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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** | |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** | |  |
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| PLENARY MEETING | **Addendum 2 to Document 62(Add.23)(Add.1)-E** | | |
|  | **16 October 2015** | |
|  | **Original: Chinese** | |
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| China (People’s Republic of) | | |
| Proposals for the work of the conference | | |
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| Agenda item 9.1(9.1.2) | | |

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

9.1 on the activities of the Radiocommunication Sector since WRC‑12;

9.1(9.1.2) Resolution **756 (WRC-12)** − Studies on possible reduction of the coordination arc and technical criteria used in application of No. **9.41** in respect of coordination under No. **9.7**

# 1 Consideration

It is noted that under WRC-15 agenda item 9.1, issue 9.1.2, improved ways to accommodate new networks and facilitate more efficient use of the spectrum resource are being sought, while at the same time adequate protection of existing networks operating in accordance with the Radio Regulations (RR) should also be ensured. Based on that, this administration has the following considerations.

a) Replacement of the Δ*T*/*T* criterion used under RR Nos. 9.7 and 9.41 with a *C*/*I* criterion

It is noted that according to BR statistics the number of satellite networks has increased as a result of RR No. 9.41 after the reduction of the coordination arc by WRC-12, which shows that the work of administrations in terms of self-identification has increased. This administration is of the view that the Δ*T*/*T* criterion is a classic and simple method for sharing evaluation which has been used by administrations and satellite operators for a long time for identifying requests and triggering coordination according to the Radio Regulations. In comparison, the *C*/*I* criterion, being more complex, is suitable for detailed technical coordination discussions rather than as a coordination trigger or for identification. In the event of Δ*T*/*T* being replaced by the *C*/*I* criterion, administrations would have to shoulder an additional burden and/or difficulty to accommodate the changes vis-à-vis the current method used under No. 9.41. Based on that observation, this administration proposes not to replace Δ*T*/*T* by the *C*/*I* criterion.

b) Increasing the level of permissible interference

Considering that the relaxation of coordination triggers from Δ*T*/*T* > 6% to Δ*T*/*T* > 20% or other values would have an unforeseeable negative impact on compatibility not only between satellite systems but also between satellite services and other services, this administration proposes not to relax the interference level for triggering coordination.

c) Reducing the size of the coordination arc in selected frequency bands

As mentioned in a), WRC-12’s decision to reduce the coordination arc in the 6/4 GHz and 14/10/11/12 GHz frequency ranges by 2 degrees already increased the burden on administrations to self-identify under RR No. 9.41. This administration proposes not reducing the size of the coordination arc further in the C and Ku bands at this stage.

For the Ka band, considering that the current application in this band is not as congested as that in the C and Ku bands, this administration proposes maintaining the current size of the coordination arc in this band.

d) Replacement of the C/I criterion used under RR No. 11.32A with a pfd threshold in the 6/4 GHz and 14/10/11/12 GHz bands

In order to eliminate unnecessary coordination and reduce administrative correspondence, this administration is in favour of introducing one pfd mask/level in the congested C and Ku frequency bands. Meanwhile, considering that the sharing conditions between adjacent satellite networks within the coordination arc generally need to be analysed case by case, especially for specific sensitive usage and cases of co-orbit, it is difficult to use a unique pfd mask/level for all cases. Additionally, the relevant coordination procedure should also be respected. This administration proposes that the current procedure for coordination between satellite networks within the coordination arc should be maintained. The pfd masks/levels only be applied could for satellite networks outside the coordination arc.

Proposal

NOC CHN/62A23A1A2/1

ARTICLE 9

Procedure for effecting coordination with or obtaining agreement of other administrations1, 2, 3, 4, 5, 6, 7, 8, 8*bis*    (WRC‑12)

**Reasons:** No change to the provisions of RR Article 9.

ARTICLE 11

Notification and recording of frequency   
assignments1, 2, 3, 4, 5, 6, 7, 7*bis*    (WRC‑12)

Section II − Examination of notices and recording of frequency assignments   
in the Master Register

MOD CHN/62A23A1A2/2

11.32A *c)* with respect to the probability of harmful interference that may be caused to or by assignments recorded with a favourable finding under Nos. 11.36 and 11.37 or 11.38, or recorded in application of No. 11.41, or published under Nos. 9.38 or 9.58 but not yet notified, as appropriate, for those cases for which the notifying administration states that the procedure for coordination under Nos. 9.7, 9.7A, 9.7B, 9.11, 9.12, 9.12A, 9.13 or 9.14, could not be successfully completed (see also No. 9.65);14, 14*bis* or     (WRC‑15)

NOC

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14 11.32A.1

ADD CHN/62A23A1A2/3

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14*bis*  11.32A.2 The criteria to determine the probability of harmful interference and the criteria for the formulation of the findings of the Bureau in respect of assignments in the frequency bands identified in 1) and 2) in Table **5‑1** of Appendix **5** of these regulations for satellite networks having a nominal orbit separation in the geostationary arc of 8 and 7 degrees respectivelyare contained in Resolution **[CHN-A912] (WRC‑15)**.     (WRC‑15)

**Reasons:** In C and Ku frequency bands, pfd masks/levels apply for the satellite networks outside the coordination arc.

