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| REPORT BY THE RADIO REGULATIONS BOARD TO WRC-23 ON RESOLUTION 80 (REV.WRC-07) | | | |
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The Annex to this document contains the Report by the Radio Regulations Board to WRC-23 on Resolution **80 (Rev.WRC-07)**.

Doreen Bogdan-Martin  
 Secretary-General

**Annex:** 1

Annex

Report by the Radio Regulations Board to WRC-23 on  
Resolution 80 (Rev.WRC-07)

Executive summary

The Board has addressed Resolution **80** **(Rev.WRC-07)**, *Due Diligence in Applying the Principles Embodied in the Constitution*, at five world radiocommunication conferences since its adoption at WRC-97. In this report to WRC-23, the Board provides an update to the report to WRC-19 focusing on its efforts to address issues the Board and the Bureau have faced since WRC-19 affecting fulfilment of the principles contained in Article **44** of the Constitution and No. **0.3** of the Preamble to the Radio Regulations. Chief among these issues are the considerations involving the implementation of Resolution **559** (**WRC-19**), difficulties in resolving some harmful interference situations, difficulties affecting satellite network coordinationand the treatment of requests for extensions of regulatory time limits to bring into use or bring back into use frequency assignments. To the extent possible, the Board provides recommendations regarding provisions of the Radio Regulations for enhancing the linkage between the notification, coordination, and registration procedures and the basic principles concerning the use of the radio frequency spectrum and satellite orbits. It is hoped that the administrations find this work useful in addressing the various issues at WRC-23, particularly those involving satellite networks.

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Resolution 80 (Rev.WRC-07)

Report by the Radio Regulations Board to WRC-19

# 1 Introduction

1.1 Resolution 80, *Due Diligence in Applying the Principles Embodied in the Constitution*, was first adopted by WRC-97 and subsequently revised by WRC-2000 and WRC-07. Each version of Resolution **80** has instructed the Radio Regulations Board (the Board) either to develop Rules of Procedure (RoPs), conduct studies, or consider and review possible draft recommendations related to linking the principles contained in No. **0.3** of the Preamble to the Radio Regulations (RR) to the notification, coordination and registration procedures in the Radio Regulations and to report to a subsequent World Radiocommunication Conference (WRC). In the case of Resolution **80 (Rev.WRC-07)**, these linkages were extended to include the principles contained in Article **44** of the Constitution.

1.2 The Board reported the results of its studies to WRC-2000, WRC-03,WRC-12, WRC-15 and WRC-19 in Documents 29 (<http://www.itu.int/itudocr/itu-r/archives/wrc/wrc-2000/docs/1-99/29.pdf>), 4 Addendum 5 (<http://www.itu.int/md/R03-WRC03-C-0004/en>), 11 (<http://www.itu.int/md/R12-WRC12-C-0011/en>), 14(<https://www.itu.int/md/R15-WRC15-C-0014/en>) and 15 (<https://www.itu.int/md/R16-WRC19-C-0015/en>) respectively. WRC-2000 and WRC-03 noted these reports, but took no related action. The annexes to Resolution **80 (Rev.WRC-07)** now contain some of the concepts reflected in the Board’s reports to these two conferences. The Board was not instructed to report to WRC‑07 on this matter, but WRC-07 modified Resolution **80**. Since then, the Board’s reports to subsequent WRCs addressed issues such as the application of No. **13.6** of the Radio Regulations, No. **11.44B** on bringing into use, No. **11.49** on suspension of use, extension of regulatory time-limits and harmful interference.

# 2 Approach

2.1 The Board continued the working group on Resolution **80** **(Rev.WRC-07)** under the chairmanship of Ms. Beaumier. At its 92nd meeting, the Board instructed the Director of the Radiocommunication Bureau to issue a circular letter calling the attention of administrations to the draft Report by the Radio Regulations Board to WRC-23 on Resolution **80 (Rev. WRC-07)** and inviting administrations to contribute to these studies in time for the 93rd meeting. The draft Report was published in Circular Letter [CR/496](https://www.itu.int/md/R00-CR-CIR-0496/en) dated 5 April 2023 and comments were received from 3 administrations and from a group of 35 administrations.

2.2 The Board decided to focus its efforts on issues that the Board and the Bureau have faced since WRC-19, which in some cases were also considered in previous reports by the Board or are options under discussion elsewhere in the ITU-R. Chief among these issues is the implementation of Resolution **559** (**WRC-19**), difficulties in resolving some harmful interference situations, difficulties affecting satellite network coordination and the treatment of requests for extensions of regulatory time limits to bring into use or bring back into use frequency assignments. The Board also considered new areas of concern such as the long-term sustainability and equitable and rational use of the non-GSO orbit/spectrum resources as well as the recording of frequency assignments to satellite networks and systems under No. **4.4**.

# 3 The Board’s mandate under *resolves* 2of Resolution 80 (Rev.WRC-07)

3.1 *Resolves* 2of Resolution **80 (Rev.WRC-07)** includes the following instruction to the RRB:

*2 to instruct the RRB to consider and review possible draft recommendations and draft provisions linking the formal notification, coordination and registration procedures with the principles contained in Article* ***44*** *of the Constitution and No.****0.3*** *of the Preamble to the Radio Regulations, and to report to each future World Radiocommunication Conference with regard to this Resolution;*

3.2 The Board concluded that the formal notification, coordination and registration procedures referred to in *resolves* 2 of Resolution **80 (Rev.WRC-07)** primarily involve Articles **9** and **11** and Appendices **4**, **5**, **30**, **30A** and **30B** of the Radio Regulations and Resolution **49 (Rev.WRC-12)** and that all of the principles contained in Article **44** of the Constitution and No. **0.3** of the Preamble to the Radio Regulations were to be considered.

3.3 Article **44** of the Constitution, Use of the Radio-Frequency Spectrum and of the Geostationary-Satellite and Other Satellite Orbits, contains the following two provisions:

**195  
PP-02**

1 Member States shall endeavour to limit the number of frequencies and the spectrum used to the minimum essential to provide in a satisfactory manner the necessary services. To that end, they shall endeavour to apply the latest technical advances as soon as possible.

**196  
PP-98**

2 In using frequency bands for radio services, Member States shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries.

3.4 No. **0.3** of the Preamble to the Radio Regulations states the following:

In using frequency bands for radio services, Members shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of these Regulations, so that countries or groups of countries may have equitable access to both, taking into account the special needs of the developing countries and the geographical situation of particular countries (No. **196** of the Constitution).

3.5 According to No. 78 of the Constitution, the functions of the Radiocommunication Sector include “ensuring the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including those using the geostationary-satellite or other satellite orbits, subject to the provisions of Article **44** of this Constitution.” These functions are accomplished through the World and Regional Radiocommunication Conferences, ITU-R Study Groups, and the work of the Radiocommunication Bureau and the Board. While *resolves* 2of Resolution **80 (Rev.WRC-07)** addresses specific instructions to the Board, the entire Radiocommunication Sector is involved in fulfilling the principles contained in Article **44** of the Constitution and No. **0.3** of the Preamble to the Radio Regulations.

3.6 All Member States are charged with these principles and all Member States benefit when these principles are upheld by having equitable access to spectrum and orbit resources. The Board strove to abide by these principles in considering the following issues and formulating possible draft recommendations and draft provisions linking the formal notification, coordination and registration procedures with the principles contained in Article **44** of the Constitution and No.**0.3** of the Preamble to the Radio Regulations.

# 4 Issues and draft recommendations

## 4.1 Submissions received past the deadline or containing confidential information

4.1.1 The Board regularly received late submissions past the deadline and noted an increasingly large number of delayed submissions that commented on a submission from another administration. In accordance with § 1.6 of Part C of the rule of procedure on internal arrangements and working methods of the Radio Regulations, except for comments on draft rules of procedure, all submissions shall be received by the Executive Secretary, the Director of the Bureau, at least three weeks before the meeting. Any submissions received from Administrations following the three-week deadline will normally not be considered at the same meeting and will be placed on the agenda of the following meeting. However, if so agreed by Board Members, delayed submissions relevant to items on the approved agenda could be considered for information.

4.1.2 At its 88th meeting, the Board modified the rule of procedure to limit the possible consideration of such submissions to those received at least ten days before the start of the meeting. Submissions in response to a delayed submission are now only considered if received before the start of the meeting. In addition to any of the other five official languages of the Union, delayed submissions shall at least be provided in English. Any submissions received after the start of the Board meeting will not be considered by the Board unless there are exceptional circumstances. These measures were taken to ensure that Board Members and administrations had sufficient time to review and prepare appropriate responses and analyses prior to the start of the meeting.

4.1.3 The Board also noted that submissions of administrations often contained confidential information. In accordance with § 1.7 of Part C of the rules of procedure, any submission to the Board containing restricted material (e.g. confidential, proprietary, sensitive, etc.) shall be returned by the Bureau, which will invite the administration concerned to resubmit an unrestricted document if it wishes the Board to consider the material. However, the inclusion of restricted material in submissions delay the processing and availability of documents for consideration by the Board and impact administrations’ ability to react to the content of a submission in a timely manner.

**WRC-23 is invited to urge administrations to submit their documents to the Radio Regulations Board on time and without any restricted material that would delay the processing and availability of documents.**

## 4.2 Issues related to the implementation of Resolution 559 (WRC-19)

4.2.1 WRC-19 adopted Resolution **559** to provide Regions 1 and 3 administrations that are eligible for the special procedure described in that Resolution with the possibility to submit new frequency assignments as a replacement of their national frequency assignments in the Appendices **30** and **30A** Plans, taking advantage of the removal of some limitations in Annex 7 to Appendix **30 (WRC-15)**. Submissions applying the special procedure had to be sent between 23 March 2020 and 21 May 2020. Several issues related to the implementation of Resolution **559** **(WRC-19)** were brought to the attention of the Board and several measures were adopted by the Board to implement in a meaningful way the intent of WRC-19 with respect to Resolution **559** **(WRC-19)** and to monitor its implementation on an on-going basis. The Board noted that the intention of WRC-19 in adopting Resolution **559 (WRC-19)** was to allow administrations with degraded BSS frequency assignments to regain resources in the BSS Plan.

4.2.2 In accordance with Resolution **559 (WRC-19)** and the associated instructions to the Bureau from WRC-19, the Bureau identified 55 administrations that were eligible to apply the Special Procedure described in that Resolution. These 55 administrations are listed in Circular Letter [CR/455](https://www.itu.int/md/R00-CR-CIR-0455/en) of 21 February 2020 on the implementation of Resolution **559 (WRC-19)**. In order to assist administrations in the implementation of this Resolution, the Bureau sought confirmations and clarifications from the Board on a number of elements to facilitate the implementation of Resolution **559 (WRC-19)**.

4.2.3 As the Bureau received and published submissions on its website, administrations realized that some submissions were incompatible and decided to amend their submission. The Board confirmed the Bureau’s understanding that, although each administration could have only one submission under Resolution **559** **(WRC-19)** on 21 May 2020, notifying administrations would be allowed to withdraw and resubmit a notice for the purpose of ensuring compatibility as often as necessary, so long as the final resubmission was received before 22 May 2020. The Board also noted that such resubmission(s) within 15 days of the date of receipt of the filings would incur no additional cost recovery fee, in line with *decides*10 of Council Decision 482 (Modified 2019).

4.2.4 The Board also considered proposals and requests to address the concerns and difficulties encountered by several administrations in the implementation of Resolution **559 (WRC-19)***.* Early on, some administrations experienced delays due to the COVID-19 pandemic and were unable to submit their filings before 22 May 2020. Noting that Resolution **559 (WRC-19)** provided a one-time opportunity for administrations with degraded BSS frequency assignments to regain resources in the BSS Plan and the principles of Article 44 of the Constitution relating to equitable access, and in line with Resolution **80 (Rev.WRC-07)**, the Board instructed the Bureau to accept late submissions under Resolution **559 (WRC-19)** until the start of the 84th Board meeting on 6 July 2020 and to consider eligible submissions received between 22 May 2020 and 6 July 2020 as received by the Bureau on 21 May 2020.

4.2.5 Three administrations were unable to find suitable orbital positions within the orbital arc specified in Resolution **559 (WRC-19)** given their particular geographical situation and despite the assistance provided by the Bureau. Since Resolution **559 (WRC-19)** only applies to submissions for frequency assignments in specific portions of the orbital arc, the Board instructed the Bureau to take into account and process the submissions received from these three administrations as submissions received under the Article 4 procedure of Appendices **30** and **30A**, while also implementing the same measures adopted by the Board for the treatment of Resolution **559** submissions. The submissions under Resolution **559 (WRC-19)** and under Article 4 of Appendices **30** and **30A** from three administrations are hereafter referred to as Res. **559** submissions.

4.2.6 One administration pointed out that it was unable to meet both requirements stipulated under provisions c) and d) of §2 of the Attachment to Resolution **559 (WRC-19)**, i.e. to submit a set of test points located inside national territories and to obtain a minimum ellipse from these test points. This administration invoked Article **44** of the Constitution in its request to accept the same test points located at sea as in the BSS Plan for its submission, in relation to the particular geographical situation of some countries. The Board noted the potential for contradiction in the application of provisions c) and d) of §2 of the Attachment to Resolution **559 (WRC-19)** for territories that include islands. Furthermore, for some countries, test points need to be located at sea so that the elliptical satellite beam generated from these test points encompasses all its territories. This had been recognized by WRC-2000 which decided that some countries could have test points outside their national territory. The Board therefore instructed the Bureau to provisionally accept test points outside national territories in Part A submissions under Resolution **559 (WRC-19)** received no later than 21 May 2020 if such test points were the same as those found in the Appendices **30** and **30A** Plan frequency assignments and if a minimal ellipse could not be generated over the entire territory of the submitting administration solely from test points on its national territory, noting that WRC-2000 had already approved the use of those points. In some cases, the issue will be temporary and resolved when administrations file their Part B submission. For the remaining cases, the Board recommends that WRC-23 endorse the approach taken to accept these test points.

