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| U.S. Radiocommunications Sector  Fact Sheet | | |
| **Working Party:** ITU-R WP 5B | **Document No:** USWP5B32-02 | |
| **Ref:** WRC-27 AI 1.7 | **Date:** March 7, 2024 | |
| **Document Title:** Proposed draft liaison statement to Working Party 5D | | |
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| **Purpose/Objective:** This contribution proposes a draft liaison statement to WP 5D regarding AI 1.7, to consider studies on sharing and compatibility and develop technical conditions for the use of International Mobile Telecommunications (IMT) in the frequency bands 4 400-4 800 MHz, 7 125-8 400 MHz (or parts thereof), and 14.8-15.35 GHz taking into account existing primary services operating in these, and adjacent, frequency bands, in accordance with Resolution **256 (WRC-23)**. This contribution provides an initial response which will allow WP 5D to proceed with its planning. | | |
| **Abstract:** Pursuant to Resolution **256 (WRC-23)**, in preparation for Agenda Item 1.7 (**WRC-27**), this contribution proposes a draft reply liaison statement to WP 5D with relevant technical information of the aviation systems (ARNS radio altimeters and AM(R)S wireless avionics intra-communication systems) operating in the adjacent frequency band 4 200-4 400 MHz and the Detect and Avoid (DAA) systems and airborne weather radar in the nearby ARNS frequency band 15.4-15.7 GHz. | | |

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| **Radiocommunication Study Groups** |  |
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| **English only** |
| United States of America | |
| proposed draft reply liaison statement to Working party 5D  **Relevant technical information for sharing studies under WRC-27 Agenda Item 1.7** | |
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**Introduction**

WRC-27 Agenda Item 1.7 considers studies on sharing and compatibility and develop technical conditions for the use of International Mobile Telecommunications (IMT) in the frequency bands 4 400-4 800 MHz, 7 125-8 400 MHz (or parts thereof), and 14.8-15.35 GHz taking into account existing primary services operating in these, and adjacent, frequency bands, in accordance with Resolution **256 (WRC-23)**. This contribution proposes a draft reply liaison statement to WP 5D with relevant technical information of the aviation systems (ARNS radio altimeters and AM(R)S wireless avionics intra-communication systems) operating in the adjacent frequency band 4 200-4 400 MHz and the Detect and Avoid (DAA) systems and airborne weather radars in the nearby ARNS frequency band 15.4-15.7 GHz.

Attachment: 1

ATTACHMENT

# Working Party 5B

PROPOSAL DRAFT REPLY LIAISON STATEMENT TO WORKING PARTY 5D

**Relevant technical information for sharing studies under WRC-27 Agenda Item 1.7**

Working Party (WP) 5B thanks WP 5D for its liaison statement in Document 5B/4, requesting the characteristics and protection criteria of the systems operating in the frequency bands 4 400-4 800 MHz, 7 125-8 400 MHz (or parts thereof), and 14.8-15.35 GHz taking into account existing primary services operating in these, and adjacent, frequency bands, in accordance with Resolution **256 (WRC-23)**, for sharing/compatibility studies under WRC-27 agenda item 1.7.

The frequency band 4 200-4 400 MHz is allocated to the primary aeronautical mobile (R) service (AM(R)S) and the primary aeronautical radionavigation service (ARNS). Use of the frequency band 4 200-4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. And use of the frequency band 4 200-4 400 MHz by stations in the aeronautical mobile (R) service is reserved exclusively for wireless avionics intra-communication systems that operate in accordance with recognized international aeronautical standards.

The frequency band 15.4-15.7 GHz is allocated to the primary aeronautical radionavigation service (ARNS) and is used by the unmanned aircraft Detect and Avoid (DAA) systems, the airborne weather/ground mapping radars, and other ARNS systems. This frequency band is nearby to the IMT proposed frequency band 14.8-15.35 GHz.

WP 5B highlights the following ITU-R recommendations and Reports that provide relevant technical information of above aviation systems:

**Recommendation ITU-R M.2059-0** Operational and technical characteristics and protection criteria of radio altimeters utilizing the band 4 200-4 400 MHz (02/2014)

This recommendation provides the technical and operational characteristics, and protection criteria of radio altimeters. Representative operational and technical characteristics of radio altimeters are in Annex 1 and Annex 2 of this recommendation. The protection criteria of the radio altimeters are in Annex 3 of this recommendation. Radio altimeter antenna pattern can be found in Annex 2 Section 1.2 of this recommendation.

**Recommendation ITU-R M.2067-0** Technical characteristics and protection criteria for Wireless Avionics Intra-Communication systems (02/2015)

This recommendation provides the technical and operational characteristics and protection criteria for wireless avionics intra-communication (WAIC) systems, as described in its Annex.

**Report ITU-R M.2319-0** Compatibility analysis between wireless avionic intra-communication systems and systems in the existing services in the frequency band 4 200-4 400 MHz (11/2014)

This report contains compatibility studies between radio altimeters and WAIC systems on board separate aircraft in the 4 200-4 400 MHz band.

**Document 5B/819 Annex 11** Characteristics of and protection criteria for radars operating in the aeronautical radionavigation service in the frequency band 15.4-15.7 GHz.

This document specifies the characteristics and protection criteria of radars operating in the aeronautical radionavigation service (ARNS) in the frequency band 15.4-15.7 GHz. The technical and operational characteristics should be used in analyzing compatibility between radars operating in the aeronautical radionavigation service and systems in other services.

**Recommendation ITU-R S.1340-0** Sharing between feeder links for the mobile-satellite service and the aeronautical radionavigation service in the Earth-to-space direction in the band 15.4-15.7 GHz (1997)

This recommendation contains the characteristics of ARNS systems in the 15.4-15.7 GHz band in Annex 1, and the protection criteria in Annex 3 Table 2.

**Recommendation ITU-R S.1341-0** Sharing between feeder links for the mobile-satellite service and the aeronautical radionavigation service in the space-to-Earth direction in the band 15.4-15.7 GHz and the protection of the radio astronomy service in the band 15.35-15.4 GHz (1997)

This recommendation contains the characteristics of ARNS systems in the 15.4-15.7 GHz band in Annex 1, and the protection criteria in Annex 3 Table 3.

WP 5B requests to be kept informed on the progress of the studies under WRC-27 agenda item 1.7 and will provide to WP 5D any relevant updated/additional information, before 31 December 2024 deadline, for studies under this WRC-27 agenda item.

Status: For information and action, as appropriate

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