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# 1st ITU Inter-regional Workshop on WRC-23 preparation

13 - 15 December 2021

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#ITUWRC

## Satellite Issues

## WRC-23 agenda item 1.19

**Primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2**

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***Chairwoman, AI 1.19***
***SG4 Vice-chairwoman***

# Outlines

- WRC-23 agenda item 1.19
- Resolution 174 (WRC-19)
- Background and motivation
- Organization of the work in WP 4A
- Status of the Studies

# WRC-23 agenda item 1.19

*1.19 to consider a new primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2, while protecting existing primary services in the band, in accordance with Resolution **174 (WRC-19)**.*

Resolution **174 (WRC-19)** – *Primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2*

***Responsible Group:***

***WP 4A***

***Contributing Groups:***

*WP 3M*

*WP 5A*

*WP 5B*

*WP 5C*

*WP 7C*

# Resolution 174 (WRC-19)

***Primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2***

*resolves*

that the studies referred in *invites the ITU Radiocommunication Sector* below shall protect radiocommunication services to which the frequency band is allocated on primary basis, in particular assignments contained in Appendix **30A**,

*invites the ITU Radiocommunication Sector*

to conduct, and complete in time for WRC-23, sharing and compatibility studies between the FSS (space-to-Earth) and the BSS (space-to-Earth) and between the FSS (space-to-Earth) and the FSS (Earth-to-space), in order to consider a possible new primary allocation to the FSS (space-to-Earth) in the frequency band 17.3-17.7 GHz for Region 2, while ensuring the protection of existing primary allocations in the same and adjacent frequency bands, as appropriate, and without imposing any additional constraints on existing allocations to the BSS (space-to-Earth) and the FSS (Earth-to-space),

*invites the 2023 World Radiocommunication Conference*

to consider the results of the above studies and take necessary actions, as appropriate,

*invites administrations*

to participate actively in the studies and provide the technical and operational characteristics of the systems involved by submitting contributions to the ITU Radiocommunication Sector.

# Background and motivation

- *An allocation to FSS (space-to-Earth) in 17.3 to 17.7 GHz will encourage the development and implementation of new technologies in the fixed-satellite service (FSS) for broadband applications.*

- *FSS systems based on the use of new technologies associated with geostationary satellite systems are capable of providing high-capacity and low-cost means of broadband communication even to the most isolated regions of the world.*

- *The introduction of new applications of radiocommunication technology will ensure the operation of as many systems as possible in order to provide an efficient use of the spectrum.*

- *In Region 1, the band is already allocated to the FSS, a new allocation in Region 2 progresses the principle of Regional harmonization, which allows for synchronization of frequency bands across both Regions. Its important to remember that the frequency band 17.3-17.7 GHz is allocated in Region 2 on a primary basis to the broadcasting-satellite service (BSS) (space-to-Earth) and to the FSS (Earth-to-space).*

# Organization of the work in WP 4A

***WRC-23 Agenda item 1.19:***

***SWG 4A1d***

***Main activities:***

- *Development of the **Working Document towards Draft CPM text for WRC-23 Agenda item 1.19** (4A/522 Annex 28);*
  - *Executive Summary* ✅
  - *Background* ✅
  - *Summary of ITU-R studies **(working in progress)***
  - *Methods: A (NOC) and B (Allocation of the frequency band 17.3-17.7 GHz in Region 2 to the fixed-satellite service in the space-to-Earth direction.* ✅
- *Development of the **Working Document on WRC-23 Agenda Item 1.19** (4A/522 Annex 21) that contains the sharing and compatibility studies that are being carried;*
- *Update the **AI 1.19 Work Plan** in each meeting, considering what happend in the meeting and what is expected for the next meeting (4A/522 Annex 36);*

✅ *Information received in this regard.*

# Status of the studies

**Adjacent band sharing scenarios for the frequency range 17.2-17.3 GHz (space-to-Earth)**

| Study # | Interferer | Victim |
|---|---|---|
| 10 | GSO FSS - Space Station Transmit | EESS (active) |
| 11 ✓ | GSO FSS - Space Station Transmit | Radiolocation |
| 12 | GSO FSS - Space Station Transmit | SRS (active) |
| 13 | Non-GSO FSS - Space Station Transmit | EESS (active) |
| 14 | Non-GSO FSS - Space Station Transmit | Radiolocation |
| 15 | Non-GSO FSS - Space Station Transmit | SRS (active) |
| 16 | GSO FSS - Space Station Transmit | Fixed |
| 17 | Non-GSO FSS - Space Station Transmit | Fixed |
| 18 | GSO FSS - Space Station Transmit | Mobile |
| 19 | Non-GSO FSS - Space Station Transmit | Mobile |

