda item for WRC-27 "to consider improving the utilization of the VHF maritime frequencies in Appendix 18, in accordance with Resolution **363 (WRC-19)**" (item 2.10 of Resolution **812 (WRC-19)**).

ITU-R is currently conducting studies to improve the automatic connection system (ACS) in the MF and HF maritime mobile frequency bands. The implementation of ACS will ensure that mariners have easy and reliable access to the radio links they need.

Therefore, APT Members propose to modify Resolution **363 (WRC-19)** to study**:**

* possible changes to Appendix **18** in order to enable use of VHF maritime frequencies in the MMS for future implementation of new technologies;
* possible changes to the Radio Regulations for implementation of VDES R-Mode;
* possible changes to the Radio Regulations in the maritime mobile MF band to improve use and efficiency; and
* possible changes to Appendix **17** to improve use and efficiency.

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| **Subject:**  Proposal for a WRC-27 agenda item | |
| **Origin: APT** | |
| ***Proposal*:**  to consider improving utilization of the maritime frequencies in Appendix **18**, and improving channelling arrangements in the MF maritime mobile band and Appendix **17**, in accordance with Resolution **363 (Rev.WRC-23)** | |
| **Background/reason:**  At WRC-19, preliminary Agenda Item for WRC-27 “to consider improving the utilization of the VHF maritime frequencies in Appendix **18**, in accordance with Resolution **363 (WRC-19)**” was developed (item 2.10 of Resolution **812 (WRC-19)**).  ITU-R is currently conducting studies on the improvement of the automatic connection system (ACS) in MF and HF maritime mobile frequency bands. The implementation of ACS will ensure simple and reliable access to the required radio links for the mariners.  Voice communication in the VHF maritime mobile band is one of the key elements of the safety of navigation. VHF voice communication should be clear and unambiguous in order to prevent maritime accidents such as collision and grounding. Recently, communications using digital technology such as digital selective calling (DSC), automatic identification system (AIS) and VHF data exchange (VDE) have been introduced to the VHF maritime frequency band, and consequently the number of analogue voice communication channels in this frequency band has been reduced. Since the demand for voice communication does not decline, the analogue voice communication channels start to congest. Digitalization is a solution to improve channel efficiency of the VHF maritime mobile band. The channel efficiency can be improved up to four times by converting each 25 kHz analogue voice channel in Appendix **18** into four 6.25 kHz digital voice channels.  Ranging mode (R-Mode) is a concept of new terrestrial radio navigation system using timing information on existing maritime radio systems to provide Global Navigation Satellite Systems (GNSS) independent shipborne position, navigation and timing (PNT). It is therefore considered a possible candidate as a regional backup of GNSS. There are currently two carriers considered for providing timing information, MF using existing Differential GNSS (DGNSS) radio beacon frequencies and VHF using existing VHF data exchange system (VDES) frequencies. In order to introduce R-Mode in the marine VHF band, it is necessary to add allocation for radionavigation service to the frequency band currently allocated to maritime mobile service.  The implementation of ACS will ensure simple and reliable access to the required radio links for the mariners. The International Maritime Organization (IMO) decided to introduce ACS in IMO performance standards for shipborne MF and MF/HF radio installations for the global maritime distress and safety system (GMDSS). Recommendations ITU-R M.493 and ITU-R M.541 are under revision in order to allow the introduction of an automatic connection system (ACS) based on DSC for communication in the MF and HF bands. ACS will require channelling arrangements for more working channels on an international basis, however that there is no global channel in the MF band, and some HF bands lack channels for intership operation in Appendix **17**. | |
| ***Radiocommunication services concerned*:**  Maritime mobile service and radionavigation service | |
| ***Indication of possible difficulties*:**  MF maritime mobile band and Appendixes **17** and **18** identify frequencies to be used for distress and safety communications and other maritime communications on an international basis. | |
| ***Previous/ongoing studies on the issue*:**  Resolution **363 (WRC‑19)**  Recommendations ITU-R M.493, ITU-R M.541 and ITU-R M.1084-5  Report ITU-R M.2010-1,  Reports ITU-R M.[DIGITAL-VOICE] and M.[ACS] | |
| ***Studies to be carried out by*:**  ITU-R Working Party 5B | ***with the participation of*:**  Other Working Parties as required, Member States, Sector Members, and International Organizations such as IMO, IALA etc |
| ***ITU‑R study groups concerned*:**  ITU-R Study Group 5 | |
| ***ITU resource implications, including financial implications (refer to CV126)*:**  ITU-R Working Party 5B usually has meetings twice a year each requiring ten working days | |
| ***Common regional proposal*:** TBD | ***Multicountry proposal*:** TBD  ***Number of countries*:** TBD |
| ***Remarks*** | |