4.2.7 Submissions were received from 45 administrations out of the 55 eligible administrations[[1]](#footnote-1) (each submission consists of one notice for downlinks and another notice for feeder-links) in order to apply the Special Procedure of Resolution **559 (WRC-19)** with the aim of replacing their degraded BSS frequency assignments in the BSS Plans in Regions 1 and 3 and, in the case of a new Member State, with the aim of including new BSS and FSS feeder link frequency assignments in the Appendices **30** and **30A** Plans. The Bureau validated all these submissions, examined and published them in Part A Special Sections, BR IFIC 2932 of 27 October 2020. The four-month commenting period ended on 27 February 2021.

4.2.8 Subsequently, the 45 administrations started the coordination process with the affected administrations. A key area of concern related to the coordination of submissions under Resolution **559 (WRC-19)** with Part A submissions received before the end of WRC-19 within the orbital arc between 37.2° W and 10° E or before 22 May 2020 outside the same orbital arc. Such Part A submissions would have a date of receipt prior to the date of receipt of Res. **559** submissions; however, because they had not yet been entered in the List, their final characteristics were unknown. Moreover, Part A submissions often had generic parameters; therefore, even if their characteristics were considered, the results of taking them into account would be less reliable and it would be almost impossible to determine an orbital position that involved no Part A interference.

4.2.9 Various proposals were made to ensure that a Part B submission associated with a Part A submission received before 22 May 2020 did not degrade Res. **559** submissions:

• the Bureau proposed to review Part B submissions associated with a Part A submission received before 22 May 2020 during the completeness process and identify additional measures that could be implemented by the notifying administration to avoid a degradation of the equivalent protection margin (EPM) of Res. **559** submissions;

• administrations made similar proposals but also proposed that:

a) the Board instructs the Bureau not to update the EPM of the Res. **559** submissions if any of the above-mentioned Part B submissions result in a degradation of more than 0.45 dB pending a decision by WRC-23 noting that a frequency assignment in the List can only have a period of operation of up to 15 years + 15 years;

b) the Board invites administrations with frequency assignments in the List to consider modifying, without any change in their date of protection, some characteristics to help eligible administrations with Res. **559** submissions, especially those still having low EPM at the new orbital position.

4.2.10 The Board noted that it was not possible to change the characteristics of filings already entered into the List while keeping the initial date of protection as such a decision would exceed the terms of reference of the Board (this would require a decision by WRC-23). However, at the Board’s request, the Bureau performed a comprehensive analysis of the situation following the receipt of Res. **559** submissions, including the potential impact of Part B submissions corresponding to Part A submissions received before 22 May 2020 on the reference situation of these Res. **559** submissions.

4.2.11 The analysis of the reference situation was based on the master database published in BR IFIC 2921 on 26 May 2020, which included Part B submissions received up to 21 January 2020. The reference situation of all submissions received from the administrations eligible to apply the Resolution **559 (WRC-19)** special procedure, including the three Article 4 submissions, had improved compared to the current associated Plan frequency assignments to enable the implementation of national frequency assignments. However, without additional regulatory measures to protect these new frequency assignments, efforts made to restore the status of Plan frequency assignments of those administrations would be compromised. Indeed, if all Part A submissions received before 22 May 2020 were to be further submitted as Part B, the reference situation of the Res. **559** submissions would be severely degraded.

4.2.12 The Board noted that the main objective of the BSS Plans is to guarantee equitable access to spectrum/orbit resources to all administrations for future use. By adopting Resolution **559 (WRC-19)**, WRC-19 intended to restore this guaranteed access for administrations which no longer had viable national frequency assignments in the BSS Plans. The Board therefore decided to instruct the Bureau to:

– review Part B submissions received after 21 January 2020 and associated with Part A submissions received before 22 May 2020, during the completeness process of those Part B submissions and identify additional measures that could be implemented by the notifying administrations to avoid degradation of the EPM levels of the Res. **559** submissions;

– request the notifying administrations, following the review of completeness of Part B submissions, to make their utmost efforts to take into account these Res. **559** submissions and the results of the Bureau’s analysis with measures to avoid further degrading EPM;

– not update the EPM of these Res. **559** submissions pending a decision of WRC-23 if, at the time any of the Part B submissions received after 21 January 2020 that are associated with Part A submissions received before 22 May 2020 enter in the List, the EPM of these Res. **559** submissions fall more than 0.45 dB below 0 dB or if already negative by more than 0.45 dB below that value;

– analyse the impact of the above-mentioned Part B submissions on the EPM of these Res. **559** submissions and report the results together with the efforts undertaken by those Part B administrations to the next meetings of the Board for further consideration.

4.2.13 Similarly, the Board has been urging administrations with Part A submissions received before 22 May 2020 to make all efforts to accommodate Res. **559** submissionsand to take into account the results of the Bureau’s review when preparing their Part B submissions. The Board noted with satisfaction the goodwill exercised by administrations in protecting the Res. **559** submissions. It was also encouraging to see the risk of EPM degradation caused by Part B submissions being further reduced as a result of cancelled filings.

4.2.14 Despite having applied all available sharing techniques and the Res. **559** submissions having minimum ellipses together with standard Plan technical parameters, other administrations have still been identified as potentially affected due to limited resources made available following the revision of Annex 7 to Appendix **30** by WRC-19. In total, there were 684 coordination cases, out of which the Bureau had received copies of almost all coordination proposals. To further facilitate the coordination of the Res. **559** submissions, the Bureau suggested that the following measures be applied by administrations and the Bureau, which were endorsed by Working Party (WP) 4A and subsequently endorsed by the Board:

a) Coordination with frequency assignments in the Regions 1 and 3 Plan:

1) When the EPM of an affected Plan frequency assignment becomes positive as a result of cancellation of a frequency assignment in the List, the Bureau shall determine if that affected Plan frequency assignment is still affected by the concerned Res. **559** submission. In case the Bureau reaches a favourable finding, coordination between the concerned Res. **559** submission and the affected Plan frequency assignment is no longer required on the condition that the Part B of the concerned Res. **559** submission is within the envelope of its Part A. The Bureau shall inform both administrations of its conclusions.

2) In case a coordination agreement has not been obtained or an affected administration does not want the EPM of its Plan frequency assignment be updated, the Bureau could accept the Part B submission of the relevant Res. **559** submission. As such, when the concerned Res. **559** submission enters in the List, the Bureau would insert a note indicating that an agreement shall be reached before the concerned frequency assignment is brought into use under Article 5 of Appendices **30/30A**. In such case, the interference from the relevant Res. **559** submission would not be taken into account in updating the EPM of concerned Plan frequency assignments.

3) For cases where the space-to-Earth single-entry carrier-to-interference ratio is greater than 21 dB and the Earth-to-space single-entry carrier-to-interference ratio is greater than 30 dB, Res. **559** submissions and the corresponding Regions 1 and 3 Plan frequency assignments are considered compatible. In order to preserve the same level of protection for such compatible cases of those Regions 1 and 3 Plan frequency assignments from incoming Article 4 submissions, the reference situation of those Regions 1 and 3 Plan frequency assignments shall not be updated when the Res. **559** frequency assignments in the List are included in the Plans.

b) Coordination with frequency assignments in the original Region 2 Plan or pending Article 4 satellite networks in Region 2:

1) In case a coordination agreement has not been obtained, the Bureau could accept the Part B submission of the relevant Res. **559** submission. As such, when the concerned Res. **559** submission enters the List, the Bureau would insert a note indicating that an agreement shall be reached before the concerned frequency assignment is brought into use under Article 5 of Appendices **30/30A**.

2) Moreover, an affected administration could consider reducing the receiving sensitivity of its Article 4 satellite network when communicating the Part B submission in order to accommodate the Res. **559** submissions.

3) In case of continuing disagreement, whenever an affected Article 4 satellite network enters in the Region 2 Plan, the Bureau should review the coordination requirement. Should the examination result show that the Article 4 network is no longer affected, coordination between the concerned Res. **559** submission and the affected Article 4 network is no longer required and the Bureau will inform both administrations of its conclusions.

c) Coordination with frequency assignments in the List or of pending Article 4 satellite networks in Regions 1 and 3:

1) Upon receipt of the coordination proposals, the affected administrations are urged to reply timely to the requesting Res. **559** administrations and endeavour to accommodate the Res. **559** submissions.

2) In case of continuing disagreement, the Bureau should apply the course of action prescribed in footnote 7*bis* of Article 4 of Appendix **30** and footnote 9*bis* of Article 4 of Appendix **30A**, as appropriate, whenever an affected Article 4 network for additional use enters the List. Should the Bureau reach a favourable finding, coordination between the concerned Res. **559** submission and the affected Article 4 frequency assignment is no longer required and the Bureau will inform both administrations of its conclusions.

d) Coordination with frequency assignments in non-planned services and of Article 2A satellite networks:

1) Upon receipt of the coordination proposals, the affected administrations are urged to reply timely to the requesting Res. **559** administrations and endeavour to accommodate the Res. **559** submissions.

2) In case of continuing disagreement, whenever an affected non-planned satellite network or Article 2A satellite network is recorded in the Master Register, the Bureau shall review the coordination requirement using the recorded characteristics. Should the Bureau reach a favourable finding, coordination between the concerned Res. **559** submission and the affected non-plan network or Article 2A network is no longer required and the Bureau will inform both administrations of its conclusions.

4.2.15 The Board also considered the following proposals from a group of administrations for three measures to facilitate the conclusion of pending coordination of Part B submissions forming part of the implementation of Resolution **559 (WRC-19)**:

a) Under 4.1.1 b) of Appendix **30,** the coordination between a Res. **559** submission and an additional use network in Regions 1 and 3 would be deemed completed if their nominal orbital separation was equal to or greater than six degrees. In order to preserve the same level of protection for such cases of those Regions 1 and 3 additional use frequency assignments from incoming Article 4 submissions, the reference situation of those Regions 1 and 3 additional use frequency assignments would not be updated when the Res. **559** frequency assignments in the List are included in the Plans.

b) Under 4.1.1 e) of Appendix **30**, the coordination between a Res. **559** submission and a non-planned FSS satellite network in Regions 2 or 3 would be deemed completed if their nominal orbital separation was equal to or greater than six degrees;

c) Under 4.1.1 e) of Appendix **30**, for the coordination of a Res. **559** submission in respect of a non-planned FSS satellite network in Regions 2 or 3, the service area of the non-planned satellite network to be considered would be the one submitted that was situated on land and was within the – 3 dB antenna gain contour of that non-planned satellite network.

4.2.16 While there would be merit in applying the proposal for a 6-degree coordination arc between Res. **559** submissions and potentially affected networks, other measures proposed would require further study and the Board noted that the technical aspects of the proposals had not been studied by Working Party 4A. The Board was therefore not in a position to adopt the proposed measures but encouraged administrations to consider the proposed measures, as appropriate, during bilateral or multilateral coordination discussions to resolve outstanding coordination of Res. **559** submissions.

4.2.17 The Board encouraged administrations to cooperate in their coordination activities so that notifying administrations of Res. **559** submissions could submit their requests to replace their entries in the BSS Plans in time for WRC-23. Owing to the decisions of the Board, the technical advice of ITU-R Working Party 4A, the active engagement of Res. **559** administrations and the assistance of the Bureau, 87.08%[[2]](#footnote-2) of those frequency coordination cases had been completed. There were 1 802 frequency coordination cases which had yet to be completed.

4.2.18 The Board also considered proposals from administrations and the Bureau to facilitate the processing of Part B of Res. **559** submissions. The Board endorsed the following measures:

• When examining Part B of submissions made in accordance with Resolution **559 (WRC-19)** in respect of BSS frequency assignments for additional uses in Regions 1 and 3, the affected test point of the additional use that is located inside the territory of the notifying administration of a submission under Resolution **559 (WRC-19)** will not be considered in formulating a finding;

• When the notifying administration of the Res. **559** submission explicitly indicates in the cover letter of its Part B submission that the reference situation of certain networks should not be updated because an agreement has been obtained with the notifying administration(s) of those networks, the Bureau will not update the reference situation of the networks concerned, when entering frequency assignments of a Res. **559** submission in the List;

• When the Bureau is explicitly informed by the notifying administration of a Res. **559** submission that an agreement has been reached with any other administration in order to ignore test points that were located on the territory of the latter administration and that will be degraded by the incoming Res. **559** submission, the Bureau will ignore those degraded test points in the examination of Part B of the Res. **559** submission. Such an agreement can also be provided by the other administration but it has to be communicated to the Bureau at the latest before the start of the formal examination of the Part B submission.

4.2.19 In January 2023, 41 out of the 45 Res. **559** administrations had successfully submitted their Part B to the Bureau. The Bureau had informed all 41 Res. **559** administrations of the publication of their relevant Part B Special Sections BR IFIC 2993 on 4 April 2023 and had assisted all of them in preparing a corresponding request in accordance with Resolution **559 (WRC-19)** to be submitted to WRC-23 and had reminded them to submit it no later than **20 July 2023**. At the time of writing the report, the Board noticed that 35 administrations had successfully submitted their requests to WRC-23. Due to lack of resources, four administrations had not yet started the coordination process with relevant administrations. The Bureau continued to assist these administrations to successfully apply Resolution **559 (WRC-19)** by WRC-27.

4.2.20 The Board recognized and greatly appreciated the extensive efforts of the Bureau to assist notifying administrations in finding suitable orbital positions, preparing their Part A and Part B submissions, and to proactively proposing possible solutions to facilitate the treatment and coordination of these submissions. Its continued support to notifying administrations was instrumental in the progress achieved so far in implementing Resolution **559 (WRC‑19)**.

4.2.21 Since WRC-19, the Board was extensively involved in the implementation of Resolution **559 (WRC-19)** and took numerous decisions. The Board’s decisions were necessary to ensure the objective of restoring access to the national frequency assignments in the BSS Plans was fulfilled and did not raise concerns from administrations. The Board is of the view that measures should be taken to ensure the long-term protection of the BSS Plans in order to avoid the severe degradation of frequency assignments in the Regions 1 and 3 BSS Plan over time and the need to conduct a similar exercise in the future. A discussion on the long-term protection of the Plans can be found in section 4.5.

