

UNITED STATES OF AMERICA
DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 1.6.2: to consider possible additional primary allocations to the fixed-satellite service (FSS) (Earth-to-space) of 250 MHz in Region 2 and 300 MHz in Region 3 within the range 13-17 GHz and review the regulatory provisions on the current allocations to the fixed-satellite service within this range, taking into account the results of ITU-R studies, in accordance with Resolution **152 (WRC-12)**

BACKGROUND: This agenda item studies the unplanned fixed-satellite service (FSS) imbalance in the Earth-to-space direction within ITU Regions 2 and 3 and considers allocating an additional 250 MHz and 300 MHz FSS (Earth-to-space), within the range 13.0-17.0 GHz, in Region 2 and Region 3, respectively. ITU-R sharing studies for this agenda item shall exclude the frequency band 13.0-13.25 GHz from consideration, in accordance with resolves 3 of Resolution **152 (WRC-12)**. As a result, studies in the ITU-R must demonstrate compatibility with incumbent services prior to WRC-15 allocating any additional spectrum to the FSS (Earth-to-space) in the range 13.25-17.0 GHz.

The existing unplanned FSS bands in this frequency range are extensively used for a myriad of applications. The very small aperture terminal (VSAT) services, video distribution, broadband networks, internet services, satellite newsgathering, and backhaul links have triggered the rapid rise in the demand. Satellite traffic is typically symmetrical in a large variety of applications, i.e. similar amounts of Earth-to-space (uplink) and space-to-Earth (downlink) traffic are transmitted. However, in ITU Regions 2 and 3, there are asymmetrical Earth-to-space and space-to-Earth FSS allocations that are used for these services.

The 250 MHz spectrum asymmetry in Region 2 and 300 MHz in Region 3 translates to approximately 10 and 14 transponders for each respective Region, considering a transponder bandwidth of 36 MHz in both polarizations. Some satellite networks are designed with an additional uplink beam which has sufficient geographical isolation with the uplink beam within the intended service area. The satellites currently deployed have been registered in all of the available non-planned bands in Regions 2 and 3, both in the uplink and the downlink. Faced with the current congestion and spectrum asymmetry, it is challenging for satellite operators to effectively expand their communication services within this frequency range to meet the growing market demands.

In order to address this spectrum shortage and imbalance, WRC-12 adopted agenda item 1.6.2 to consider additional primary allocations to the fixed-satellite service in the range 13-17 GHz and review regulatory provisions for existing FSS allocations, taking into account ITU-R studies in accordance with Resolution **152 (WRC-12)**. Resolution **152 (WRC-12)** invites the ITU-R to complete, for WRC-15, sharing and compatibility studies towards additional allocations to the

fixed-satellite service in the Earth-to-space direction of 250 MHz in Region 2 and 300 MHz in Region 3 within the band 13-17 GHz, focusing on the frequency range that is contiguous (or near contiguous) to the existing fixed satellite service allocations, while protecting existing primary services within these bands. This Resolution also calls for studies considering utilization of existing allocations to the FSS in the Earth-to-space direction through a review of regulatory provisions, except for Nos. **5.502** and **5.503** and Resolution **144 (Rev. WRC-07)**.

Within portions of the band 13-17 GHz are primary allocations to the fixed, mobile, mobile except aeronautical mobile, radiolocation, Earth exploration-satellite (active), Earth exploration-satellite (passive), fixed-satellite (Earth-to-space), radio astronomy, space research, space research (passive), radionavigation, and aeronautical radionavigation services. In accordance with Resolution **152 (WRC-12)**, the ITU-R should conduct sharing studies to address the protection of existing in-band primary services and compatibility studies to address interference.

Studies carried out in preparation for WRC-95 identified limited sharing compatibility between FSS uplinks and space-borne active sensors in the Earth exploration-satellite service (active) operating in the band 13.75-14.0 GHz. In the Table of Allocations there are no instances where EESS (active) and FSS (Earth-to-space) are co-primary.

Future ITU-R studies should include Doppler navigational radars used for collision avoidance for unmanned aircraft in the worldwide primary ARNS allocation in the band 13.25-13.4 GHz. The United States also maintains extensive mobile service operations in the band 14.5-15.35 GHz, which will require in-depth study with the proposed FSS operations. As noted in Resolution **152 (WRC-12)**, *further recognizing e*, the band 15.35-15.4 GHz is allocated to passive services and No. **5.340** applies.

The United States will be operating synthetic aperture radars worldwide as part of the global radiolocation service allocation in the band 15.4-17 GHz. The United States also operates an airport surface detection system on a co-primary basis with the primary radiolocation service in the band 15.7-16.2 GHz.

Working Party 4A is developing a Preliminary Draft New Report **ITU-R S.[R2R3.FSS]** to establish the issues and difficulties associated with this shortfall. This draft Report provides a framework for further work on the associated analyses and sharing studies in support of this agenda item.

U.S. VIEW: The United States supports studies towards consideration of possible additional primary allocations to the fixed-satellite service (FSS) (Earth-to-space) of 250 MHz in Region 2 and 300 MHz in Region 3 within the range 13-17 GHz and review the regulatory provisions on the current allocations to the fixed-satellite service within this range, in accordance with Resolution **152 (WRC-12)**.