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Indonesia (Republic of)

**preliminary views on WRC-19 agenda items 7, 9.1 issue 9.1.3**

**Agenda Item 7:**

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

1. **Issue A – Bringing into use of frequency assignments to all non-GSO systems, and consideration of a milestone-based approach for the deployment of non-GSO systems in specific frequency bands and services**

**1. Background**

WRC-12 and WRC-15 adopted into the RR a series of specific provisions, including RR No. **11.44B**, that clarified the requirements for the bringing into use (BIU) and the bringing back into use (BBIU) of frequency assignments to a space station in a GSO satellite network. However, there are no provisions in the RR that specifically address the BIU of frequency assignments to space stations in non-GSO systems. In this context and in order to complete the recording of frequency assignments to non-GSO systems, it has been the practice of the Bureau to declare their BIU successfully completed when one satellite is deployed into a notified orbital plane and capable of transmitting and/or receiving those frequency assignments. This practice, reflected for FSS and MSS non-GSO systems in section 2 of the Rules of Procedure for RR No. **11.44** , has been used for a number of years. Furthermore, it has been used irrespective of the number of satellites or of the number of orbital planes indicated in the notification information provided under RR No. **11.2**.

However, in its report to WRC-15 on the experience in the application of regulatory procedures and other related matters, the Director of the Radiocommunication Bureau stated that:

“Taking into account of the numerous non-GSO systems received so far by the Bureau, and the possible speculative nature of such submissions that could lead to spectrum warehousing and resurgence of so-called “paper satellite networks” the conference may wish to consider redefining the notion of bringing into use for non-GSO satellite networks.”

WRC-15 invited the ITU-R to examine, under the standing WRC agenda item 7, the possible development of regulatory provisions beyond those under RR Nos. **11.25** and **11.44** on the non-GSO FSS/MSS systems and the implications of the application of such milestones to non-GSO FSS/MSS systems brought into use after WRC-15.

**2. Preliminary Views**

Indonesia is of the view as follow:

* BIU Period

All satellites which used in BIU shall be able to transmit and receive in the notified frequency assignments for a continuous period of 90 (ninety) days.

* Milestone-based approach

Considering that the appropriate time has been provided to allow the completion of the development of non-GSO satellite systems, the minimum required percentage of satellite deployed at the end of milestone shall be 100%. Should the number of satellites does not meet the requirement, Bureau shall adjust the MIFR accordingly.

* Transitional measure

Indonesia support that the decision of WRC-19 on this issue shall also apply for non-GSO systems with frequency assignments brought into use and having reached the end of their seven-year regulatory period prior to the entry into force of the provisions adopted by WRC-19.

1. **Issue B - Application of coordination arc in the Ka-band, to determine coordination requirements between the FSS and other satellite services**

**1. Background**

Evolution of technology and in particular the development of precise tracking systems, has allowed that terminals on board of systems in motion used in the MSS have characteristics comparable to fixed earth stations. As a result of this, WRC-15 approved the use of earth stations in motion under the FSS (Resolution **156 (WRC-15)**) in the same frequency bands considered under WRC-19 agenda item 7, Issue B.

Currently in the Radio Regulations, to determine whether coordination under RR No. **9.7** is required, in the frequency bands 29.5-30 GHz (Earth-to-space)/19.7-20.2 GHz (space-to-Earth) in all 3 Regions the following criteria is applied:

– FSS vs FSS: Coordination arc of 8°

– FSS vs MSS: Δ*T/T* > 6%

– MSS vs MSS: Δ*T/T* > 6%

In addition, in the FSS vs FSS coordination, administrations can always request application of RR No. **9.41** to include additional satellite networks that would be affected taking into account the Δ*T/T* > 6% criteria.

Taking into account that the coordination arc criteria is used to determine coordination between FSS systems and it works in an effective and efficient way, WRC-19 agenda item 7, Issue B studies the possibility to apply this same coordination criteria to determine if coordination is required between MSS systems and between MSS and FSS systems.

**2. Preliminary Views**

Indonesia is of the view to support Method B2 which propose to use of the coordination arc with a value of 8 degrees as coordination criteria, to determine if coordination is required between FSS and MSS systems and between MSS systems in the frequency bands 29.5-30 GHz (Earth-to-space)/19.7-20.2 GHz (space-to-Earth), in all 3 Regions, replacing the existing coordination criteria ΔT/T > 6%.

