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| **Title** | | Develop and maintain SARPs and guidance to prevent WAIC / Radio Altimeter interference | | **Reference**: | | FSMP.00Y.01 | | | | |
| **Source** | | FSMP/2 Report | | | | | | | | |
| **Problem Statement** | | Establish high-level guidance for the design and certification of Wireless Avionics Intra-Communications (WAIC) systems. | | | | | | | | |
| **Specific Details (including impact statements)** | | World Radiocommunication Conference 2015 (WRC-15) also allocated the frequency band 4 200 ‑ 4 400 MHz to the aeronautical mobile (route) service, exclusively reserved for WAIC, operating in accordance with international aeronautical standards. The associated Resolution **424 (WRC-15**) requires that the WAIC systems protect the operation of the radio altimeters and operate in accordance with SARPs as contained in Annex 10 to the ICAO Convention.  It is thus necessary that the SARPS specifically cover the following elements:   * Requirement that WAIC systems have to tolerate interference coming from radio altimeters from another aircraft * Requirement that WAIC systems on one aircraft shall not interfere with WAIC systems on other aircraft * Requirement that WAIC systems shall not interfere with radio altimeters on other aircraft1 * Receive mask(s) specifying required adjacent band / out-of-band suppression properties of a WAIC receiver * In-band emission properties of a WAIC transmitter, particularly transmit power levels and channel plan * Transmit mask(s) specifying out-of-band emission properties of a WAIC transmitter   Wherever possible the SARPS should reference MOPS to avoid having to update SARPS if MOPS are updated.  1WAIC system compatibility with radio altimeters on-board the same aircraft will be addressed via aircraft system integration and certification. | | | | | | | | |
| **Expected Benefit** | | Mutual protection criteria ensuring the safe operation and required performance of both WAIC and Radio Altimeters. | | | | | | | | |
| **Reference**  **Documents** | | Final Acts WRC-15, Geneva 2015  Report ITU-R M.2283 “Technical characteristics and spectrum requirements of Wireless Avionics Intra-Communications systems to support their safe operation”, approved Dec. 2013  Recommendation ITU-R M.2059 “Operational and technical characteristics and protection criteria of radio altimeters utilizing the band 4 200-4 400 MHz”, approved Feb. 2014  Report ITU-R M.2318 “Technical characteristics and protection criteria for Wireless Avionics Intra-Communications systems”, approved Nov. 2014  Report ITU-R M.2319 “Compatibility analysis between wireless avionics intra-communication systems and systems in the existing services in the frequency band 4 200-4 400 MHz”, approved Nov. 2014  Recommendation ITU-R M.2067 “Technical characteristics and protection criteria for Wireless Avionics Intra-Communication systems”, approved in Nov. 2014  Recommendation ITU-R M.2085 “Technical conditions for the use of the aeronautical mobile (R) service in the frequency band 4 200- 4 400 MHz to support wireless avionics intra-communication systems”  Minimum Operational Performance Standards (MOPS) for WAIC (to be developed) | | | | | | Attachments | | Y |
| **Primary Expert Group**: | | [FSMP] [to be determined] | | | | | | | | |
| **WPE No.** | **Document affected** | | **Description of Amendment proposal or Action** | | **Supporting Expert  Group** | **Expected dates:** | | | | |
| **Expert Group** | **Effective** | | **Applicability** | |
|  | Annex 10 Vol [III or V] | | New provisions for WAIC / Radio Altimeter interoperability | | CP, FSMP | Feb, 2019 |  | |  | |
| Initial Issue Date: | | | Date approved by ANC: | | Session/Meeting: | | | | | |
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