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| **40 MEETING OF PERMANENT**  **CONSULTATIVE COMMITTEE II:**  **RADIOCOMMUNICATIONS**  **October 31 to November 04, 2022**  **Port of Spain, Trinidad and Tobago** | | **OEA/Ser.L/XVII.4.2.39**  **CCP.II-RADIO /doc. /22**  **6 October 2022**  **Original: English** |
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|  | **DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**  **AGENDA ITEM 1.10** | |
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|  | **(Item on the Agenda: 3.1)**  **(Document submitted by the United States of America)** | |

**Impact on the sector:**

This document supports the CITEL PCCII WRC Working Group’s preparations for WRC-23.

**Executive Summary:**

This document contains a preliminary proposal from the United States for WRC-23 agenda item 1.10.

**UNITED STATES OF AMERICA**

**DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**

**AGENDA ITEM 1.10:** *to conduct studies on spectrum needs, coexistence with radiocommunication services and regulatory measures for possible new allocations for the aeronautical mobile service for the use of non-safety aeronautical mobile applications, in accordance with Resolution 430 (WRC-19)*

**BACKGROUND INFORMATION**:

Resolution **430 (WRC-19)**, calls for:

1. Sharing and compatibility studies in the 22-22.21 GHz frequency band, already allocated on a primary basis to mobile, except aeronautical mobile to determine if the “except aeronautical mobile” restriction can be revised or deleted, while ensuring the protection of primary services in the frequency bands considered and, as appropriate, in adjacent frequency bands.
2. Sharing and compatibility studies on a possible new primary allocation to the aeronautical mobile service (AMS) for non-safety aeronautical applications in the frequency band 15.4-15.7 GHz, while ensuring the protection of primary services in the frequency bands considered and, as appropriate, in adjacent frequency bands.
3. Definition of appropriate protection for passive services and the Radio Astronomy Service (RAS) allocated in adjacent frequency bands from unwanted emissions of the AMS.

The frequency band 15.4-15.7 GHz is widely used by the radiolocation (RLS) and aeronautical radionavigation services (ARNS) for critical applications. There has been a significant investment in support of the airborne radar applications within this frequency band. ITU-R past studies show sharing between RLS and AMS could be difficult, requiring extremely large separation distances. Additionally, the sub-band 15.43-15.63 GHz is allocated to the fixed-satellite service (space-to-Earth) on a primary basis for use by feeder links of non-geostationary systems in the mobile satellite service. The aeronautical radionavigation service in the 15.4-15.7 GHz band is used for landing systems and unmanned aircraft detect and avoid (DAA) systems. An ITU-R Recommendation is currently being developed to provide characteristics and protection requirements for these aeronautical radionavigation systems.

Sharing studies between aeronautical radionavigation systems and the radiolocation systems in the 15.4 -15.7 GHz frequency band show that sharing between non-safety AMS and radiolocation systems is not feasible due to a high transmitted EIRP limit from the non-safety AMS resulting in a large separation distance.

The 22-22.21 GHz frequency band under consideration is adjacent to the 22.21-22.5 GHz frequency band allocated to the Earth Exploration Satellite Service (passive). The 22.21-22.5 GHz frequency band allows for remote sensing observations near an H2O absorption line that is essential not only for measuring atmospheric water vapor, but also for reducing error in other geophysical parameters due to the presence of water vapor.

Compatibility studies between non-safety AMS systems in the 22-22.21 GHz band and EESS (passive) systems in the 22.21-22.5 GHz band show that various AMS scenarios (e.g., wildfire observation and network-above-the-clouds) are not compatible with EESS (passive) operations based on the anticipated out-of-band emission levels from the non-safety AMS links.

The frequency band 22.21-22.5 GHz is also allocated to the RAS on a primary basis, and is subject to footnote **No 5.149**, which urges administrations to take all practicable steps to protect the RAS from harmful interference. The radio astronomy service is extremely susceptible to interference from space and airborne transmitters (No. **29.12**).

**PROPOSAL**

**ARTICLE 5**

**Frequency allocations**

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

**NOC USA/AI 1.10/1**

**15.4 – 15.7 GHz**

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| **Allocation to services** | | |
| **Region 1** | **Region 2** | **Region 3** |
| **15.4-15.43** RADIOLOCATION 5.511E 5.511F  AERONAUTICAL RADIONAVIGATION | | |
| **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 | | |

**Reasons**: Sharing studies between non-safety AMS and the incumbent services have been performed resulting in a large separation distance. The results show that it is not feasible for the non-safety AMS to obtain an allocation. Therefore, no change is proposed for the 15.4 – 15.7 GHz frequency band.

**NOC** **USA/AI 1.10/2**

22-22.21 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 22-22.21 FIXED  MOBILE except aeronautical mobile  5.149 | | |

**Reasons**: Compatibility studies between non-safety AMS and the incumbent services in the adjacent frequency band have been performed. The results show that various AMS scenarios (e.g., wildfire observation and network-above-the-clouds) are not compatible with EESS (passive) operations based on the anticipated out-of-band emission levels from the non-safety AMS links. Therefore, no change is proposed for the 22-22.21 GHz frequency band.

**SUP** USA/AI 1.10/3

RESOLUTION 430 (**WRC-19**)  
**Studies on frequency-related matters, including possible additional allocations,  
for the possible introduction of new non-safety aeronautical mobile applications**

**Reasons**: This resolution should be suppressed by WRC-23 noting the difficulties with new AMS allocations under this agenda item.