1. **Issue C1 - AR11 and AP30/30A/30B discrepancies**

**1. Background**

Further review of the provisions dealing with any changes to the characteristics of an assignment submitted under provisions of RR No. **11.43A** of RR Article **11**, and that submitted under paragraph 8.13 of Article 8 of RR Appendix **30B** and confirmed as having been brought into use, reveals that there is a regulatory inconsistency between the objectives of the two provisions/paragraph as follows:

 *“8.13 A notice of a change in the characteristics of an assignment already recorded, as specified in Appendix****4****, shall be examined by the Bureau under § 8.8 and § 8.9, as appropriate. Any changes to the characteristics of an assignment that has been notified and confirmed as having been brought into use shall be brought into use within eight years from the date of the notification of the modification. Any changes to the characteristics of an assignment that has been notified but not yet brought into use shall be brought into use within the period provided for in §§ 6.1, 6.31 or 6.31bis of Article 6.    (WRC‑12)”*

 *“11.43A A notice of a change in the characteristics of an assignment already recorded, as specified in Appendix 4, shall be examined by the Bureau under Nos. 11.31 to 11.34, as appropriate. Any change to the characteristics of an assignment that has been recorded and confirmed as having been brought into use shall be brought into use within five years from the date of the notification of the modification. Any change to the characteristics of an assignment that has been recorded but not yet brought into use shall be brought into use within the period provided for in No. 11.44.    (WRC‑07)”*

It is to be emphasized that the concept of the text of paragraph 8.13 of Article 8 of RR Appendix **30B** was borrowed/taken from provisions of RR No. **11.43A** of RR Article **11**. However, in so doing an important element as contained in RR No. **11.43A** which referred to any change to the characteristics of an assignment that has been *recorded* and confirmed as having been brought into use was changed to *notified* and confirmed as having been brought into use*,* which is quite different.

An assignment may be notified but due to one or other reasons not yet recorded in the MIFR, but the notifying administration might have brought that assignment into use and its date of bringing it to use might have been confirmed.

It is also worth mentioning that an assignment may be notified but being returned to its notifying administration on relevant regulatory grounds. That assignment shall not be benefited as being recorded.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose the alignment of the text of paragraph 8.13 of Article 8 of RR Appendix **30B** with that of RR No. **11.43A** of RR Article **11** while ensuring that this alignment should not impact on any other regulatory practice at present.

1. **Issue C2 - Frequency bands submitted under AP30B Article 6**

**1. Background**

RR Appendix **30B** consists of two blocks/sub-bands of 250 MHz each in the 13-11 GHz frequency band, i.e. 10.70‑10.95 GHz, 11.2-11.45 GHz for downlink and 12.75-13.0 GHz, 13.0-13.25 GHz for uplink. Submission from administrations when applying Article 6 of RR Appendix **30B** for additional use usually covers both blocks/sub-bands of 250 MHz mentioned above or may only submit either of the two blocks for additional use or while successfully applying Article 6for the two blocks/sub‑bands, when applying Article 8, only bring into use one block/sub-band of the 13-11 GHz.

There is no provision in the Appendix prohibiting, strictly speaking, to allow administrations to submit an application for one of the blocks/sub-bands in an explicit submission of one of the blocks/sub-bands under RR Appendix **30B**. This concept is analogous to that stipulated in footnote 4 associated with paragraph 6.1 of Article 6 of the Appendix. However, there is no specific provision authorizing that application when submitting RR Appendix **4** for either of two sub-bands. Nevertheless, the Rules of Procedure relating to paragraphs 6.5 of Article 6 of the RR Appendix **30B** in its sub-paragraph 1 stipulates that:

**Quote**

*“1 The planning exercise and the interference analysis were made by WARC Orb-88 for the whole band of 300 MHz (6/4 GHz) or 500 MHz (13/11 GHz) on a co-channel basis. It may happen that two administrations conclude agreement on the shared use of the frequency bands. In the compatibility examination by the Bureau, the mutual interference between non-overlapping frequency assignments shall not be taken into consideration in formulating findings”.*

**Unquote**

The Rules of Procedure were established in order that a dispute between two administrations relating to the use of the entire frequency bands (two blocks/sub-bands) on a given orbital position could be satisfactorily resolved. The adoption of the Rules mentioned above permitted each of these two administrations using one of the two blocks/sub-bands, each of 250 MHz be used at two closely orbital positions.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose to add another footnote to paragraph 6.1 of Article 6 of RR Appendix **30B** to allow the administration as follows:

