|  |  |  |  |
| --- | --- | --- | --- |
| **42 MEETING OF PERMANENT**  **CONSULTATIVE COMMITTEE II:**  **RADIOCOMMUNICATIONS**  **August 28 to September 01, 2023**  **Ottawa, Canada** | | **OEA/Ser.L/XVII.4.2.42**  **CCP.II-RADIO /doc. 5897/23**  **06 August 2023**  **Original: English** | |
|  | | | |
|  | **PROPOSALS FOR THE WORK OF THE CONFERENCE AGENDA ITEM 7 TOPIC A** | |  |
|  | **(Item on the Agenda: 3.1 (SGT-4))** | |  |
|  | **(Document submitted by the delegation of the United States of America)** | |  |

|  |
| --- |
| **Impact on the sector:** |
| To support the WRC-23 preparations in CITEL PCCII under the WRC Working Group. |

|  |
| --- |
| **Executive Summary:** |
| The United States provides a revision to the preliminary proposal for WRC-23 agenda item 7 Topic A regarding tolerances for certain orbital characteristics of non-GSO space stations of the FSS, BSS or MSS. Revisions to the preliminary proposal output from the 41st CITEL PCC.II meeting are highlighted in green. |

**UNITED STATES OF AMERICA**

# **DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**

**Agenda Item 7** *to consider possible changes, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, on advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution****86******(Rev.WRC‑07)****, in order to facilitate the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;*

**7(A)** Topic A - Tolerances for certain orbital characteristics of non-GSO space stations of the FSS, BSS or MSS

**BACKGROUND**

**Source: MEX 5803**

WRC-19 invited the ITU-R to study “as a matter of urgency, tolerances for certain orbital characteristics of non-GSO space stations of the fixed-satellite, mobile-satellite or broadcasting satellite services to account for potential differences between the notified and deployed orbital characteristics for the inclination of the orbital plane, the altitude of the apogee of the space station, the altitude of the perigee of the space station and the argument of the perigee of the orbital plane.”.

**Source: Canada 5772**

Topic A for WRC-23 agenda item 7 considers the adoption of possible tolerances for certain orbital characteristics of non-GSO space stations of the fixed-satellite, mobile-satellite or broadcasting-satellite services to account for potential differences between values recorded in the Master International Frequency Register (MIFR) for the specified orbital characteristics of non-GSO space stations operating on notified frequency assignments and those representative of the actual deployment of these non-GSO space stations.

The need for tolerances arises from the obligations stipulated in the Radio Regulations (RR):

– to deploy at least one satellite on a notified orbital plane for a successful completion of the bringing into use (BIU) or bringing back into use (BBIU) of frequency assignments to a fixed-satellite service (FSS), broadcasting-satellite service (BSS) or mobile-satellite service (MSS) non-GSO satellite network or system irrespective of the frequency bands (see RR Nos. **11.44C** and 11.49**.2**);

– to deploy satellites on a notified orbital plane to satisfy the milestones stipulated in Resolution **35 (WRC-19)** for some services in some bands, and

– to operate frequency assignments in accordance with the notified required characteristics as specified in RR Appendix **4**.

**Source: USA 5798**

ITU-R studies conducted to date agree that there should be allowable differences between the values recorded in the Master International Frequency Register (MIFR) for the specified orbital characteristics of non-GSO space stations operating on notified frequency assignments and those representative of the actual deployment of these non-GSO space stations.

There are multiple aspects involved here. On the one hand, as indicated in Section 4/7/1.3 of the CPM Report for WRC-23 on this Topic: “Deviations from the nominal parameters characterizing the notified plane (A.4.b.4.a, A.4.b.4.d, A.4.b.4.e and A.4.b.4.i), have an impact on the regulatory treatment by the Bureau of the confirmation of the BIU, the BBIU or the Resolution **35 (WRC-19)** submission. These deviations could also have a major impact on the interference environment of such a system, and thereby could impact the efficient use of the non-GSO spectrum resource.” The same section of the CPM Report also indicates that “design considerations (including the impact of atmospheric drag[[1]](#footnote-1) and solar cycle effects for systems at altitudes lower than 600 km), the need to ensure safe flight operations between satellites in the same and/or other systems, and other factors can lead to notifying administrations needing to operate some space stations in orbital parameters that are at variance from the notified orbital parameters or to employ orbital practices that do not increase interference or protection requirements.” The CPM Report goes on to recognize that there are legitimate reasons for variations from notified orbital plane parameters, and that it is important not to over-regulate deviations/tolerances in a way that limits administrations’ flexibility or to inappropriately limit entry of additional systems.

