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**2nd ITU INTER-REGIONAL WORKSHOP ON WRC-19 PREPARATION (Geneva, 20-22 November 2018)**

# Maritime, Aeronautical and Amateur WRC-19 agenda items

## 1.1, 1.8, 1.9 (1.9.1 & 1.9.2), 1.10, 9.1 (9.1.4)

***Wael Sayed***
***CPM-19 Rapporteur for Chapter 5***

# Agenda Item 1.1

to consider an allocation of the frequency band 50-54 MHz to the amateur service in Region 1, in accordance with Resolution 658 (WRC-15);

**Responsible Group:** **WP 5A**

**Contributing Groups:** **WP 5B**, **WP 5C**, **WP 6A**, (WP 1A), (WP 3K), (WP 3M)

# Proposed methods to satisfy AI 1.1

**Method A** - Add an allocation to the amateur service on a **primary basis in all the band 50-54 MHz, or part thereof**

**Method B1** - Add an allocation to the amateur service on a **secondary basis in all or part of the frequency band 50-54 MHz**

**Method B2** - Add an allocation to the amateur service on a **secondary basis in the frequency band 50-51.75 MHz**

**Method C** – Add an allocation to the amateur service on a **partly primary and partly secondary basis in all or part of the frequency band 50-54 MHz**

Methods A, B1, B2 and C includes also appropriate footnotes to provide protection to services which already have an allocation in the band. In the case of Method B1 this can also be done with appropriate regulatory text.

**Method D** - **No change** to the Radio Regulations

# Agenda Item 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.WRC15)

**Responsible Group:** **WP 5B**

**Contributing Groups:** **WP 4C** ( in charge of developing studies and draft CPM text on resolves 2 and sending that to WP 5B), **WP 7D**, (WP 1A), (WP 3M), (WP 5A)

# Issues within AI 1.8

**Issue A:** GMDSS Modernization (resolves to invite ITU-R 1)

**Issue B:** Additional Satellite Systems (resolves to invite ITU-R 2)

# Proposed methods to satisfy Issue A

**Method A1 - No change** to the Radio Regulations

**Method A2**

**MF NAVDAT**

- The frequency band 495-505 kHz is intended to be used for international MF NAVDAT.
- The limitation on the use of the bands 415-495 kHz and 505-526.5 kHz (505-510 kHz in Region 2) in the maritime mobile service only by radiotelegraphy should be removed.
- And the possibility of using these bands by national MF NAVDAT could be given.

**HF NAVDAT**

- It is needed to modify RR Appendix 17 to allow the frequency bands described in the most recent version of Recommendation ITU-R M.2058 to be used for the HF NAVDAT system.
- Therewith, proper regulatory provisions should be developed to ensure compatibility of HF NAVDAT systems with digital maritime mobile systems operating the frequency bands concerned subject to relevant existing allocations.
- WRC-23 will consider the modernization of the GMDSS after IMO has concluded its work on this topic. Therefore, at that time it will be possible to consider a possible revision of RR Appendix 15.

# Proposed methods to satisfy Issue B

**Method B1**

- No new allocations or associated studies are required
- A footnote in the MSS allocations to identify their use in the GMDSS;
- Modification of provisions RR Nos. **5.364** and **5.368** in order to avoid any inconsistency and ambiguity about the regulatory status of the maritime mobile-satellite service in the band 1 616-1 626.5 MHz when used for GMDSS.
- The addition of the band 1 616-1 626.5 MHz to Table 15-2 of RR Appendix **15**, as well as provisions RR No. **33.50** and RR No. **33.53** of RR Article **33**.

**Method B2 (Complementary to B1 and B5)**

In case the regulatory status of the allocation to the MSS (space-to-Earth) in the band 1 616-1 626.5 MHz, effectively or directly, raised to primary when used for GMDSS, a footnote to Article **5** of RR, stating that mobile earth stations receiving in the band 1 616-1 626.5 MHz shall not claim protection from mobile earth stations transmitting in the adjacent band 1 626.5-1 660.5 MHz, would be added.

**Method B3**

As Method B1, but identifying only the MSS allocation in the 1 616-1 626.5 MHz (Earth-to-space) direction for GMDSS.

**Method B4**

NOC.

