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| A close up of a sign  Description automatically generated | **World Radiocommunication Conference (WRC-23) Dubai, 20 November - 15 December 2023** | |  |
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| PLENARY MEETING | | **Addendum 10 to Document 148-E** | |
|  | | **30 October 2023** | |
|  | | **Original: English** | |
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| Iran (Islamic Republic of) | | | |
| PROPOSALS FOR THE WORK OF THE CONFERENCE | | | |
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| Agenda item 1.10 | | | |

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)**;

Introduction

Wideband line-of-sight data links (WB LOS DLs) operate in the aeronautical mobile (off-route) service (AM(OR)S) and are not related to safety of life. They are used to exchange mission data between aircraft and aeronautical stations to support applications such as: observation missions, search and rescue, earth science and land management. This agenda item considers possible new allocations to the AM(OR)S in the frequency bands 15.4-15.7 GHz and 22-22.21 GHz to support the growing use of WB LOS DLs.

Per the Radio Regulations (RR), stations in the AM(OR)S can support bi-directional communication links including those between aircraft stations or an aircraft station and an aeronautical station on the ground, on board a ship or on a platform at sea.

The frequency band 15.4-15.7 GHz is allocated to the radiolocation service (RLS) and to the aeronautical radionavigation service (ARNS). The ARNS in the frequency band 15.4-15.7 GHz is used for automatic landing systems (ALS) and unmanned aircraft detect and avoid (DAA) systems. Some previous ITU-R studies have shown that sharing between RLS and AM(OR)S could be difficult.

The sub-band 15.43-15.63 GHz is allocated to the fixed-satellite service (Earth-to-space) used by feeder links of non-geostationary systems.

The lower adjacent frequency band 15.35-15.4 GHz is allocated to the Earth exploration-satellite service (EESS) (passive), radio astronomy service (RAS) and space research service (SRS) (passive), subject to RR No. **5.340**. The upper adjacent frequency band at 15.7-17.3 GHz is allocated to the RLS.

The frequency band 22-22.21 GHz is allocated to the fixed service and mobile service (except aeronautical mobile). The lower adjacent frequency band 21.4-22 GHz has allocations to the fixed and mobile services and to the broadcasting-satellite service in Regions 1 and 3. The upper adjacent frequency band at 22.21-22.5 GHz has allocations to the fixed and mobile services (except aeronautical mobile), RAS, SRS (passive) and EESS (passive). With regard to the RAS operating in the frequency band 22.21-22.5 GHz, RR No. **5.149** applies.

The frequency band 22.01-22.21 GHz is not allocated to the RAS. In making assignments to stations of other services to which the frequency band 22.01-22.21 GHz is allocated, administrations are urged to take all practicable steps to protect the RAS from harmful interference, according to RR No **5.149**. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the RAS. In these cases coordination may be needed between the concerned administrations.

Under the EESS (passive) allocation, the frequency band 22.21-22.5 GHz allows for remote sensing observations near a water absorption line that is essential for measuring atmospheric water vapour, which in turn helps reducing error in other geophysical parameters due to the presence of water vapour.

Passive ground-based water-vapour radiometers operating in the frequency band 22-22.5 GHz are also used worldwide to characterize vertical profiles of water-vapour concentrations for applications including, but not limited to, studies of Earth’s atmosphere, climatology and meteorology. Furthermore, such radiometers are an important helper application for several application of different radiocommunication services to calibrate signals that travel through Earth’s atmosphere and are subject to attenuation and phase shifts caused by water molecules in the troposphere.

There are 5 methods to satisfy the agenda item. All the methods propose the suppression of Resolution **430 (WRC-19)**:

– Method A: No change to Radio Regulations

– Method B: New primary AM(OR)S allocation in the frequency band 15.4-15.7 GHz

– Method C: Remove the exception of AM(OR)S in the frequency band 22‑22.21 GHz

– Method D: Combination of Methods B and C

– Method E: Combination of Methods B and C with 10 MHz guard bands.

Proposals

The Administration of Iran (Islamic Republic of) supports Method C which proposes to remove the exception of aeronautical mobile service of the mobile service allocation in the frequency band 22‑22.21 GHz, and to add associated footnotes. However, there is a need that the protection of primary services is allocated in the 15.4-15.7 GHz and 22-22.21 GHz frequency bands and in adjacent frequency bands should be ensured. Also, AM(OR)S shall not cause unacceptable interference to nor claim protection from these services.

ARTICLE 5

Frequency allocations

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

NOC IRN/148A10/1#1642

15.4-18.4 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 | | |

MOD IRN/148A10/2#1648

22-24.75 GHz

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| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 22-22.21 FIXED  MOBILE except aeronautical (R) ADD 5.D110 ADD 5.E110 ADD 5.F110 ADD 5.H110  5.149 ADD 5.G110 | | |
| 22.21-22.5 EARTH EXPLORATION-SATELLITE (passive)  FIXED  MOBILE except aeronautical mobile  RADIO ASTRONOMY  SPACE RESEARCH (passive)  5.149 5.532 ADD 5.G110 | | |

**Reasons:** To provide a new allocation in the frequency band 22-22.21 GHz to the aeronautical mobile (off‑route) service for introduction of new non-safety aeronautical mobile (off-route) applications.

ADD IRN/148A10/3#1653

5.F110 The use of the aeronautical mobile (OR) service in the frequency band 22-22.21 GHz is limited to non-safety applications.     (WRC‑23)

SUP IRN/148A10/4#1670

RESOLUTION 430 (WRC-19)

Studies on frequency-related matters, including possible additional allocations, for the possible introduction of new non-safety aeronautical mobile applications

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