PRELIMINARY PROPOSALS

ARTICLE 11

**Notification and recording of frequency   
assignments**1, 2, 3, 4, 5, 6, 7    (WRC‑19)

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

MOD USA/7(A)/1

11.44C A frequency assignment to a space station in a non-geostationary-satellite orbit network or system in the fixed-satellite service, the mobile-satellite service or the broadcasting-satellite service shall be considered as having been brought into use when a space station with the capability of transmitting or receiving that frequency assignment has been deployed and maintained on one of the notified orbital plane(s)MOD 27 of the non‑geostationary satellite network or system for a continuous period of 90 days, irrespective of the notified number of orbital planes and satellites per orbital plane in the network or system. The notifying administration shall so inform the Bureau within 30 days from the end of the 90-day period25, 28, 29. On receipt of the information sent under this provision, the Bureau shall make that information available on the ITU website as soon as possible and shall publish it in the BR IFIC subsequently.      (WRC‑23)

Reasons:

Source: Canada 5772

Modification required to reflect some variations are allowed between the values notified and the actual values for certain orbital characteristics of the space station deployed to satisfy the BIU requirement as stated in No. **11.44C** for FSS, BSS and MSS non-GSO **systems.**

MOD USA/7(A)/2

\_\_\_\_\_\_\_\_\_\_\_\_

27 **MOD**11.44C.1 and **MOD11.44D.1** For the purposes of No. **11.44C** or No. **11.44D**, the term “notified orbital plane” means an orbital plane of the non-geostationary-satellite system, as provided to the Bureau in the most recent notification information for the system’s frequency assignments, that corresponds to Items A.4.b.4.a, A.4.b.4.d, A.4.b.4.e and A.4.b.4.i (only for orbits whose altitudes of the apogee and perigee are different) in Table A of Annex 2 to Appendix **4**. For frequency assignments to some non-geostationary-satellite systems in specific frequency bands and services, Resolution **[B7(A)] (WRC-23)** shall apply.     (WRC23)

Reasons: To incorporate a mandatory reference to a new WRC Resolution addressing allowable deviations on elements of a notified orbital plane, and to correct an erroneous reference to Appendix 4.

MOD USA/7(A)/3

11.44D A frequency assignment to a space station in a non-geostationary satellite orbit network or system with “Earth” as the reference body, other than a frequency assignment to which No. 11.44C applies, shall be considered as having been brought into use when a space station with the capability of transmitting or receiving that frequency assignment has been deployed on one of the notified orbital plane(s)MOD 27 of the non-geostationary satellite network or system, irrespective of the notified number of orbital planes and satellites per orbital plane in the network or system. The notifying administration shall so inform the Bureau as soon as possible, but not later than 30 days after the end of the period referred to in No. 11.44.25, 29 On receipt of the information sent under this provision, the Bureau shall make that information available on the ITU website as soon as possible and shall publish it in the BR IFIC subsequently.     (WRC‑23)

Reasons: Consequential to the modification of Nos. 11.44C and 11.44C.1.

MOD USA/7(A)/4

11.49 Wherever the use of a recorded frequency assignment to a space station of a satellite network or to all space stations of a non-geostationary-satellite system is suspended for a period exceeding six months, the notifying administration shall inform the Bureau of the date on which such use was suspended. When the recorded assignment is brought back into use, the notifying administration shall, subject to the provisions of Nos. 11.49.1, 11.49.2, 11.49.3or11.49.4, as applicable, so inform the Bureau, as soon as possible. On receipt of the information sent under this provision, the Bureau shall make that information available as soon as possible on the ITU website and shall publish it in the BR IFIC. The date on which the recorded assignment is brought back into use32, 33, 34, 35, MOD 36shall be not later than three years from the date on which the use of the frequency assignment was suspended, provided that the notifying administration informs the Bureau of the suspension within six months from the date on which the use was suspended. If the notifying administration informs the Bureau of the suspension more than six months after the date on which the use of the frequency assignment was suspended, this three-year time period shall be reduced. In this case, the amount by which the three-year period shall be reduced shall be equal to the amount of time that has elapsed between the end of the six-month period and the date that the Bureau is informed of the suspension. If the notifying administration informs the Bureau of the suspension more than 21 months after the date on which the use of the frequency assignment was suspended, the frequency assignment shall be cancelled. Ninety days before the end of the period of suspension, the Bureau shall send a reminder to the notifying administration. If the Bureau does not receive the declaration of the commencement of the bringing back into use period within thirty days following the limit date of the period of suspension established in accordance with this provision, it shall cancel the entry in the Master Register. The Bureau shall, however, inform the administration concerned before taking such action.     (WRC‑23)

Reasons:

Source: Canada 5772

Modification required to reflect some variations are allowed between the values notified and the actual values for certain orbital characteristics of the space station deployed to satisfy the BBIU requirement as stated in No. 11.49.2 for FSS, BSS and MSS non-GSO systems.

