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| **36 MEETING OF PERMANENT****CONSULTATIVE COMMITTEE II:****RADIOCOMMUNICATIONS****November 30 to December 4, 2020*****Virtual meeting*** | **OEA/Ser.L/XVII.4.2.36****CCP.II-RADIO/doc. /20****7 November 2020****Original: English** |
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|  | **U.S. PRELIMINARY VIEW ON WRC-23 AGENDA ITEM 1.8** |  |
|  | **(Item on the Agenda: 3.1)** |  |
|  | **(Document submitted by the United States of America)** |  |

**Introduction:**

This document contains an attachment including the USA preliminary view on WRC-23 Agenda Item 1.8 for consideration in CITEL’s preparation for WRC-23.

**UNITED STATES OF AMERICA**

**DRAFT PRELIMINARY VIEW ON WRC-23 AI 1.8**

**AGENDA ITEM 1.8**: to consider, on the basis of ITU-R studies in accordance with Resolution **171 (WRC-19)**, appropriate regulatory actions, with a view to reviewing and, if necessary, revising Resolution **155 (Rev.WRC-19)** and No. **5.484B** to accommodate the use of fixed-satellite service (FSS) networks by control and non-payload communications of unmanned aircraft systems.

**ISSUE:**

Resolution **171 (WRC-19)** invites the ITU-R to complete, in time for WRC-23, relevant studies of the technical, operational, and regulatory aspects of Resolution **155 (Rev.WRC-19)**, taking into account the progress obtained by International Civil Aviation Organization (ICAO) in the completion of Standards and Recommended Practices (SARPs) on the use of FSS for Unmanned Aircraft Systems (UAS) control and non-payload communications (CNPC) links. The resolution also invites the ITU-R to review footnote No. **5.484B** and Resolution **155 (Rev.WRC-19)**,taking into account the results of these studies.

**BACKGROUND**:

WRC-12 Agenda Item 1.3 first addressed UAS spectrum requirements, which included terrestrial and satellite-based CNPC links as well as the Sense and Avoid requirements. As a result, WRC-12 added a new aeronautical mobile (R) service (AM(R)S) frequency allocation in the 5 030-5 091 MHz band to support terrestrial CNPC links and determined that existing aeronautical radionavigation service (ARNS) were sufficient to support UAS sense and avoid requirements. ITU-R Report M.2204 “Characteristics and spectrum considerations for sense and avoid systems use on unmanned aircraft systems” identifies the ARNS bands available for UAS sense and avoid. WRC-12 further revised the existing AMS(R)S allocation in the 5 030-5 091 MHz band, which could be used to support satellite-based command and control of UAS, from a footnote allocation to a table entry. While WRC-12 considered use of FSS satellites in additional frequency bands, it was unable to resolve the issues associated with FSS satellite-based CNPC links.

The use of FSS satellite-based CNPC links was re-examined under WRC-15 Agenda Item 1.5 and some frequencies in the 14/11 GHz bands and 30/20 GHz bands allocated to the FSS were identified, through footnote RR No. **5.484B,** to meet the satellite-based UAS CNPC link requirement. Since a number of aspects of CNPC link operations using FSS satellites were not yet complete, Resolution **155 (WRC-15)** identified the actions necessary to implement CNPC link operations using FSS satellites. In addition, Resolution **155 (WRC-15)** called for a review of the text of the resolution at WRC-23, to ensure that the actions necessary to implement CNPC link operations using FSS satellites had been addressed.

*Resolves* 16 in Resolution **155 (WRC-15)** called for WRC-19 to review and, if necessary, revise the power flux-density (pfd) limits provided in Annex 2 of the Resolution. As a result, the resolution was updated (see Resolution **155 (Rev.WRC-19)**). In addition, a new WRC-23 Agenda Item (AI 1.8) was created to consider the results of the actions identified in Resolution **155 (Rev.WRC-19)**.

*Resolves* 19 in Resolution **155 (WRC-15)** called for the completion of studies on technical, operational, and regulatory aspects of UAS CNPC systems along with the adoption of relevant ITU-R Recommendations defining the technical characteristics of satellite-based UAS CNPC Links and conditions of sharing with other services.

The ITU-R has been undertaking the development of new reports to address these *resolves*. These studies include a preliminary draft new (PDN) report ITU-R M.[UA\_PDF] on the pfd limits in Annex 2 of Resolution **155 (Rev.WRC-19)** to protect the fixed service operating in certain parts of the band 14.0-14.47 GHz in certain parts of the world (see *resolves* 14, 15, and 16 of Resolution **155 (Rev.WRC-19)**), and the technical characteristics of UAS CNPC link Earth stations.

**U.S. VIEW**:

To support and complete the studies called for by Resolutions **171 (WRC-19)** and **155 (Rev.WRC-19)** to define theconditions for operating in the FSS (see *resolves* 19 of Resolution **155 (Rev.WRC-19)**) in the frequency bands for which No. **5.484B** already applies. Based on the results of studies, consider revisions to Resolution **155 (Rev.WRC-19)** with a view to finalizing the provisions needed to accommodate the use of FSS networks by UAS CNPC systems and to revise No. **5.484B** to provide clarity that the provisions apply to the use of earth stations on board unmanned aircraft.

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