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| --- | --- |
| **World Radiocommunication Conference (WRC-15)Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
|  |  |
| PLENARY MEETING | **Addendum 2 toDocument 34(Add.6)-E** |
|  | **30 September 2015** |
|  | **Original: English** |
|  |
| Thailand |
| Proposals for the work of the conference |
|  |
| Agenda item 1.6.2 |

1.6 to consider possible additional primary allocations:

1.6.2 to the fixed-satellite service (Earth-to-space) of 250 MHz in Region 2 and 300 MHz in Region 3 within the range 13-17 GHz;

and review the regulatory provisions on the current allocations to the fixed-satellite service within each range, taking into account the results of ITU‑R studies, in accordance with Resolutions **151 (WRC‑12)** and **152 (WRC‑12)**, respectively;

Introduction

The existing unplanned FSS bands in the 10-15 GHz range are used extensively for a myriad of applications such as VSAT services, video distribution, broadband networks, internet services, satellite news gathering, and backhaul links. Growth in demand for these applications has triggered a rapid rise in the demand for spectrum. Moreover, satellite traffic is typically symmetrical in a large variety of applications, i.e. similar amounts of Earth-to-space (uplink) and space-to-Earth (downlink) traffic are transmitted. However, in ITU Regions 2 and 3, there are asymmetrical Earth-to-space and space-to-Earth FSS allocations that are used for these services. Studies sought to address this imbalance so that the limited spectrum resources could be used in the most efficient and economical manner.

WRC-12 adopted WRC-15 agenda item 1.6.2 to consideradditional primary allocations to the FSS in the range 13-17 GHz and review regulatory provisions for existing FSS allocations, taking into account ITU-R studies in accordance with Resolution152 (WRC-12).

Thailand supports Method E2 of the CPM Report to make additional allocation to the FSS (Earth-to-space) in the band 13.45-13.75 GHz since this band provides contiguity to the existing FSS band of 13.75-14.5 GHz.

Thailand also supports Method F2 of the CPM Report to modify the existing FSS allocation to support FSS uplinks that are not limited to BSS feeder links in the band 14.5-14.8 GHz considering that this band provides contiguity to the existing FSS band of 13.75-14.5 GHz.

In general, Thailand supports Option B under Method F2 to ensure adequate protection of the AP30A Plan and List Assignments. Thailand, in particular, is of the view that a minimum antenna diameter of 2.4 m of the FSS earth stations is required to facilitate sharing between the FSS (Earth-to-space) and the FS in the band 14.5-14.8 GHz since this antenna diameter restriction will limit number of the FSS earth stations deployment and, accordingly, proposes the addition of a new footnote to the RR to reflect this requirement. In addition, Thailand proposes no change to Section 4 of Annex 1 to AP30A of the RR since modification to this Section is considered unnecessary.

Proposals

For the frequency band 13.4-13.75 GHz:

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations
(See No. 2.1)

MOD THA/34A6A2/1

11.7-14 GHz

|  |
| --- |
| Allocation to services |
| Region 1 | Region 2 | Region 3 |
| 13.4-13.45 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH MOD 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.499 5.500 5.501 5.501B |
| 13.45-13.5 EARTH EXPLORATION-SATELLITE (active)RADIOLOCATIONSPACE RESEARCH MOD 5.501AStandard frequency and time signal-satellite (Earth-to-space)5.499 5.500 5.501 5.501B | 13.45-13.5EARTH EXPLORATION-SATELLITE (active)FIXED-SATELLITE (Earth-to-space) ADD 5.A162 ADD 5.A162*bis* ADD 5.D162RADIOLOCATIONSPACE RESEARCH MOD 5.501AStandard frequency and time signal-satellite (Earth-to-space)5.499 5.500 5.501 5.501B |
| 13.5-13.75EARTH EXPLORATION-SATELLITE (active)RADIOLOCATIONSPACE RESEARCH  MOD 5.501AStandard frequency and time signal-satellite (Earth-to-space)5.499 5.500 5.501 5.501B | 13.5-13.75EARTH EXPLORATION-SATELLITE (active)FIXED-SATELLITE (Earth-to-space) ADD 5.A162 ADD 5.A162*bis*  ADD 5.D162RADIOLOCATIONSPACE RESEARCH MOD 5.501AStandard frequency and time signal-satellite (Earth-to-space)5.499 5.500 5.501 5.501B MOD 5.502  |

**Reasons:** To allocate the band 13.5-13.75 GHz to the FSS (Earth-to-space) in Region 2 and 13.45-13.75 GHz to the FSS (Earth-to-space) in Region 3.

