

WRC-15 Agenda Item 1.1

With Respect to 5 925- 6 425 MHz

IWG-2 members were not able to reach consensus on a proposal for WRC-15 agenda item 1.1 regarding 5 925- 6 425 MHz and, therefore, forwards two views on how the FCC should handle this matter.

View A is supported by 21st Century Fox, Inc., Aviation Spectrum Resources, Inc., EchoStar Corporation, Inmarsat, Intelsat, Lockheed Martin Corp., National Association of Broadcasters, New Wave Spectrum Partners LLC, Satellite Industry Association, SES Americom, and The Boeing Company.

View B is supported by AT&T, Ericsson, Intel Corporation, Motorola Mobility, Nokia Solutions and Networks, Samsung, Sprint Corporation, Telecommunications Management Group Inc. and Verizon.

VIEW A

VIEW A: Proposal for No Change in All Three ITU Regions under AI 1.1 for the 5925-6425 MHz Frequency Band

WAC members setting forth this view carefully considered that without a mechanism that: i) ensures continued satellite access, ii) protects existing U.S. satellite receive operations in all three ITU Regions, iii) addresses two-way compatibility issues, and iv) does not constrain future growth for fixed-satellite service (FSS) in the 5925-6425 MHz band, it is necessary for the United States to propose no changes (NOC) to WRC-15 under agenda item 1.1 for this band. 21st Century Fox, Inc., Aviation Spectrum Resources, Inc., EchoStar Corporation, Inmarsat, Intelsat, Lockheed Martin Corp., National Association of Broadcasters, New Wave Spectrum Partners LLC, Satellite Industry Association, SES Americom, and The Boeing Company support this view. WAC members setting forth this view include operators, manufacturers, suppliers, and customers of satellite systems and networks that operate in the 5925-6425 MHz frequency band.

The frequency band 5 925-6 425 MHz has been identified as potential candidate frequency band for International Mobile Telecommunications (IMT) systems. The 5 925-6 425 MHz frequency range is used by satellites networks in the FSS for Earth-to-space communication, and these satellite networks are often used for intercontinental communications. FSS networks typically provide service to large regions encompassing the territory of multiple administrations.

The CPM Report for this frequency band stated, without disagreement, that the ITU-R “studies showed that GSO FSS space networks would be subjected to excessive levels of interference from the aggregate operation of IMT-Advanced (small cell) base stations, irrespective of whether they are deployed outdoors or indoors.” CPM Report, Section 1/1.1/4.1.13.2. Although the Report indicated that under certain conditions, co-frequency operation of FSS transmitting earth stations and an indoor IMT-Advanced small cell with no specific separation distance, this conclusion was limited to a specific case included in draft new Report ITU-R [FSS-IMT CBAND UPLINK], and did not cover the case where the bandwidth of the FSS carrier is larger than the bandwidth of the IMT-Advanced channel or larger than the aggregate bandwidth of the combined IMT-Advanced channels. The Report also specifies that “[i]t was concluded that for the protection of a single receiving IMT-Advanced base station, separation distances up to many tens of km would be required between a single transmitting FSS earth station and a single outdoor IMT-Advanced receiving base station, in order to protect the IMT-Advanced station from co-frequency interference.” Although one scenario of potential interference from FSS transmitting earth stations to IMT stations formed the basis of a feasibility determination under conditions fully specified, other cases of interference to IMT (including the operational case used by most FSS networks) are not resolved. Furthermore, the case of aggregate interference to FSS satellite receive operations has also not been resolved – and this is significant, as the draft new Report states without disagreement that “[i]f deployed in these bands, it is expected IMT stations would be deployed in large numbers as part of dense mobile communication networks.” See Introduction to draft New Report ITU-R [FSS-IMT CBAND UPLINK], Document 4/77 and 5/123. These factors led to the view in the CPM Report from some administrations, including many administrations operating FSS satellites in geostationary orbit in the 5925-6425 MHz band, “that, considering the extent of the FSS deployment worldwide in the band 5 925-6 425 MHz, there is no potential for harmonization of that band, either regionally or globally, for IMT or other mobile broadband.” CPM Report, Section 1/1.1/4.1.13.2.

The proponents of View A strongly support this conclusion. As U.S. satellites authorized to receive in the 5925-6425 MHz band operate at orbital locations serving all three ITU Regions, it is

imperative that the U.S. protect these operations by proposing that no IMT stations be authorized to transmit in this band anywhere in the world.

ATTACHMENT TO VIEW A:

Draft

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 1.1

1.1 to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)**

BACKGROUND:

The frequency range 5 925-6 425 MHz, or parts thereof, is allocated to the FS, FSS and MS. The frequency bands adjacent to this frequency range are allocated to the FS, FSS, MS, ARS and RLS.