4.2.22 In summary, WRC-23 is invited to note the following Board decisions:

• notifying administrations were allowed to withdraw and resubmit a notice for the purpose of ensuring compatibility as often as necessary, so long as the final resubmission was received before 22 May 2020;

• the Bureau accepted late submissions under Resolution **559 (WRC-19)** until the start of the 84th Board meeting on 6 July 2020 and considered eligible submissions received between 22 May 2020 and 6 July 2020 as received by the Bureau on 21 May 2020.

• the Bureau took into account and processed the submissions received from three administrations as submissions received under the Article 4 procedure of Appendices **30** and **30A**, while also implementing the same measures adopted by the Board for the treatment of Resolution **559** submissions.

• the Bureau reviewed Part B submissions received after 21 January 2020 and associated with Part A submissions received before 22 May 2020, during the completeness process of those Part B submissions and identified additional measures that could be implemented by the notifying administrations to avoid degradation of the EPM levels of the Res. **559** submissions;

• the Board requested the notifying administrations, following the review of completeness of Part B submissions by the Bureau, to make their utmost efforts to take into account these Res. **559** submissions and the results of the Bureau’s analysis with measures to avoid further degrading EPM levels.

4.2.23 The Board adopted several additional decisions that should be considered and endorsed by WRC-23.

**WRC-23 is invited to endorse the following measures adopted by the Board and the Bureau to implement Resolution 559 (WRC-19)**:

• the Bureau shall accept test points outside national territories in Part A submissions under Resolution **559 (WRC-19)** received before 22 May 2020 if they are the same as those found in the Appendices **30** and **30A** Plan frequency assignments and if a minimal ellipse cannot be generated over the entire territory of the submitting administration solely from test points on its national territory, noting that WRC-2000 approved the use of these points;

• the Bureau shall not update the EPM of these Res. 559 submissions at the time any of the Part B submissions received after 21 January 2020 that are associated with Part A submissions received before 22 May 2020 enter the List, if the EPM of these Res. 559 submissions are degraded by more than 0.45 dB below 0 dB, or if already negative, by more than 0.45 dB below that value;

• With respect to coordination with frequency assignments in the Regions 1 and 3 Plan:

1) When the EPM of an affected Plan frequency assignment becomes positive as a result of cancellation of a frequency assignment in the List, the Bureau shall determine if that affected Plan frequency assignment is still affected by the concerned Res. **559** submission. In case the Bureau reaches a favourable finding, coordination between the concerned Res. **559** submission and the affected Plan frequency assignment is no longer required on the condition that the Part B of the concerned Res. **559** submission is within the envelope of its Part A. The Bureau shall inform both administrations of its conclusions.

2) In case a coordination agreement has not been obtained or an affected administration does not want the EPM of its Plan frequency assignment be updated, the Bureau could accept the Part B submission of the relevant Res. **559** submission. As such, when the concerned Res. **559** submission enters the List, the Bureau would insert a note indicating that an agreement shall be reached before the concerned frequency assignment is brought into use under Article 5 of Appendices **30/30A**. In such case, the interference from the relevant Res. **559** submission would not be taken into account in updating the EPM of concerned Plan frequency assignments.

3) For cases where the space-to-Earth single-entry carrier-to-interference ratio is greater than 21 dB and the Earth-to-space single-entry carrier-to- interference ratio is greater than 30 dB, Res. 559 submissions and the corresponding Regions 1 and 3 Plan frequency assignments are considered compatible. In order to preserve the same level of protection for such compatible cases of those Regions 1 and 3 Plan frequency assignments from incoming Article 4 submissions, the reference situation of those Regions 1 and 3 Plan frequency assignments shall not be updated when the Res. 559 frequency assignments in the List are included in the Plans.

• With respect to coordination with frequency assignments in the original Region 2 Plan or pending Article 4 satellite networks in Region 2:

1) In case a coordination agreement has not been obtained, the Bureau could accept the Part B submission of the relevant Res. **559** submission. As such, when the concerned Res. **559** submission enters the List, the Bureau would insert a note indicating that an agreement shall be reached before the concerned frequency assignment is brought into use under Article 5 of Appendices **30/30A**.

2) Moreover, an affected administration could consider reducing the receiving sensitivity of its Article 4 satellite network when communicating the Part B in order to accommodate the Res. **559** submissions.

3) In case of continuing disagreement, whenever an affected Article 4 satellite network enters the Region 2 Plan, the Bureau should review the coordination requirement. Should the examination result show that the Article 4 network is no longer affected, coordination between the concerned Res. **559** submission and the affected Article 4 network is no longer required and the Bureau will inform both administrations of its conclusions.

• With respect to coordination with frequency assignments in the List or of pending Article 4 satellite networks in Regions 1 and 3:

1) Upon receipt of the coordination proposals, the affected administrations are urged to reply timely to the requesting Res. **559** administrations and endeavour to accommodate the Res. **559** submissions.

2) In case of continuing disagreement, the Bureau should apply the course of action prescribed in footnote 7*bis* of Article 4 of Appendix **30** and footnote 9*bis* of Article 4 of Appendix **30A**, as appropriate, whenever an affected Article 4 network for additional use enters the List. Should the Bureau reach a favourable finding, coordination between the concerned Res. **559** submission and the affected Article 4 frequency assignment is no longer required and the Bureau will inform both administrations of its conclusions.

• With respect to coordination with frequency assignments in non-planned services and of Article 2A satellite networks:

1) Upon receipt of the coordination proposals, the affected administrations are urged to reply timely to the requesting Res. **559** administrations and endeavour to accommodate the Res. **559** submissions.

2) In case of continuing disagreement, whenever an affected non-planned satellite network or Article 2A satellite network is recorded in the Master Register, the Bureau shall review the coordination requirement using the recorded characteristics. Should the Bureau reach a favourable finding, coordination between the concerned Res. **559** submission and the affected non-plan network or Article 2A network is no longer required and the Bureau will inform both administrations of its conclusions.

• When examining Part B of submissions made in accordance with Resolution **559 (WRC-19)** in respect of BSS frequency assignments for additional uses in Regions 1 and 3, the affected test point of the additional use that is located inside the territory of the notifying administration of a submission under Resolution **559 (WRC-19)** should not be considered in formulating a finding:

1) When the notifying administration of the Res. **559** submission explicitly indicates in the cover letter of its Part B submission that the reference situation of certain networks should not be updated because an agreement was obtained with the notifying administration(s) of those networks, the Bureau will not update the reference situation of the networks concerned, when entering frequency assignments of a Res. **559** submission in the List;

• When the Bureau is explicitly informed by the notifying administration of a Res. **559** submission that an agreement was reached with any other administration in order to ignore test points that are located on the territory of the latter administration and that will be degraded by the incoming Res. **559** submission, the Bureau will ignore those degraded test points in the examination of Part B of the Res. **559** submission. Such an agreement can also be provided by the other administration, but it has to be communicated to the Bureau at the latest before the start of the formal examination of the Part B submission.

**WRC-23 is further invitedto urgeadministrations with Part A submissions received before 22 May 2020 to make all efforts to accommodate Res. 559 submissions and to take into account the results of the Bureau’s review when preparing their Part B submissions.**

**WRC-23 is also invited to encourage administrations to cooperate and consider approaches such as those outlined in § 4.2.15 in order to complete all of the remaining coordination cases.**

## 4.3 Linkage between bringing into use and notification for recording in the Master International Frequency Register of frequency assignments (MIFR)

4.3.1 In its report to WRC-19, the Board expressed the view that there did not appear to be any remaining ambiguities about how the Bureau or the Board should treat cases related to non-planned services when the notified date of bringing into use was more than 120 days prior to the date of receipt of the notification information. However, the Bureau and the Board noted that WRC-15 might not have considered the specificities of the procedures of Appendices **30**, **30A** and **30B** when it modified No. **11.44B** to add footnote No. **11.44B.2**.

4.3.2 WRC-19 was invited to consider whether the bringing into use of frequency assignments in Appendices **30**, **30A** and **30B** with a satellite that is subsequently relocated prior to the notification submission should be permitted, noting (1) that §4.1.18 of Appendices **30** and **30A** does not apply with respect to a frequency assignment in the Regions 1 and 3 Plan, or in the Region 2 Plan, or for which the procedure of § 4.2 of Appendices **30** and **30A** has been initiated, (2) that §4.2.21A of Appendices **30** and **30A** does not apply with respect to a frequency assignment in the Region 2 Plan, or in the Regions 1 and 3 Plan or List, or for which the procedure of § 4.1 or 4.2 has been initiated, and (3) that § 6.25 of Article 6 of Appendix **30B** does not apply with respect to allotments in the Plan and therefore, a notification submitted within the 120-day period of the bringing into use may not always result in a recording in the MIFR but instead may be returned to the administration and resubmitted with a new date of receipt while the satellite used for the bringing into use has already been relocated.

4.3.3 WRC-19 decided that, in cases where:

*a)* the information related to the bringing into use of frequency assignments in Appendices **30**, **30A** or **30B** is submitted prior to the end of examination of Part B and notification submissions of these frequency assignments;

*b)* the requirements of Nos. **11.44** and **11.44B** have been met for these frequency assignments prior to the end of examination of their Part B and notification submissions;

*c)* after the fulfilment of the requirements of No. **11.44B**, the satellite has been relocated to another orbital location prior to the end of examination of the notification submission of these frequency assignments;

*d)* the examination of the Part B submission of these frequency assignments leads to the notice being returned to the notifying administration because of an inadvertent error of the notifying administration;

*e)* the notifying administration informs the Bureau that it is unable to fulfil the requirements of Nos. **11.44** and **11.44B** at the time of resubmitting the Part B and notification information;

the Board was to consider, on a case-by-case basis, whether the fulfilment of the requirements of Nos. **11.44** and **11.44B** prior to the end of examination of Part B and notification submissions can be accepted as the bringing into use of the frequency assignments. Since WRC-19, the Board has not considered any cases involving the bringing into use of frequency assignments in Appendices **30**, **30A** or **30B** with a satellite that is subsequently relocated prior to the end of examination of the notification submission of these frequency assignments.

4.3.4 The Board however considered a submission by one administration requesting recognition of the bringing into use of frequency assignments which used satellites that were relocated or deorbited prior to the submission of the notification filings. The administration argued amongst other things that No. **11.44B.2** did not clearly stipulate that a frequency assignment to a GSO space station with a notified date of bringing into use more than 120 days prior to the date of receipt of the notification information was not to be considered by the Bureau as having been brought into use if a GSO space station with the capability of transmitting or receiving that frequency assignment had been deployed and maintained for a continuous period of more than 90 days, as required by No. **11.44B**, but had already left the notified orbital position when the notification information was submitted. The provision in question is shown below:

**11.44B.2** A frequency assignment to a space station in the geostationary-satellite orbit with a notified date of bringing into use more than 120 days prior to the date of receipt of the notification information shall also be considered as having been brought into use if the notifying administration confirms, when submitting the notification information for this frequency assignment, that a space station in the geostationary-satellite orbit with the capability of transmitting or receiving that frequency assignment has been deployed and maintained for a continuous period of time from the notified date of bringing into use until the date of receipt of the notification information for this frequency assignment. (WRC 15)

4.3.5 The Board noted that administrations had been informed in CR/343, CCRR/49 and CCRR/52 about the link between the 90-day period for the bringing into use of frequency assignments and the notification procedure, and the matter had been discussed extensively within the relevant study groups, the RRB and at WRC-15. WRC-15 had adopted No. **11.44B.2** to discourage the practice of satellite hopping and its application had not given rise to any difficulties. The Board was of the view that there were no remaining ambiguities about how the Bureau or the Board should treat cases of non-planned services when the notified date of bringing into use is more than 120 days prior to the date of receipt of the notification information.

## 4.4 Issues related to the extension of time-limits for bringing into use or bringing back into use a frequency assignment

**4.4.1 Introduction**

4.4.1.1 The WRC-15 reaffirmed the Board’s authority to address requests for extensions to the time-limit for bringing into use or bringing back into use frequency assignment in cases of either *force majeure* or co-passenger delay (Minutes of the seventh plenary meeting of WRC-15). This section is intended to identify any issues and difficulties with acceding to the requests the Board has received since WRC-19.

4.4.1.2 The Board noted that administrations which were granted an extension of the regulatory time-limit to bring into use or bring back into frequency assignments to a satellite network sometimes failed to meet other regulatory time-limits to submit information such as the Resolution **49 (Rev. WRC-19)** due diligence information or the notification filing. This was often the case when extensions were long or when the extension was granted well before the regulatory time-limit. Either administrations forgot to provide the information or assumed the extension also applied to other regulatory provisions.

4.4.1.3 At its 93rd meeting, the Board adopted new or modified rules of procedure that removed the requirement to provide updated Resolution **49 (Rev. WRC-19)** and/or Resolution **552 (Rev.WRC-19)** information within a year following the Board’s decision to grant an extension when that information had been provided prior to the Board’s decision. The premise for this requirement was that administrations usually had contracts with manufacturers and launch service providers in place when they requested extensions or they were in the process of finalizing them. However, depending on the duration of the extension and the date it was granted relative to the end of the regulatory time-limit, it might not always be possible to provide that information within one year of the date the extension was granted, especially if circumstances changed again and there was a need to consider interim solutions such as the use of an in-orbit satellite.

