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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Addendum 2 to Document 7(Add.6)-E** |
|  | **29 September 2015** |
|  | **Original: English** |
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| Member States of the Inter-American Telecommunication Commission (CITEL) | |
| Proposals for the work of the conference | |
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| 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;

Background

The bands between 13 and 17 GHz have allocations to a variety of services with worldwide applications, including Earth exploration-satellite, space research, aeronautical radionavigation, mobile and aeronautical mobile services, representing significant and, in many cases global commitments by Administrations. Efforts to rectify previous WRC agreements that created imbalances between fixed-satellite service (FSS) up and downlinks in the frequency range 13‑17 GHz need to ensure the protection of vital incumbent operations. CITEL administrations do not support an additional primary allocation to the FSS (Earth-to-space) in the frequency range 13.25-14.5 GHz and 15.4-17 GHz in either Region 2 or 3 due to interference into existing global services. CITEL does not have a common position for the 14.5-15.4 GHz frequency range.

13.25-13.4 GHz

The 13.25-13.4 GHz frequency band has allocations to the Earth exploration-satellite service (EESS) (active), the aeronautical radionavigation service (ARNS) and the space research service (active) on a primary basis in all three ITU regions subject to Radio Regulation Nos. 5.497, 5.498A, and 5.499.

ITU-R sharing studies demonstrate that the proposed FSS (Earth-to-space) links will interfere with the ARNS in the bands 13.25-13.4 GHz, exceeding protection criteria by large margins. ITU-R sharing studies also show that EESS (active) altimeter measurements of lakes, reservoirs, and coastal areas will be lost over a large area of the Earth spanning over all three ITU regions.

13.4-13.75 GHz

The 13.4-13.75 GHz frequency band has allocations to the EESS (active), the radiolocation service (RLS) and the space research service (active) on a primary basis in all three ITU regions. RR No. 5.501A indicates that the use of the band 13.4-13.75 GHz by the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. RR Nos. 5.499, 5.500, 5.501, and 5.501B apply.

ITU-R sharing studies demonstrate that the proposed FSS (Earth-to-space) links in the 13.25‑13.75 GHz bands will interfere with existing authorized services in the bands 13.25‑13.4 GHz and 13.4‑13.75 GHz. The sharing studies’ results show that EESS (active) altimeter measurements of lakes, reservoirs, and coastal areas will be lost over a large area of the Earth spanning over all three ITU regions. Mitigation techniques sufficient to protect the EESS (active) altimeters operating in the current allocations may impose severe if not impractical restrictions on new FSS systems that might operate in this band. Studies also show that the proposed FSS (Earth-to-space) would significantly exceed allowed aggregate interference levels into the ARNS.

15.4-17 GHz

The 15.4-17.0 GHz range is allocated to the RLS on a primary basis in all three Regions and the 15.4-15.7 GHz band is also allocated to the aeronautical radionavigation service on a primary basis in all three Regions. Some Administrations will operate synthetic aperture radars worldwide as part of the global RLS allocation in the range 15.4-17 GHz. Some Administrations also operate an airport surface detection system on a co-primary basis with the primary RLS in the range 15.7‑16.2 GHz.

ITU-R sharing studies demonstrate that the proposed FSS (Earth-to-space) links in the 13.0 17.0 GHz range will interfere with existing services in the frequency ranges 14.5-15.35 GHz and 15.4-17.0 GHz. In addition, the band 15.35-15.4 GHz is an exclusive passive band in which RR 5.340 prohibits all emissions in the band. The studies also show that in order to protect radiolocation stations operating in the range 15.4-17.0 GHz, a separation distance of up to 420 km (not accounting for terrain obstruction) is required. Given the large, required separation distances around AMS and RLS receivers’ operational areas, and the mobile nature of AMS receiver/RLS airborne receiver, the ubiquitous deployment of FSS transmitters would make mitigation and coordination approaches to permit sharing with the FSS very difficult or impractical. In addition, ITU-R studies have yet to demonstrate how FSS space station receivers in the geostationary satellite orbit could mitigate unacceptable levels of interference from existing operations in these bands.

Proposals

ARTICLE 5

Frequency allocations

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

NOC IAP/7A6A2/1

11.7-14 GHz

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| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 13.25-13.4 EARTH EXPLORATION-SATELLITE (active)  AERONAUTICAL RADIONAVIGATION 5.497  SPACE RESEARCH (active)  5.498A 5.499 | | |

**Reasons:** ITU-R studies indicate a potential for interference into existing EESS (active) systems. ITU-R studies indicate a potential for interference between the proposed FSS (space-to-Earth) and the existing ARNS systems.

NOC IAP/7A6A2/2

11.7-14 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 13.4-13.75 EARTH EXPLORATION-SATELLITE (active)  RADIOLOCATION  SPACE RESEARCH 5.501A  Standard frequency and time signal-satellite (Earth-to-space)  5.499 5.500 5.501 5.501B | | |

**Reasons:** ITU-R studies indicate a potential for interference into existing EESS (active) systems.

NOC IAP/7A6A2/3

15.4-18.4 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 15.4-15.43 RADIOLOCATION 5.511E 5.511F  AERONAUTICAL RADIONAVIGATION  5.511D | | |
| 15.43-15.63 FIXED-SATELLITE (Earth-to-space) 5.511A  RADIOLOCATION 5.511E 5.511F  AERONAUTICAL RADIONAVIGATION  5.511C | | |
| 15.63-15.7 RADIOLOCATION 5.511E 5.511F  AERONAUTICAL RADIONAVIGATION  5.511D | | |
| 15.7-16.6 RADIOLOCATION  5.512 5.513 | | |
| 16.6-17.1 RADIOLOCATION  Space research (deep space) (Earth-to-space)  5.512 5.513 | | |

**Reasons:** ITU-R studies indicate a potential for interference into existing RLS systems.

SUP IAP/7A6A2/4

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:** Consequential change to completing the agenda item.

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