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| APTlogogreen3 | ASIA-PACIFIC TELECOMMUNITY | **Document:** |
| **The 3rd Meeting of the APT Conference Preparatory Group for WRC-19 (APG19-3)** | **APG19-3/OUT-23** |
| 12 – 16 March 2018, Perth, Australia | **16 March 2018** |

Working Party 5

**PRELIMINARY VIEWs on WRC-19 agenda item 1.9.1**

**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)****;*

Resolution **362 (WRC‑15)** – *Autonomous maritime radio devices operating in the frequency band 156-162.05 MHz*

**1. Background**

**1.1 Introduction**

There are some kinds of autonomous maritime radio devices using automatic identification system (AIS) technology or digital selective calling (DSC) technology, or transmitting synthetic voice messages, or with a combination of those technologies. Their number is expected to increase. Some of these devices are not for the purpose of enhancing the safety of navigation or the purpose of communication between coast stations and ship stations, or between ship stations, or between associated on-board communication stations, or survival craft stations and emergency position-indicating radio beacon stations, but are consuming the spectrum and identities assigned for maritime mobile service.

In the maritime mobile service, as defined in RR No. **1.28**, autonomous maritime radio devices (AMRD) are not listed and are therefore not formally recognised as a station operating under the maritime mobile service. And the term AMRD is also not part of the Database of ITU Terms and Definitions. There are general requirements to categorize and regulate the usage of autonomous maritime radio devices.

The purpose of this agenda item is to address unregulated operation of AMRDs in order to enhance safety of navigation through established maritime communications. The studies contain several steps, including the definition of autonomous maritime radio devices (AMRD), the compilation of existing AMRDs, the description of technology, the categorizing and the evaluation. The target of the studies is to regulate the operation of these kinds of devices by addressing the issues of necessary spectrum allotment and the numbering systems, to ensure the integrity of GMDSS and AIS.

**1.2 Progress of ITU-R studies**

By now, ITU-R Working Party (WP) 5B has preliminarily determined the working structure, the definition and categorization of AMRDs by developing a working document towards Preliminary Draft New Report ITU-R M.[AMRD].

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

Group A - AMRDs that enhance the safety of navigation,

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

The 19th session of ITU-R WP 5B meeting updated the working document towards draft CPM text of Agenda Item 1.9.1, in which methods regarding the different types of Group B AMRDs respectively operating in AIS technology, analogue voice or other technology were proposed, as following.

**Method A1-1** For operation of AIS-technology the frequency [160.900 MHz (Ch. 2006)] (new AMRD AIS) is proposed. [For this reason it is proposed to amend RR Appendix **18** footnote *r)* as appropriate.] [Such use should be in accordance with the latest version of Recommendation ITU-R M.xxx.]

**Method A1-2** Modify the Radio Regulations to allow Group A AMRDs to use maritime mobile service frequency bands, and to allow Group B AMRDs to use frequency band 161.4375-161.4875 MHz. [Such use should be in accordance with the latest version of Recommendation ITU-R M.xxx.]

**Method A2** For operation of analogue voice telephony two [25 kHz channels within the frequencies [160.575] MHz (AMRD 1) and [160.600] MHz (AMRD 2)] are proposed. For this reason an additional footnote No. **5.226A** in RR Article **5** should be implemented as appropriate.

**Method A3** For usage for other technology not channelised spectrum of [25 kHz in the band 160.5375-160.5625 MHz] is proposed. For this reason an additional footnote No. **5.226B** in RR Article **5** should be implemented as appropriate.

However, further discussions are still needed on the certain assignments of frequency bands, as well as the related Regulatory considerations. The work plan of this agenda item was also updated.

Meanwhile, the meeting commenced the preliminary draft revision of the Recommendation ITU-R M.585-7 for compliance with needs of Group A AMRD identification, and updated the working document towards the preliminary draft new Report ITU-R M.[NEW\_MARNUM] accordingly. Taking account of some concerns on the MID plan, the ITU-R members are encouraged to contribute to the issue in close collaboration with BR.

Furthermore, the ongoing preliminary draft revision of the Recommendation ITU-R M.1371-5 was updated to incorporate the technical requirements of AMRDs using AIS technology.

The progress of this Agenda Item was liaised with IMO, IALA, WMO and CIRM.

**1.3 List of relevant ITU-R Reports/Recommendations**

* Recommendation ITU-R M.493-14: *Digital selective-calling system for use in the maritime mobile service;*
* Recommendation ITU-R M.585-7: *Assignment and use of identities in the maritime mobile service; or the revised version*;
* Recommendation ITU-R M.1371-5: *Technical characteristics for an automatic identification system using time-division multiple access in the VHF maritime mobile band; or the revised version*;
* Preliminary draft new Report ITU-R M. [AMRD]: *Autonomous maritime radio devices*;
* Preliminary draft new Report ITU-R M. [NEW\_MARNUM]: *New numbering scheme for maritime identities.*

**2. Documents**

**2.1 Input Documents**

APG19-3/INP-25(KOR), APG19-3/INP-32(IRN), APG19-3/INP-38(NZL), APG19-3/INP-45 (AUS), APG19-3/INP-53(J), APG19-3/INP-63(THA), APG19-3/INP-80(INS), APG19-3/INP-85(VTN), APG19-3/INP-90(CHN).