4.4.1.4 For cases when due diligence information had not been provided before the decision of the Board to grant an extension of the regulatory time-limit for bringing into use, the Rule of procedure continues to require administrations to provide the information pertaining to the satellite that faced a case of *force majeure* or a co-passenger delay at the latest 30 days after the regulatory time-limit of 7-year or 8-year period, as appropriate. In their submissions to the Board, administrations usually provide essentially the same information that is required under Resolution **49 (Rev. WRC-19)** and/or Resolution **552 (Rev.WRC-19)** in support of their requests for extension. If not already provided, the Board requests the administration to provide clarifications on the name, contract signature dates and delivery windows of the satellite manufacturer and launch service provider as this information is critical to enable the Board to render its decision. There should therefore be no difficulties for administrations to provide this information to the Bureau at the end of the regulatory time-limit. However, depending on the case, the information may no longer represent their revised plans to implement the frequency assignments and would not be helpful to other administrations. For these cases, the provision of due diligence information at the end of the extended regulatory time-limit would be more appropriate and the Board could decide to establish a different regulatory time-limit on a case-by-case basis.

**The Board wishes to draw the attention of administrations to the fact that an extension of the regulatory time-limit to bring into use or bring back into use the frequency assignments to a satellite network does not provide an automatic extension of the time-limits set out in any other applicable provisions of the Radio Regulations. Unless an extension was explicitly provided for a specific provision of the Radio Regulations or the Rules of Procedure by the Board, all other regulatory time-limits continue to apply.**

**4.4.2 Situations of *force majeure***

4.4.2.1 The Board frequently received requests from administrations to extend the regulatory time-limit for bringing the frequency assignments associated with a satellite network into use or back into use because of *force majeure*. The Board may address requests for a time-limited extension based on *force majeure* so long as any extension is both “limited and qualified”.

4.4.2.2 The Board received several requests for extensions of regulatory time limits due to cases of *force majeure*, with the vast majority citing the COVID-19 pandemic as the *force majeure* event. At its 84th meeting, the ITU Legal Adviser, addressing the four conditions that are used in determining whether a situation should be considered to be a case of *force majeure,* and which are presented in Document [RRB12-2/INFO/2(Rev.1)](http://www.itu.int/md/R12-RRB.12.2-INF-0002/en), clarified how COVID-19 could constitute grounds for *force majeure*. As a result, the Board accepted that the COVID-19 pandemic met the first two conditions of *force majeure*, namely that it had not been caused by the obligator, had been unforeseen and inevitable or irresistible, and focused its assessment on the remaining two conditions. Cases brought before the Board were examined on a case-by-case basis to determine whether a causal effective connection existed between COVID-19 and the delay in bringing into use the frequency assignments, and if so, whether COVID-19 rendered it impossible or simply more difficult to meet the time-limits for bringing into use. In addition, as *force majeure* cannot be presumed, the Board expected the administration that invoked it to furnish tangible, formal proof of the existence of an event constituting *force majeure*.

4.4.2.3 Unfortunately, several submissions were deemed incomplete which delayed the treatment of the cases. Some requests were also submitted at the early stage of the satellite project before all possibilities to mitigate the risks of missing the deadline had been considered or pursued. The Board concluded that while the COVID-19 pandemic had caused delays to satellite projects around the world, not all situations satisfied the conditions to qualify as a case of *force majeure*. Some projects had sufficient contingencies in the project timelines to meet regulatory time-limits, others would have missed the time-limit even if the pandemic had not occurred. The Board therefore drew the attention of administrations to the fact that the threshold to meet the four conditions for a situation or event to qualify as a case of *force majeure* was high and the onus was on the administration requesting the extension to provide all the required information and justification, and to do so in sufficient detail to clearly demonstrate that their case met all four conditions including that the length of the extension requested was reasonable.

4.4.2.4 As additional guidance, the Board identified the key considerations that were factored in its decisions when assessing whether a case met all four conditions to qualify as a case of *force majeure*. These included:

• whether, based on the original schedule, the administration could have met the regulatory time-limit to bring into use the frequency assignments if the global pandemic had not occurred;

• whether the administration had made extensive and continuous efforts to meet the deadline, to overcome the difficulties faced and to reduce the time schedule of the project if possible, with supporting evidence by the satellite manufacturer;

• whether the project schedule delays due to the pandemic were clearly identified and justified;

• the consequences and the future impact of the global pandemic on future project timelines were unpredictable;

• any additional margin or contingency related to the pandemic could not be taken into account.

4.4.2.5 While the Board noted improvements in the quality of submissions since it had offered guidance, the Board still noted difficulties in assessing some requests when insufficient information was provided to demonstrate how the case qualified as *force majeure* or in the absence of a detailed rationale for the length of the period requested, irrespective of whether the event was the global pandemic. While it would be difficult to establish an exhaustive list given that the information needed might vary depending on each case, the Board is of the view that formal guidance from a WRC should be provided to ensure that all administrations are aware of the minimum information requirements in order to avoid, or minimize the need for, a request for further clarifications and delaying the treatment of the case as was often necessary these past few years.

4.4.2.6 When providing a rationale for the length of the extension requested, some administrations identified a period for in-orbit testing. The Board decided not to take that period into account when the satellite was launched directly in its nominal orbital position noting that frequency assignments do not need to complete the in-orbit testing period to satisfy the requirements for bringing into use. Similarly, the Board did not take into account any contingency period for potential delays in launch schedule. While the Board recognized that such delays may occur, the Board was of the view that such delays are nearly impossible to predict especially when the satellite construction was still underway, and the satellite had yet to be delivered to the launch site. The Board also noted that launch delays generally qualified as *force majeure* and as such, administrations could seek another extension if needed.

**WRC-23 may wish to confirm that, as a minimum, the following information should be provided to facilitate the consideration of a request for extension of the regulatory time-limit due to *force majeure* by the Board:**

**– A summary description of the satellite to be launched, including the frequency bands;**

**– The name of the manufacturer selected to build the satellite and the contract signature date;**

**– The status of the satellite construction before the *force majeure* event, including the date it began and whether it was expected to be completed prior to the initial launch window;**

**– The name of the launch service provider and the contract signature date;**

**– The efforts and measures taken or envisaged to avoid missing the deadline, to overcome the difficulties faced and to reduce the project timelines, if possible, with supporting evidence by the satellite manufacturer and/or launch service provider as appropriate;**

**– Detailed rationale and assessment against all four conditions of *force majeure*:**

**1) The event must be beyond the control of the obligor and not self-induced.**

**2) The event constituting *force majeure* must be unforeseen or, if it was foreseeable, must be inevitable or irresistible.**

**3) The event must make it impossible for the obligor to perform its obligation.**

**4) A causal effective connection must exist between the event constituting *force majeure* and the failure by the obligator to fulfil the obligation.**

**– The initial and revised project milestones for the construction, launch window, launch and orbit raising of the satellite, as well as relocation and in-orbit testing timelines when the satellite is not directly launched in its nominal orbital position or its non-geostationary satellite orbit;**

**– A detailed rationale for the length of the extension requested, including a breakdown of the nature and extent of the delay experienced so far, the additional delay projected by the manufacturer and launch service provider, and any planned contingency;**

**– Any other relevant information and documentation.**

**WRC-23 is also invited to confirm the Board’s approach with respect to contingency periods in the determination of the length of an extension in cases of *force majeure* or co-passenger delay.**

4.4.2.7 The Board considered requests from administrations that either the status of coordination be a criterion in assessing extension requests or that coordination requirements be modified if an extension was granted due to the COVID-19 pandemic. One administration proposed that the Board should ask administrations submitting requests for extensions of regulatory time-limits to provide information demonstrating that coordination had been completed or to explain why if it had not. The administration argued that projects in respect of which there had been no demonstrable progress on coordination were less credible and requests for extensions pertaining thereto should therefore be rejected even if all the conditions to qualify as a case of *force majeure* were met.

4.4.2.8 Under the current authority granted to the Board, if a situation fully meets all the conditions to qualify as a case of *force majeure*, the coordination status of a satellite network cannot be used as a reason to refuse an extension of the regulatory time-limit to bring into use or bring back into use the frequency assignment to the satellite network. Exceptional cases were treated under *force majeure*, on a case-by-case basis, and in that regard, the Board might require some coordination information in order to have a complete and comprehensive view of the issue under consideration, to understand the status and seriousness of the satellite project and to provide a proper response. The issue of coordination status was therefore of value when discussing a possible extension under *force majeure*. Often times, administrations already provided information on the status of coordination in their submissions to the Board. The Board also requested the Bureau to provide similar information. When considering satellite network time-limit extensions, previous WRCs agreed to accede to such requests where the requested extension was limited, on the understanding, *inter alia*, that all frequency coordination activities related to the satellite network for which an exceptional extension was requested, had been completed. In addition, when adopting Resolution **35 (WRC-19)**, WRC-19 decided that progress on coordination would be one of the elements the Board would need to consider when assessing waiver requests from the requirement to meet the first deployment milestone of non-GSO systems. The Board is therefore of the view that it can take into account, to some extent, coordination information of satellite networks and request coordination information, when assessing a specific case.

4.4.2.9 Another administration felt that the pandemic had been used to obtain extensions for satellite network projects that had been artificially maintained and could prevent deployment of its own satellite networks. It was proposed that if an extension was granted, the Board would no longer require administrations with a later filing receipt date to coordinate its satellite networks with the satellite networks being granted the extension.

4.4.2.10 While Board does not have the mandate to change the coordination requirements or coordination procedures of the relevant provisions of the Radio Regulations, the Board is also of the view that doing so would have the effect of assigning a new date of receipt to the satellite network filing being granted an extension. This in turn would run contrary to the *force majeure* principle whereby administrations were exempted from the penalties that applied for failing to meet their regulatory obligations. As such, the Board does not recommend that this approach be pursued.

4.4.2.11 Finally, as to a precise period during which invocation of the pandemic as justification for *force majeure* will be admissible, it was impossible to answer that question in the early years of the pandemic. The Board initially accepted that the COVID-19 pandemic met the first two conditions of *force majeure*, namely that it had not been caused by the obligator, had been unforeseen and inevitable or irresistible, and focused its assessment on the remaining two conditions. However, with the removal of all pandemic-related restrictions in most jurisdictions, the COVID-19 pandemic may no longer constitute, *a priori,* an unforeseen, inevitable or irresistible event from the perspective of satisfying the second condition of *force majeure*. As a result, the Board expects more and more to assess all four conditions of *force majeure* when COVID-19 is invoked as the *force majeure* event.

**WRC-23 is invited to note that the Board is now examining how all four conditions of *force majeure* are met on a case-by-case basis when the COVID-19 pandemic is invoked as the *force majeure* event.**

### 4.4.3 Situations of co-passenger delay

4.4.3.1 The Board recommended to WRC-19 that minimum information requirements be established in order to facilitate the Board’s consideration of a request for extension of regulatory time-limits due to co-passenger delay. WRC-19 decided that the Board shall consider the provision of the following information as required when dealing with a request for extension of regulatory time-limits due to co-passenger delay:

*– a summary description of the satellite to be launched, including the frequency bands;*

*– the name of the manufacturer selected to build the satellite and the contract signature date;*

*– the status of the satellite construction, including the date it began and whether it was expected to be completed prior to the initial launch window;*

*– the name of the launch service provider and the contract signature date;*

*– the initial and revised launch window;*

*– sufficient detail to justify that the request for extension is due to co-passenger delay (e.g. a letter from the launch service provider indicating that the launch is delayed because of a delay affecting the co-passenger satellite);*

*– sufficient detail to justify the length of the requested extension period; and*

*– any other relevant information and documentation.*

4.4.3.2 The Board considered a few cases that qualified as co-passenger delays but noted that administrations had chosen to invoke *force majeure* instead or omitted to address all the information requirements in their submission which delayed the treatment of the case. The Board is of the view that there is no benefit in invoking *force majeure* for a case of co-passenger delay as the former requires the submission of more information, including a detailed assessment against the four conditions that must be met for a case to qualify as *force majeure*.

4.4.3.3 When granting an extension, the Board ensured that the extension was based on a solid rationale, properly justified and consistent with its analysis of similar cases in the past. A key consideration was whether or not the regulatory time-limit would have been met in the absence of the delay. The Board faced some difficulties when it was not clear if the original time-limit would have been met, for instance when there was no information on the duration of orbit raising and drift required to bring the satellite to its orbital position. The Board therefore recommends some refinements to the information requirements to ensure sufficient details are provided and avoid a request for further clarifications which in turn delays the treatment of the case.

### 4.4.4 Compliance with the regulatory time-limits for space stations using electric propulsion

**WRC-23 may wish to confirm that the following additional information should be provided to facilitate the consideration of a request for extension of the regulatory time-limits due to co-passenger delay:**

**– The initial and revised project milestones for the construction, launch window, launch and orbit raising of the satellite, as well as relocation and in-orbit testing timelines when the satellite is not directly launched in its nominal orbital position or its non-geostationary satellite orbit;**

**– A detailed rationale for the length of the extension requested, including a breakdown of the nature and extent of the delay experienced so far, the additional delay projected by the launch service provider, and any planned contingency.**

4.4.4.1 In its previous report, the Board encouraged administrations when using satellite energy-efficient propulsion systems to take into account the extra time needed for orbit raising to ensure compliance with the regulatory time-limits for bringing into use, or bringing back into use, frequency assignments. Based on the Board’s recommendation, WRC-19 decided to invite the ITU-R to study whether the use of electric propulsion satellite technology should be taken into account in the Radio Regulations for consideration at a future competent WRC.

4.4.4.2 In addition, when considering requests that qualify as *force majeure* or co-passenger delay, WRC-19 instructed the Board to continue to take into account the use of electric propulsion on a case-by-case basis when deciding on the length of the extension, based on the merits of each individual case. Since WRC-19, the Board received several submissions requesting an extension of the regulatory time-limit for bringing into use or bringing back into use frequency assignments to a satellite network using a satellite with electric propulsion for orbit raising. The Board examined these requests keeping in mind that the Board does not have the authority to relax a requirement in the Radio Regulations for any reason, including to allow for the use of more energy-efficient technology. The Board found that project timelines to meet regulatory deadlines were generally sufficient to allow for a longer orbit raising phase. As a result, and with delays mostly due to the COVID-19 pandemic, the use of electric propulsion systems did not give rise to any difficulty in the assessment of extension requests.