MOD USA/7(A)/5

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

36 11.49.5 For the purposes of Nos. **11.49.2** and **11.49.3**, the term “notified orbital plane” means an orbital plane of the non-geostationary-satellite system, as provided to the Bureau in the most recent notification information for the system’s frequency assignments, that corresponds to Items A.4.b.4.a, A.4.b.4.d, A.4.b.4.e and A.4.b.4.1 (only for orbits whose altitudes of the apogee and perigee are different) in Table A of Annex 2 to Appendix **4**. For frequency assignments to some non-geostationary-satellite systems in specific frequency bands and services, Resolution **[B7(A)] (WRC-23)** shall apply.      (WRC23)

Reasons: To incorporate a mandatory reference to a new WRC Resolution addressing allowable deviations on elements of a notified orbital plane, and to correct an erroneous reference to Appendix 4.

Source: Canada 5772

**Section III – Maintenance of the recording of frequency assignments to non-geostationary-satellite systems in the Master Register**     (WRC‑19)

**MOD USA/7(A)/6**

**11.51** For frequency assignments to some non-geostationary-satellite systems in specific frequency bands and services, Resolution **35 (WRC‑19)** andResolution **[A7(A)-NGSO-FSS-BSS-MSS**-**Tolerance] (WRC‑23)**  shall apply.     (WRC‑23)

Reasons: To incorporate a mandatory reference to a new WRC Resolution addressing allowable deviations on elements of a notified orbital plane.

Note: *This preliminary proposal is limited to the Resolution to be referred to in several provisions of Article 11 and is based on method A4 of the CPM report. It is important to note that the modifications to Article 11 to incorporate a mandatory reference to this Resolution shown above are identical to those shown in the DIAP Doc #*

ADD USA/7(A)/7

draft new RESOLUTION [B7(A)] (WRC-23)

An approach to orbital tolerances for the implementation and use of frequency assignments to space stations in a non-geostationary-satellite system   
in specific bands and services

The World Radiocommunication Conference (Dubai, 2023),

considering

*a)* that filings for frequency assignments to circular-orbit non-geostationary-satellite (non-GSO) systems composed of hundreds to thousands of non-GSO satellites have been received by ITU since 2011, in particular in frequency bands allocated to the fixed-satellite service (FSS) or the mobile-satellite service (MSS);

*b)* that non-GSO systems using highly-inclined orbits having an apogee altitude greater than 18 000 km and an orbital inclination between 35° and 145° are typically composed of only a few satellites and the number of such systems notified represents only a small fraction of the number of notified non-GSO systems;

*c)* that under Nos. **11.44C.1**, **11.44D.1**, **11.49.2** and **11.49.3**, the term “notified orbital plane” means an orbital plane of the non-GSO system, as provided to the Radiocommunication Bureau (Bureau) in the most recent notification information for the system’s frequency assignments, that corresponds to Items A.4.b.4.a, A.4.b.4.d, A.4.b.4.e and A.4.b.4.i (only for orbits whose altitudes of the apogee and perigee are different) in Table A of Annex 2 to Appendix **4**;

*d)* that design considerations (including the impact of atmospheric drag[[2]](#footnote-2) and solar cycle effects for systems at altitudes lower than 600 km); availability of launch vehicles to support multiple satellite launches; maintaining separation between satellites in the same and other systems to ensure safe flight operations and minimize the risk of collisions; and other factors can lead to notifying administrations needing to operate some space stations in orbital planes with some variance from the notified orbital planes for the non-GSO systems referred to in *considering* *a)*;

*e)* that discrepancies between the operational orbital plane(s) of a non-GSO system and the notified orbital plane(s) for those systems as recorded in the Master International Frequency Register (Master Register) could have an impact on the interference environment into other systems/services;