ADD THA/34A6A2/2

5.A162 In the band 13.45-13.75 GHz in Region 3 and in the band 13.5-13.75 GHz in Region 2, the peak envelope power delivered to the antenna of stations of the fixed-satellite service (Earth-to-space) shall not exceed the spectral density of −53.5 dB(W/Hz) computed from the peak envelope power and the occupied bandwidth.   (WRC‑15)

**Reasons:** To define the peak envelope power of the FSS (Earth-to-space).

ADD THA/34A6A2/3

5.A162*bis* The use of the band 13.5-13.75 GHz in Region 2 and 13.45-13.75 GHz in Region 3 by the fixed-satellite service (Earth-to-space) is limited to geostationary-satellite systems.

**Reasons:** To limit the usage of the frequency bands 13.5-13.75 GHz in Region 2 and 13.45-13.75 GHz in Region 3 to GSO FSS systems (Earth-to-space).

ADD THA/34A6A2/4

5.D162 The use of the band 13.5-13.75 GHz in Region 2, the band 13.45-13.75 in Region 3 by systems in the fixed-satellite service (Earth-to-space) shall not cause harmful interference to, nor claim protection from, nor constrain the use and development of EESS (active) systems, and No. 22.2 does not apply.    (WRC-15)

**Reasons:** To protect EESS (active) systems.

MOD THA/34A6A2/5

5.501A The allocation of the band 13.4-13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors, as well as satellite systems, operating in the space research service (space-to-Earth, space-to-space) to relay data from space stations in the geostationary-satellite orbit to associated earth stations and space stations in the non-geostationary satellite orbit, for which information for advance publication has been received by the Bureau prior to 27 November 2015. Other uses of the band by the space research service are on a secondary basis.     (WRC‑15)

**Reasons:** To determine the satellite systems operating in the SRS (space-to-Earth, space-to-space) as a primary basis for API received before 27 November 2015.

MOD THA/34A6A2/6

5.502 In the band 13.45-13.75 GHz in Region 3, in the band 13.5-13.75 GHz in Region 2 and in the band 13.75-14 GHz, an earth station of a geostationary fixed-satellite service network shall have a minimum antenna diameter of 1.2 m. In the band 13.45-13.75 GHz an earth station of a non‑geostationary fixed-satellite service system shall have a minimum antenna diameter of 4.5 m. In addition, the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services shall not exceed 59 dBW for elevation angles above 2° and 65 dBW at lower angles. Before an administration brings into use an earth station in a geostationary-satellite network in the fixed-satellite service in this band with an antenna diameter smaller than 4.5 m, it shall ensure that the power flux-density produced by this earth station does not exceed:

 – –115 dB(W/(m2 · 10 MHz)) for more than 1% of the time produced at 36 m above sea level at the low water mark, as officially recognized by the coastal State;

 – –115 dB(W/(m2 · 10 MHz)) for more than 1% of the time produced 3 m above ground at the border of the territory of an administration deploying or planning to deploy land mobile radars in this band, unless prior agreement has been obtained.

 For earth stations within the fixed-satellite service having an antenna diameter greater than or equal to 4.5 m, the e.i.r.p. of any emission should be at least 68 dBW and should not exceed 85 dBW.     (WRC-15)

**Reasons:** To apply the criteria in this provision to the use of the band 13.5-13.75 GHz in Region 2 and the band 13.45-13.75 in Region 3 by the FSS (Earth-to-space).