**The Board continues to encourage administrations when using energy-efficient satellite propulsion systems to take into account the extra time needed for orbit raising to ensure compliance with the regulatory time-limits for bringing into use, or back into use, frequency assignments.**

### 4.4.5 Requests from developing countries that do not qualify as force majeure or co-passenger delay

4.4.5.1 When dealing with requests for extension of regulatory time-limits that were not within the authority of the Board, the Board usually instructed the Bureau to continue to take into account the frequency assignments to the satellite network until the last day of the upcoming WRC, noting that resolution of such situations is within the terms of reference of a WRC. This approach works well to address the needs of developing countries when the next WRC is in the near future. However, it creates uncertainty for both the requesting administration and other administrations interested in the same frequencies and orbital resources when the request is received just following a WRC. Developing countries facing such uncertainty would likely be unable to move forward with their satellite project until confirmation was received from the WRC. For this reason, it would be consistent with Resolution **80 (Rev. WRC-07)** for a WRC to consider giving the Board the authority to address requests, on a case-by-case basis, for time-limited extensions of regulatory time-limits from developing countries, in particular those relying on satellite services to ensure connectivity over its entire territory.

4.4.5.2 In its previous report, the Board recognized that previous WRCs deliberately decided that only a WRC could consider requests for the extension of regulatory time-limits if they did not fall within the authority of the Board in order to limit the potential of abuse. The Board recommended that WRC-19 should specify conditions that would need to be satisfied to grant a time-limited extension on an exceptional basis to an individual developing country. For example, there could be limits on the service area, on the number of satellite networks that could be granted an extension or the WRC could also instruct the Board to take into account the particular situation of the notifying administration.

4.4.5.3 In response to the Board's recommendation, WRC-19 invited the ITU-R to study the matter of requests for extensions of regulatory time limits from developing countries that do not qualify as cases of *force majeure* or co‑passenger delay and to develop the specific criteria and conditions upon which the Board could consider granting an extension of the regulatory time-limit to a developing country. The Board noted that studies have yet to be initiated on this topic but recognizes that the last cycle has been challenging for the ITU-R and administrations.

**WRC-23 may wish to reiterate its invitation to the ITU-R to study the matter of requests for extensions of regulatory time limits from developing countries that do not qualify as cases of *force majeure* or co‑passenger delay and to develop the specific criteria and conditions upon which the Board could consider granting an extension of the regulatory time-limit to a developing country for consideration at a future competent WRC.**

## 4.5 Requests for a transfer or change of the "notifying administration" from one to the other.

4.5.1 WRC-19 confirmed the approach so far used by the Board for treating cases of the change of notifying administration acting on behalf of an intergovernmental satellite organization for a satellite network of that intergovernmental organization, to an administration which is a member of that organization acting on its own behalf. WRC-19 further decided that a letter from an appropriate responsible authority of this intergovernmental satellite organization was required to confirm their agreement with the change of notifying administration. In addition, WRC-19 decided that the Board shall deny a request to change the notifying administration in some specific cases. The Board had adopted a Rule of Procedure at its 84th meeting to reflect these decisions and since considered one case without experiencing any difficulty.

## 4.6 Issues related to the Appendices 30/30A/30B Plans

### 4.6.1 Conversion of national allotments in Appendix 30B

4.6.1.1 The Board considered a request for the extension of the regulatory time-limit to bring into use the frequency assignments to a satellite network involving the conversion of a national allotment in Appendix **30B** into a frequency assignment within the envelope of the characteristics of the initial allotment. The Board noted that the intent of the FSS Plan in Appendix **30B** was to grant equitable access to spectrum and orbital resources via national allotments with no expiry date or regulatory deadline. Provision § 1.2 of Article 1 to Appendix **30B** indicates that the Appendix **30B** procedures should “in no way prevent the implementation of frequency assignments in conformity with the national allotments of the Plan”. The Board further noted that the conversion of a national allotment into frequency assignments in conformity with the Plan allotment required no coordination with other administrations. Should frequency assignments that were in conformity with the Plan allotment not be brought into use before the regulatory time-limit specified in Articles 6 and 8 to Appendix **30B**, then the allotment would have to be reinstated, which would have no impact on other administrations, but would place additional administrative burdens on the notifying administration and on the Bureau.

4.6.1.2 The Board therefore concluded that applying a regulatory time-limit to bring into use frequency assignments that were in conformity with the allotment in the Plan from which they had been derived was inconsistent with the purpose of Appendix **30B**. The Board further instructed the Bureau to continue to take into account such frequency assignments in the List and to set the regulatory time-limit for the submission of the information required under Resolution **49 (Rev.WRC-19)** to 15 December 2023 pending a decision by WRC-23.

4.6.1.3 To address the inconsistency and avoid additional administrative burdens related to the conversion of an allotment into frequency assignment(s) without any modification or with modification within the envelope of the characteristics of an allotment in Appendix **30B,** modifications to Articles 6 and 8 of this Appendix would be required. The Board is of the view that a regulatory time-limit to bring into use such frequency assignments should only be specified at the time of notification. In other words, frequency assignments could remain in the List until the use of these assignments is no longer required since these frequency assignments do not require any coordination with frequency assignments already in the List or recorded in the Master Register. When administrations are ready to implement their frequency assignments and submit their notice under § 8.1, they would identify a planned date of bringing into use that cannot exceed three years from the date of the submission. This planned date of bringing into use should be considered as the time-limit for bringing into use the frequency assignments and providing the information required under Resolution **49 (Rev.WRC-19)**. Furthermore, this time-limit for bringing into use could be extended upon request from the notifying administration. If a frequency assignment was not brought into use within that time-limit and no request for an extension of the time-limit had been received by the Bureau, the frequency assignment should lapse.

**WRC-23 is invited to consider modifications to Articles 6 and 8 of Appendix 30B that would specify a regulatory time-limit to bring into use frequency assignments converted from an allotment without any modification or with modification within the envelope of the characteristics of the allotment in Appendix 30B only at the time of notification. This time-limit for bringing into use could be extended upon request from the notifying administration.**

The following draft provisions are examples to implement this recommendation to modify Articles 6 and 8 of Appendix **30B**:

**6.31** The regulatory time-limit to bring into use an assignment to a space station of a satellite network is no more than eight years from the date of receipt by the Bureau of the complete notice under § 6.1, with the exception of assignments converted from an allotment without any modification or with modification within the envelope of the characteristics9 of an allotment in the Plan. (WRC‑~~15~~23)

**6.31 *ter*** The regulatory time-limit to bring into use an assignment to a space station of a satellite network that was converted from an allotment without any modification or with modification within the envelope of the characteristics 9 of an allotment in the Plan may be extended by no more than three years upon request of the notifying administration.

**6.33**

When:

i) an assignment is no longer required; *or*

ii) an assignment recorded in the List and brought into use has been suspended for a period exceeding the suspension period resulting from the application of § 8.17 below and ending after the expiry date specified in § 6.31; *or*     (WRC‑15)

iii) an assignment recorded in the List has not been brought into use within the eight-year period following the receipt by the Bureau of the relevant complete information under § 6.1 (or within the extended period in the event of an extension under § 6.31*bis* or 6.31*ter*), with the exception of assignments submitted by new Member States where § 6.35 and 7.7 apply,

the Bureau shall:

*a)* publish in a Special Section of its BR IFIC the cancellation of the related Special Sections and the assignments recorded in the Appendix **30B** List;

*b)* if the cancelled assignment is the result of a conversion of an allotment without modification, reinstate the allotment in the Appendix **30B** Plan;

*c)* if the cancelled assignment is the result of the conversion of an allotment with modifications, reinstate the allotment with the same orbital location and technical parameters of the cancelled assignment except for its service area, which shall be the national territory of the administration whose allotment is being reinstated; and

*d)* update the reference situation for the allotments of the Plan and the assignments of the List.     (WRC‑‑23)

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9 When an administration converts an allotment into an assignment with characteristics different from those in the Plan, the Bureau shall undertake calculation to determine if the proposed new characteristics increase the interference level caused to other allotments and assignments. The increase of the interference due to characteristics different from those of the subject allotment in the Plan will be checked by comparing the C/I ratios of these other allotments and assignments, which result from the use of the proposed new characteristics of the subject assignment on the one hand, and those obtained with the characteristics of the subject allotment in the Plan, on the other hand. This C/I calculation is performed under the same technical assumptions and conditions. (WRC-23)

**8.2bis** § 8.2 shall not apply to assignments converted from an allotment without any modification or with modification within the envelope of the characteristics of an allotment in the Plan, where § 6.31*ter* applies.

**8.16** All frequency assignments notified in advance of their being brought into use shall be entered provisionally in the Master Register. Any frequency assignment provisionally recorded under this provision shall be brought into use no later than the end of the period provided for in § 6.31, § 6.31*bis* or § 6.31*ter* in the event of an extension under these provisions. Unless the Bureau has been informed by the notifying administration of the bringing into use of the assignment, it shall, no later than 15 days before the end of the regulatory period established under § 6.31, § 6.31*bis* or § 6.31*ter*, send a reminder requesting confirmation that the assignment has been brought into use within the regulatory period. If the Bureau does not receive that confirmation within 30 days following the period provided under § 6.31, § 6.31*bis* or § 6.31*ter* in the event of an extension under these provisions, it shall cancel the entry in the Master Register. In the event that an extension was requested under § 6.31*bis* but the Bureau determines that the conditions for an extension under § 6.31*bis* are not met, the Bureau shall inform the administration of its findings and cancel the entry in the Master Register.    (WRC‑23)

### 4.6.2 Issues related to the Article 7 procedure of Appendix 30B

4.5.2.1 The Board considered a contribution from administrations who had submitted requests for national allotments in Appendix **30B**. The Bureau had identified prospective orbital locations for these administrations. However, numerous satellite networks were considered as potentially affected, notably assignments entered in the List after WRC-07 and new submissions for additional systems under Article 6.

4.6.2.2 The Board noted that studies were underway in WP 4A under agenda item 7 to address improvements to the Article 7 procedure and thereby reduce the difficulty in getting new Plan allotments for new Member States. The administrations concerned noted that, in establishing the reference situation (aggregate *C/I*) of the recent seven Article 7 requests, the Bureau had not considered pending satellite networks processed by the Bureau before the date of receipt of those requests. However, such networks, if located within the relevant coordination arc, could degrade the reference situation of the Article 7 requests upon entry into the List, rendering the requested allotments for new Member States unusable. As any regulatory improvements decided by WRC-23 would enter into force only after the conference, the administrations proposed that the Board instruct the Bureau to apply measures similar to those for submissions under Resolution **559 (WRC-19)** until the last day of WRC-23 to avoid degradation of the aggregate *C/I* levels of the Article 7 requests.

4.6.2.3 The Board recognized that the main objective of the FSS Plan was to guarantee equitable access to orbital and spectrum resources to all administrations for future use. The Board noted that this objective was difficult to fulfil given the significant number of additional systems that needed to be coordinated with the Article 7 submissions to be entered in the Plan and that WRC-23 would be addressing the issue. Consequently, as an interim measure until WRC-23, the Board instructed the Bureau to implement the following regulatory measures:

• to review Part B submissions received after 28 October 2021 associated with Part A submissions received before 12 March 2020 during the completeness process of those Part B submissions, and to identify additional measures that could be implemented by the notifying administrations to avoid degradation of the aggregate *C/I* levels of the Article 7 requests;

• to request the notifying administrations, following the review of completeness of Part B submissions, to make their utmost efforts to take into account such Article 7 requests and the results of the Bureau’s analysis with measures to avoid further degrading aggregate *C/I* levels;

• to analyse the impact of the above-mentioned Part B submissions on the aggregate *C/I* levels of such Article 7 requests and to report the results, together with the efforts undertaken by those Part B administrations, to the next meetings of the Board for further consideration.

4.6.2.4 The Board noted with satisfaction the goodwill displayed by administrations in protecting the Article 7 submission of the proposed allotments by accepting the Bureau’s proposals.

4.6.2.5 Nevertheless, an additional seven countries (Eritrea, Estonia, Latvia, Saint Lucia, Tajikistan, Timor-Leste (Dem. Rep. of), and Turkmenistan) still had no allotment in this Plan. Furthermore, the State of Palestine[[3]](#footnote-3) had no allotment in the Appendix **30B** Plan whereas it had planned frequency assignments in the Appendices **30** and **30A** Plans.

**WRC-23 is invited to urge administrations with Part A submissions received before 12 March 2020 to make all efforts to accommodate Article 7 submissions of other administrations and to take into account the results of the analyses of the Bureau and the measures to avoid further degradation of the *C/I* levels when preparing their Part B submissions.**

**WRC-23 is invited to instruct the Bureau to identify orbital resources for the additional seven countries (Eritrea, Estonia, Latvia, Saint Lucia, Tajikistan, Timor-Leste (Dem. Rep. of), and Turkmenistan) and the State of Palestine which still have no allotment in the Appendix 30B Plan.**

### 4.6.3 Long-term protection of the Plans

4.6.3.1 The Board considered proposed measures for the long-term protection of frequency assignments in the Regions 1 and 3 BSS Plans, allotments in the FSS Plan and those intended to enter into the Plans for new Member States. Although the modification to § 4.1.10 of Appendices **30** and **30A** agreed by WRC-15 alleviated some concerns regarding the concept of implicit agreement, the concept was still applicable under certain provisions of Article 4, albeit indirectly, and could cause an unfavourable situation to those administrations identified under Resolution **559 (WRC-19)** should they fail to respond to a request from the Bureau within the time-limit. The concept was also applicable under certain provisions of Article 6 of Appendix **30B** and resulted in significant degradation of aggregate *C/I* levels of a number of allotments. However, as the absence of response to the Bureau’s requests was, in most cases, a result of insufficient human resources and regulatory expertise, the administrations proposed that the Board consider instructing the Bureau, as an interim measure until WRC-23: to include a regional telecommunication organization in the list of recipients of a reminder sent under §§ 4.1.10b and 4.1.10c of Appendices **30** and **30A** and under §§ 6.14 and 6.14*bis* of Appendix **30B** whenever that reminder was sent to a member of that organization; and to consider a decision from the General Secretariat of that organization as sent on behalf of the administration that had not replied to the Bureau’s reminder within the time-limit.