**Sharing scenarios for the frequency range 17.3-17.7 GHz (space-to-Earth)**

| Study # | Interferer | Victim |
|---|---|---|
| 1 ✓ | GSO FSS Space Station Transmit | BSS Feeder Link AP**30A** - Space Station Receive |
| 2 ✓ | GSO FSS Space Station Transmit | BSS - Earth Station Receive |
| 3 ✓ | BSS Feeder Link AP**30A** - Earth Station Transmit | GSO FSS Earth Station Receive |
| 4 ✓ | BSS - Space Station Transmit | GSO FSS Earth Station Receive |
| 5 ✓ | BSS - Space Station Transmit | Non-GSO FSS Earth Station Receive |
| 6 ✓ | BSS Feeder Link AP**30A** - Earth Station Transmit | Non-GSO FSS Earth Station Receive |
| 7 ✓ | Non-GSO FSS Space Station Transmit | GSO FSS Earth Station Receive |
| 8 ✓ | Non-GSO FSS Space Station Transmit | BSS Feeder Link AP**30A** - Space Station Receive |
| 9 ✓ | Non-GSO FSS Space Station Transmit | BSS - Earth Station Receive |

**Adjacent band sharing scenarios for the frequency range 17.7-17.8 GHz (space-to-Earth)**

| Study # | Interferer | Victim |
|---|---|---|
| 20 | GSO FSS - Space Station Transmit | FSS - Earth Station Receive |
| 21 | Non-GSO FSS - Space Station Transmit | FSS - Earth Station Receive |
| 22 | GSO FSS - Space Station Transmit | BSS Feeder Link AP**30A** - Space Station Receive |
| 23 | Non-GSO FSS - Space Station Transmit | BSS Feeder Link AP**30A** - Space Station Receive |
| 24 | GSO FSS - Space Station Transmit | BSS - Earth Station Receive |
| 25 | Non-GSO FSS - Space Station Transmit | BSS - Earth Station Receive |
| 26 ✓ | GSO FSS - Space Station Transmit | Fixed |
| 27 ✓ | Non-GSO FSS - Space Station Transmit | Fixed |
| 28 | GSO FSS - Space Station Transmit | Mobile |
| 29 | Non-GSO FSS - Space Station Transmit | Mobile |

