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| CPG19-3 |
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| Summary:  |
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| Proposals: |
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DRAFT CEPT BRIEF ON AGENDA ITEM 1.9.2

1.9.2 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 (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).

# ISSUE

This Agenda item requires:

* to conduct, as a matter of urgency, and in time for WRC-19, sharing and compatibility studies between VDES satellite components and incumbent services in the same and adjacent frequency bands specified in recognizing d) and e) to determine potential regulatory actions, including spectrum allocations to the MMSS (Earth-to-space and space-to-Earth) for VDES applications.

# PRELIMINARY CEPT POSITION

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 implementability 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 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.

# BackGrOuNd

The studies associated with WRC-15 AI 1.16 resulted in elaboration of a concept for the VHF data exchange system (VDES) reflected in Recommendation ITU-R M.2092-0. The system combines the current Automatic Identification System (AIS), applications specific messages (ASM) as well as data exchange terrestrial and satellite components. Therewith VDES satellite uplink was proposed to operate in the frequency band 157.1875-157.3375 MHz with downlink in the frequency band 161.7875-161.9375 MHz.

WRC decisions provided for implementation of this concept in Appendix 18 frequency bands except for the data exchange system satellite component. The reason of those decisions consisted in the incomplete studies in sharing with incumbent services in the frequency bands proposed for operation of the VDES satellite component. Therefore the decision was made to conduct further studies on the problem in WRC-19 AI 1.9.2 subject to Resolution 360 (Rev. WRC-15).

At WP5B meeting in November 2016, IALA proposed an alternative frequency plan for VDES satellite component (Doc. 5B/195/Annex 26). Subject to the new concept, channels 1026, 1086, 2026, 2086 (157.2875-157.3375 MHz and 161.8875-161.9375 МHz) are proposed to be used for uplink and to use the frequency band 160.9625-161.4875 MHz for downlink where channels are not identified yet. With this, the satellite would be allowed to listen to channels 1024, 1084, 1025, 1085, 2024, 2084, 2025, 2085 (157.1875-157.2875 MHz and 161.7875-161.8875 MHz) used by VDES terrestrial component similar to operation of AIS1 and AIS 2 channels.

# LIST Of reLevant DocUMeNts

* Recommendation ITU-R M.2092-0. Technical characteristics for the VHF data exchange system in the VHF maritime mobile band;
* Working document towards a Preliminary Draft New Report ITU-R M.[VDES-SAT]. Technical characteristics of the satellite component for the VHF data exchange system in the VHF maritime mobile band (Annex 26 to Document 5B/195);
* Working document to draft CPM Report text on WRC-19 Agenda item 1.9.2 (Annex 5 to Document 5B/195);
* Revised work plan for WRC-19 Agenda item 1.9.2 (Annex 6 to Document 5B/195).

# Actions to be taken

To conduct, subject to Resolution 360 (Rev. WRC-15), sharing and compatibility studies between VDES satellite components and incumbent services in the same and adjacent frequency bands, (in the lower adjacent band from 154 MHz to 156 MHz and in the upper adjacent frequency band from 162 MHz to 164 MHz) including studies in compatibility with the space surveillance radars operating in the frequency band 154-156 in line with No 5225A.

# information from outside CEPT (examples of these are below)

## European Union (date of proposal)

[TBD]

## Regional telecommunication organisations:

APT (date of proposal)

TBD

ATU (date of proposal)

TBD

Arab Group (date of proposal)

TBD

CITEL (December 2016)

TBD

RСС (December 2016)

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.

## INTERNATIONAL ORGANIZATIONS

IATA (date of proposal)

TBD

ICAO (September 2016)

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.

IMO (August 2016)

1. Recognizing that the VDES satellite component should not bring any harmful interference:

1.1 modifications should not be required to existing AIS equipment on board existing vessels; and

1.2 an 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.

2. IMO supports the VDES concept, without committing the Organization regarding future requirements on the use of the VHF frequency band.

SFCG (December 2016)

TBD

WMO and EUMETNET (December 2016)

TBD

## REGIONAL ORGANIZATIONS

ESA (date of proposal)

TBD

Eurocontrol (date of proposal)

TBD

## OTHER INTERNATIONAL AND REGIONAL ORGANISATIONS

EBU (date of proposal)

TBD

GSMA (date of proposal)

TBD

CRAF (December 2016)

This is the AI 1.16 of WRC-15, which was postponed to WRC-19 due to the lack of sufficient studies. CRAF supported the Method C2 and C1 of the CPM15-2 report as long as an attenuation of 85 dB and the pfd mask described in section 3/1.16/4.3 of the report as proposed by the MMSS are implemented for the nearby radio astronomy band. Under such conditions compatibility between MMSS in the band 161.7875-161.9375 MHz and the RAS in the band 150.05-153 MHz will be feasible.