*f)* that the determination whether an orbital plane of a non-GSO system has characteristics that corresponds to Items A.4.b.4.a, A.4.b.4.d, A.4.b.4.e and A.4.b.4.i (only for orbits whose altitudes of the apogee and perigee are different) in Table A of Annex 2 to Appendix **4** as provided to the Bureau in the most recent notification information for the system’s frequency assignments is not always straightforward, and can depend on factors that are specific to the non-GSO system in question;

*g)* that it is important, for consideration of instances where a non-GSO system operates with orbital planes that are at variance with the system’s notified orbital planes, that there is a mechanism developed for determining that such at-variance operation does not now and will not in the future result in the space stations of the non-GSO system causing more interference or claiming a higher need for protection than would have been the case if the operational orbital planes exactly matched the notified orbital planes for the system;

*h)* that for purposes of maximizing the efficient use of the orbit/spectrum resource for all non-GSO systems, whether or not they are in the same frequency band or service, it is important for there to be a listing maintained by the Bureau, and periodically updated by filing administrations, of all satellites in a subject non-GSO system that are operating in orbital planes that are at variance with Items A.4.b.4.a, A.4.b.4.d, A.4.b.4.e and A.4.b4.i (only for orbits whose altitudes of the apogee and perigee are different) in Table A of Annex 2 to Appendix **4** of any of the system’s notified orbital planes, as provided to the Bureau in the most recent notification information for the system’s frequency assignments;

*i)* that notwithstanding *considerings f), g)*, and *h)* above, there will be instances where the Bureau can determine without a methodology that an orbital plane of a non-geostationary-satellite system has characteristics that do not correspond to Items A.4.b.4.a, A.4.b.4.d, A.4.b.4.e and A.4.b4.i (only for orbits whose altitudes of the apogee and perigee are different) in Table A of Annex 2 to Appendix **4** as provided to the Bureau in the most recent notification information for the system’s frequency assignments;

*j)* that, in addressing the subject of orbital tolerances, there is a need to seek a balance between providing accurate information regarding the operational orbital planes used by non-GSO systems to assist the proper functioning of coordination mechanisms and other provisions of the Radio Regulations to enable sharing of the radio frequency spectrum and ensure the avoidance of harmful interference, and the operational requirements related to the safe deployment and operation of a non‑GSO system outside the mandate of the Radio Regulations that may be required by the notifying administration;

*k)* that satellites using highly-inclined orbits having an apogee altitude greater than 18 000 km and an orbital inclination between 35° and 145° have significant orbital precession rates and consequently, restrictive orbital keeping requirements, and correction of orbit parameters may lead to a reduction of such satellites’ lifetime and to frequent replacement;

*l)* that adherence to a transparent approach to the question of orbital tolerances is desirable, as this reduces uncertainty with respect to the deployment of non-GSO systems,

recognizing

*a)* that the bringing into use of frequency assignments to non-GSO systems is addressed in Article **11**;

*b)* that any regulatory mechanism for management of frequency assignments to non-GSO systems in the Master Register should not impose an unnecessary burden;

*c)* that the core characteristics of notified orbital planes in a non-GSO system are among the notified required characteristics as specified in Appendix **4** (specifically provision A.4.b.4.a, A.4.b.4.d, A.4.b.4.e and A.4.b.4.i);

*d)* that Resolution **35 (WRC-19)** addresses variances between the actual number of satellites in notified orbital planes and the notified number of satellites for each orbital plane, whereas this Resolution is addressing the subject of variances of deployed versus notified orbital characteristics;

*e)* that regulation of orbital tolerances for a non-GSO system should take into account design considerations including offsetting the atmospheric drag characteristics of the altitude chosen and solar cycle predictions, which could have an impact on the lifetime of the satellites;

*f)* that No. **13.6** is applicable to non-GSO systems with frequency assignments in the frequency bands and services to which this Resolution applies;

*g)* that No. **11.49** addresses the suspension of recorded frequency assignments to a space station of a satellite network or to space stations of a non-GSO system,

recognizing further

that this Resolution relates to those aspects of non-GSO systems to which *resolves*1 applies with regard to the notified required characteristics as specified in Appendix **4**, and the conformity of the notified required characteristics of the non-GSO systems, other than those referred to in *recognizing c)* above and Nos. **11.44C.1**, **11.44D.1**, **11.49.2** and **11.49.3** is outside the scope of this Resolution,

noting

that for the purpose of this Resolution:

– the term “frequency assignments” is understood to refer to frequency assignments to a space station of a non-GSO system;

