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| A close up of a sign  Description automatically generated | **World Radiocommunication Conference (WRC-23) Dubai, 20 November - 15 December 2023** | |  |
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| PLENARY MEETING | | **Addendum 4 to Document 111(Add.25)-E** | |
|  | | **30 October 2023** | |
|  | | **Original: Chinese** | |
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| China (People's Republic of) | | | |
| PROPOSALS FOR THE WORK OF THE CONFERENCE | | | |
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| Agenda item 9.2 | | | |

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

9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations;[[1]](#footnote-1)1 and

Experience in the application of the radio regulatory procedures

## Section 3.2 – Appendices to the Radio Regulations

Introduction

Noting that the difficulties and inconsistencies encountered in the application of the relevant provisions are collected and analysed in the Part 2 of the Report of the Director of Radiocommunication Bureau ([Doc. 4 Add.2](https://www.itu.int/md/R23-WRC23-C-0004/en)), our views and proposals with respect to a number of items are summarized in this document focusing on experience in the application of the radio regulatory procedures under section 3.2 – Appendices to the Radio Regulations.

Proposals

This Administration submits its views and proposals with respect to a number of items for further discussion during the Conference.

CHN/111A25A4/1

#### 3.2.1.6 New orbital decay parameters

Some non-GSO satellites remain active until they re-enter the atmosphere due to natural decay or orbit-disposal manoeuvres. The Bureau has noted that available Appendix 4 parameters at the current stage do not allow administrations to clearly reflect in detail the orbital decay in a filing. In order to reflect changes in the altitude of apogee and/or perigee, administrations should follow the procedure of No. 11.43B. Considering the difficulties of this procedure, the Bureau is adopting the following practice to represent filings for such systems：

a) the altitudes of the apogee and perigee of the space station indicate the initial orbital parameters at the moment of bringing into use;

b) the minimum altitude of the space station above the surface of the Earth at which any satellite transmits (item A.4.b.4.f of Appendix 4) indicates the minimum altitude at which satellites remain in operation during the entire lifetime;

c) such a satellite network is protected with the initial orbital parameters (the apogee and perigee, which may not include the minimum altitude), and, therefore, commitments that the satellite network will not cause more interference or require more protection, as compared to the initial orbital parameters, should be provided by administrations;

d) the examination, for example under No. 21.16, should be carried out based on the worst-case approach for any orbital altitudes between the initial one and the minimum altitude.

In order to better represent such systems in the coordination and notification for recording of satellite network filings submitted to the ITU and to help the Bureau during the verification of the bringing into use and continuous use of these satellite networks, the Bureau invites the Conference to consider the addition of the following data items to Annex 2 of Appendix 4:

i) a new data item “an indicator [Y/N] of whether the space station uses station-keeping to maintain the altitudes of the apogee and perigee”, required for each orbital plane of a non-GSO satellite network or system with reference body “Earth”; and,

ii) a new data item “**the altitude of the apogee and perigee (km) as a function of the time (days) beginning from the date of bringing into use for all orbital planes with different orbital characteristics**”, required for non-GSO satellite networks for which the indicator introduced above is “N”.

**Views and Proposals:** This Administration endorses the addition of the two new data items to Annex 2 of RR Appendix **4** as suggested, contingent upon the approval of the preceding proposal.

**Reasons:** This Administration believes that the orbital decay data must be checked to ensure that it aligns with the anticipated lifespan of the space station.

CHN/111A25A4/2

#### 3.2.1.11 Steerable beams

The Bureau notes that for steerable beams, when satellite antenna can be steered towards any point in the service area, administrations normally submit for this data element a note, either indicating that this diagram cannot be provided or that gain will be constant and equal to the maximum gain (item B.3.a.1 of Appendix **4**) for any elevation angle (or submitting this diagram with a constant gain).

Due to the difficulties in interpreting this information, the Bureau currently does not generally use information provided in item B.4.b.2 for the examination under RR Article **21** or other provisions of the Radio Regulations.

However, the Bureau considers introducing an additional element which would indicate maximum gain versus elevation for steerable beams using phased-array antennas or electronically steered beams. Furthermore, the Bureau believes that such data should not be limited to only non-GSO space stations that are being submitted in accordance with RR Nos. **9.11A**, **9.12** or **9.12A**.

The Bureau invites the Conference to consider:

1) proposed modifications to item B.4.b.2 of Appendix **4** or,

2) the suppression of item B.4.b.2.

**Views and Proposals:** This Administration supports the Bureau's addition of an element detailing the maximum gain versus elevation for phased-array antennas or electronically steered beams, and the removal of item B.4.b.2**.**

**Reasons:** For phased array antennas, the gain changes regardless of the elevation angle. Therefore, a new parameter is needed to describe the above characteristics, so that the calibration of RR Article **21** can also use the curve of elevation angle and maximum gain.

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1. 1 This agenda sub-item is strictly limited to the Report of the Director on any difficulties or inconsistencies encountered in the application of the Radio Regulations and the comments from administrations. Administrations are invited to inform the Director of the Radiocommunication Bureau of any difficulties or inconsistencies encountered in the Radio Regulations. [↑](#footnote-ref-1)