APPENDIX 7 (REV.WRC‑12)

Methods for the determination of the coordination area around an earth
station in frequency bands between 100 MHz and 105 GHz

ANNEX 7

System parameters and predetermined coordination distances for determination of the coordination area around an earth station

# 3 Horizon antenna gain for a receiving earth station with respect to a transmitting earth station

MOD THA/34A6A2/7

TABLE 7b    (Rev.WRC‑12)

Parameters required for the determination of coordination distance for a transmitting earth station

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Transmitting space radiocommunication service designation | Fixed-satellite,mobile-satellite | Aero-nautical mobile-satellite (R) service | Aero-nautical mobile-satellite (R) service | Fixed-satellite | Fixed-satellite | Fixed-satellite | Fixed-satellite | Space operation,space research | Fixed-satellite,mobile-satellite,meteorological- satellite | Fixed-satellite | Fixed-satellite | Fixed-satellite | Fixed-satellite 3 | Fixed-satellite | Fixed-satellite 3 |
| Frequency bands (GHz) | 2.655-2.690 | 5.030-5.091 | 5.030-5.091 | 5.091-5.150 | 5.091-5.150 | 5.725-5.850 | 5.725-7.075 | 7.100-7.235 5 | 7.900-8.400 | 10.7-11.7 | 12.5-14.8 | 13.45-14.3 | 15.43-15.65 | 17.7-18.4 | 19.3-19.7 |
| Receiving terrestrialservice designations | Fixed,mobile | Aeronautical radio-navigation | Aeronautical mobile (R) | Aeronautical radio-navigation | Aeronautical mobile (R) | Radiolocation | Fixed, mobile | Fixed, mobile | Fixed, mobile | Fixed, mobile | Fixed, mobile | Radiolocation radionavigation (land only) | Aeronautical radionavigation | Fixed, mobile | Fixed, mobile |
| Method to be used | § 2.1 | § 2.1, § 2.2 | § 2.1, § 2.2 |  |  | § 2.1 | § 2.1 | § 2.1, § 2.2 | § 2.1 | § 2.1 | § 2.1, § 2.2 | § 2.1 |  | § 2.1, § 2.2 | § 2.2 |
| Modulation at terrestrial station 1 | A |  |  |  |  |  | A | N | A | N | A | N | A | N | A | N | − |  | N | N |
| Terrestrial station interference parameters and criteria | *p0* (%) | 0.01 |  |  |  |  |  | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 |  | 0.005 | 0.005 |
| *n* | 2 |  |  |  |  |  | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |  | 2 | 2 |
| *p* (%) | 0.005 |  |  |  |  |  | 0.005 | 0.0025 | 0.005 | 0.0025 | 0.005 | 0.0025 | 0.005 | 0.0025 | 0.005 | 0.0025 | 0.01 |  | 0.0025 | 0.0025 |
| *NL* (dB) | 0 |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |
| *Ms* (dB) | 26 2 |  |  |  |  |  | 33 | 37 | 33 | 37 | 33 | 37 | 33 | 40 | 33 | 40 | 1 |  | 25 | 25 |
| *W* (dB) | 0 |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |
| Terrestrial station parameters | *Gx* (dBi) 4 | 49 2 | 6 | 10 | 6 | 6 |  | 46 | 46 | 46 | 46 | 46 | 46 | 50 | 50 | 52 | 52 | 36 |  | 48 | 48 |
| *Te* (K) | 500 2 |  |  |  |  |  | 750 | 750 | 750 | 750 | 750 | 750 | 1 500 | 1 100 | 1 500 | 1 100 | 2 636 |  | 1 100 | 1 100 |
| Reference bandwidth | *B* (Hz) | 4 × 103 | 150 × 103 | 37.5 × 103 | 150 × 103 | 106 |  | 4 × 103 | 106 | 4 × 103 | 106 | 4 × 103 | 106 | 4 × 103 | 106 | 4 × 103 | 106 | 107 |  | 106 | 106 |
| Permissible interference power | *Pr*( *p*) (dBW)in *B* | −140 | −160 | −157 | −160 | −143 |  | −131 | −103 | −131 | −103 | −131 | −103 | −128 | −98 | −128 | −98 | −131 |  | −113 | −113 |

**Reasons:** To include the band in the Table 7b.

For the frequency band 14.5-14.8 GHz

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations
(See No. 2.1)