– the term “notified orbital plane” means an orbital plane of the non-GSO system, as provided to the Bureau in the most recent notification information for the system’s frequency assignments, that possesses the general characteristics of items:

• A.4.b.4.a, the angle of inclination of the orbital plane of the space station;

• A.4.b.4.d, the altitude of the apogee of the space station;

• A.4.b.4.e, the altitude of the perigee of the space station; and

• A.4.b.4.i, the argument of the perigee of the orbit of the space station (only for orbits whose altitudes of the apogee and perigee are different)

in Table A of Annex 2 to Appendix **4**;

resolves

1 that this Resolution applies to frequency assignments to non-GSO systems, other than non-GSO systems using the orbits described in *considering* b) above, in the frequency bands and for the services listed in the Table below:

Table

Frequency bands and services for application of the orbital tolerance approach

| Frequency bands  (GHz) | Space radiocommunication services | | |
| --- | --- | --- | --- |
| Region 1 | Region 2 | Region 3 |
| 10.70-11.70 | FIXED-SATELLITE  (space-to-Earth)  FIXED-SATELLITE  (Earth-to-space) | FIXED-SATELLITE (space-to-Earth) | |
| 11.70-12.50 | FIXED-SATELLITE (space-to-Earth) | | |
| 12.50-12.70 | FIXED-SATELLITE  (space-to-Earth)  FIXED-SATELLITE  (Earth-to-space) | FIXED-SATELLITE (space-to-Earth) | BROADCASTING-SATELLITE  FIXED-SATELLITE  (space-to-Earth) |
| 12.70-12.75 | FIXED-SATELLITE  (space-to-Earth)  FIXED-SATELLITE  (Earth-to-space) | FIXED-SATELLITE (Earth-to-space) | BROADCASTING-SATELLITE  FIXED-SATELLITE  (space-to-Earth) |
| 12.75-13.25 | FIXED-SATELLITE (Earth-to-space) | | |
| 13.75-14.50 | FIXED-SATELLITE (Earth-to-space) | | |
| 17.30-17.70 | FIXED-SATELLITE  (space-to-Earth)  FIXED-SATELLITE  (Earth-to-space) | None | FIXED-SATELLITE  (Earth-to-space) |
| 17.70-17.80 | FIXED-SATELLITE  (space-to-Earth)  FIXED-SATELLITE  (Earth-to-space) | FIXED-SATELLITE (space-to-Earth) | FIXED-SATELLITE  (space-to-Earth)  FIXED-SATELLITE  (Earth-to-space) |
| 17.80-18.10 | FIXED-SATELLITE (space-to-Earth)  FIXED-SATELLITE (Earth-to-space) | | |
| 18.10-19.30 | FIXED-SATELLITE (space-to-Earth) | | |
| 19.30-19.60 | FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space) | | |
| 19.60-19.70 | FIXED-SATELLITE (space-to-Earth) (Earth-to-space) | | |
| 19.70-20.10 | FIXED-SATELLITE  (space-to-Earth) | FIXED-SATELLITE  (space-to-Earth)  MOBILE-SATELLITE (space-to-Earth) | FIXED-SATELLITE  (space-to-Earth) |
| 20.10-20.20 | FIXED-SATELLITE (space-to-Earth)  MOBILE-SATELLITE (space-to-Earth) | | |
| 27.00-27.50 |  | FIXED-SATELLITE (Earth-to-space) | |
| 27.50-29.50 | FIXED-SATELLITE (Earth-to-space) | | |
| 29.50-29.90 | FIXED-SATELLITE (Earth-to-space) | FIXED-SATELLITE  (Earth-to-space)  MOBILE-SATELLITE (Earth-to-space) | FIXED-SATELLITE  (Earth-to-space) |
| 29.90-30.00 | FIXED-SATELLITE (Earth-to-space)  MOBILE-SATELLITE (Earth-to-space) | | |
| 37.50-38.00 | FIXED-SATELLITE (space-to-Earth) | | |
| 38.00-39.50 | FIXED-SATELLITE (space-to-Earth) | | |
| 39.50-40.50 | FIXED-SATELLITE (space-to-Earth)  MOBILE-SATELLITE (space-to-Earth) | | |
| 40.50-42.50 | FIXED-SATELLITE (space-to-Earth)  BROADCASTING-SATELLITE | | |
| 47.20-50.20 | FIXED-SATELLITE (Earth-to-space) | | |
| 50.40-51.40 | FIXED-SATELLITE (Earth-to-space) | | |

