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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
|  |  |
| **PLENARY MEETING** | **Addendum 3 to Document 9(Add.16)-E** |
|  | **24 June 2015** |
|  | **Original: English** |
|  | |
| European Common Proposals | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 1.16 | |

1.16 to consider regulatory provisions and spectrum allocations to enable possible new Automatic Identification System (AIS) technology applications and possible new applications to improve maritime radiocommunication in accordance with Resolution **360** **(WRC‑12)**;

Issue C

Introduction

Taking into account the studies performed during this study period, this ECP proposes the following in order to introduce a satellite component for the VHF data exchange system (VDES) for the maritime community:

It is proposed to create a new secondary allocation for the maritime mobile-satellite service (Earth to-space) for frequency band 161.9375-161.9625 MHz (channel 2027) and frequency band 161.9875-162.0125 MHz (channel 2028) for improved ASM (Application Specific Messages) communications capacity and coverage.

It is proposed to create a new secondary allocation for the maritime mobile-satellite service (Earth to-space), for frequency band 157.1875-157.3375 MHz (channels 1024, 1084, 1025, 1085, 1026 and 1086).

It is proposed to create a new primary allocation for the maritime mobile-satellite service (space to-Earth) for frequency band 161.7875-161.9375 MHz (channels 2024, 2084, 2025, 2085, 2026 and 2086), for improved VDE communications capacity and coverage and it enables that the same equipment as for the terrestrial VDE (VHF data exchange) communication can be used.

Coordination of VDE space stations of the MMSS (space-to-Earth) with respect to terrestrial services is described in modification of Appendix 5, proposing a PFD mask. The coordination mechanism under No. 9.14 is introduced in the new footnote No. 5.B116.

It is proposed to modify provision No. 5.208A and to modify provision No. 5.208B in order to ensure the protection of the nearest RAS (radioastronomy service) band.

In order to protect the RAS, Annex 1 to Resolution 739 (Rev.WRC-07) is revised to include new space service in the frequency band 161.7875-161.9375 MHz.

Recommendation ITU-R M.[VDES] describes the concept and characteristics of VDES as developed during the study period.

These European proposals are based on Method C1-B of the CPM Report.

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations  
(See No. 2.1)

MOD EUR/9A16A3/1

148-223 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 156.8375-157.1875  FIXED  MOBILE except aeronautical mobile | 156.8375-157.1875  FIXED  MOBILE | |
| 5.226 | 5.226 | |
| 157.1875-157.3375  FIXED  MOBILE except aeronautical mobile  Maritime mobile-satellite (Earth-to-space) | 157.1875-157.3375  FIXED  MOBILE  Maritime mobile-satellite (Earth-to-space) | |
| 5.226 ADD 5.A116 | 5.226 ADD 5.A116 | |
| 157.3375-161.7875  FIXED  MOBILE except aeronautical mobile | 157.3375-161.7875  FIXED  MOBILE | |
| 5.226 | 5.226 | |
| 161.7875-161.9375  FIXED  MOBILE except aeronautical mobile  MARITIME MOBILE-SATELLITE (space-to-Earth) MOD 5.208A MOD 5.208B | 161.7875-161.9375  FIXED  MOBILE  MARITIME MOBILE-SATELLITE (space-to-Earth) MOD 5.208A MOD 5.208B | |
| 5.226 ADD 5.B116 | 5.226 ADD 5.B116 | |
| 161.9375-161.9625  FIXED  MOBILE except aeronautical mobile  Maritime mobile-satellite (Earth-to-space) | 161.9375-161.9625  FIXED  MOBILE  Maritime mobile-satellite (Earth-to-space) | |
| 5.226 ADD 5.A116 | 5.226 ADD 5.A116 | |
| 161.9625-161.9875  FIXED  MOBILE except aeronautical mobile  Mobile-satellite (Earth-to-space) 5.228F | 161.9625-161.9875  AERONAUTICAL MOBILE (OR)  MARITIME MOBILE  MOBILE-SATELITE (Earth-to-space) | 161.9625-161.9875  MARITIME MOBILE  Aeronautical mobile (OR) 5.228E  Mobile-satellite (Earth-to-space) 5.228F |
| 5.226 5.228A 5.228B | 5.228C 5.228D | 5.226 |
| 161.9875-162.0125  FIXED  MOBILE except aeronautical mobile  Maritime mobile-satellite (Earth-to-space) | 161.9875-162.0125  FIXED  MOBILE  Maritime mobile-satellite (Earth-to-space) | |
| 5.226 ADD 5.A116 5.229 | 5.226 ADD 5.A116 | |