MOD THA/34A6A2/8

14-15.4 GHz

|  |
| --- |
| **Allocation to services** |
| Region 1 | Region 2 | Region 3 |
| **14.5-14.8**FIXEDFIXED-SATELLITE(Earth-to-space) MOD 5.510MOBILESpace research | **14.5-14.75**FIXEDFIXED-SATELLITE(Earth-to-space) MOD 5.510ADD 5.D161 ADD 5.F161ADD 5.Y161MOBILESpace research ADD 5.E161 | **14.5-14.8**FIXEDFIXED-SATELLITE(Earth-to-space) MOD 5.510ADD 5.D161 ADD 5.F161ADD 5.Y161MOBILESpace research ADD 5.E161 |
|  | **14.75-14.8**FIXEDFIXED-SATELLITE(Earth-to-space) MOD 5.510MOBILESpace research ADD 5.E161 |  |

**Reasons:** To modify the existing FSS allocation to support FSS uplinks that are not limited to BSS feeder links in the band 14.5-14.75 GHz in Region 2 and 14.5-14.8 GHz in Region 3.

ADD THA/34A6A2/9

5.Y161 The use of the band 14.5-14.75 GHz in Region 2 and 14.5-14.8 GHz in Region 3 by the fixed-satellite service (Earth-to-space) is limited to geostationary-satellite systems.    (WRC-15)

**Reasons:** To limit the usage of the frequency bands 14.5-14.75 GHz in Region 2 and 14.5-14.8 GHz in Region 3 to GSO FSS systems (Earth-to-space).

MOD THA/34A6A2/10

5.510 The use of the band 14.5-14.8 GHz by the fixed-satellite service (Earth-to-space) for feeder links for the broadcasting-satellite service is subject to the provisions of Appendix **30A** for Regions 1 and 3 and is limited for countries outside Europe.    (WRC-15)

**Reasons:** To determine the use of the band 14.5-14.8 GHz by the FSS (Earth-to-space) for feeder links for the BSS subject to the provisions of Appendix **30A** for Regions 1 and 3 is limited for countries outside Europe.

ADD THA/34A6A2/11

5.D161 For the use of the band 14.5-14.75 GHz in Regions 2, and 14.5-14.8 GHz in Region 3 by the fixed-satellite service (Earth-to-space) not subject to No. 5.510, the fixed-satellite service earth stations shall have a minimum antenna diameter of 2.4 and meters in Regions 2 and 3.    (WRC‑15)

**Reasons:** To facilitate sharing in the band.

ADD THA/34A6A2/12

5.E161 The band 14.5-14.8 GHz is also allocated to the space research service on a primary basis. However, such use is limited to satellite systems, operating in the space research service (Earth-to-space) to relay data to space stations in the geostationary-satellite orbit from associated earth stations, for which information for advance publication has been received by the Bureau prior to 27 November 2015. Stations in the space research service shall not cause harmful interference to nor claim protection from stations in the fixed, mobile services and stations in the fixed-satellite service limited to feeder links for the broadcasting satellite service operating under Appendix **30A** and feeder links for the broadcasting satellite service in Region 2.    (WRC-15)

**Reasons:** To determine satellite systems operating in the SRS (Earth-to-space) as a primary basis of which API received before 27 November 2015.

APPENDIX 5 (REV.WRC‑12)

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

MOD THA/34A6A2/13

TABLE 5-1     (Rev.WRC‑15)