2 that, for frequency assignments to which *resolves* 1 applies, and for which information concerning the bringing into use or bringing back into use of the frequency assignments is provided to the Bureau on or after 1 January 2025, the notifying administration shall communicate to the Bureau the required information regarding the system’s deployed space stations in accordance with Annex 1 to this Resolution no later than 30 days after the end of the regulatory period specified in No. **11.44** or No. **11.49**, as applicable, or 30 days after the end of the bringing/bringing back into use period in No. **11.44C** or No. **11.49.2**, as applicable, whichever comes later;

3 that, for frequency assignments to which *resolves* 1 applies, and that were brought into use or brought back into use prior to 1 January 2025, the notifying administration shall communicate to the Bureau the required information regarding the system’s deployed space stations in accordance with Annex 1 to this Resolution no later than 1 April 2025;

4 that, for frequency assignments to which *resolves* 1 applies, and that retain the remark to the Master Register entry that was added under *resolves* 5*b)* of Resolution **35 (WRC-19)**, the notifying administration shall communicate to the Bureau the required information regarding the system’s deployed space stations in accordance with Annex 1 to this Resolution at the same time the notifying administration communicates to the Bureau the required information under *resolves* 7 or 8, as applicable, from Resolution **35 (WRC-19)**;

5 that, for frequency assignments to which *resolves* 1 applies, the notifying administration shall communicate to the Bureau the required information regarding the system’s deployed space stations in accordance with Annex 1 to this Resolution three years after the date of submission in accordance with *resolves* 2 or 3 above, or if applicable, three years after the date of submission of the information required under *resolves* 7c) or 8c)from Resolution **35 (WRC-19)** as required under *resolves* 4of this Resolution, and continue doing so on the anniversary date of submission every three years thereafter;

6 that, upon receipt of the required deployment information submitted in accordance with *resolves* 2, 3, 4or5 above, Bureau shall promptly make this information available “as received” on the ITU website and retain the most recent submission under resolves 5 on the ITU website;

7 that, if the information provided in any Annex 1 submission under *resolves* 2, 3, 4, or 5 above shows a change in the altitude of the apogee or perigee of the space station, or a change in the angle of inclination of the orbital plane of the space station, to which Element B6) of Annex 1 to this Resolution applies, the notifying administration shall also submit to the Bureau, no later than 90 days after the deadline for the Annex 1 submission under *resolves* 2, 3, 4, or 5 above, modifications to the characteristics of the notified or recorded frequency assignments reflecting the revised parameters;

8 that, upon receipt of the modifications to the characteristics of the notified or recorded frequency assignments as referred to in *resolves* 7:

*a)* the Bureau shall promptly make this information available “as received” on the ITU website;

*b)* the Bureau, for the purpose of No. **11.43B**, shall retain the original dates of entry of the frequency assignments in the Master Register if:

1. Bureau reaches a favourable finding under No. **11.31**; and

1. the modifications are limited to changes in the altitude of the apogee of the space station (Appendix **4** data item A.4.b.4.d), the altitude of the perigee of the space station (Appendix **4** data item A.4.b.4.e), and the angle of inclination of the orbital plane of the space station (Appendix **4** data item A.4.b.4.a), along with changes associated with not causing more interference or requiring more protection than the characteristics provided in the latest notification information published in the BR IFIC (Part II‑S, if available, or Part I‑S if Part II‑S is not available); and

*iii)* the notifying administration provides a commitment stating that the

characteristics as modified will not cause more interference or require more protection than the characteristics provided in the latest notification information published in Part I-S of the BR IFIC for the frequency assignments (see Appendix **4** data item A.25.a);

*c)* the Bureau shall publish the information provided and its findings in the BR IFIC;

9 that the Bureau shall, no later than 45 days before any deadline for submission by a notifying administration under *resolves* 2, 3, 4, 5, or 6 send a reminder to the notifying administration to provide the information required;

10 that, if a notifying administration fails to communicate the information required under *resolves* 2, 3, 4, 5, or 6 as appropriate, the Bureau shall promptly send to the notifying administration a reminder asking the administration to provide the required information within 30 days from the date of this reminder from the Bureau;

11 that, if a notifying administration fails to provide information after the reminder sent under *resolves* 10, the Bureau shall send to the notifying administration a second reminder asking it to provide the required information within 15 days from the date of the second reminder;

12 that, if a notifying administration fails to provide the required information under *resolves*2, 3, 4, 5, or 6, as appropriate, following the reminders under *resolves*10 and 11, the Bureau shall:

