

## WAC Informal Working Group (IWG)-1

Modifications to NTIA's Preliminary View on  
Agenda Item 1.12 (see WAC/007(13.01.09))

Preparation for ITU Radiocommunication Conferences

### UNITED STATES OF AMERICA PRELIMINARY VIEWS ON WRC-11

**AGENDA ITEM 1.12:** to protect the primary services in the band 37-38 GHz from interference resulting from aeronautical mobile service operations, taking into account the results of ITU-R studies in accordance with Resolution **754 (WRC-07)**

**ISSUE:** Resolution **754 (WRC-07)**, "Consideration of modification of the aeronautical component of the mobile service allocation in the 37-38 GHz band for protection of other primary services in the band," calls for consideration of the compatibility of the aeronautical mobile service (AMS) with other primary services in the band 37-38 GHz in order to determine appropriate compatibility criteria for inclusion within the Radio Regulations or an appropriate modifications to the Table of Frequency Allocations.

**BACKGROUND:** The band 37-38 GHz is allocated on a primary basis to the fixed, mobile and space research (space-to-Earth) services, and the 37.5-38 GHz portion of this band is also allocated on a primary basis to the fixed-satellite service (space-to-Earth). Space research service (SRS) earth station receivers are being implemented in the 37-38 GHz band to support manned missions, for both near Earth and deep space distances. Use of the wider bandwidth available in the 37-38 GHz band is required to support the increasing data requirements of planned manned missions.

Preliminary analysis within ITU-R Working Party 7B has shown that aeronautical mobile stations (assuming parameters from lower bands) are capable of causing unacceptable levels of interference when they are within the line-of-sight of an SRS receiving earth station. In particular, SRS earth station receivers operating in the 37-38 GHz band have a very low interference threshold. Protection criteria applicable to these SRS Earth stations operating with either deep space or non-deep-space missions are contained in ITU-R Recommendations ITU-R SA.1396, ITU-R SA.609, ITU-R SA.1157 and ITU-R SA.1015. The operation of an aeronautical mobile station exceeding the protection criteria of the SRS for an extended period could jeopardize the success of a manned or scientific space mission. WRC-07 approved this agenda item based on information that no aeronautical mobile systems operate or plan to operate in the 37-38 GHz band.

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CITEL proposed this agenda item at WRC-07 with the intent to exclude the AMS from the Mobile Service allocations in the 37-38 GHz band, in order to determine appropriate compatibility criteria, and protect the other services using this band, particularly the space research service. However, subsequent to WRC-07 it was believed that some aeronautical use might be made of this band if the proper precautions were taken to protect the existing services. Preliminary studies using technical and operational criteria for AMS operations in lower bands are not necessarily applicable to future potential AMS use in the 37-38 GHz band. These earlier studies have shown that sharing with traditional AMS systems is not feasible if the AMS systems were to operate in the band. However, since WRC07 adopted this agenda item, the aviation industry is considering several candidate bands, which includes the 37-38 GHz band, for a newly identified airborne application. If studies show this application can operate without exceeding applicable interference thresholds, it may be feasible to establish sharing criteria that protects the other primary services in the band 37-38 GHz.

Resolution **754 (WRC-07)** calls for sharing studies between the AMS and the SRS, fixed service, FSS and MS in the band 37-38 GHz to determine appropriate criteria to ensure the protection of the other primary services from

AMS operations in the band 37-38 GHz. [FSS system characteristics which may be used in sharing or compatibility studies can be found in Recommendation ITU-R S.1328.](#)

**U.S. VIEW:** The United States supports sharing studies in the band 37-38 GHz to determine appropriate compatibility criteria for the AMS. If the studies show that sharing is feasible with particular AMS applications, support the establishment of sharing criteria that both protects the other primary services in the band 37-38 GHz, as well as allows for such compatible AMS applications. However, if the studies show that sharing is not feasible, support the suppression of the AMS from the 37-38 GHz band.