**Allocation information for 17.3-17.7 GHz and adjacent bands**

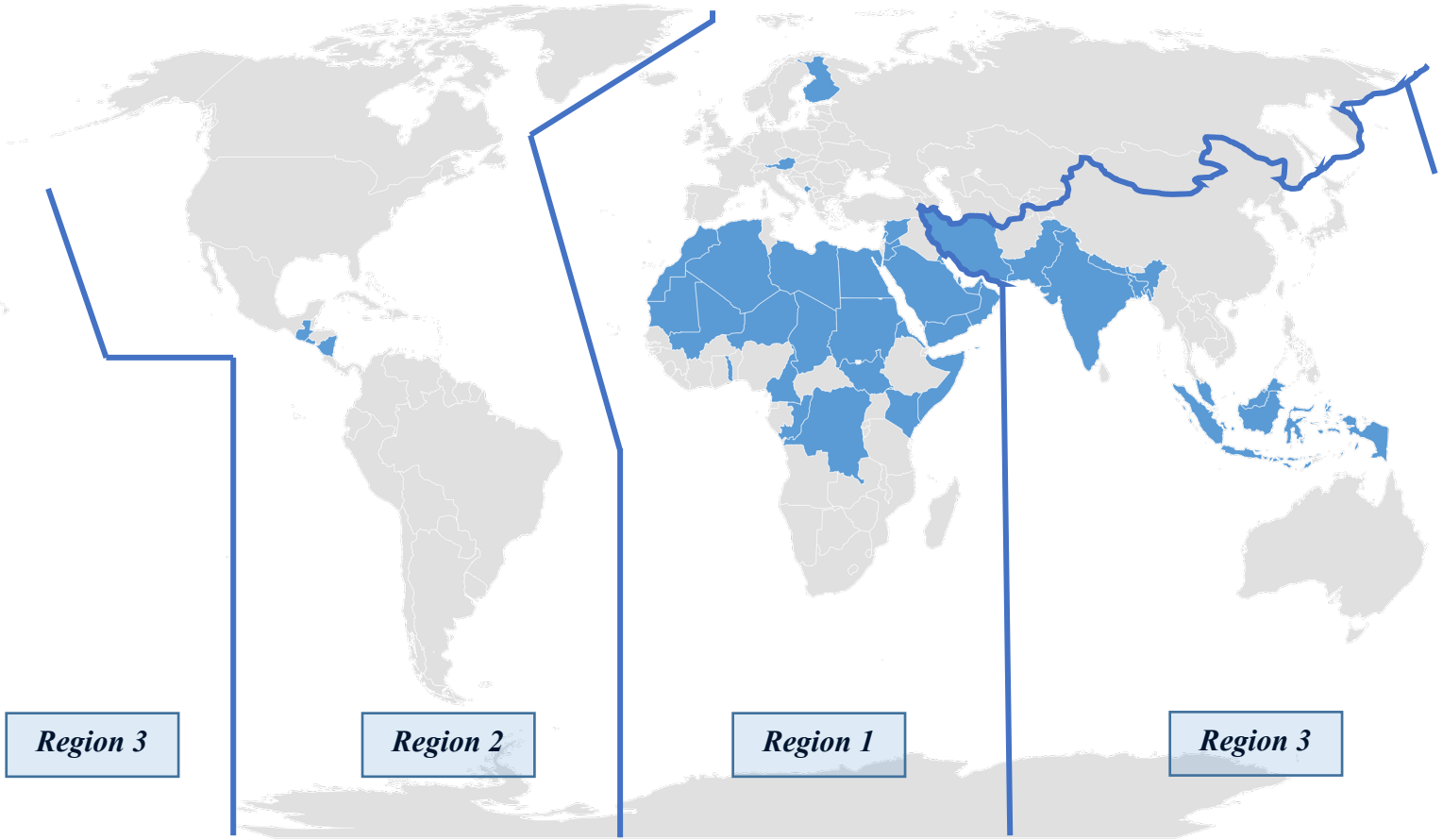
| Allocation to services | | |
|---|---|---|
| **Region 1** | **Region 2** | **Region 3** |
| 17.2-17.3 | EARTH EXPLORATION-SATELLITE (active)<br>RADIOLOCATION<br>SPACE RESEARCH (active)<br>5.512 5.513 5.513A | |
| **17.3-17.7**<br>FIXED-SATELLITE<br>(Earth-to-space) 5.516<br>(space-to-Earth) 5.516A 5.516B<br>Radiolocation<br>5.514 | **17.3-17.7**<br>FIXED-SATELLITE<br>(Earth-to-space) 5.516<br>BROADCASTING-SATELLITE<br>Radiolocation<br>5.514 5.515 | **17.3-17.7**<br>FIXED-SATELLITE<br>(Earth-to-space) 5.516<br>Radiolocation<br>5.514 |
| 17.7-18.1<br>FIXED<br>FIXED-SATELLITE<br>(space-to-Earth) 5.484A 5.517A<br>(Earth-to-space) 5.516<br>MOBILE | 17.7-17.8<br>FIXED<br>FIXED-SATELLITE<br>(space-to-Earth) 5.517 5.517A<br>(Earth-to-space) 5.516<br>BROADCASTING-SATELLITE<br>Mobile<br>5.515 | 17.7-18.1<br>FIXED<br>FIXED-SATELLITE<br>(space-to-Earth) 5.484A 5.517A<br>(Earth-to-space) 5.516<br>MOBILE |
| | 17.8-18.1<br>FIXED<br>FIXED-SATELLITE<br>(space-to-Earth) 5.484A 5.517A<br>(Earth-to-space) 5.516<br>MOBILE<br>5.519 | |

✓ *Studies received.*

*No studies made considering that there is no technical information available in the official sources.*

# Status of the studies

***Countries that 17.2 to 17.3 GHz is also allocated in primary basis to FS and MS***

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- *17.2 to 17.3 GHz is also allocates to FS and MS in 42 countries (RR No. 5.512).*
- *There is no technical information in the official sources about MS systems in AI 1.19 adjacent bands and FS systems in 17.2 to 17.3 GHz.*
- *The due date to receive technical information was 23 July 2021.*
- *In this context, administrations are invited to continue developing studies, specially the ones that have FS and MS systems operating in AI 1.19 adjacent bands.*

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## *Thank you!*

*Any questions?*
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