4.6.3.2 The Board recognized the difficulties that those administrations had encountered in relation to the concept of implicit agreement, which was in force in a number of provisions of the Radio Regulations, and its potential impact on administrations that were unable to respond within the time-limits to such cases affecting their frequency assignments or allotments. Consequently, the Board decided to instruct the Bureau to include the General Secretariat of the regional telecommunication organization in the list of recipients of a reminder sent under §§ 4.1.10b and 4.1.10c of Appendices **30** and **30A** and under §§ 6.14 and 6.14bis of Appendix **30B** whenever that reminder was sent to one of its members as an interim measure, until the end of WRC-23.

4.6.3.3 Since the relevant articles in the BSS and FSS Plans do not explicitly permit an organization not party to the Radio Regulations to act on behalf of an administration, the Board was not in a position to accede to the request to accept answers from a third party on behalf of an administration to reminders sent by the Bureau where the administration’s frequency assignments or allotments were considered as affected.

4.6.3.4 The Board also noted that, in some cases and despite all efforts, the Bureau had difficulty reaching administrations in a timely manner as the contact information provided to the Bureau was no longer valid. The Bureau relies on administrations to promptly inform them of changes in their organisation, in particular when email addresses or telefax numbers have changed.

4.6.3.5 From a more fundamental perspective, the Board is concerned that the extensive efforts of previous WRCs, the Board, Bureau and administrations in assisting administrations seeking to gain or regain access to resources in the Plans could be undermined over time if no measures are taken to further protect these resources for future use. The Board noted with satisfaction that under agenda item 7 topic H, options are under consideration for decision by WRC-23 to enhance to protection of the Regions 1 and 3 Appendices **30/30A** BSS Plan frequency assignments and of the Appendix **30B** FSS allotments.

**WRC-23 is invited to consider adopting measures to enhance the protection of the Regions 1 and 3 Appendices 30/30A BSS Plan frequency assignments and the Appendix 30B FSS allotments.**

### 4.6.4 inability to resubmit Appendix 30B notice when returned by the Bureau

4.6.4.1 The Board considered a request to instruct the Bureau to accept the submission of revised Appendix **4** data required under Appendix **30B** after the eight-year regulatory time-limit for the satellite network filing had expired. The Appendix **4** information required under Articles 6 and 8 of Appendix **30B** had been submitted in time but the notice was returned in accordance with § 6.24 of Appendix **30B** due to an unfavourable finding. The Bureau having received the Appendix **4** information just a few weeks before the regulatory time-limit, could not return the notice before the eight-year regulatory time-limit for the satellite network filing had expired. The administration had been ready to submit a new notice containing revised Appendix **4** data but a resubmission under Appendix **30B** was not receivable because the eight-year time-limit had expired in the meantime.

4.6.4.2 The Board noted that contrary to the procedures for frequency assignments of the non-planned services, it was not possible for a notifying administration to resubmit Appendix **4** data under Appendix **30B** to obtain a favourable finding if the return of notice was after the end of the regulatory time-limit. For frequency assignments of non-planned services, administrations can maintain their date of receipt if they resubmit their notice within six-months from the return of notice even if the resubmission occurs after the end of the regulatory time-limit. The Board also noted that Appendix **30B** did not provide an opportunity to apply § 6.25 for the resubmission of a returned notice when an allotment had been identified as affected. Therefore, modifications to the filings would be required to ensure that there would be no degradation to national allotments and to provide additional information, in particular on the agreements reached with other administrations. Even if the return of notice occurs before the end of the regulatory time-limit, if it is too close to the time-limit, that may not allow sufficient time for an administration to prepare the submission before the deadline.

4.6.4.3 Allowing a resubmission of the notice while keeping the date of receipt within the regulatory time-limit may adversely impact the processing of Appendix **30B** submissions received after the date of the returned notice by the Bureau and the reception of the subsequent modified notice from the administration, because of the need to sequentially update the reference situation of the allotments in the Plan and the frequency assignments in the List. In the Appendices **30** and **30A** Plans, administrations retain the same date of receipt if they adjust their filings following an explicit request by the Bureau during the completeness examination stage of the submission and if these adjustments are submitted to the Bureau within 30 days from the date of the Bureau’s correspondence in accordance with the Rules of Procedure concerning the receivability of Appendix **4** forms of notice. The Board is of the view that administrations should have the same possibility to resubmit Appendix **4** data under Appendix **30B** as they have under Appendices **30** and **30A**.

The Board intends to instruct the Bureau to propose draft Rules of Procedure concerning the receivability of Appendix **4** forms of notice to provide an administration with the same possibility to resubmit Appendix **4** data under Appendix **30B** as they have under Appendices **30** and **30A**.

## 4.7 Difficulties affecting satellite network coordination

4.7.1 As the number of satellites in orbit and the use of certain frequency bands increases, it is becoming more complex and more important to complete satellite network coordination in order to avoid harmful interference. Several administrations brought difficulties regarding satellite network coordination to the Board. Some cases involved an administration seeking assistance in advancing coordination with an administration whose agreement was required but it did not respond to coordination requests. In some cases, the administration that was second to start the advance publication or coordination procedure was unable to gain the agreement of the administration that had started this process first. Administrations may seek the assistance of the Bureau under Nos. **9.60**- **9.65** in the event of no reply, no decision, or disagreement on a request for coordination.

4.7.2 Overcoming any difficulties in achieving coordination requires the goodwill of the administrations involved and the identification of technical solution(s) to mitigate any predicted interference. The following rule of procedure on No. **9.6** contains elements that foster the principle of equitable access to those orbits and frequencies:

*1 Based on an analysis of Articles* ***9*** *and* ***11*** *and Appendix* ***5****, the Board agreed that as far as coordination requests, submitted to the Bureau under Nos.****9.30*** *or* ***9.32*** *(space network coordination cases), are concerned:*

*a) publication, under No.****9.38****, of requests for coordination shall be made in the order of their date of receipt (see also the general Rules of Procedure on Receivability);*

*b) the intent of Nos.* ***9.6*** *(****9.7*** *to* ***9.21****),* ***9.27*** *and Appendix* ***5*** *is to identify to which administrations a request for coordination is to be addressed, and not to state an order of priorities for rights to a particular orbital position;*

*c) the coordination process is a two-way process. This understanding was included in the Radio Regulations by WARC Orb-88 with the adoption of the former provision No. 1085A which was confirmed by WRC-97 in No.* ***S9.53****;*

*d) in the application of Article* ***9*** *no administration obtains any particular priority as a result of being the first to start either the advance publication phase (Section I of Article****9****) or the request for coordination procedure (Section II of Article* ***9****).*

*2 Cases of continuing disagreement or unsuccessful coordination (See No.* ***9.65****) are dealt with in Article* ***11*** *where the goal of the procedures, i.e. the international recognition of frequencies, is secured through the recording of frequency assignments in the Master Register (see also Nos.****11.32A****,* ***11.33****,* ***11.41*** *and* ***11.41A****).*

4.7.3 Likewise, Resolution **2** **(Rev.WRC-03)**, “Equitable use, by all countries, with equal rights, of the geostationary-satellite and other orbits and of frequency bands for space radiocommunication services”, establishes that registration of frequency assignments for space services does not establish permanent priority and that all practicable measures should be taken to facilitate the use of new space systems.

4.7.4 Other cases considered by the Board involved an administration notifying and bringing into use a satellite network before completing any or very little of the required satellite network coordination. Ideally, coordination would be completed with all affected administrations prior to notification and bringing into use. This is seldom the case due to congestion in the geostationary orbit in several frequency bands and the fact that administrations must notify and bring frequency assignments into use at the end of the seven-year deadline or face the need to reapply the coordination procedure.

4.7.5 No. **11.41** enables notification without completing coordination provided that efforts have been made to effect coordination, thus enabling administrations to meet the regulatory deadlines. Since the level of effort required to satisfy No. **11.41.2** can be minimal, No. **11.41** continues to be used in cases where no or very few satellite network coordination agreements have been completed at the time of notification. The increased possibility of interference makes notification without coordination undesirable and inhibits the rational, efficient, economical, and equitable use of the spectrum and satellite orbits.

4.7.6 The Board considered cases where administrations had challenged the date of protection of recorded frequency assignments and proceeded to launch satellites without completing coordination with each other. In one such case, two administrations complained of harmful interference and one requested the application of No. **11.42A**. The Board noted that disputes over the priority date of protection and challenges over spectrum reservation practices typically had led to an impasse in coordination discussions. In addition, when operational satellites were involved, it was imperative to focus on compatible use rather than the date of protection of frequency assignments.

4.7.7 The Board drew to the attention of both administrations to the fact that while No. **11.41** was applicable, its use usually reflected insufficient and/or difficult coordination discussions. As such, the application of Nos. **11.42** and **11.42A** should not precede or exclude seeking solutions through exhaustive coordination efforts. Given that the two administrations had only recently begun coordination discussions under the auspices of the Bureau, the Board decided that it was premature to refer to the application of No. **11.42A**.

**The Board urges administrations to complete frequency coordination before launching satellites. The Board wishes to draw the attention of administrations to the fact that the coordination process is a two-way process and that no administration obtains any particular priority as a result of being the first to start either the advance publication phase (Section I of Article 9) or the request for coordination procedure (Section II of Article 9). In addition, for frequency assignments recorded under No. 11.41, the application of No. 11.42A should not precede or exclude seeking solutions through exhaustive coordination discussions.**

## 4.8 Considerations related to harmful interference

### 4.8.1 Considerations regarding the factors affecting the resolution of harmful interference

4.8.1.1 The Board treated requests for its assistance regarding harmful interference on a regular basis and the number of cases brought to the Board had increased since WRC-19. These requests involved terrestrial services and increasingly also space services, including services that were subject to a plan. The Board and the Bureau had no difficulties acting in accordance with the procedures of Articles **12**, **13**, **15** and **16** of the Radio Regulations in addressing such cases. Nevertheless, the persistent character of the harmful interference in some situations was a concern and created a situation that impeded fulfilment of the principles contained in Article 44 of the Constitution and No. **0.3** of the Preamble to the Radio Regulations. In those cases where the Bureau’s offers of assistance were accepted, the parties generally made better progress in resolving the interference issues.

4.8.1.2 In some cases of harmful interference, and despite repeated communications from the Bureau, including on behalf of the Board, no replies were provided by the administration suspected of being the source of the interference. The lack of response of an administration to communications and requests from the Board is a matter of grave concern and the absence of actions taken by an administration to effectively cooperate to resolve cases of harmful interference both indicated a direct contravention of No. **15.21** and No. 197 (Article 45) of the Constitution.

4.8.1.3 In addition, in recent years the Board observed an increase in difficulties in reaching coordination agreements involving space services, which in some cases led to mutual complaints of intentional harmful interference by the parties involved. The Board considered such behaviour as counterproductive to resolving coordination disputes and a direct contravention with No. **15.1**.

**The Board recommends intensifying efforts to ensure that all members exercise the utmost goodwill and mutual respect and abide by the instruments of the Union.**

**The Board expressed its grave concern regarding causing intentional harmful interference to the radiocommunication services of another administration and condemned such actions in the strictest terms, noting that such behaviour was in direct contravention of No. 15.1 of the Radio Regulations.**

### 4.8.2 Difficulties in resolving issues of harmful interference resulting from non-conformity with the GE84 and GE06 Regional Agreements

4.8.2.1 The Board continues to be greatly concerned about the persistent character of the harmful interference to a number of television and sound broadcasting stations from uncoordinated broadcasting stations and the lack of progress in resolving it as well as the non-observance of the obligations under the GE84 and GE06 Regional Agreements.This case figured prominently on the agenda of the Board since 2005 and had also been discussed at the World Radiocommunication Conferences 2007, 2012, 2015 and 2019. Efforts were made by all concerned parties. Priority lists of most urgent cases that needed to be resolved had been drawn up and a road map to solve the harmful interference cases to television and sound broadcasting stations of neighbouring countries were provided regularly. Multilateral meetings had been held annually under the auspices of the Bureau, as well as a number of bilateral meetings. These efforts had resulted in solving most of the harmful interference to the television broadcasting stations of the neighbouring countries.

Unfortunately, there was little to no improvement to the sound broadcasting situation. Ultimately, legislative action was required and adopted to enable the administration responsible for the stations causing harmful interference to impose new operational conditions to resolve cross-border interference and ensure these stations operate in conformity with the relevant ITU Regional Agreement. A working group had been established to implement the new legislation and just started its work.

The Board deplored this lack of progress towards resolving very long-standing cases of harmful interference and again strongly urged the administration concerned to take all necessary measures to eliminate it. However, the Board is of the view that in such complex situations, meaningful and timely results can only be achieved with a firm commitment at a high level to resolve the matter.

### 4.8.3 International monitoring

4.8.3.1 The Board considered that monitoring results obtained by recognized international monitoring stations using measurement techniques and technologies documented in the *ITU-R Handbook on Spectrum Monitoring* to be a valuable resource for addressing harmful interference and had in some cases of harmful interference requested the Bureau to make use of the International Monitoring Service in order to determine the sources of harmful interference, the pattern of its occurrences and its technical characteristics. This was done, both in cases of terrestrial as well as in cases of space services. In the case of terrestrial services, a sufficient number of administrations agreed to participate when requested by the Bureau to perform spectrum monitoring. Spectrum monitoring results were achieved, which confirmed the claims of the administration complaining of harmful interference. Nevertheless, even after receiving conclusive monitoring results, it turned out to be difficult to solve the case because of different views and interpretations of the way to address it further.

4.8.3.2 The Board deemed that the procedures for the use of recognized monitoring stations to assist the Bureau to perform measurements related to cases of harmful interference for which either an administration was seeking the assistance of the Bureau or the Board was requesting the Bureau to initiate the use of international monitoring, had much added value in solving harmful interference cases, on condition that administrations were willing to accept the results.