1. to submit under paragraph 6.1 an additional use for the two blocks/sub-bands in 10‑11 GHz but only bring into use one of the blocks/one sub-band or,
2. to submit under paragraph 6.1 an application of an additional use for only one of the two blocks/sub-bands in 10-11 GHz and notify and bring into use that block/sub-band only;
3. to allow/authorize the Bureau, in applying Article 6, to act according to the nature of submission and further process them accordingly, i.e. to process the two blocks/sub-bands or process one of the two block/sub-bands and further process the submission as received;
4. to allow/authorize the Bureau, in applying Article 8, to maintain one of the two blocks/sub-bands as notified even though the entire two blocks/sub-bands were submitted under Article 6 and successfully coordinated under that Article but only one of the block/sub-bands is notified or brought into use.
5. **Issue C3 - AP30B MOD to Article 6 No. 6.10**

**1. Background**

Issue C3 addresses the consequences for not replying to the letters from the Bureau initiated by a request for its assistance by a notifying administration seeking the inclusion of the territory of a foreign administration under § 6.6 of RR Appendix **30B**.

An administration intending to convert an RR Appendix **30B** allotment into an assignment, introduce an additional system or modify the characteristics of an assignment in the RR Appendix **30B** List, must submit the information specified in RR Appendix **4** to the Bureau. Following the receipt of the notice, the Bureau examines and publishes it in a Special Section of the BR IFIC. Among other things, this Special Section can contain two types of requirements to seek and obtain the agreement of those affected administrations whose:

* allotments in the RR Appendix **30B** Plan or assignments in the RR Appendix **30B** List or those already examined by the Bureau (requirements identified under § 6.5 of RR Appendix **30B**), or
* territories have been included in the service area of the assignment under consideration (requirements associated with § 6.6 of RR Appendix **30B**).

It is important to note that under the current regulatory framework, there is a specific provision (§ 6.13) in RR Appendix **30B** to seek the assistance of the Bureau in case of a non-response of an affected administration identified under § 6.5 of RR Appendix **30B** within the four-month comment period. In case of a non-response to the letters from the Bureau initiated under § 6.13, 6.14 and 6.14*bis* of RR Appendix **30B**, it will be deemed that this administration, identified under § 6.5 of RR Appendix **30B** has agreed as per § 6.15 of RR Appendix **30B**. However, none of the provisions referred above (§ 6.13 to 6.15) applies in the case of affected administrations identified under § 6.6 of RR Appendix **30B**. In fact, there is not a single regulatory mechanism in RR Appendix **30B** to seek the assistance of the Bureau in this case. For a request for the assistance of the Bureau on issue relating to the inclusion of the territory of an administration, the notifying administration, in its request to the Bureau and the Bureau, in its subsequent letters to the affected administration, have to invoke RR No. **13.1** for this matter. Furthermore, the current Radio Regulations do not specify any action from the Bureau with respect to an administration that did not respond to any of its letters initiated under RR No. **13.1**. This implies that the inclusion of the territory of an administration identified under § 6.6 of RR Appendix **30B** can only result from a formal agreement of this administration and, in no circumstance, results from a non-response to neither the original request for inclusion of its territory nor any subsequent letters from the Bureau on this matter.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose to add a new provision in Article 6 of RR Appendix **30B** to clearly state that § 6.13 to 6.15 of RR Appendix **30B** do not apply in the context of requirements associated with § 6.6 of RR Appendix **30B**.

1. **Issue C4 - AP30/30A single AP4 notice for List and Notification**

**1. Background**

Normally, at the end of the coordination process for Regions 1 and 3 under Article **4** of RR Appendices **30** and **30A** and when a network is about to be implemented, systems are submitted for entry into the List under § 4.1.12 and for Notification under §§ 5.1.1 and 5.1.2 of RR Appendices **30** and **30A**, respectively at the same time. This is logical since both these two provisions refer to actions following the completion of the coordination process and since they are both required to implement the network.

It would therefore reduce the workload of both administrations and the Bureau if one physical submission could be treated as, and examined in respect of both these provisions. In respect of RR Appendix **30A**, it would seem that this would be in particular of value for notification of receiving space stations and typical earth stations while specific earth stations probably in many cases would be subject to separate notices as the requirements change with time.