The frequency band 5 925-6 425 MHz has been identified as potentially suitable frequency range for International Mobile Telecommunications (IMT) systems. If deployed in these bands, it is expected IMT stations would be deployed in large numbers as part of dense mobile communication networks.

The 5 925-6 425 MHz frequency range is extensively used by satellites networks in the fixed satellite service (FSS) for Earth-to-space communication. By their global nature, FSS networks typically provide service to large regions encompassing the territory of multiple administrations. ITU-R studies showed that receiving space stations of GSO FSS space networks would be subjected to excessive levels of interference from IMT-Advanced base stations. Considering the extent of FSS deployment worldwide in the band 5 925-6 425 MHz, and the studies described in draft new Report ITU-R [FSS-IMT C-BAND UPLINK] (Document 4/77, 5/123), the United States concludes that there is no potential at WRC-15 for harmonization of the 5 925-6 425 MHz band, either regionally or globally, for IMT or other mobile broadband. As a result, this Administration proposes no change to the 5 925-6 425 MHz band under this agenda item.

PROPOSAL:

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations
(See No. 2.1)

NOC USA/1.1/1

5 570-7 250 MHz

Allocation to services		
Region 1	Region 2	Region 3

5 925-6 700	FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C 5.149 5.440 5.458	

Reasons: The 5 925-6 425 MHz band is extremely important for FSS for Earth-to-space communications, and FSS networks typically provide service to large regions encompassing the territory of multiple administrations. ITU-R studies have demonstrated that receiving space stations of GSO FSS space networks would be subjected to excessive levels of interference from IMT-Advanced base stations. As a result, sharing between IMT or other mobile broadband systems and FSS space and earth stations is not feasible.

VIEW B

VIEW B:

The proponents of View B (attached) are of the view that the United States of America should not support a NOC proposal for all three Regions for 5925-6425 MHz for WRC-15 Agenda Item 1.1 as proposed in View A, given that CPM text and associated studies show that sharing and compatibility between IMT-Advanced systems and FSS networks in 5 925-6 425 MHz frequency band is feasible under certain conditions.

View B is supported by AT&T, Ericsson, Intel Corporation, Motorola Mobility, Nokia Solutions and Networks, Samsung, Sprint Corporation, Telecommunications Management Group Inc. and Verizon.

These View B companies note that the CPM text states that “Based on studies described in draft new Report ITU-R [FSS-IMT C-BAND UPLINK] it is concluded that sharing and compatibility between IMT-Advanced systems and FSS networks in 5 925-6 425 MHz frequency band is feasible under certain conditions. These conditions include deployment of IMT-Advanced systems only indoor and establishment of a limit on the maximum allowable e.i.r.p. for IMT-Advanced stations in this frequency range. In addition it is generally concluded that no specific separation distance is required between a FSS transmitting station and an indoor IMT-Advanced small cell.”

CPM text also states “Some administrations are of the view that there is potential for harmonization in portions or the whole of the band 5 925-6 425 MHz, either regionally or globally, for IMT or other mobile broadband.”

Given the importance of mobile broadband in providing connectivity to users and the results of ITU-R studies that show that sharing is feasible under certain conditions, the above signed companies respectfully submit that the United States should not oppose identification to IMT in the 5 925- 6 425 MHz band by other administrations or other Regions.

ATTACHMENT TO VIEW B:

Draft

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 1.1

1.1 to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)**;

BACKGROUND:

The frequency range 5 925-6 425 MHz, or parts thereof, is allocated to the FS, FSS and MS. The frequency bands adjacent to this frequency range are allocated to the FS, FSS, MS, and to the ARS and RLS on a secondary basis.

The frequency band 5 925-6 425 MHz has been identified as a potential candidate frequency band for International Mobile Telecommunications (IMT) systems. The 5 925-6 425 MHz frequency range is used by satellite networks in the fixed satellite service (FSS) for Earth-to-space communication.

CPM text states “Based on studies described in draft new Report ITU-R [FSS-IMT C-BAND UPLINK] it is concluded that sharing and compatibility between IMT-Advanced systems and FSS networks in 5 925-6 425 MHz frequency band is feasible under certain conditions. These conditions include deployment of IMT-Advanced systems only indoor and establishment of a limit on the maximum allowable e.i.r.p. for IMT-Advanced stations in this frequency range. In addition it is generally concluded that no specific separation distance is required between a FSS transmitting station and an indoor IMT-Advanced small cell.”

The United States currently uses this band for FSS and does not support an identification for IMT in the United States under WRC-15 agenda item 1.1. However, as ITU-R studies show that sharing is feasible under certain conditions, the US takes no position on the identification for IMT by other administrations or other Regions.

PROPOSAL:

ARTICLE 5

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Reasons: The United States currently uses this band for FSS and does not support an identification for IMT in the United States under WRC-15 agenda item 1.1. However, as ITU-R studies show that sharing is feasible under certain conditions, the US takes no position on the identification for IMT by other administrations or other regions.