*a)* inform the Radio Regulations Board (RRB), at the RRB’s next scheduled meeting, that the Bureau intends to discontinue taking the entry in the Master Register into account when conducting its examinations;

*b)* in the absence of a determination by the RRB to reject or postpone the course of action outlined in *resolves* 12*a)* at the first RRB meeting after the Bureau provides the information in *resolves* 12*a)*, no longer consider the frequency assignments under subsequent examinations under Nos. **9.36**, **11.32** or **11.32A**, and inform administrations having frequency assignments subject to Sub-Section IA of Article **9** that those assignments shallnot cause harmful interference to, nor claim protection from, other frequency assignments recorded in the Master Register with a favourable finding under No.**11.31**;

13 that the suspension of the use of frequency assignments in accordance with No. **11.49** at any point prior to a reporting deadline as specified in *resolves* 2, 3, 4 or 5of this Resolution, as applicable, shall not alter or reduce the requirements associated with any reporting obligations as stated in this Resolution;

14 that, if information provided by a notifying administration under *resolves* 4of this Resolution results in frequency assignments not retaining their original dates of entry in the Master Register after application of *resolves* 8 of this Resolution, those space stations with altitude or inclination variances that caused this result shall not be included in the total number of space stations deployed as part of the system during any relevant milestone period;

15 that nothing in this Resolution, including *resolves 6* above, shall be considered to limit or constrain the Bureau from implementing or following the procedure set forth in No. **13.6** of the Radio Regulations upon receipt of any Annex 1 submission under *resolves*2, 3, 4 or 5 above, or at any other time, with respect to the bringing into use, bringing back into use, or continuation in use of frequency assignments to non-GSO space stations in accordance with the notified required characteristics of a notified orbital plane as specified in Appendix **4**,

instructs the Radiocommunication Bureau

1 to take the necessary actions to implement this Resolution, including providing assistance to administrations when requested, to address the difficulties they may encounter in the implementation of this resolution without any regulatory impact on the administrations;

2 to report any difficulties it encounters in the implementation of this Resolution to WRC‑27,

invites the ITU-R

to continue studies with a view to identifying a methodology or methodologies for determining whether specific changes to a notified orbital plane will cause more interference or require more protection than the characteristics provided in the latest notification information published in the BR IFIC (Part II-S, if available, or Part I-S if Part II-S is not available) for the frequency assignments,

*urges Administrations*

to submit modifications to the characteristics of the notified or recorded frequency assignments reflecting the revised parameters if the information provided in any Annex 1 submission under *resolves* 2, 3, 4, or 5 above shows a change in the altitude of the apogee or perigee of the space station to which Element B5) of Annex 1 to this Resolution applies.

Annex 1 to Resolution [B7(A)] (WRC-23)

Information to be submitted about the deployed space stations

A Satellite system information

1) Name of the satellite system

2) Name of the notifying administration

3) Country symbol

4) Reference to the advance publication information or the request for coordination, or the notification information, if available

5) Total number of space stations deployed into each notified orbital plane of the satellite system with the capability of transmitting or receiving the frequency assignments

6) Orbital plane number indicated in the latest notification information published in the BR IFIC (Part II-S, if available, or Part I-S if Part II-S is not available) for the frequency assignments into which each space station is deployed.

B Space station characteristics for each space station deployed

1) Name of the space station

2) Orbital plane number with which the space station is associated

3) Altitude of the apogee and perigee of the space station and angle of inclination of the orbital plane of the space station. If there is no variance from the latest notification information published in the BR IFIC (Part II‑S, if available, or Part I‑S if Part II‑S is not available) in either altitude of the apogee or angle of inclination of the orbital plane in all space stations covered by the submission, the notifying administration may indicate “No Variance” in its response here, and skip the remaining steps below.

4) For each space station operating in an orbital plane with an altitude of the apogee or perigee at a variance of  70 km or less (for an apogee or perigee altitude of 2000 km or less) or of 5% in km or less (for an apogee or perigee altitude of more than 2000 km)], and an angle of inclination of the orbital plane of the space station at a variance of 2 degrees or less, from the latest notification information published in the BR IFIC (Part II‑S, if available, or Part I‑S if Part II‑S is not available), an explanation of why there is a change in the orbital characteristics of the space station.