Looking at the RR Appendix **4** information required for submission under § 4.1.12 and § 5.1.1/5.1.2, these would seem to be identical for entry into the List and notification. The data requirements of RR Appendix **4** therefore should not create any practical difficulties in achieving this goal.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose to modify § 4.1.12*bis* to allow administrations to request the Bureau to examine the submission made under § 4.1.12 also in respect of notification under § 5.1.1.

1. **Issue C5 - MOD to No. 11.46 and six month resubmission**

**1. Background**

Pursuant to RR No. **11.46**, the Bureau allows notifying administrations six months to resubmit their notified frequency assignments which were returned due to an unfavourable finding with respect to RR Nos. **11.32**, **11.32A** or **11.33**. Any notification resubmitted beyond six months is considered as a new notification with a new date of receipt and would be subject to cost-recovery fees. However, neither RR No. **11.46** nor any other provision in the Radio Regulations requires the Bureau to send a reminder to the notifying administration at any point during the six-month period. If the notifying administration resubmits the notice to the Bureau beyond the required six-month period, the Bureau assigns a new date of receipt and reviews whether the notice complies with the period in RR No. **11.44.1** or RR No. **11.43A** and takes the appropriate action. In the case that a notice resubmitted beyond the six-month deadline is receivable, cost-recovery fees would be required for the resubmitted assignments. Addressing this lack of a reminder would be beneficial to administrations who may have experienced difficulties receiving or addressing the Bureau’s return of notice and the need to ensure that frequency assignments that are in use are properly recorded in the Master Register.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose the modification of RR No. **11.46** requiring the Bureau to remind the notifying administration of the six-month deadline that would aid administrations who may have had difficulties in receiving the communication of returned frequency assignments.

1. **Issue C6 - AP30B single AP4 notice for List and Notification**

**1. Background**

Normally, at the end of the coordination process under Article 6 of RR Appendix **30B** and when a network is about to be implemented, systems are submitted for entry into the List under § 6.17 and for notification under § 8.1 at the same time. This is logical since both these two provisions refer to actions following the completion of the coordination process and since they are both required to implement the network.

Enabling, as an option, administrations to submit one notice and request in a letter to the Bureau that it should be treated both in respect of entry into the List and notification would simplify the processing and reduce the workload of the Bureau and administrations. However, this is not possible under the current provisions of RR Appendix **30B** (§ 6.17). In addition, the data items required for the submission under § 6.17 and for notification under § 8.1 are not the same.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose to modify § 6.17 to allow one submission to be treated in respect of both provisions and modify RR Appendix **4** to enable this.

1. **Issue C7 - AP30B temporary agreements**

**1. Background**

Taking into account that the possibility of obtaining agreement from affected administrations for a specified period would considerably facilitate the tasks of those administrations applying Article 4 of RR Appendices **30** and **30A** as well as Article 6 of RR Appendix **30B**, it is proposed to amend RR Appendices **30A** and **30B** to be harmonized among RR Appendices **30**, **30A** and **30B**.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose to add a new provision 6.15*bis* to Article 6 and a new provision § 8.16*bis* to Article 8 of RR Appendix **30B** in order to recognize the possibility of obtaining agreement from affected administrations for a specified period. In addition, in order to make harmonization of RR Appendix **30B** and RR Appendices **30** and **30A**, modification to § 5.2.6 to Article 5 of RR Appendix **30A** would be necessary.

1. **Issue D - Identification of those specific satellite networks and systems with which coordination needs to be effected under RR Nos. 9.12, 9.12A and 9.13**

**1. Background**

The 2012 World Radiocommunication Conference (WRC-12) decided to modify RR No. **9.36.2**. Following this provision, the Bureau now publishes a “definitive list” of those networks, systems and earth stations with which coordination under RR Nos. **9.7**, **9.7A** and **9.7B** needs to be effected once a coordination request (a new one or a modification to an existing one, as appropriate) for a satellite network or system is processed. Such a list is published in the relevant Special Section annexed to the BR International Frequency Information Circular (BR IFIC).

The above-mentioned provision (RR No. **9.36.2**) is very useful, because, in the cases of coordination under RR Nos. **9.7**, **9.7A** and **9.7B**, it reduces the administrative workload of identifying the names of specific satellite networks, systems and earth stations with which a new satellite network or system needs to effect coordination.