Technical conditions for coordination

(see Article 9)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ReferenceofArticle 9 | Case | Frequency bands(and Region) of the service for which coordinationis sought | Threshold/condition | Calculation method | Remarks |
| No. **9.7**GSO/GSO | A station in a satellite network using the geostationary-satellite orbit (GSO), in any space radiocommunication service, in a frequency band and in a Region where this service is not subject to a Plan, in respect of any other satellite network using that orbit, in any space radiocommunication service in a frequency band and in a Region where this service is not subject to a Plan, with the exception of the coordination between earth stations operating in the opposite direction of transmission | 1) 3 400-4 200 MHz5 725-5 850 MHz (Region 1) and5 850-6 725 MHz7 025-7 075 MHz | i) Bandwidth overlap, andii) any network in the fixed-satellite service (FSS) and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS |  | With respect to the space services listed in the threshold/condition column in the bands in 1), 2), 3), 4), 5), 6), 7) and 8), an administration may request, pursuant to No. **9.41**, to be included in requests for coordination, indicating the networks for which the value of Δ*T*/*T* calculated by the method in § 2.2.1.2 and 3.2 of Appendix **8** exceeds 6%. When the Bureau, on request by an affected administration, studies this information pursuant to No. **9.42**, the calculation method given in § 2.2.1.2 and 3.2 of Appendix **8** shall be used |
| 2) 10.95-11.2 GHz11.45‑11.7 GHz 11.7-12.2 GHz (Region 2)12.2-12.5 GHz (Region 3)12.5‑12.75 GHz (Regions 1 and 3) 12.7‑12.75 GHz (Region 2) and 13.75‑14.5 GHz | i) Bandwidth overlap, andii) any network in the FSS or broadcasting-satellite service (BSS), not subject to a Plan, and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±7° of the nominal orbital position of a proposed network in the FSS or BSS, not subject to a Plan |
|  |  | 3) 14.5-14.8 GHz | i) Bandwidth overlap, andii) any network in the space research service (SRS) or FSS not subject to a Plan and any associated space operation functions (see No. 1.23) with a space station within an orbital arc of 7° of the nominal orbital position of a proposed network in the FSS not subject to a Plan |  |  |

**Reasons:** To determine procedure for coordination under the provisions of RR No. **9.7** for any network in the SRS and FSS not subject to a Plan in the band 14.5-14.8 GHz.

APPENDIX 30A (REV.WRC‑12)\*

Provisions and associated Plans and List1 for feeder links for the broadcasting-satellite service (11.7-12.5 GHz in Region 1, 12.2-12.7 GHz
in Region 2 and 11.7-12.2 GHz in Region 3) in the frequency bands
14.5-14.8 GHz2 and 17.3-18.1 GHz in Regions 1 and 3,
and 17.3-17.8 GHz in Region 2     (WRC‑03)

ARTICLE 4     (Rev.WRC‑03)

Procedures for modifications to the Region 2 feeder-link Plan
or for additional uses in Regions 1 and 3

MOD THA/34A6A2/14

## 4.1 Provisions applicable to Regions 1 and 3

4.1.1 An administration proposing to include a new or modified assignment in the feeder-link List shall seek the agreement of those administrations whose services are considered to be affected, i.e. administrations4, 5:

*a)* of Regions 1 and 3 having a feeder-link frequency assignment in the fixed-satellite service (Earth-to-space) to a space station in the broadcasting-satellite service which is included in the Regions 1 and 3 feeder-link Plan with a necessary bandwidth, any portion of which falls within the necessary bandwidth of the proposed assignment; *or*

*b)* of Regions 1 and 3 having a feeder-link frequency assignment included in the feeder-link List or for which complete Appendix **4** information has been received by the Radiocommunication Bureau in accordance with the provisions of § 4.1.3, and any portion of which falls within the necessary bandwidth of the proposed assignment; *or*

*c)* of Region 2 having a feeder-link frequency assignment in the fixed-satellite service (Earth-to-space) to a space station in the broadcasting-satellite service which is in conformity with the Region 2 feeder-link Plan, or in respect of which proposed modifications to that Plan have already been received by the Bureau in accordance with the provisions of § 4.2.6 with a necessary bandwidth, any portion of which falls within the necessary bandwidth of the proposed assignment; *or*

*d)* having a feeder-link frequency assignment in the band 17.8-18.1 GHz in Region 2 in the fixed-satellite service (Earth-to-space) to a space station in the broadcasting-satellite service or a frequency assignment in the band 14.5-14.8 GHz in the fixed-satellite service (Earth-to-space) not subject to this Appendix which is recorded in the Master Register or which has been coordinated or is being coordinated under the provisions of No. 9.7, or under § 7.1 of Article 7, with a necessary bandwidth, any portion of which falls within the necessary bandwidth of the proposed assignment.     (WRC‑15)

**Reasons:** To include coordination procedure for the modified frequency assignments subject to this Appendix and frequency assignment in the band 14.5-14.8 GHz in the FSS (Earth-to-space) not subject to a Plan.