**2.2 Information Documents**

APG19-3/INF-06 (CEPT), APG19-3/INF-08 (CITEL).

**3. Summary of Discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Republic of Korea – APG19-3/INP-25**

The Republic of Korea proposes modifications to the APT Preliminary View adopted at the APG19-2, as stated below:

APT Members support the ITU-R studies on the spectrum needs, technical and operational characteristics, categorization, identifications of AMRDs and its applications, as well as the studies in relation to regulatory actions within the frequency band 156-162.05 MHz while ensuring the protection of the GMDSS and AIS, in accordance with Resolution 362 (WRC-15).

APT Members are also of the view that:

- AMRDs which enhance the safety of navigation should be regulated for the use of frequencies and identities of the maritime mobile service;

- AMRDs which do not enhance the safety of navigation, regulation of the use of frequencies, and technical and operational characteristics, should benefit both the user of devices as well as coexistence with maritime safety devices and applications. Identification of additional spectrum within the frequency band 156-162.05 MHz should be considered;

- Search and rescue aircraft system operating in maritime frequencies must be protected.

**3.1.2 Iran (Islamic Republic of) - APG19-3/INP-32**

Support the ITU-R studies on the spectrum needs, technical and operational characteristics, categorization, identifications of AMRDs and its applications, as well as the studies in relation to regulatory actions within the frequency band 156-162.05 MHz while ensuring the protection of the GMDSS and AIS, in accordance with Resolution 362 (WRC-15).

I.R. of Iran is also of the view that:

- AMRDs which enhance the safety of navigation should be regulated for the use of frequencies and identities of the maritime mobile service;

- AMRDs which do not enhance the safety of navigation, regulation of the use of frequencies, and technical and operational characteristics, should benefit both the user of devices as well as coexistence with maritime safety devices and applications. Identification of additional spectrum within the frequency band 156-162.05 MHz and a new numbering scheme which is different from those in the existing maritime mobile service should be considered;

- any Identification of additional spectrum for AMRDs which do not enhance the safety of navigation should not cause harmful interference or any impact on the existing services within the frequency band and the adjacent bands. In this regard mitigation technique of interference such as limitation of output power of AMRDs (to 1 watt as an example) should be considered.

- search and rescue aircraft system operating in maritime frequencies must be protected.

**3.1.3 New Zealand - APG19-3/INP-38**

The term “autonomous maritime radio device” (AMRD) and its intended applications should be properly defined before the studies in relation to regulatory actions within the frequency band 156-162.05 MHz could be considered.

New Zealand is also of the view that AMRDs for the purpose of safety of navigation and safety of life should use frequencies in accordance with RR Appendix 18. AMRDs that do not enhance the safety of navigation in the maritime environment should consider frequencies not currently channelised within RR Appendix 18.

**3.1.4 Australia - APG19-3/INP-45**

Support consideration of possible spectrum needs and the development of appropriate technical and operational characteristics of autonomous maritime radio devices (AMRDs) operating in the frequency band 156-162.05 MHz; while noting sharing and compatibility studies in the band should ensure that no undue constraints are placed on the GMDSS and AIS in accordance with Resolution 362 (WRC-15).

Australia supports a definition of AMRDs to be developed in an ITU-R Recommendation.

**3.1.5 Japan - APG19-3/INP-53**

Support ITU-R studies for the introduction of AMRD. The use of AMRD should not impose undue constraint on existing services operating in the band concerned, therefore this Administration believes that the frequencies should be selected from the frequencies in RR Appendix 18.

**3.1.6 Thailand - APG19-3/INP-63**

Support modification of the Radio Regulations to allow Group B AMRDs to use frequency 160.900 MHz (Channel 2006 in Appendix 18).

**3.1.7 Indonesia - APG19-3/INP-80**

Any regulatory action of AMRD Group B within the frequency band 156-162.05 MHz, should also consider the limited numbering resources of MMSI and also consider the implementation transition period when the operation of autonomous maritime radio devices bring in to use.

**3.1.8 Viet Nam- APG19-3/INP-85**

Support studies being undertaken by ITU-R on this issue and is of the view that:

* The integrity of AIS and the Global Maritime Distress and Safety System (GMDSS) must be protected;
* Search and rescue aircraft system operating in maritime frequencies must be protected;
* Definition and categorization of AMRD should be introduced into Radio Regulation to support the consideration on regulatory actions in accordance with Resolution 362 (WRC-15);
* AMRDs operation should be harmonized, regulated and should not constrain the frequencies designated for the GMDSS and AIS;
* AMRDs which are related to the safety of navigation should be regulated for the use of frequencies and identities of the maritime mobile service; while AMRDs which are not related to the safety of navigation, regulation of the use of frequencies, and technical and operational characteristics, should benefit both the user of devices as well maritime safety. An additional spectrum allocation within the frequency band 156-162.05 MHz and a new numbering scheme which is different from those in the existing maritime mobile service should be considered;
* Oppose any use of AMRD in the frequency band 157.425 - 160.6 MHz.