However, in the cases of coordination under RR Nos. **9.12**, **9.12A** and **9.13**, the Bureau does not publish a list of the satellite networks or systems potentially affected to complement the list of administrations potentially affected by incoming satellite networks or systems that it provides.

**2. Preliminary Views**

Indonesia is of the view to support Method D2 which propose to add the requirements to have:

1. a pre-compiled list of potentially affected satellite networks and/or systems, published for information only, included in the CR/C Special Section for coordination under RR Nos. **9.12**, **9.12A** and **9.13**, by stipulating it in RR No. **9.36.1**;
2. the definitive list of affected satellite networks or systems to be considered when effecting coordination under RR Nos. **9.12**, **9.12A** and **9.13** to beincluded in the CR/D Special Section by stipulating it in RR No. **9.53A**.
3. **Issue F - Measures to facilitate entering new assignments into the RR Appendix 30B List**

**1. Background**

Article 44 of the ITU Constitution stipulates that for countries to have equitable access to spectrum/orbit resources, administrations shall limit their use to the minimum required to provide services in a satisfactory manner and to endeavour to apply the latest technical advances.

An administration which wants to convert its national allotment of RR Appendix **30B** into assignments in an economically viable manner very often needs to modify the initial characteristics of its national allotments, taking into account the latest available development and advancement in technology. For this purpose, the administration will make a submission and follow the procedures of Article 6 of RR Appendix **30B**.

In so doing:

1. when the submission is examined and published by the Bureau, the submission would need to coordinate with affected networks with higher priority;
2. due to the conservative criteria used in RR Appendix 30B, a large number of coordination requirements will be identified;
3. networks can be designed with combinations of characteristics, possibly unrealistic, to obtain a high sensitivity to interference from later submissions of other administrations.

As a result, it may be difficult for an administration to successfully complete the coordination within the regulatory period.

**2. Preliminary Views**

Indonesia is of the view to support method F1 in draft CPM Report which propose the following:

* Adopting the structure decided by WRC-2000 for RR Appendices 30 and 30A, i.e. a reduced coordination arc and mechanisms to remove unnecessary coordination requirements inside the coordination arc.
* Bringing the size of the coordination arc in line with that used for the unplanned frequency bands, i.e. 7° for C-band and 6° for Ku-band and consequently align the Annex 3 limits to newly established coordination arcs.
* Introducing pfd masks and levels like in RR Appendices 30 and 30A as well as in portions of the unplanned frequency bands to remove unnecessary coordination and prevent combinations of technical parameters leading to unrealistic links from hindering introduction of new networks. Proposed values for pfd masks and levels are those developed in preparation for WRC-15, based on a level of protection corresponding to ΔT/T = 6% for C-band antennas with a diameter between 1.2 and 18 m and Ku-band antennas with a diameter between 45 cm and 11 m).
1. **Issue H - Modifications to RR Appendix 4 items to be provided for non-geostationary satellite systems not subject to the procedures of Section II of RR Article 9**

**1. Background**

The RR Appendix **4** items provided in the API for frequency assignments to non-GSO networks or systems in frequency bands not subject to coordination under Section II of RR Article 9 are used initially by administrations to identify potential interference scenarios to their existing and planned systems and to formulate their comments under RR No. **9.3**. The capability of these administrations to identify such potential scenarios depends, amongst other things, on whether the satellite orbits can be properly modelled based on the information provided in the API. The modelling of the orbit of satellites of non-GSO systems requires significantly more information than a GSO satellite network. Recent analysis performed for non-GSO satellite networks or systems based on APIs as published in the Radiocommunication Bureau International Frequency Information Circular (BR IFIC) have shown that, in some instances, there is a need for additional information in order to properly model the satellite orbits.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose to extend the requirement to provide items for frequency assignments of non-GSO systems in frequency bands subject to coordination under Section II of RR Article**9** of RR Appendix **4** parameters (namely the right ascension of the ascending node, the longitude of the ascending node and the associated date and time, the argument of the perigee) to API and notification filings for frequency assignments to non-GSO systems in frequency bands not subject to coordination under Section II of RR Article **9**.

