|  |  |  |
| --- | --- | --- |
| U.S. Radiocommunications Sector  Fact Sheet | | |
| **Working Party:** ITU-R WP 5B | **Document No:** USWP5B32-04 | |
| **Ref:** WRC-27 AI 1.13 | **Date:** March 7, 2024 | |
| **Document Title:** Proposed draft liaison statement to Working Party 4C | | |
| **Author(s)/Contributors(s):**  Chris Tourigny  FAA Spectrum Engineering Services  Sandra Wright  FAA Spectrum Engineering Services  Andrew Meadows  AFSMO  Dominic Nguyen  eSimplicity support AFSMO  Philip Sohn  DOC/NOAA/NWS  Tomasz Wojtaszek  DOC/NOAA  Michael Tran  MITRE | | Phone: 202-267-3071  Email: chris.tourigny@faa.gov  Phone: 202-603-7094  Email: sandra.a.wright@faa.gov  Phone: 334-467-4720  Email: andrew.meadows.1@us.af.mil    Phone: 703-606-7394  Email: dominic.nguyen@esimplicity.com  Phone: 202-841-5542  Email: philip.sohn@noaa.gov  Phone: 301-456-4574  Email: tomasz.wojtaszek@noaa.gov  Phone: 703-593-9969  Email: mtran@mitre.org |
| **Purpose/Objective:** This contribution proposes a draft liaison statement to WP 4C regarding AI 1.13 to help WP 4C to proceed with its planning for sharing studies. | | |
| **Abstract:** Pursuant to Resolution **253 (WRC-23)**, in preparation for Agenda Item 1.13 (**WRC-27**), this contribution proposes a draft reply liaison statement to WP 4C with relevant technical information of systems operating in the frequency range between 694/698 MHz and 2.7 GHz, and the adjacent frequency band 2.7-2.9 GHz. | | |

|  |  |
| --- | --- |
| **Radiocommunication Study Groups** |  |
|  |  |
|  |  |
| Source: None  Subject: WRC-27 Agenda Item 1.13 | **Document 5B/** |
| **14 May 2024** |
| **English only** |
| United States of America | |
| proposed draft reply liaison statement to Working party 4c  **Relevant technical information for sharing studies under WRC-27 Agenda Item 1.13** | |
|  | |

**Introduction**

WRC-27 Agenda Item 1.13 considers possible new allocations to the mobile-satellite service in the frequency range between 694/698 MHz and 2.7 GHz, for direct connectivity between space stations and International Mobile Telecommunications (IMT) user equipment to complement terrestrial IMT network coverage, in accordance with Resolution **253 (WRC-23)**. This contribution proposes a draft reply liaison statement to WP 4C with relevant technical information of systems operating in the frequency range between 694 and 2.7 GHz, and in the adjacent band 2.7-2.9 GHz (including ground-based meteorological radar in accordance with RR No. 5.423).

Attachment: 1

ATTACHMENT

# Working Party 5B

PROPOSAL DRAFT REPLY LIAISON STATEMENT TO WORKING PARTY 4C

**Relevant technical information for sharing studies under WRC-27 Agenda Item 1.13**

Working Party (WP) 5B thanks WP 4C for its liaison statement (Document 5B/xx), requesting the characteristics and protection criteria of the systems operating in the frequency range between 694/698 MHz and 2.7 GHz, for sharing and compatibility studies between incumbent services including in adjacent frequency bands, under WRC-27 agenda item 1.13.

WP 5B highlights the following ITU-R recommendations and ICAO document that provide relevant technical information of systems operating in the frequency range between 694 MHz and 2.7 GHz, and in the adjacent frequency band 2.7-2.9 GHz (including ground-based meteorological radar in accordance with RR No. 5.423) for sharing and compatibility studies:

**Recommendation ITU-R M.1463-3** Characteristics of and protection criteria for radars operating in the radiodetermination service in the frequency band 1 215-1 400 MHz (02/2015)

This Recommendation provides technical and operational characteristics, as well as protection criteria, of operational ground-based radars in the frequency band 1 215-1 400 MHz. The Recommendation includes representative characteristics on the transmitter, receiver, and antenna components of these radars. Representative technical characteristics of RDS radars in 1 215-1 400 MHz are in Table 1 of the Annex. The I/N protection criteria of RDS radars in 1 215-1 400 MHz are in Recommends 3 of this recommendation.

**Recommendation ITU-R M.1639-1** Protection criterion for the aeronautical radionavigation service with respect to aggregate emissions from space stations in the radionavigation-satellite service in the band 1 164-1 215 MHz (2003-2005)

This Recommendation gives the equivalent power flux density (epfd) level which protects stations of the aeronautical radionavigation service (ARNS). Some characteristics of the distance measuring equipment (DME)/tactical air navigation (TACAN) are in Annex 1 Table 1.