**The Board considers monitoring results obtained by recognized international monitoring stations using measurement techniques and technologies documented in the *ITU-R Handbook on Spectrum Monitoring* to be a valuable resource for addressing harmful interference.**

**WRC-23 is invited to note that the Board has requested the Bureau to initiate the use of international monitoring and appreciated its value in solving harmful interference cases, in particular when administrations are willing to accept the results.**

## 4.9 Invocation of Article 48 of the ITU Constitution

4.9.1 In its Report to WRC-19 on Resolution **80** **(Rev. WRC-07)**, the Board identified concerns raised by some administrations regarding the appropriateness of other administrations’ application of Article 48 of the ITU Constitution. The alleged cases of non-compliance with Article 48 of the ITU Constitution that were presented to the Board can be summarized as follows:

– Administrations invoking Article 48 of the ITU Constitution after the Bureau launched an investigation under No. **13.6** as a means to prevent its application and retain rights in the MIFR.

– Administrations invoking Article 48 of the ITU Constitution for frequency assignments that were used for non- military radio installations.

4.9.2 While it did not have a position on the merit of the cases that administrations submitted on Article 48 of the ITU Constitution, the Board was however very concerned with the potential for misuse of the Article and how such misuse would seriously compromise the integrity of the regulatory framework. The Board also considered that invoking Article 48 of the ITU Constitution for the sole purpose of preventing the Bureau from investigating the status of satellite networksunder No. **13.6** was incompatible with the ITU Constitution and the Radio Regulations.

4.9.3 In response to this report of the Board, and the associated WRC-19 comments and discussions, WRC-19, in accordance with Article 21 of the ITU Convention, invited the Plenipotentiary Conference 2022 (PP-22) to consider the question of the invocation of Article 48 of the ITU Constitution in relation to the Radio Regulations and take necessary actions, as appropriate.

4.9.4 Since WRC-19, the Board received a request to develop a rule of procedure in respect of Article 48 of the ITU Constitution triggered by concerns of its invocation in response to a coordination request as a means not to provide the characteristics of the assignments on which the objection was based. The characteristics of these assignments were only recorded in the MIFR as typical stations associated to a satellite network, making it impossible to address potential interference.

4.9.5 The Board noted that in accordance with No. 203 of Article 48 of the ITU Constitution, military radio installations must, so far as possible, observe statutory provisions relative to the measures to be taken to prevent harmful interference. The Board further noted that the international rights and obligations of administrations in respect of their own and other administrations’ frequency assignments were derived from the recording of those assignments in the MIFR (No. **8.1**). Noting that WRC-19 had invited the PP-22 to provide guidance on the application of Article 48 of the ITU Constitution, the Board decided not to develop a rule of procedure on invoking Article 48 of the ITU Constitution under the application of coordination procedures at that stage.

4.9.6 The Board submitted a report to PP-22 (Doc. [PP-22/63](https://www.itu.int/md/S22-PP-C-0063/en)) and sought guidance that could be used to address cases under Article 48 of the ITU Constitution. In particular, it sought confirmation that the Bureau and the Board could seek clarification and consequently apply all relevant regulatory provisions if it appeared from reliable information that a recorded frequency assignment for which Article 48 of the ITU Constitution had been invoked was actually not in compliance with the article.

4.9.7 PP-22 adopted Resolution 216 (Doc. [PP-22/173](https://www.itu.int/md/S22-PP-C-0173/en)) which addresses the basic principles associated with the invocation of Article 48 of the ITU Constitution and provides the necessary guidance to the Bureau and the Board on how to address cases where Article 48 of the ITU Constitution may appear to have been improperly invoked or is no longer being properly applied. The Board noted the concerns over the need to maintain the sensitivity and confidentiality of the information provided for frequency assignments invoking Article 48 of the ITU Constitution during its deliberations and would take necessary measures to fulfil this objective as instructed in Resolution 216 (Bucharest, 2022).

4.9.8 Since PP-22, an administration sought clarifications on whether the provisions of Article 48 could be applied instead of, or in response to, coordination in accordance with the provisions of the Radio Regulations. The Board emphasized that the rights for international recognition and protection of any frequency assignments are derived from the recording of those frequency assignments in the MIFR and conditioned by the provisions of the Radio Regulations, which is recognized in Resolution 216 (Bucharest, 2022). The Board is of the view that invoking Article 48 of the ITU Constitution does not exempt an administration from the obligation to effect coordination under the relevant provisions of the Radio Regulations. The Board also concluded that objections to coordination requests were receivable only if they were based on frequency assignments recorded or in the process of being recorded in the MIFR, or for those stipulated in §§ 1 or 2 of Appendix **5** of the Radio Regulations, as appropriate.

**The Board is of the view that with Resolution 216 (Bucharest, 2022), PP-22 has comprehensively covered the invitation from WRC-19 to address the questions raised at WRC-19 regarding the invocation of Article 48 of the ITU Constitution and that no further action by WRC-23 is necessary.**

## 4.10 The status of WRC decisions recorded in the minutes from a World Radiocommunication Conference

4.10.1 As was done since WRC-15, in adopting the 2021 version of the Rules of Procedure, the Board amended the relevant rules of procedure with "notes" that precisely quote the Minutes of the WRC-19 Plenary sessions to ensure that administrations are fully aware of all WRC decisions, including those reflected in WRC Plenary minutes.

4.10.2 In addition, the Board studied a compilation of conference decisions from WRC-12, WRC-15 and WRC-19 involving considerations by the Board on requests from notifying administrations for extension of regulatory time-limits to bring into use satellite frequency assignments. The Board identified three conference decisions for inclusion in the Rules of Procedure. The Board also agreed that such WRC Plenary decisions should be part of a stand-alone section of the Rules of Procedure rather than being related to specific provisions. The new stand-alone section of the Rules of Procedure containing decisions by WRC-12, WRC-15 and WRC-19 related to the extension of the regulatory time-limit for bringing into use satellite assignments was approved at the Board’s 88th meeting (see Part A1 of the Rules of Procedure, Rules concerning the extension of the regulatory time-limit for bringing into use satellite assignments).

## 4.11 Issues related to Resolution 40 (Rev. WRC-19)

4.11.1 The Board considered statistics derived from the submissions of Resolution **40 (Rev.WRC-19)** information which had been presented to WP 4A by the Bureau. Resolution **40 (Rev.WRC-19)** had been adopted to prevent the practice of “satellite hopping,” whereby a single space station was used to bring more than one frequency assignment to GSO satellite networks into use at different orbital locations within a three-year period. The statistics showed that since its entry into force Resolution **40** **(Rev.WRC-19)** was having the desired effect and that instances of satellite hopping were rare. While there were isolated cases where one satellite had been used to bring into or back into use (BIU/BBIU) frequency assignments at several different orbital positions, the reuse of the same satellite multiple times was not necessarily an indication of misuse of the BIU/BBIU provisions.

4.11.2 Satellite operators that encountered delays with their satellite project would often consider using an in-orbit satellite to meet their regulatory time-limits to BIU or BBIU frequency assignments of their satellite network filings and avoided seeking an extension of these time-limits from the Board or WRC. Many turned to satellite operators that had in-orbit satellites available for leasing. It was therefore not surprising that the same satellite had been reused multiple times over the last 7-8 years since a market for short-term in-orbit satellite leasing had emerged in the last decade. When such a reuse benefitted different administrations and unrelated operators, there was no misuse. The Board is of the view that the key indicator of potential misuse is rather when frequency assignments are repeatedly brought into use or brought back into use only for a short period of time. This type of practice allows an administration to maintain its recording in the MIFR (which maintains the international recognition and rights for protection of the frequency assignments to the GSO satellite networks) by simply satisfying the BIU/BBIU requirements without maintaining any satellite with the required transmitting and receiving capability beyond the required 90-day BIU/BBIU period. Such a practice is contrary to the principles of Article 44 of the Constitution, the intent of the Radio Regulations and the essence of the regulatory provisions governing access to the radio spectrum and geostationary orbit.

4.11.3 The Board also noted with concern a recent case reported by the Bureau of “satellite hopping without moving,” whereby a single satellite located at orbital position “A” had been used to bring into use assignments to satellite networks notified at orbital position “B” less than 0.5° away from position “A.” Those networks had been suspended after several years of operation and the satellite, still physically located at position “A,” had then been used to bring into use frequency assignments to satellite networks at orbital position “C,” still less than 0.5° away from the satellite’s physical position. The case showed that notifying administrations could keep networks at two positions with a single physical satellite at a third position by suspending the networks in sequence every three years without suffering any loss of service for having to remain at a different position for 90 days or loss of fuel for drifting to a different position. When WRC-15 adopted Resolution **40**, the operational costs of using one space station to bring into use frequency assignments at different orbital locations within a short period of time had been deemed to be sufficiently high to minimize potential misuse. However, when the practice does not involve any satellite relocation, the cost-related assumption that had led to the adoption of Resolution **40 (WRC-15)** no longer applies. The Board is of the view that such practice also clearly runs contrary to the principles of the Union’s instruments in relation to the rational, efficient and economical use of, and equitable access to, frequency and orbital resources.

4.11.4 While there was no consensus within WP 4A to address satellite hopping as a topic under agenda item 7, the Board noted that WP 4A discussions did not focus on the two spectrum reservation practices described above.

**To further limit spectrum reservation practices, WRC-23 is invited to request the ITU-R to study possible measures to restrain the use of the same satellite or different satellites to repeatedly bring into use and bring back into use the same frequency assignments of a satellite network or system for a short period of time only for consideration at a future competent WRC.**

## 4.12 Issues related to the BIU of non-geostationary-satellite networks

4.12.1 The Bureau brought to the attention of the Board recent cases of modifications to existing coordination requests of non-geostationary-satellite (non-GSO) networks. These modifications were limited to the addition of one satellite in one orbital plane. In the absence of agreed orbital tolerances, which were under study by WP 4A and to be discussed under agenda item 7 at WRC-23, administrations were being more cautious and adding the exact orbital parameters of the spacecraft to be used for bringing into use the frequency assignments to a non-GSO satellite system. However, the modifications sometimes introduced a new orbital plane with a new satellite with characteristics that might differ significantly from the rest of the non-GSO system under coordination, including where the orbital altitude would exceed the tolerances to be considered by WRC-23. Although that practice did not affect the regulatory status of the main set of frequency assignments of the system, it raised the question of whether a spacecraft with the capability of transmitting or receiving the frequency assignments described in the modification was complying with the requirements of Nos. **11.44C** and **11.44D** for the other groups of frequency assignments, and was directly related to the efficient use of the orbit and spectrum resources. The Bureau intended to address that matter on a case-by-case basis. In the event of doubt, the Bureau would first ask the administration concerned for clarification but might have to bring particular cases to the Board for decision. Given that most cases would probably be confirmed by Resolution **35 (WRC-19)**, the Bureau would report any cases not covered by the milestone-based approach outlined in that resolution, should they arise.

4.12.2 While it might be understandable in certain cases for administrations to submit such modifications to avoid any challenge on tolerances, the Board is of the view that the practice of introducing a completely different orbital plane that is not foreseen to be required for operation of the constellation raises the issue of spectrum and orbit reservation and the efficient use of frequencies and the non-geostationary orbit. Concerns will also arise about the efficient use of the orbit and spectrum resources when the modifications are outside the tolerances to be considered by WRC-23.

**4.1****3 Long-term sustainability and equitable access and rational use of the non-GSO orbit/spectrum resources**

**WRC-23 is invited to instruct the ITU-R to study possible measures to limit the practice of introducing a completely different orbital plane that is not foreseen to be required for operation of the constellation in order to satisfy requirements to bring or bring back into use frequency assignments.**

4.13.1 The Board witnessed an increased number of low Earth orbit (LEO) satellite system filings that proposed to deploy constellations comprising tens to hundreds of thousands of satellites. Noting the appealing and promising scientific and commercial value of these ventures, the Board believes that this satellite system filing conduct by administrations may be just at its beginning, in frequency bands and services subject to coordination procedure under Section II of Article **9**, but notably in frequency bands and services not subject to Resolution **35 (WRC-19).**

4.13.2 Concerns from some satellite operators, the scientific community, and governmental and civil space related stakeholders emerged against such filing behaviour in terms of the long-term sustainability of the low Earth orbit environment and equitable access and rational use of the non-GSO orbit/spectrum resources. Indeed, some large constellations may effectively pre-empt entire frequency bands and services not subject to Article **9** coordination, with almost no practical possibility for administrations to comment under No. **9.3** to resolve sharing difficulties, and some entire systems plan to use non-conforming assignments under No. **8.4** to be operated in accordance with No. **4.4**.

4.13.3 Some questions on the actual number of satellites for such systems and their timely manufacturing were raised, as well as criticisms against the ITU for not being proactive enough against such filing behaviour (especially for the very largest non-GSO systems). In response to this perceived lack of action by the ITU, suggestions emerged encouraging countries to work outside of the ITU’s well-established framework to develop rules to meet the challenges of the largest constellations.

4.13.4 The uncertainty in the management of these large LEO satellite system filings also drove some ITU Member States to consider departing from ITU rules for satellite networks and systems as they created domestic policy, which could inadvertently conflict with the ITU basic instruments. Such policy and regulatory trends are particularly challenging for space and satellite infrastructures that are inherently global. Should national procedures deviate from the framework for equitable spectrum and orbit resources access embedded in the ITU basic instruments, they may lead to unresolvable and continuing harmful interference between satellite networks and systems, preventing the delivery of vital services to the population in need all over the world. Such approach may adversely affect Internet broadband access and much-needed support communications in the wake of disasters and emergencies.

4.13.5 PP-22 noted the urgency of addressing a few types of issues associated with non-GSO systems before they are launched and operational and adopted a new Resolution 219 on the “Sustainability of the radio-frequency spectrum and associated satellite orbit resources used by space services’’. In its *resolves* 1, the Resolution “*instruct the Radiocommunication Assembly, as a matter of urgency, to perform the necessary studies through relevant ITU Radiocommunication Sector (ITU-R) study groups on the issue of the increasing use of radio-frequency spectrum and associated orbit resources in non-GSO orbits and the long-term sustainability of these resources, as well as on equitable access to, and rational and compatible use of, the GSO and non-GSO orbit and spectrum resources, consistent with the objectives of Article 44 of the Constitution*’’.