ADD EUR/9A16A3/2

5.A116 The use of the frequency bands 157.1875-157.3375 MHz, 161.9375-161.9625 MHz and 161.9875-162.0125 MHz by the maritime mobile-satellite (Earth-to-space) service is limited to the systems which operate in accordance with Appendix **18**.     (WRC-15)

ADD EUR/9A16A3/3

5.B116 The use of the frequency band 161.7875-161.9375 MHz by the maritime mobile-satellite (space-to-Earth) service is limited to the systems which operate in accordance with Appendix **18**. Such use is subject to the application of the provisions of No. **9.14** for coordination with stations of terrestrial services.     (WRC-15)

**Reasons:** The above modifications of RR Article 5 identify a MMSS allocation uplink and downlink for the VHF Data Exchange System which is described in the Recommendation ITU-R M.[VDES]. It is also clarified, in this footnote that the coordination between MMSS and terrestrial services is subject to the application of the provision of No. 9.14.

MOD EUR/9A16A3/4

5.208A In making assignments to space stations in the mobile-satellite service in the bands 137-138 MHz, 387-390 MHz, 400.15-401 MHz and for the maritime-mobile satellite service (space-to-Earth) in the band 161.7875-161.9375 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in the relevant ITU‑R Recommendation.     (WRC-15)

MOD EUR/9A16A3/5

5.208B\* In the bands:

137-138 MHz,  
 161.7875-161.9375 MHz,  
 387-390 MHz,  
 400.15-401 MHz,  
 1 452-1 492 MHz,  
 1 525-1 610 MHz,  
 1 613.8-1 626.5 MHz,  
 2 655-2 690 MHz,  
 21.4-22 GHz,

Resolution **739** **(Rev.WRC-15)** applies.     (WRC-15)

MOD EUR/9A16A3/6

APPENDIX 5 (REV.WRC‑15)

Identification of administrations with which coordination is to be effected or  
agreement sought under the provisions of Article 9

ANNEX 1

# 1 Coordination thresholds for sharing between MSS (space-to-Earth) and terrestrial services in the same frequency bands and between non‑GSO MSS feeder links (space-to-Earth) and terrestrial services in the same frequency bands and between RDSS (space-to-Earth) and terrestrial services in the same frequency bands     (WRC‑12)

MOD EUR/9A16A3/7

## 1.1 Below 1 GHz\*

...

1.1.4 In the band 161.7875-161.9375 MHz, coordination of a space station of the maritime mobile-satellite service (space-to-Earth) with respect to terrestrial services is required only if the power spectral and flux density produced by this space station exceeds the following mask in dB(W/(m24 kHz)) at the Earth’s surface:

**where  θ  is the angle of arrival of the incident wave above the horizontal plane (degrees)

**Reasons:** It is proposed to extend the coordination threshold defined in Annex 1 of Appendix 5 for the VDES using the frequency band 161.7875-161.9375 MHz by using this new defined mask.

MOD EUR/9A16A3/8

APPENDIX 18 (REV.WRC‑15)

Table of transmitting frequencies in the  
VHF maritime mobile band

(See Article 52)

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| Channel designator | Notes | Transmitting frequencies  (MHz) | | Inter-ship | Port operations  and ship movement | | Public corres-pondence |
| --- | --- | --- | --- | --- | --- | --- | --- |
| From ship stations | From coast stations | Single frequency | Two frequency |
| 24 | *w), ww), x)* | 157.200 | 161.800 |  | x | x | x |
| 1024 | *BBB)* | 157.200 |  |  |  |  |  |
| 2024 | *CCC)* | 161.800 | 161.800 | x |  |  |  |
| 84 | *w), ww), x)* | 157.225 | 161.825 |  | x | x | x |
| 1084 | *BBB)* | 157.225 |  |  |  |  |  |
| 2084 | *CCC)* | 161.825 | 161.825 | x |  |  |  |
| 25 | *w), ww), x)* | 157.250 | 161.850 |  | x | x | x |
| 1025 | *BBB)* | 157.250 |  |  |  |  |  |
| 2025 | *CCC)* | 161.850 | 161.850 | x |  |  |  |
| 85 | *w), ww), x)* | 157.275 | 161.875 |  | x | x | x |
| 1085 | *BBB)* | 157.275 |  |  |  |  |  |
| 2085 | *CCC)* | 161.875 | 161.875 | x |  |  |  |
| 26 | *w), ww), x)* | 157.300 | 161.900 |  | x | x | x |
| 1026 | *BBB)* | 157.300 |  |  |  |  |  |
| 2026 | *CCC)* |  | 161.900 |  |  |  |  |
| 86 | *w), ww), x)* | 157.325 | 161.925 |  | x | x | x |
| 1086 | *BBB)* | 157.325 |  |  |  |  |  |
| 2086 | *CCC)* |  | 161.925 |  |  |  |  |