MOD THA/34A6A2/15

ARTICLE 7     (Rev.WRC‑15)

Coordination, notification and recording in the Master International
Frequency Register of frequency assignments to stations in the fixed-satellite service (space-to-Earth) in Region 1 in the band 17.3-18.1 GHz and in
Regions 2 and 3 in the band 17.7-18.1 GHz, to stations in the fixed-satellite service (Earth-to-space) in Region 2 in the band 17.8-18.1 GHz, to stations in
the fixed-satellite service (Earth-to-space) in all Regions in the band 14.5-14.8 GHz where those stations are not subject to the Regions 1 and 3 feeder-link Plan or List and to stations in the broadcasting-satellite service in Region 2 in the band 17.3-17.8 GHz when frequency assignments to feeder links for broadcasting-satellite stations in the 14.5-14.8 GHz, 17.3-18.1 GHz band in Regions 1 and 3 or in the band 17.3-17.8 GHz in Region 2 are involved28

Section I – Coordination of transmitting space or earth stations in the fixed-satellite
service or transmitting space stations in the broadcasting-satellite service
with assignments to broadcasting-satellite service feeder links

7.1 The provisions of No. 9.729and the associated provisions under Articles 9 and 11 are applicable to transmitting space stations in the fixed-satellite service in Region 1 in the band 17.3‑18.1 GHz, to transmitting space stations in the fixed-satellite service in Regions 2 and 3 in the band 17.7-18.1 GHz, to transmitting earth stations in the fixed-satellite service in Region 2 in the band 17.8‑18.1 GHz, to transmitting earth stations in the fixed-satellite service in any region in the band 14.5-14.8 GHz where those stations are not subject to the Regions 1 and 3 feeder link Plan or List and to transmitting space stations in the broadcasting-satellite service in Region 2 in the band 17.3-17.8 GHz.    (WRC‑15)

7.2 In applying the procedures referred to in § 7.1, the provisions of Appendix 5 are replaced by the following:

7.2.1 The frequency assignments to be taken into account are:

*a)* the assignments in conformity with the appropriate Regional feeder-link Plan in Appendix 30A;

*b)* the assignments included in the Regions 1 and 3 feeder-link List;

*c)* the assignments for which the procedure of Article 4 has been initiated as from the date of receipt of the complete Appendix 4 information under § 4.1.3 or 4.2.6.     (WRC‑03)

7.2.2 The criteria to be applied are those given in Annex 4.

7.2*bis* In applying the procedures referred to in § 7.1 for FSS frequency assignments in the band 14.5-14.8 GHz not subject to the Regions 1 and 3 feeder link Plan or List, the provision of No. **11.41** is replaced by the following provision. No. **11.41.2** continues to apply.

7.2*bis* 1 If, after a notice is returned under No. **11.38**, should the notifying administration resubmit the notice and insist upon its reconsideration, and the assignment which was the basis of the unfavourable finding is neither an assignment in the Regions 1 and 3 Plan nor an assignment of definitive recording in the Regions 1 and 3 feeder-link List at the time when the notice is returned under No. **11.38**, the Bureau shall enter the assignment in the Master Register with an indication of those administrations whose assignments were the basis of the unfavourable finding (see also No. **11.42**).

**Reasons:** To define the notification and recording procedure for frequency assignments of unplanned FSS in case the notice is returned with unfavourable finding under RR No.11.38.

ANNEX 1

Limits for determining whether a service of an administration is considered
to be affected by a proposed modification to the Region 2 feeder-link Plan
or by a proposed new or modified assignment in the Regions 1 and 3
feeder-link List or when it is necessary under this Appendix to seek
the agreement of any other administration     (Rev.WRC‑03)

NOC THA/34A6A2/16

# 4 Limits to the interference into frequency assignments in conformity with the Regions 1 and 3 feeder-link Plan or with the Regions 1 and 3 feeder-link List or proposed new or modified assignments in the Regions 1 and 3 feeder-link List     (WRC‑15)

Under assumed free-space propagation conditions, the power flux-density of a proposed new or modified assignment in the feeder-link List shall not exceed the value of −76 dB(W/(m2 · 27 MHz)) at any point in the geostationary-satellite orbit, and the relative off-axis e.i.r.p. of the associated feeder-link antenna shall be in compliance with Fig. A (WRC‑97 curves) of Annex 3.     (WRC‑03)