1. **Issue I - Additional RR Appendix 4 data items to be provided for non-geostationary satellite systems with multiple orbital planes**

**1. Background**

WRC-15 endorsed the recommendation of the Radiocommunication Bureau Director to allow two types of submissions for the coordination request (CR/C) for frequency assignments to non-GSO systems:

* 1. CR/C for frequency assignments to a non-GSO system with one (or more than one) set(s) of orbital characteristics with an indication that all frequency assignments of the system would be operated simultaneously;
	2. CR/C for frequency assignments to a non-GSO system with different sets of orbital characteristics with an indication that the different sets of orbital planes would be mutually exclusive, i.e. satellites on these sets of orbits would not be operated simultaneously and only one of these sets of orbital planes would be implemented.

However, no modification was made to RR Appendix **4** to ensure the proper identification of the type of CR/C, leading the Bureau to systematically seek clarification from notifying administrations in case of a submission of a CR/C for frequency assignments to a non-GSO system with multiple orbital planes. Subsequently, the Radio Regulations Board adopted a Rules of Procedure for the receivability of non-GSO systems which implements the two types of submissions endorsed by WRC-15.

Although WRC-15 did not specifically address the case of frequency assignments to non-GSO systems with multiple planes in frequency bands not subject to coordination under Section II of RR Article **9**, it is important to consider the same level of flexibility for the submission of API and to reflect it in RR Appendix **4**.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose to add two new RR Appendix **4** data items: an indicator of whether all of the orbital planes define a single non-GSO system or multiple mutually exclusive configurations and in the case of the latter, another RR Appendix **4** data item for the provision of an exhaustive list of the potential orbital plane configurations.

1. **Issue K - Difficulties for Part B examinations under § 4.1.12 or 4.2.16 of RR Appendices 30 and 30A and § 6.21 *c)* of RR Appendix 30B**

**1. Background**

Examination under RR Appendix **30B** § 6.21 *c)* is based on the assignments for which the Bureau has previously received complete information in accordance with § 6.1 (i.e. Network SR-Part A) even though the Network SR-Part B has already been published under § 6.23 or § 6.25 with much reduced characteristics (e.g. reduced service area and coverage area) and from that Part B publication, Network SR-Part A no longer exists in the Appendix **30B** databases.

This creates difficulties to the notifying administration and may prevent its notice submitted under § 6.17 (Network JR-Part B) from entering into the List with favourable findings as the examination of its submission in respect of the senior network (Network SR-Part A) is unfavourable even though in reality, its network (Network JR-Part B) can coexist with the senior network in the List (Network SR-Part B) and if examination in respect of Network SR is based on its Part B, the examination result will become favourable.

**2. Preliminary Views**

Indonesia is of the view to support the single method in draft CPM Report which propose to add one more examination under § 4.1.12 and § 4.2.16 of RR Appendices **30** and **30A** and § 6.21 *c)* of RR Appendix **30B** such that should any remaining affected networks whose assignments have been entered in the List before the submission under § 4.1.12 and § 4.2.16 of RR Appendices **30** and **30A** or § 6.17 of RR Appendix **30B**, the Bureau shall further examine if the remaining corresponding assignments in the List are still considered as being affected.

1. **Issue M - Simplified regulatory regime for non-GSO satellite systems with short-duration missions**

**1. Background**

At WRC-15 a proposal for a new agenda item for WRC-19 “to consider modifications to the regulatory procedures for notifying satellite networks to accommodate nanosatellite and picosatellite missions”was submitted.WRC-15 decided not to include this as an item on the WRC-19 agenda, and concluded that this matter could best be dealt with by the ITU-R under the standing WRC agenda item 7.

Considering that the size of a satellite is independent of the nature of the service that it is intended to provide, a simplified regulatory regime has been developed for satellites with short-duration missions, independent of the size of the satellite.

Based on the above, ITU-R developed a method to address this issue that consists of modifications to the existing regulatory procedures for advanced publication and notification of satellite networks and systems that are not subject to Section II of RR Article **9** to facilitate the recording of non-GSO satellite systems with short-duration missions in the MIFR.

**2. Preliminary Views**

Indonesia is of the view to support the consideration for developing a simplified regulatory regime for non-GSO satellite systems with short-duration missions while ensuring the protection of existing and future satellite networks.

