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| APTlogogreen3 | ASIA-PACIFIC TELECOMMUNITY | **Document:** |
| **The 2nd Meeting of the APT Conference Preparatory Group for WRC-19 (APG19-2)** | **APG19-2/OUT-18** |
| 17 – 21 July 2017, Bali, Republic of Indonesia | **21 July 2017** |

Working Party 5

**PRELIMINARY VIEWs on WRC-19 agenda item 1.9.2**

**Agenda Item 1.9.2:**

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

*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.WRC‑15****);*

**1. Background**

WRC-19 Agenda item 1.9.2 aims to address the satellite component of VDES. The issue of VDES satellite component was previously considered as one of the four issues under WRC-15 Agenda item 1.16 within the frequency bands as per RR Appendix **18**. However, some Administrations were of the view that the satellite component was outside the scope of WRC-15 Agenda item 1.16, and no consensus could be reached on the satellite component of the VDES. Therefore, it was deferred to WRC-19 with a revised scope under WRC-19 Agenda item 1.9.2, in accordance with Resolution **360 (Rev. WRC-15)**.

Resolution **360 (Rev.WRC-15)** *resolves to invite the 2019 World Radiocommunication Conference* to consider, based on the results of ITU-R studies, modifications of the Radio Regulations, including new spectrum allocations to the maritime mobile-satellite service (MMSS) (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 VDES satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, ASM and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands.

**Recent ITU-R developments**

ITU-R Working Party 5B as the responsible group for Agenda Item 1.9.2 has developed a working document towards a preliminary draft new Report ITU-R M.[VDES-SAT] to provide an overview of the needs for VDES satellite component, spectrum requirements, technical description and the appropriate sharing and compatibility studies based on the input contributions from International Association of Lighthouse Authorities (IALA) and ITU-R Member States.

At its May/June 2017 meeting, WP 5B continued to develop the working document towards a preliminary draft new Report ITU-R M.[VDES-SAT]. This document currently contains:

- two alternate frequency plan options; and

- three different pfd masks for protect land mobile system.

Working Party 5B also updated its work plan, and sent a liaison statement to WP 4C detailing the progress of this agenda item (Document [4C/205](https://www.itu.int/md/R15-WP4C-C-0205/en)). To date, WP 5B has not developed any draft CPM text on the agenda item.

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

- Recommendation ITU-R M.2092-0: Technical characteristics for a VHF data exchange system in the VHF maritime mobile band

- Working document towards a preliminary draft new Report ITU-R M.[VDES-SAT]  
 (Document [5B/305](https://www.itu.int/md/R15-WP5B-C-0305/en)/Annex 24)

**2. Documents**

**Input Documents:**

APG19-1/INP-21 (CHN), APG19-2/INP-12 (KOR), APG19-2/INP-24 (NZL), APG19-2/INP-32 (AUS), APG19-2/INP-43 (INA), APG19-2/INP-48 (VTN), APG19-2/INP-53 (CHN), APG19-2/INP-59 (J)

**Information Documents:**

APG19-2/INF-01 (ASMG), APG19-2/INF-02 (ICAO), APG19-2/INF-04 (CITEL), APG19-2/INF-05 (RCC), APG19-2/INF-07 (ATU), APG19-2/INF-14 (CEPT)

**3. Summary of Discussions**

**3.1 Summary of Members’ view**

**3.1.1 Korea (Rep. of)**

The Republic of Korea supports ITU-R studies to introduce satellite component of VDES while ensuring that this component should not degrade the current terrestrial VDES components, ASM and AIS operations and should not impose any undue constraints on existing services.

**3.1.2 New Zealand**

New Zealand supports the studies undertaken in accordance with Resolution **360 (Rev. WRC-15)** to identify possible new allocations to the maritime mobile-satellite service for VDES satellite component.

New Zealand is of the view that the candidate band for this possible new allocation to the maritime mobile-satellite service should be within the existing frequency range already assigned to VHF maritime mobile channels in accordance with RR Appendix 18. If a candidate band to be considered is outside of, or immediately adjacent to, the frequency range of RR Appendix 18, this consideration should be carefully studied due to the heavy use of these adjacent frequency ranges by existing terrestrial services.

**3.1.3 Australia**

Australia supports ITU-R studies to enable a new VHF data exchange system (VDES) satellite component consistent with Resolution **360 (Rev.WRC-15)**. The Australian Maritime Safety Authority (AMSA) is an active participant in the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) e-NAV Committee which is contributing to ITU-R WP 5B meetings with regards to studies for satellite VDES and agenda item 1.9.2.

**3.1.4 Indonesia, Republic of**

Indonesia supports that activities of WP 5B to consider of regulatory provisions and spectrum allocations to the maritime mobile-satellite service to enable the satellite component of the VHF Data Exchange System and enhanced maritime radiocommunication. Indonesia support that recognizing that the VDES satellite component should not bring any harmful interference and identification of the frequencies for the VDES satellite component should protect the integrity of the original operational purpose of AIS on the existing AIS frequencies.

**3.1.5 Socialist Republic of Viet Nam**

Viet Nam Administration supports the activities of ITU-R and IALA which are related to the satellite component of VDES.

In regarding the modification of the Radio Regulations under WRC-19 Agenda Item 1.9.2, this Administration is of the view that:

- Existing allocations and systems in same and adjacent bands, especially the AIS, must be protected, which include but not limit to, avoid any modification requested to existing AIS equipment on board existing vessels,

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

**3.1.6 China (People’s Republic of)**

China supports ITU-R technical and spectrum needs studies on VDES satellite components, as well as sharing and compatibility studies between VDES satellite components and incumbent services in the same and adjacent frequency bands in accordance with ITU-R Resolution **360**.