5) For each space station operating in an orbital plane with an altitude variance of between 70 km and 100 km (for an apogee or perigee altitude of 2000 km or less) or between 5% and 10% in km (for an apogee or perigee altitude of more than 2000 km), and an angle of inclination of the orbital plane of the space station at a variance of 2 degrees or less, from the latest notification information published in the BR IFIC (Part II‑S, if available, or Part I‑S if Part II‑S is not available), an explanation of why there is a change in the orbital characteristics of the space station, and a technical showing confirming that the altitude variance above 70 km or 5% in km, as applicable, does not result in any increased interference or protection requirements as compared to those requirements for operation without the variance.

6) For each space station operating in an orbital plane with an altitude of the apogee or perigee at variance from the latest notification information published in the BR IFIC (Part II‑S, if available, or Part I‑S if Part II‑S is not available) by an amount greater than the variances provided in Element B5) above, and/or with an angle of inclination of the orbital plane of the space station at a variance of more than 2 degrees from the latest notification information published in the BR IFIC (Part II‑S, if available, or Part I‑S if Part II‑S is not available), a detailed explanation of why there is a change in the orbital characteristics of the space station and a technical showing to support a determination that the variance does not result in any increased interference or protection requirements as compared to those requirements for operation without the variance.

C Commitment of Non-Interference/Non-Protection

By providing a submission under Annex 1 to this Resolution, the notifying administration commits that the operation of its notified frequency assignments using the orbital characteristics of the submission that are at variance with the notified orbital plane(s) will not cause more interference, require more protection, than would otherwise be the case for operation in accordance with the characteristics provided in the latest notification information published in the BR IFIC (Part II-S, if available, or Part I-S if Part II-S is not available) for the frequency assignments to the non-geostationary-satellite system.

**Reasons:**  To provide a mechanism to ensure that deviations in key orbital parameters from what is notified and/or recorded in the MIFR are transparent, reasonably up to date, and cause no change in the interference environment in which the non-GSO system operates.

**MOD USA/7(A)/8**

APPENDIX 4 (REV.WRC‑19)

Consolidated list and tables of characteristics for use in the  
application of the procedures of Chapter III

ANNEX 2

Characteristics of satellite networks, earth stations  
or radio astronomy stations2    (Rev.WRC‑12)

Footnotes to Tables A, B, C and D

| **Items in Appendix** | ***A \_ GENERAL CHARACTERISTICS OF THE SATELLITE NETWORK OR SYSTEM, EARTH STATION OR RADIO ASTRONOMY STATION*** |  |  |  |  | **Advance publication of a geostationary- satellite network** | **Advance publication of a non-geostationary-satellite network or system subject to coordination under Section II  of Article 9** | **Advance publication of a non-geostationary-satellite network or system not subject to coordination under Section II  of Article 9** | **Notification or coordination of a geostationary-satellite network (including space operation functions under Article 2A of Appendices 30 or 30A)** | **Notification or coordination of a non-geostationary-satellite network or system** | **Notification or coordination of an earth station (including notification under  Appendices 30A or 30B)** | **Notice for a satellite network in the broadcasting-satellite service under  Appendix 30 (Articles 4 and 5)** | **Notice for a satellite network  (feeder-link) under Appendix 30A  (Articles 4 and 5)** | **Notice for a satellite network in the fixed- satellite service under Appendix 30B  (Articles 6 and 8)** | **Items in Appendix** | **Radio astronomy** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| \*\*\* |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **A.25** | **COMPLIANCE WITH RESOLUTION [B7(A)] (WRC‑23)** | |  | |  | |  | |  | |  | | | | | | | | | | | | | | | | | | **A.25** | |  | |
| A.25.a | a commitment stating that the characteristics as modified will not cause more interference or require more protection than the characteristics provided in the latest notification information published in Part I‑S of the BR IFIC for the frequency assignments to the non-geostationary-satellite system | |  | |  | |  | |  | |  | |  | |  | |  | | **O** | |  | |  | |  | |  | | A.25.a | |  | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Reasons:** To improve and clarify the procedural implementation provisions for Method A4.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Atmospheric drag is the atmospheric force acting opposite to the relative motion of an object. Atmospheric drag is important for a space station as it hinders the space station exiting the atmosphere, and also pulls orbital satellites back towards Earth over time. [↑](#footnote-ref-1)
2. Atmospheric drag is the atmospheric force acting opposite to the relative motion of an object. Atmospheric drag is important for a space station as it hinders the space station exiting the atmosphere, and also pulls orbital satellites back toward Earth over time. [↑](#footnote-ref-2)