# Proposed methods to satisfy Issue B

## Method B5a

- Upgrade the MSS (space-to-Earth) allocation in 1 621.35-1 626.5 MHz band to primary.
- Identify this band 1 621.35-1 626.5 MHz in RR Appendix **15** for GMDSS.
- Modification of RR Nos. **5.364** and **5.368** in order to remove any ambiguity due to the upgrade of the status for the downlink segment.
- A modification of RR No. **5.372** is proposed introducing the maximum value of epfd and pfd defined in Resolution **739 (Rev.WRC-15)** for the protection of the radio astronomy.
- Adjustment of RR No. **5.208B** and of Resolution **739 (Rev.WRC-15)** in order not to refer any more to the band 1 613.8-1 626.5 MHz. The Resolution gives just a threshold of "best effort" which is less effective than a regulatory limit. In any case the RR No. **5.208B** could be suppressed for the band 1 613.8-1 626.5 MHz due to the modification of RR No. **5.372**.
- Consequential modifications in RR Article **33** are proposed.
- Suppression of Resolution **359 (Rev.WRC-15)** with regard to *resolves* 2.

## Method B5b

As Method B5a but limiting modification to upgrading the status of the band 1 621.35-1 626.5 MHz from a secondary to a primary allocation to the MMSS (space-to-Earth);

# Agenda Item 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);

**Responsible Group:** **WP 5B**

**Contributing Groups:** **WP 4C, WP 5A, WP 5C,** (WP 1B), (WP 3M)

# Proposed methods to satisfy AI 1.9.1

**Method A** (For the operation of AMRD Group A)
to amend footnote *f)* of RR Appendix 18 to allow AMRD Group A to operate on frequency channels 156.525 MHz (channel 70), 161.975 MHz (AIS 1) and 162.025 MHz (AIS 2).

**Method B1** (For the operation of AMRD Group B using AIS-technology)
the frequency 160.900 MHz (Ch. 2006) (new AMRD AIS) is suggested to be used. This requires amendment to RR Appendix **18** footnote *r)* as appropriate. Such use should be in accordance with the latest version of Recommendation ITU-R M.[AMRD].

**Method B2** (For the operation of AMRD Group B using non-AIS technology)
It may be operate on the frequencies 161.525 MHz (Channel 2078), 161.550 MHz (Channel 2019) and 161.575MHz (Channel 2079). This requires amendment to RR Appendix **18** footnote *mm)* as appropriate. Such use should be in accordance with the latest version of Recommendation ITU-R M.[AMRD].

**Method B3** (For AMRD Group B using non-AIS technology)
to modify the RR to allow use of the frequency band 161.4375-161.4875 MHz, subject to causing no harmful interference to the existing services. Such use should be in accordance with the latest version of Recommendation ITU-R M.[AMRD].

# Agenda Item 1.9.2

modifications of the Radio Regulations, including new spectrum allocations to the maritime mobile-satellite service (Earth to space and space-to-Earth), preferably within the frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of Appendix 18, to enable a new VHF data exchange system (VDES) satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, applications specific messages (ASM) and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands as stated in recognizing d) and e) of Resolution 360(Rev.WRC15)

**Responsible Group: WP 5B**

**Contributing Groups: WP 4C, WP 5A, WP 5C,** (WP 1A), (WP 3M)

# Proposed methods to satisfy AI 1.9.2

**Method A**

**No change** to the Radio Regulations except suppression of Resolution **360 (Rev.WRC-15)**.

**Method B** (based on frequency plan alternative 2)

- A new primary allocation for the MMSS (Earth-to-space) in the frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz
- The channels 1026, 1086, 2026 and 2086 are exclusively reserved for ship-to-satellite (VDE-SAT uplink) services.
- The channels 1024, 1084, 1025 and 1085 are reserved for ship-to-shore services, but ship-to-satellite (VDE-SAT uplink) services are possible without imposing constraints on ship-to-shore services.
- A new primary allocation for the MMSS (space-to-Earth) in the frequency band 160.9625-161.4875 MHz, for improved VDE communication capacity and coverage.
- modification of RR Appendix **5**, taking into account the pfd mask defined at the last study cycle in Recommendation ITU-R M.2092-0
- to clarify that the coordination between MMSS and terrestrial services is subject to the application of the provisions of RR No. **9.14**.
- to modify provisions RR Nos. **5.208A** and **5.208B** in order to ensure the protection of the radio astronomy service (RAS) in the nearest frequency band.
- Annex 1 to Resolution **739 (Rev.WRC-07)** is revised to include MMSS in the frequency band 160.9625-161.4875 MHz in order to protect the RAS.