**3.1.9 China - APG19-3/INP-90**

Support the ITU-R studies on the spectrum needs, technical and operational characteristics, categorization, identifications of AMRDs and its applications, as well as the studies in relation to regulatory actions within the frequency band 156-162.05 MHz while ensuring the protection of the GMDSS and AIS, in accordance with Resolution 362 (WRC-15).

China is also of the views that:

- AMRDs which enhance the safety of navigation should be regulated to use the frequencies and identities of the maritime mobile service;

- For AMRDs which do not enhance the safety of navigation, the regulation on the use of frequencies, technical and operational characteristics should benefit both the user of devices and the maritime safety devices and applications. Identification of additional spectrum within the frequency band 156-162.05 MHz and a new numbering scheme which are both different from those in the existing maritime mobile service should be considered;

- Search and rescue aircraft system operating in maritime frequencies must be protected.

* 1. **Summary of issues raised during the meeting**

1. Noting that there is not any determined solution of assigning the certain frequency bands for AMRD Group B, the Drafting Group on WRC-19 AI. 1.9.1 agrees that there is no commitment on the methods for APT by now.
2. Some APT Members express the view of preference on candidate frequency band for AMRD Group B.

**4. APT Preliminary Views**

APT Members support the ITU-R studies on the spectrum needs, technical and operational characteristics, categorization, identifications of AMRDs and its applications, as well as the studies in relation to regulatory actions within the frequency band 156-162.05 MHz while ensuring the protection of the GMDSS and AIS, in accordance with Resolution **362 (WRC-15)**.

APT Members are also of the view that:

* the term “autonomous maritime radio device” (AMRD) and its intended applications should be properly defined before the studies in relation to regulatory actions, support a definition of AMRDs to be developed in an ITU-R Recommendation;
* AMRDs Group A should be regulated for the use of frequencies and identities of the maritime mobile service;
* Regarding AMRDs Group B, regulation of the use of frequencies, and technical and operational characteristics, should benefit both the user of devices as well as coexistence with maritime safety devices and applications. Identification of additional spectrum within the frequency band 156-162.05 MHz and the numbering issue should be considered;
* any identification of additional spectrum for AMRDs Group B should not cause harmful interference or any impact on the existing services within the frequency band and the adjacent bands. In this regard mitigation technique of interference such as limitation of output power of AMRDs (to 1 watt as an example) should be considered;
* any regulatory action of AMRD Group B within the frequency band 156-162.05 MHz, should also consider the limited numbering resources of MMSI and also consider the implementation transition period when the operation of autonomous maritime radio devices bring in to use;
* Search and rescue aircraft system operating in maritime frequencies must be protected.

**5. Other Views from APT Members**

* Some APT Members propose to consider the frequencies not currently channelised within RR Appendix 18.
* Some APT Members propose that the frequency should be selected within channelised RR Appendix 18, e.g, 160.900 MHz (Channel 2006).
* Some APT Members oppose any use of AMRD in the frequency band 157.425 - 160.6 MHz.

**6. Issues for Consideration at Next APG Meeting**

APT Members are encouraged to contribute to the next APG meeting on the Agenda Item 1.9.1, taking into account the studies of ITU-R WP5B as well as the activities and information of the IMO.

**7. Views from Other Organisations**

**7.1 Regional groups**

**7.1.1 ASMG**

None

**7.1.2 ATU**

None

**7.1.3 CEPT - APG19-3/INF-06**

CEPT is of the view that the operation of autonomous maritime radio devices needs to be harmonized and regulated.

CEPT is of the view that the operation of autonomous maritime radio devices shall not reduce the integrity of AIS and of GMDSS.

CEPT supports the identification of spectrum for autonomous maritime radio devices within the frequency band 156-162.05 MHz.

**7.1.4 CITEL - APG19-3/INF-08**

Preliminary views from a few countries support studies that should also take into account the protection of GMDSS and AIS.

**7.1.5 RCC - APG19-2/INF-05**

The RCC Administrations consider it reasonable to identify categories (types), technical and operational characteristics of autonomous maritime radio devices in order to develop regulatory actions in the frequency band 156−162.05 MHz for the autonomous maritime radio devices to protect GMDSS and AIS.

**7.2 International organizations**

**7.2.1 IARU**

**7.2.2 ICAO - APG19-2/INF-02**

To ensure that any change to the regulatory provisions and spectrum allocations resulting from this agenda item do not adversely impact aviation systems, including the capability of search and rescue aircraft to effectively communicate with vessels during disaster relief operations.

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