With respect to § 4.1.1 *a)* or *b)* of Article 4, an administration in Region 1 or 3 is considered by the Bureau as being affected if the minimum orbital spacing between the wanted and interfering space stations, under worst-case station-keeping conditions, is less than 9°.     (WRC‑03)

However, an administration is not considered as being affected if, under assumed free-space propagation conditions, the effect of the proposed new or modified assignments in the feeder-link List is that the feeder-link equivalent protection margin35 corresponding to a test point of its assignment in the feeder-link Plan or the feeder-link List or for which the procedure of Article 4 has been initiated, including the cumulative effect of any previous modification to the feeder-link List or any previous agreement, does not fall more than 0.45 dB below 0 dB, or, if already negative, more than 0.45 dB below the value resulting from:

– the Regions 1 and 3 feeder-link Plan and List as established by WRC‑2000; *or*

– a proposed new or modified assignment to the feeder-link List in accordance with this Appendix; *or*

– a new entry in the Regions 1 and 3 feeder-link List as a result of the successful application of Article 4 procedures.     (WRC‑03)

For a proposed new or modified assignment to the feeder-link List, in the interference analysis, for each test point, the antenna characteristics described in § 3.5 of Annex 3 shall apply.     (WRC‑03)

**Reasons:** No Changes to this provision since modification proposed in Option C is not feasible.

MOD THA/34A6A2/17

# 6 Limits applicable to protect a frequency assignment in the band 17.8-18.1 GHz (Region 2) to a receiving feeder-link space station inthe fixed-satellite service (Earth-to-space) or a frequency assignment in the band 14.5-14.8 GHz (all regions where the frequency assignment is not subject to the Regions 1 and 3 feeder-link Plan or List) to a receiving space station in the fixed-satellite service (Earth-to-space)      (WRC‑15)

With respect to § 4.1.1 *d)* of Article 4, an administration is considered affected by a proposed new or modified assignment in the Regions 1 and 3 feeder-link List when the power flux-density arriving at the receiving space station of a broadcasting-satellite feeder-link in Region 2 or at the receiving space station of the fixed-satellite service uplinks not subject to the Regions 1 and 3 feeder-link Plan or List, in all regions of that administration would cause an increase in the noise temperature of the receiving space station which exceeds the threshold value of Δ*T*/*T* corresponding to 6%, where Δ*T*/*T* is calculated in accordance with the method given in Appendix 8, except that the maximum power densities per hertz averaged over the worst 1 MHz are replaced by power densities per hertz averaged over the necessary bandwidth of the uplink carriers.     (Rev.WRC‑15)

**Reasons:** To facilitate sharing in the band.

ADD THA/34A6A2/18

# **3** Threshold values for determining when coordination is required between transmitting earth stations in the fixed-satellite service in 14.5-14.8 GHz not subject to the Regions 1 and 3 feeder-link Plan or List and a receiving space station in the Regions 1 and 3 feeder-link Plan or List or a proposed new or modified receiving space station in the List, in the frequency band 14.5‑14.8 GHz     (WRC‑15)

With respect to § 7.1, Article **7**, coordination of a transmitting earth station in the fixed-satellite service with a receiving space station in a broadcasting-satellite feeder link in the Regions 1 and 3 feeder-link Plan or List, or a proposed new or modified receiving space station in the List, is required when the power flux-density arriving at the receiving space station of a broadcasting-satellite service feeder link of another administration exceeds the value of −193.9 − GRx dB(W/(m2 · Hz))    (WRC‑15)

Where GRx is the relative receive antenna gain of the space station in the Regions 1 and 3 feeder-link Plan or List at the location of the transmitting earth station in the fixed-satellite service not subject to Regions 1 and 3 feeder-link Plan or List.     (WRC‑15)

**Reasons:** To determine criteria for sharing between unplanned FSS and the AP 30A Plan/List or a proposed new or modified receiving space station in the List in the frequency band 14.5-14.8 GHz**.**

SUP THA/34A6A2/19

RESOLUTION 152 (WRC‑12)

Additional primary allocations to the fixed-satellite service in the
Earth-to-space direction in frequency bands between 13-17 GHz
in Region 2 and Region 3

**Reasons:** ITU studies on WRC-15 agenda item 1.6.2 have been finished, Resolution 152 (WRC‑12), therefore, should be suppressed.

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