It is also recognized that VDES satellite components could provide ship traffic related information to ships in the maritime environment outside the coverage of VDES coastal stations.

This administration is of the views that:

– VDES satellite components downlink transmission should not degrade the current terrestrial VDES components, ASM and AIS operations.

– VDES satellite components downlink transmission should not cause harmful interference nor constrain the future development of land mobile service in the same frequency band.

– VDES satellite components should not claim protection from harmful interference caused by stations of a primary service to which frequencies are already assigned.

– If the spectrum needs were appropriate justified, new spectrum allocations could be identified to the maritime mobile-satellite service (MMSS) (Earth-to-space and space-to-Earth) with the provisions ensuring not cause harmful interference and no claim protection from incumbent service on a primary basis in the same and adjacent frequency bands.

**3.1.7 Japan**

Japan is of the view that only the frequencies channelized in RR Appendix **18** should be considered for the satellite component of the VDES. The frequencies not channelized in RR Appendix **18** are used for terrestrial services other than maritime mobile service, and existing stations in these services need to be protected. Therefore, Japan supports ITU-R studies for the introduction of the satellite component of the VDES in the frequency bands channelized in RR Appendix **18**.

**3.2 Key points raised during the meeting**

Existing services need to be protected from the VDES satellite component.

**4. APT Preliminary View(s)**

APT Members support the ITU-R studies undertaken in accordance with Resolution **360 (Rev. WRC-15)** to identify possible new allocations to the maritime mobile-satellite service for VDES satellite component.

In regards to the possible modification of the Radio Regulations under WRC-19 Agenda Item 1.9.2, APT Members are of the view that:

- Existing allocations and systems in the same and adjacent bands, especially the AIS, must be protected from harmful interference or any constraints, which include but are not limited to, any modification requested to existing AIS equipment;

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

- VDES satellite components downlink transmission should not degrade the terrestrial VDES components, ASM and AIS operations;

– VDES satellite components should not claim protection from harmful interference caused by stations of a land mobile service to which frequencies are already assigned; and

– If the spectrum needs were appropriately justified, new spectrum allocations could be identified to the maritime mobile-satellite service (MMSS) (Earth-to-space and space-to-Earth) with the provisions ensuring not to cause harmful interference and no claim of protection from incumbent service on a primary basis in the same and adjacent frequency bands.

**5. Other Views**

None.

**6. Views from Other Organisations**

* ASMG

Support the ongoing studies in ITU-R on the development of the necessary protection criteria for the satellite receiving equipment of VDES system while ensuring the protection of services allocated to the candidate frequency bands and adjacent bands.

* ICAO

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.

* CITEL

CAN

Noting that the proposed alternatives are being discussed, Canada believes that other alternative channel plans must be explored. In order to establish a comprehensive VDES channel plan for all VDES components, Autonomous Maritime Radio Devices (AMRDs) operating within the same frequency band must also be taken into account.

These devices may use AIS technology; digital selective calling (DSC) technology; or transmit synthetic voice messages. Combinations of these technologies can be found in equipment already available on the market. AMRDs are being addressed under Agenda Item 1.9.1. In view of this, VDES channel plans should take into account frequencies for AMRDs.

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USA

The United States supports the ITU-R studies prescribed in Resolution 360 (Rev. WRC-15) and these studies should also take into account the protection of existing terrestrial services which operate in these and adjacent frequency bands.

* RCC

The RCC Administrations consider that introduction of the VDES satellite component shall not result in imposing constraints on existing and planned systems of services which have allocations in the common and adjacent frequency bands.

* ATU

No preliminary position on this agenda item yet.

* CEPT

CEPT supports sharing and compatibility studies between the proposed VDES satellite component and the systems in the radiocommunication services allocated in the same and in adjacent frequency bands.

CEPT is of the view that implement ability of the VDES satellite component and feasibility of its sharing and compatibility with the systems in the radiocommunication services allocated in the same and adjacent frequency bands without imposing any limitations on those services shall be confirmed by appropriate study results.

Subject to the results of relevant studies, CEPT is considering two options:

• the introduction of a new maritime mobile-satellite (space-to-Earth) service allocation within the frequency bands 160.9625-161.4875 MHz which is not channelized in RR Appendix 18 and the introduction of a new maritime mobile-satellite (Earth-to-space) service allocation for the channels 24, 84, 25, 85, 26 and 86 of RR Appendix 18

• the introduction of a new maritime mobile satellite service for the channels 1024, 1084, 1025, 1085, 1026, 1086 (Earth-to-space) of RR Appendix 18 and for the channels 2024, 2084, 2025, 2085, 2026 and 2086 (space-to-Earth) of RR Appendix 18;

For both options the pfd mask defined in Recommendation ITU-R M.2092, applies to the satellite component of VDES in order to ensure protection of the terrestrial services.

Subject to the finalisation of relevant studies, CEPT is considering:

• the introduction of a new maritime mobile-satellite (space-to-Earth) service allocation within the frequency bands 160.9625 - 161.4875 MHz which is not channelized in RR Appendix 18, or channels 2024, 2084, 2025, 2085, 2026 and 2086 of RR Appendix 18;

• the introduction of a new maritime mobile-satellite (Earth-to-space) service allocation for the channels 24, 84, 25, 85, 26 and 86 of RR Appendix 18;

• the application of the PFD mask defined in Recommendation ITU-R M.2092, to the satellite component of VDES in order to ensure protection of the terrestrial services.

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

APT Members are encouraged to contribute their views, taking into account the ITU-R studies and APT preliminary views, and submit contributions to APG19-3.

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