4.13.6 Although the long-term sustainability of the LEO resource may not be defined as such in the ITU instruments, the ITU is involved in key constituent parts of this concept with its focus on the prevention of harmful interference and ensuring the rational, efficient, economic, and equitable use of the spectrum/orbit resources, including the LEO orbit/spectrum resource in conformity with the provisions of the Radio Regulations, taking due account of the special needs of the developing countries and the geographical situation of particular countries. Decisions related to these matters solely rest in the hands of ITU Member States.

4.13.7 In that context, Member States can certainly be urged to efficiently deorbit their satellites at their end of life, to develop criteria and methodologies, including sharing data, to facilitate frequency coordination and compatible use of satellite systems. This work is already under the purview of ITU-R and Member States are expected to submit contributions to the relevant study groups to initiate or continue ITU-R studies to develop recommendations that support long-term sustainability of the non-GSO orbit.

4.13.8 However, taking account of the new PP-22 Resolution 219, WRC-23 may also consider exploring new perspectives and opportunities offering new insights and raising new questions and new avenues to address the issue of the long-term sustainability of LEO resources and the application of Nos. 195, 196 and 37 of the Constitution taking account of the ongoing ITU satellite system filings by administrations with the prospective deployment of satellite constellations comprising tens to hundreds of thousands of satellites.

4.13.9 Perspectives to respond to the above challenges for further actions and decisions may include consideration of:

• Additional deployment and operational information or milestones of non-GSO systems, in particular for large non-GSO systems but also for smaller ones, including short-duration missions (SDM), as appropriate. This information could be submitted with Appendix **4** information at the advance publication (API) or/and coordination request or/and notification and recording stages, or identified in a new resolution. The substance of such additional information would not be subject to any formal examination nor decisions by the Bureau. The information would be published to gain a better understanding of the issue and could include the following items:

• information on the rationale for the requested number of satellites and planes to secure the intended services to customers;

• information on the satellite’s responsible design and mitigation of space debris;

• planned launch schedule to support the implementation of the system which could be derived from the information and experience gained with the application of Resolution **35 (WRC-19)**[[4]](#footnote-4);

• information on the maintenance of the filed fleet size, for large non-GSO systems, as the shorter lifespan of most non-GSO satellites would require replacement of tens if not hundreds of new satellites on a monthly basis. This could include planned replenishment of the fleet (how frequently a satellite needs to be replaced), reporting on the fleet size fluctuation, or the de-orbiting strategy and would apply to all non-GSO networks or systems.

• Precise sharing strategies and explanations to be required with the non-GSO filing, in addition to the information already requested in conformity with the Rule of Procedure on No. **4.4**, when thousands of satellites are involved, more particularly in non-conforming frequency assignments under No. **8.4**, including measures taken in order to comply with the requirement to immediately eliminate harmful interference pursuant under No. **8.5** (see also section 4.13 dealing with the recording of frequency assignments under No. **4.4**);

• Reminders to administrations of Member States of their obligations to continue giving due consideration to the principles of the ITU Constitution, Convention, and Radio Regulations (in particular Article 44 of the Constitution) when developing national policies and regulations to authorize satellite networks or systems.

• Development of ITU-R recommendations or reports on matters related to the long-term sustainability of LEO and spectrum resources and the equitable access to those orbits and frequencies, as instructed by PP-22 in resolves 1 of Resolution 219 (Bucharest, 2022) and WRC-23 to continue giving high priority to the matter of equitable access to satellite orbits as stated in instructs the world radiocommunication conference 2023 and subsequent world radiocommunication conferences of Resolution 218 (Bucharest, 2022).

**WRC-23 is invited to instruct the ITU-R to carry out studies to identify additional information requirements for non-GSO systems and to develop ITU-R recommendations and reports that address the long-term sustainability of the non-GSO and spectrum resources and the equitable access to those orbits and frequencies.**

**WRC-23 is also invited to urge administrations of Member States of their obligations to continue giving due consideration to the principles of the ITU Constitution, Convention, and Radio Regulations (in particular Article 44 of the Constitution) when developing national policies and regulations to authorize satellite networks or systems.**

## 4.14 Recording of frequency assignments to satellite networks and systems under No. 4.4

4.14.1 The Board considered statistics provided by the Bureau on frequency assignments to satellite networks or systems intended to be used under No. **4.4**. The provision of No. **4.4** states that *“Administrations of the Member States shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations in this Chapter or the other provisions of these Regulations, except on the express condition that such a station, when using such a frequency assignment, shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the provisions of the Constitution, the Convention and these Regulations.”*

4.14.2 The Rule of Procedure on No. **4.4** specifies that the scope of No. **4.4** is limited to derogations to the Table of Frequency Allocations and to the provisions listed in the Rules of Procedure on No. **11.31** with regard to the *“other provisions”*. In particular, administrations intending to authorize the use of spectrum under No. **4.4** still have the obligation, under Sections I and II of Article **9**, Nos. **11.2** and **11.3**, to notify to the Bureau *“any frequency assignment if its use is capable of causing harmful interference to any service of another administration”*.

4.14.3 Prior to bringing into use any frequency assignment to a transmitting station operating under No. **4.4**, the notifying administration shall determine:

*“a) That the intended use of the frequency assignment to the station under No.* ***4.4*** *will not cause harmful interference into the stations of other administrations operating in conformity with the Radio Regulations;*

*b) What measures it would need to take in order to comply with the requirement to immediately eliminate harmful interference pursuant to No.* ***8.5****.*

*When notifying the use of frequency assignments to be operated under No.* ***4.4****, the notifying Administration shall provide a confirmation that it has determined that these frequency assignments meet the conditions referred to above in item a) and that it has identified measures to avoid harmful interference and to immediately eliminate such in case of a complaint.”* Frequency assignments to receiving stations not in conformity with the Radio Regulations are recorded with a symbol which includes the indication that the notifying administration cannot claim protection from any harmful interference that may be caused by frequency assignments operated in accordance with the Radio Regulations.

4.14.4 As of June 2023, there were more than 1 600 groups of frequency assignments associated with 488 satellite networks and systems recorded in the MIFR using No. **4.4**. No. **4.4** is typically used when:

1 an administration wishes to retain a frequency assignment in the MIFR after a WRC decides to suppress a frequency allocation to a radiocommunication service or changes the conditions/category of the allocation;

2 an administration wishes to use a frequency band not allocated to the radiocommunication service on board an experimental space station, including on board satellites developed by university students using the amateur-satellite service frequency bands;

3 a space station is designed to operate in deep space or in orbits of other planets using frequency assignments in accordance with the Table of Frequency Allocations but that exceed technical limits specified in other provisions of the Radio Regulations;

4 an administration uses a frequency band that is not allocated to a space service but is under consideration at the upcoming WRC for a new space allocation that would provide international recognition to the frequency assignment;

5 an administration wishes to use cheaper and commercially readily available off the shelf equipment that operates in a frequency band not allocated to the radiocommunication service being provided with that equipment, such as the use of the amateur-satellite service frequency bands to provide space operation functions in support of commercial or government operations;

6 satellite systems communicate directly with subscriber terminals of terrestrial communication networks to support IMT (direct-to-cell) or IoT (direct-to-device) applications in frequency bands allocated to the mobile service but not allocated to space services;

7 an administration wishes to use intersatellite links in frequency bands not allocated to the intersatellite service or to a space service in the space-to-space direction;

8 an administration wishes to use frequency bands allocated to the amateur service but not to the amateur-satellite service (including the case of the ISM band 902-928 MHz in Region 2).

4.14.5 As expected, the statistics showed that a relatively small number of satellite networks and systems fell within the first three categories. Often, they consisted of a single satellite not designed to provide high-quality services, operating on a temporary basis and the administration was able to comply with the requirements of the Rule of Procedure on No. **4.4**. However, these statistics highlighted an increased reliance on No. **4.4** by administrations and operators as a means to secure access to spectrum and orbital resources they wished to use, in particular for operating FSS and MSS satellite networks or systems that plan to provide commercial services on a long-term basis. Commercial satellite operators often used No. **4.4** to launch prototypes to be first to use a frequency band while awaiting an upcoming WRC decision that would allocate the band for a space service that would provide future operations with the necessary international recognition and protection. However, in recent years, the Board noted that an increasing number of satellite operators planning to use a frequency band under No. **4.4**, deployed their system or network and began offering commercial services without seeking any decision from a WRC. For these satellite systems, in particular non-GSO systems, the interference situation was uncertain due to the large number of orbital planes and satellites. Demonstrating conformity with the Rule of Procedure on No. **4.4** becomes very challenging when thousands of satellites could be involved. It was not clear that administrations and operators fully understood their obligations under No. **4.4** and its impact on the quality of service and capacity of their satellite system. In this context, as the risk of interference was likely increasing, more stringent regulatory provisions would be required to effectively address cases of harmful interference that originated from operations under No. **4.4** and to enforce No. **4.4** with appropriate consequences for non-compliance.

4.14.6 No. **4.4** was intended as an exception to the requirement to comply with the Table of Frequency Allocations or other applicable provisions of the Radio Regulations to be invoked only in exceptional circumstances. Under No. **4.4**, the Bureau does not conduct any examination of the frequency assignment, and it is recorded for information only without any interference or compatibility assessment with other frequency assignments entitled to protection. When an administration applies No. **4.4** on an infrequent and temporary basis, treating the situation as an exception to the regulations, such use does not generally pose a problem. However, when administrations view No. **4.4** as a means to avoid the need to comply with technical limits, coordination requirements and regulatory examination, the fundamental principles and objectives of the Radio Regulations to prevent harmful interference are circumvented. While administrations are free to adopt spectrum policies or decisions that derogate from the Radio Regulations within their jurisdiction, it can only do so if there is no impact on neighbouring countries. For satellite and space services, the potential of causing harmful interference to another administration is always present.

4.14.7 In addition, the issue of harmful interference between two satellite systems notified under No. **4.4** remains unclear, since No. **4.4** deals only with frequency assignments conforming with No. **8.5**. As more and more commercial services are proposed to be offered using the same spectrum and orbital resources recorded under No. **4.4**, there is a need to clarify the regulatory framework and conditions that apply before significant investments are made in these satellite networks and systems. The Board is of the view that satellite networks and systems recorded under No. **4.4** are not entitled to protection from harmful interference amongst each other.

4.14.8 The use of the VHF amateur-satellite frequency bands to support a variety of missions, including scientific experiments, goes well beyond the amateur-satellite service definition of self-training, intercommunications and technical investigations carried out by amateurs. The use of a frequency band for a different purpose than the one specified in the Table of Frequency Allocations may not raise compatibility issues when the station operates within the same technical parameters, but it does contribute to spectrum scarcity for the intended radiocommunication service. Such congestion would compromise the ability of academia to continue teaching students highly specialized skills and expertise through satellite projects. A pipeline of qualified talent to address current and future needs of the space industry and community would no longer be available.

# 5 Conclusions

**WRC-23 is invited to confirm that frequency assignments recorded under No. 4.4 are not entitled to protection from harmful interference from other frequency assignments recorded under No. 4.4.**

**WRC-23 is invited to consider more stringent regulatory measures to ensure No. 4.4 can be enforced with respect to the application of the condition of non-interference to, and non-protection from, frequency assignments which are operating in compliance with the provisions of the Radio Regulations.**

**WRC-23 is invited to encourage administrations to refrain from using No. 4.4 for commercial applications that would provide services on a long-term basis, if a new space allocation that would provide international recognition to the frequency assignments is not under study in the ITU-R or under consideration at an upcoming WRC.**

In its reports to previous conferences, the Board focused its efforts on new concepts to address issues the Board and the Bureau had faced since WRC-07 affecting fulfilment of the principles contained in Article 44 of the Constitution and No. **0.3** of the Preamble to the Radio Regulations. The use of the radio-frequency spectrum and of the geostationary-satellite and other satellite orbits in a manner consistent with the principles set forth in the Constitution and the Radio Regulations is vitally important for the future of these limited natural resources.

In this report to WRC-23, the Board examined in some detail, among other things, the implementation of Resolution **559** (**WRC-19**), difficulties in resolving some harmful interference situations, difficulties affecting satellite network coordinationand the treatment of requests for extensions of regulatory time limits to bring into use or bring back into use frequency assignments. All these topics were related directly and, in some cases, indirectly to items on the Board’s agenda in the period between WRC-19 and WRC-23. The Board also addressed new areas of concern such as the long-term sustainability and equitable and rational use of the non-GSO orbit/spectrum resources as well as the recording of frequency assignments to satellite networks and systems under No. **4.4**.

To the extent possible, the Board provided recommendations for enhancing the linkage between the notification, coordination, and registration procedures and the basic principles concerning the use of the radiofrequency spectrum and satellite orbits. It is hoped that administrations find this work useful in addressing the various issues at WRC-23, particularly those involving satellite networks.

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1. Submissions under Resolution **559 (WRC-19)** and under Article 4 of Appendices **30** and **30A** from the Administrations of Mauritius, Seychelles and Madagascar. [↑](#footnote-ref-1)
2. At the time of preparing the report. [↑](#footnote-ref-2)
3. See Resolution 99 (Rev.Dubai, 2018) of the Plenipotentiary Conference – “Status of Palestine in ITU” [↑](#footnote-ref-3)
4. Refer e.g., to Resolution 35 (WRC-19) instructs the Radiocommunication Bureau 3 ‘’to continue to identify and report on specific frequency bands in specific services for which there may be a problem similar to that which resulted in the creation of this Resolution, as early as possible, but not later than the penultimate meeting of the responsible group prior to the second session of the Conference Preparatory Meeting’’ [↑](#footnote-ref-4)