# Proposed methods to satisfy AI 1.9.2

**Method C** (based on frequency plan alternative 2)

This method uses the same frequency plan as Method B but with new secondary allocation for the MMSS (Earth-to-space) and (space-to-Earth).

Due to the secondary allocation status for the VDES-SAT, there is no coordination between MMSS and terrestrial services and therefore there is no need to introduce a pfd mask in the RR.

**Method D**

Same as Method C in addition to introduction of pfd limits for VDE-SAT downlink which are based on *I/N* protection criteria and given in the WDPND Report ITU-R M.[VDES-SAT].

# Proposed methods to satisfy AI 1.9.2

**Method E**

Same as Method B but using a pfd mask different from that contained in ITU-R M.2092. The description of the pfd mask is given in Appendix 2 of WDPDNR ITU-R M.[VDES-SAT].

**Method F** (Similar to Method B but based on frequency plan alternative 3)

- a new primary allocation for the MMSS (Earth-to-space) in the frequency band 157.1875-157.3375 MHz.
- a new primary allocation for the MMSS (space-to-Earth) in the frequency band 161.7875-161.9375 MHz for improved VDE communication capacity and coverage.
- to change the frequency plan of VDES terrestrial communication as follows.

– RR Appendix **18** lower legs (channels 1024, 1084, 1025, 1085) are for ship-to-shore, shore-to-ship and ship-to-ship VDE.

– RR Appendix **18** upper legs (channels 2024, 2084, 2025, 2085) are for shore-to-ship VDE when satellite downlink is not available.

- to modify provisions of RR Nos. **5.208A** and No. **5.208B** in order to ensure the protection of the RAS in the nearest frequency band. Annex 1 to Resolution **739 (Rev.WRC-15)** would be revised to include MMSS in the frequency band 161.7875-161.9375 MHz in order to protect the RAS.
- to add provision RR No. **5.226B** in order to ensure the coordination of VDE space stations in the MMSS (space-to-Earth) with respect to terrestrial services using a pfd mask proposed in RR Appendix 5.

# Agenda Item 1.10

to consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System (GADSS), in accordance with Resolution 426(WRC-15);

**Responsible Group:** **WP 5B**

**Contributing Groups:** **WP 4A, WP 4B, WP 4C, WP 5A, WP 5C, WP 5D, WP 6A, WP 7B, WP 7C, WP 7D,** (WP 3M)

# Proposed methods to satisfy AI 1.10

## Method A

- To include GADSS as a distress and safety communications system in RR Chapter VII – Distress and safety communications.

- The modifications of RR proposed under Method A specify:
  – that the details of the GADSS elements are contained in Annexes to the ICAO Convention;
  – that the type of radiocommunication service used depends on the requirements of the specific GADSS function;
  – that operation of GADSS elements under RR No. **4.4** is precluded.

- To suppress resolution 426 (WRC-15)

# Proposed methods to satisfy AI 1.10

## Method B

- To include GADSS as a distress and safety communications system in RR Chapter VII – Distress and safety communications.

- The modifications of the RR proposed under Method B specify:
  - that the details of the GADSS elements are contained in Annexes to the ICAO Convention;
  - that GADSS shall only operate using primary service allocations;
  - that the GADSS must operate in accordance with the terms of new Resolution **[A110-GADSS] (WRC-19)**, resolving:
    - that systems composing the GADSS shall only operate in frequency bands that have already been provided for safety purposes;
    - that ITU-R shall develop ITU-R Recommendations detailing the system elements of the GADSS including their operating frequency bands and technical characteristics;
    - that if constituent elements of GADSS are changed, those changes should be reflected in the relevant ITU-R Recommendation.

- To suppress resolution 426 (WRC-15)

# Agenda Item 9

to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention;

## Agenda Item 9.1

on the activities of the Radiocommunication Sector since WRC 15;

## Issue 9.1.4

Sub-orbital vehicles;

**Responsible Group:** **WP 5B**

**Contributing Groups:** **WP 4A, WP 4C, WP 7B**

# Conclusion on AI 9.1.4

No change to the Radio Regulations is proposed for WRC-19.

Further operational, technical and regulatory issues may need to be addressed, which require continuing studies, in particular of the status of the station aboard sub-orbital vehicles and type of applications, through the appropriate mechanism.

No action has been taken with respect to retention, revision or suppression of Resolution **763 (WRC-15)**.