NOC CHN/62A23A1A2/4

APPENDIX 5 (REV.WRC‑12)

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

**Reasons:** No change to RR Appendix 5.

ADD CHN/62A23A1A2/5

Draft New Recommendation [CHN-A912] (wrc‑15)

Application of pfd criteria to assess the potential for harmful interference under   
No. 11.32A for fixed-satellite and broadcasting-satellite service networks in   
the 4/6 GHz and 10/11/12/14 GHz bands not subject to a Plan

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that the 4/6 GHz and 10/11/12/14 GHz frequency ranges, not subject to a Plan, are extensively used with operational satellites about every 2-3° around the geostationary arc;

*b)* that currently there are a very large number of satellite networks submitted to ITU‑R for these frequency bands;

*c)* that the above factors have caused significant difficulties for administrations to introduce new satellite networks;

*d)* that more precise criteria to assess the probability of harmful interference under No. **11.32A** have the potential to reduce undue protection requirements for assignments in respect of incoming assignments;

*e)* that reduction of undue protection requirements will facilitate coordination of submissions of new networks;

*f)* that due to the congestion in these frequency bands and due to the maturity of the technology and applications in these frequency bands, relatively homogeneous technical parameters are used in satellite implementations;

*g)* that use of more homogeneous technical parameters will facilitate efficient use of spectrum and support the introduction of new networks;

*h)* that the use of pfd thresholds will encourage the use of more homogeneous technical parameters and promote the efficient use of spectrum;

*i)* that the coordination procedure within the coordination arc should be respected,

resolves

1 that for satellite networks operating in the frequency bands 3 400-4 200 MHz (space-to-Earth) and 5 725-5 850 MHz (Region 1), 5 850-6 725 MHz and 7 025-7 075 MHz (Earth-to-space) having a nominal geocentric separation in the geostationary arc of 8 degrees or more, assignments for a fixed-satellite service (FSS) satellite network with respect to other FSS networks do not have the potential to cause harmful interference if:

a) the pfd produced under assumed free-space propagation conditions, does not, anywhere within the service area of the potentially affected assignment, exceed the threshold values shown below,:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 8° | ≤ | θ | ≤ | 20.9° | −196.8 + 25log(θ/5.6) | (dBW/m2 ∙ Hz) |
| 20.9° | < | θ |  |  | −182.6 | (dBW/m2 ∙ Hz) |

where θ is the minimum nominal geocentric orbital separation (in degrees) between the wanted and interfering space stations, taking into account the respective East-West station-keeping accuracies;

b) that the pfd produced at the geostationary orbit location of the other FSS network under assumed free space propagation conditions shall not exceed −204.0 dBW/m2 ∙ Hz, taking into account the respective East-West station-keeping accuracies;

2 that in the frequency bands 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz (Region 2), 12.2‑12.5 GHz (Region 3), 12.5-12.7 GHz (Regions 1 and 3) and 12.7-12.75 GHz (space-to-Earth) and 13.75-14.5 GHz (Earth-to-space), assignments for an FSS or broadcasting-satellite service (BSS) satellite network with respect to other FSS or BSS networks having a nominal geocentric separation in the geostationary arc of 7 degrees or more do not have the potential to cause harmful interference if:

a) the pfd produced under assumed free-space propagation conditions does not, anywhere within the service area of the potentially affected assignment, exceed the threshold values shown below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 7° | ≤ | θ | ≤ | 20.9° | −187.2 + 25log(θ/5) | (dBW/m2 ∙ Hz) |
| 20.9° | < | θ |  |  | −171.9 | (dBW/m2 ∙ Hz) |

where θ is the minimum nominal geocentric orbital separation, in degrees, between the wanted and interfering space stations, taking into account the respective East-West station-keeping accuracies;

b) that the pfd produced at the geostationary orbit location of the other FSS network under assumed free-space propagation conditions shall not exceed −208.0 dBW/m2 ∙ Hz, taking into account the respective East‑West station-keeping accuracies;

3 that when the Bureau, under No. **11.32A**, conducts its examination of the probability of harmful interference in accordance with this Resolution, the above criteria shall be used.\*

*NOTE − FSS and BSS networks are also subject to other relevant limits of the RR, including, but not limited to, RR Nos.* ***21.16*** *and* ***21.17****.*

*\* NOTE − With the adoption of this Resolution by WRC, it is understood that RRB in updating their RoPs will amend the RoP for* ***11.32A*** *accordingly.*

**Reasons:** To add a new resolution and introduce pfd for the determination of the probability of harmful interference in C and Ku frequency bands under RR No. 11.32A.

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