**Agenda Item 9.1 Issue 9.1.3:**

*Study of technical and operational issues and regulatory provisions for new non-geostationary-satellite orbit systems in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz frequency bands allocated to the fixed-satellite service*

**1. Background**

Article **21** of the Radio Regulations contains provisions to ensure compatibility of non-GSO FSS operations with the fixed and mobile services. These provisions are in the form of pfd limits for non-GSO FSS systems. Similar to the sharing situations that led to the RR Article **22** epfd limits to protect GSO systems, the existing RR Article **21** pfd limits for 3 700-4 200 MHz were established based solely on sharing studies between HEO non-GSO systems and the fixed and mobile services. New non-GSO systems that seek to operate in these frequency bands may utilize different types of orbits.

Article **22** of the Radio Regulations contains provisions to ensure compatibility of non-geostationary (“non-GSO”) FSS operations with GSO networks. Among these provisions are uplink and downlink equivalent power flux density (epfd↑ and epfd↓) limits to protect GSO networks from unacceptable interference. Regulatory provisions in RR Article **22** for sharing between non-GSO FSS systems and GSO FSS networks operating in the 6/4 GHz frequency bands were based on a particular type of non-GSO system using highly-elliptical orbits (HEO). The epfd↓ limits in the 3 700-4 200 MHz (space-to-Earth) and epfd↑ limits in the 5 925-6 725 MHz (Earth-to-space) frequency bands did not take into account circular-orbit non-GSO and therefore are more stringent than in other FSS bands that did consider circular orbit non-GSO systems.

RR Article 22 does not contain epfd↓ and epfd↑ limits for non-GSO systems in the frequency bands 4 500-4 800 MHz (space-to-Earth) and 6 725-7 025 MHz (Earth-to-space) allocated to the FSS, the use of which is subject to the provisions of RR Appendix 30B.

At WRC-15, an issue was identified under WRC-19 agenda item 9.1 that called for the study of technical and operational issues and regulatory provisions for new non-geostationary-satellite orbit systems in frequency bands that included 6 725-7 025 MHz.

WRC-95 allocated the band 6 700-7 075 MHz to FSS space-to-Earth feeder downlinks of non‑geostationary MSS systems on a primary basis. One worldwide, non-geostationary MSS system, referred to as LEO-D in various ITU‑R Recommendations has been in continuous operation in this frequency band since 1998. The potential for interference exists for co-frequency use for both of these applications between spacecraft and between earth stations if the earth stations are located in the same area. The band 6 725-7 075 MHz is also used as uplink for RR Appendix **30B**. Article **22** of the Radio Regulations provide that the maximum aggregate power flux-density produced at the geostationary-satellite orbit and within ±5° of inclination around the geostationary-satellite orbit by a non-geostationary-satellite system in the fixed-satellite service shall not exceed −168 dB (W/m2) in any 4 kHz band (see RR No. 22.5A).

RR Nos. **5.16** to **5. 20** and **5.21** indicates that there are several countries located in the tropical zone. In tropical zone, the reliability of geostationary-satellite orbit systems in the 3 700-4 200 MHz and 5 925-6 425 MHz frequency bands spectrum for GSO satellite service is decisively undoubted. The characteristics of this band accommodates the rain attenuation issue that is exist in the tropical zone. The existence of GSO satellite using 3 700-4 200 MHz and 5 925-6 425 MHz frequency bands spectrum in developing countries especially located in tropical zone is very important to support the economic growth of the countries through distribution equity of ICT infrastructure, financial service, and government sector.

There is no calculation method on how to measure and/or calculate the amount of maximum aggregate power flux-density produced at the geostationary-satellite orbit and within ±5° of inclination around the geostationary-satellite orbit by a non-geostationary-satellite system in the fixed-satellite service. In fact, adding another category of service to those currently allocated to non-geostationary systems would increase the doubt on how the receiving space station of the FSS in RR Appendix **30B** would be protected. In addition, at this stage there is no information on the new non-geostationary satellite system as referred to in the WRC-19 agenda item/issue thus there would be total uncertainty on the way how the above-mentioned maximum aggregate power flux-density produced at the geostationary-satellite orbit and within ±5° of inclination around the geostationary-satellite orbit by a non-geostationary-satellite system in the fixed-satellite service.

Footnotes are contained in Article **5** of the Radio Regulations to address protection of certain passive services as well as the radio astronomy service (see RR Nos. **5.458**, **5.458A**, **5.458B**).

**2. Preliminary Views**

Indonesia support no change (NOC) to the Radio Regulations to satisfy agenda item 9.1, issue 9.1.3 based on study progress of ITU-R for new non-GSO systems in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz frequency bands under the terms of Resolution **157 (WRC-15)**.

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