**Recommendation ITU-R M.1642-2** Methodology for assessing the maximum aggregate equivalent power flux density at an aeronautical radionavigation service station from all radionavigation satellite service systems operating in the 1 164-1 215 MHz band (2003-2005-2007)

This Recommendation gives a methodology and the reference antenna characteristics for assessing the maximum aggregate equivalent power flux-density (epfd) level produced at the input of a station of the aeronautical radionavigation service (ARNS) by all radionavigation-satellite service (RNSS) systems operating in any portion of the 1 164-1 215 MHz band. Annex 2 provides ARNS reference station characteristics to be used in epfd calculation.

**ICAO Annex 10 Volume 1 - Chapter 3 Section 3.5 and Attachment C section 7:** These sections contain information of the DME systems in the frequency band 960-1 215 MHz.

**ICAO Annex 10 Volume 5, Chapter 4 Section 4.3**: Frequency planning utilization for DME.

**ICAO Annex 10 Volume 3, Part I, Chapter 12**: This chapter contains information of the Universal Access Transceiver (UAT) operating at the frequency 978 MHz.

**ICAO Annex 10 Volume 4, Chapters 2 and 3**: These chapters contain information of the surveillance radar (SSR) operating at the frequencies 1 030 MHz (ground-to-air) and 1 090 MHz (air-to-ground).

**ICAO Annex 10 Volume 4, Chapter 4**: This chapter contains information of the airborne collision avoidance system (ACAS) operating at the frequencies 1 030 MHz and 1 090 MHz.

**ICAO Annex 10 Volume 4, Chapters 5, 6, and 7**: These chapters contain information of the Mode S extended squitter, ADS-B, multi-lateration systems, and technical requirements for airborne surveillance applications using at the frequencies 1 030 MHz and 1 090 MHz.

**ICAO Annex 10 Volume 3, Chapter 5**: This chapter contains information of the SSR Mode S air-ground data link using 1 090 MHz.

**Recommendation ITU-R M.**[AMS CHARACTERISTICS\_1 780-1 850 MHz] Technical characteristics and protection criteria for systems operating in the aeronautical mobile service within the frequency range 1 780-1 850 MHz

WP 5B is finalizing this Recommendation. The latest information can be found in Annex XX of the Chairman’s Report (5B/XXX).

**Recommendation ITU-R M.1849-0 Technical and operational aspects of ground-based meteorological radars (02/2023)**

**Recommendation ITU-R M.1464-2** Characteristics of non-meteorological radiolocation radars, and characteristics and protection criteria for sharing studies for aeronautical radionavigation and radars in the radiodetermination service operating in the frequency band 2 700-2 900 MHz (02/2015)

Representative technical characteristics of ARNS and radiolocation radars in 2 700-2 900 MHz are in Annex 1. The I/N protection criteria of ARNS radars can be found in Annex 2.

**Recommendation ITU-R M.1849-3** Technical and operational aspects of ground-based meteorological radars (02/2023)

This Recommendation provides the technical and operational characteristics of ground-based meteorological radars, including interference protection criteria.

**Recommendation ITU-R M.1461-2** Procedures for determining the potential for interference between radars operating in the radiodetermination service and systems in other services (01/2018)

This Recommendation provides procedures for determining potential interference from/to radars of radiodetermination service to/from systems of other services.

**Report ITU-R M.2136-0** Theoretical analysis and testing results pertaining to the determination of relevant interference protection criteria of ground-based meteorological radars (2008)

This Report includes analysis and test results pertaining to interference protection criteria for meteorological radars operating in the frequency band 2 700-2 900 MHz.

**Recommendation ITU-R M.1459** Protection criteria for telemetry systems in the aeronautical mobile service and mitigation techniques to facilitate sharing with geostationary broadcasting-satellite and mobile-satellite services in the frequency bands 1 452-1 525 MHz and 2 310-2 360 MHz

This Recommendation provides information on the protection criteria required for aeronautical telemetry systems operating in the frequency bands 1 452-1 525 MHz and 2 310- 2 360 MHz and potential mitigation techniques.

**Report ITU-R M.2324-0** Sharing studies between potential International Mobile Telecommunication systems and aeronautical mobile telemetry systems in the frequency band 1 429-1 535 MHz

This Report provides sharing studies between potential International Mobile Telecommunication (IMT) systems and aeronautical mobile telemetry (AMT) systems in the frequency band 1 429-1 535 MHz conducted as preparatory work for WRC-15 agenda item 1.1. Several technical studies are contained in the document taking into account differences in regulatory situations as well as technical and operational characteristics for the use of AMT systems in three Regions.

**Report ITU-R M.2286-0** Operational characteristics of aeronautical mobile telemetry systems

This Report describes the operational details of AMT systems that, when combined with traditional link budget analyses and references, will provide a full-description of how AMT systems might affect, or be affected by, the operations of other systems in either co-channel or adjacent channel scenarios.

WP 5B requests to be kept informed on the progress of the studies under WRC-27 agenda item 1.13 and will provide to WP 4C any relevant updated information, before 31 December 2024 deadline, for studies under this WRC-27 agenda item.

Status: For action

Contact: TBD E-mail: TBD