**Notes referring to the Table**

*General notes*

*...*

*Specific notes*

*...*

**Reasons:** Introduction of the VDES in the Appendix 18 as follows:

SAT up3 (channels 1024, 1084, 1025, 1085, 1026 and 1086) is a ship-satellite VDE uplink.

SAT Downlink (channels 2024, 2084, 2025, 2085, 2026 and 2086) is the satellite-ship VDE downlink.

ADD EUR/9A16A3/9

*BBB)* From 1 January 2019 the combination of the channels 1024, 1084, 1025, 1085, 1026 and 1086, which are also allocated to the maritime mobile-satellite service (Earth-to-space), shall be used for the reception of VDES messages from ships as described in the most recent version of the Recommendation ITU-R M.[VDES].     (WRC-15)

**Reasons:** The channels are identified for the satellite uplink of the VDES.

ADD EUR/9A16A3/10

*CCC)* From 1 January 2019 the combination of the channels 2024, 2084, 2025, 2085, 2026 and 2086, which are also allocated to the maritime mobile-satellite service (space-to-Earth), shall be used for the reception of VDES messages from satellites as described in the most recent version of the Recommendation ITU-R M.[VDES] in which this combination is denominated as SAT downlink.     (WRC-15)

**Reasons:** The channels are identified for the satellite downlink of the VDES.

MOD EUR/9A16A3/11

RESOLUTION 739 (Rev.WRC-15)

Compatibility between the radio astronomy service and the active space services in certain adjacent and nearby frequency bands

The World Radiocommunication Conference (Geneva, 2015),

MOD EUR/9A16A3/12

ANNEX 1 TO RESOLUTION 739 (Rev.WRC-15)

Unwanted emission threshold levels

TABLE 1-2

epfd thresholds(1) for unwanted emissions from all space stations of a non-GSO satellite system   
at a radio astronomy station

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Space service | Space service band | Radio astronomy band | Single dish, continuum observations | | Single dish, spectral line observations | | VLBI | | Condition of application: the API is received by the Bureau following the entry into force of the Final Acts of: |
| epfd(2) | Reference bandwidth | epfd(2) | Reference bandwidth | epfd(2) | Reference bandwidth |
| **(MHz)** | **(MHz)** | **(dB(W/m2))** | **(MHz)** | **(dB(W/m2))** | **(kHz)** | **(dB(W/m2))** | **(kHz)** |
| MSS (space-to-Earth) | 137-138 | 150.05-153 | −238 | 2.95 | NA | NA | NA | NA | WRC-07 |
| MMSS (space-to-Earth) | 161.7875-161.9375 | 150.05-153 | −238 | 2.95 | NA | NA | NA | NA | WRC-15 |
| MSS (space-to-Earth) | 387-390 | 322-328.6 | −240 | 6.6 | −255 | 10 | −228 | 10 | WRC-07 |
| MSS (space-to-Earth) | 400.15-401 | 406.1-410 | −242 | 3.9 | NA | NA | NA | NA | WRC-07 |
| MSS (space-to-Earth) | 1 525-1 559 | 1 400-1 427 | −243 | 27 | −259 | 20 | −229 | 20 | WRC-07 |
| RNSS (space-to-Earth)(3) | 1 559-1 610 | 1 610.6-1 613.8 | NA | NA | −258 | 20 | −230 | 20 | WRC‑07 |
| MSS (space-to-Earth) | 1 525-1 559 | 1 610.6-1 613.8 | NA | NA | −258 | 20 | −230 | 20 | WRC-07 |
| MSS (space-to-Earth) | 1 613.8-1 626.5 | 1 610.6-1 613.8 | NA | NA | −258 | 20 | −230 | 20 | WRC-03 |

SUP EUR/9A16A3/13

RESOLUTION 360 (WRC‑12)

Consideration of regulatory provisions and spectrum allocations for   
enhanced Automatic Identification System technology applications   
and for enhanced maritime radiocommunication

**Reasons:** It is proposes to suppress Resolution 360 (WRC-12) since it will become superfluous after the studies are completed and the identification of frequencies in order to enhance maritime radiocommunication has been made by WRC-15.

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