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| **World Radiocommunication Conference (WRC-19)Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
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| PLENARY MEETING | **Addendum 7 toDocument 85-E** |
|  | **10 October 2019** |
|  | **Original: English** |
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| Iran (Islamic Republic of) |
| Proposals for the work of the conference |
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| Agenda item 1.7 |

1.7 to study the spectrum needs for telemetry, tracking and command in the space operation service for non-GSO satellites with short duration missions, to assess the suitability of existing allocations to the space operation service and, if necessary, to consider new allocations, in accordance with Resolution **659 (WRC-15)**;

 IRN/85A7/1

Introduction

Three methods are proposed in the CPM Report for agenda item 1.7:

• Method A proposes no change to the Radio Regulations;

• Method B1 proposes a new SOS (Earth-to-space) allocation for non-GSO SD systems in the frequency range 403-404 MHz;

• Method B2 proposes a new SOS (Earth-to-space) allocation for non-GSO SD systems in the frequency range 404-405 MHz;

• Method C proposes to use the SOS allocation in the frequency band 137-138 MHz in downlink and the band 148-149.9 MHz in uplink and to provide appropriate associated regulatory provisions in the Radio Regulations for telecommand links of non-GSO SD missions.

As outlined for the Method B in the CPM Report:

a) In section 4/1.7/3.3.3.2:

 “The studies show varying conclusions regarding the feasibility of sharing between potential new SOS allocations for non-GSO SD systems and the existing services in the frequency range 403-406 MHz.”

b) In the disadvantage part of Method B in section 4/1.7/4.2:

 “Several studies show that co-channel sharing with MetAids is not feasible in the 403-406 MHz band and hence that current and future usage of 403-406 MHz frequency band for MetAids will not be fulfilled ”

c) In the note part of Methods B1 and B2 in sections 4/1.7/5.2 and 4/1.7/5.3 respectively:

 “Studies carried out in support of this Method include elements such as separation distances and guardbands which need to be respected. Consequently, such missing information should be duly included in the regulatory parts.”

Regarding the above diverse conclusions for the sharing studies in the CPM Report, it seems that Method B could not satisfy this agenda item.

In Method C, it seems that there are some benefits and drawbacks. The benefits of this method in the frequency band 137-138 MHz are as follows:

a) In Method C, the frequency band 137-138 MHz which has already been allocated to space operation service (space-to-Earth) would be identified for the application of telemetry, tracking and command links of non-GSO satellites with short duration missions through addition of a new footnote (refer to No. **5.C17**, and *considering d*) in draft new Resolution [A17-Method-C] in section 4/1.7/5.4).

b) In Method C , in the draft new Resolution [A17-method-C], a pfd value of −140 dB(W/(m2·4 kHz)) has been included for ensuring the protection of terrestrial services in the frequency band 137-138 MHz. This pfd value is the same as the coordination threshold that has already been taken in the same frequency band for space stations of MSS (space-to-Earth) with respect to terrestrial services (see sections 1.1.1 and 1.1.2 of Annex 1 of Appendix **5** of RR). If this level is exceeded, RR No. **9.11A** applies for networks or systems within the SOS in this band (refer to *resolves 2* in the draft new Resolution [A17-method-C]).

In Method C, for the frequency band 148-149.9 MHz, the following drawbacks are observed:

a) In the RR No. **5.218**, the frequency band 148-149.9 MHz has already been allocated to space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under RR No. **9.21**. In Method C, without inspecting or assessing the effects, with modification of RR No. **5.218**, the reference to RR No **9.21** is removed from the RR No. **5.218** and space operation service (Earth-to-space) is added directly as a primary service in the 148-149 MHz frequency band to the table of frequency allocation.

 Considering the above, it is outlined in the disadvantage part of Method C in section 4/1.7/4.3 that:

 “The impact of removal of RR No. **9.21** in the frequency band 148-149.9 (in particular for non-GSO SD missions) is still to be investigated.”

b) As outlined in *resolves* 3 in the draft new Resolution [A17-Method-C] in section 4/1.7/5.4:

 “In the frequency band 148-149.9 MHz (Earth-to-space), No. **9.11A** does not apply to space operation service (SOS) (Earth-to-space) networks”

 Considering the above, it seems that the protection of the heavily used primary terrestrial services is not ensured in this frequency band.

c) It seems that modification of RR No. **5.218** by removing RR No. **9.21** from the conditions for the use of SOS frequency band 148-149.9 MHz (Earth-to-space), is out of the scope of Resolution **659 (WRC-15)**.

Proposal

Regarding the above, this Administration supports Method A (No Change) of the CPM Report.

However, in order to accommodate the spectrum requirements for TT&C in the SOS for non-GSO SD missions, this Administration may also consider those parts of Method C that are related to the frequency band 137-138 MHz, in other words:

a) We may support using existing allocations to SOS in the frequency band 137-138 MHz (space-to-Earth) for TT&C links of non-GSO satellites with short duration missions if the protection of the heavily used terrestrial services in the 137-138 MHz frequency band is ensured. (Namely, the applicability and sufficiency of the proposed pfd value of −140 dB (W/(m2·4 kHz)) for the protection of terrestrial services are demonstrated.)

b) However, we cannot support using the frequency bands 148-149.9 MHz for TT&C links of non-GSO satellites with short duration missions since no mechanism has been devised for protection of heavily used terrestrial services in this frequency band.

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