

DRAFT**United States of America****PROPOSALS FOR THE WORK OF THE CONFERENCE****AGENDA ITEM 1.1****Introduction**

In this document the United States of America makes a proposal under WRC-15 Agenda Item 1.1 for a primary allocation to the mobile service regarding the 5350-5470 MHz frequency range to facilitate the development of terrestrial mobile broadband applications.

Background

The World Radiocommunication Conference 2012 (WRC-12) adopted WRC-15 Agenda Item 1.1 in an effort to meet the dramatic increase in demand for mobile broadband applications. Radio Local Area Networks (RLANs) have become an important component of broadband connectivity for consumers and businesses.

The World Radiocommunication Conference-2003 (WRC-03) allocated the bands 5150-5350 MHz and 5470-5725 MHz on a primary basis to the mobile service for the implementation of wireless access systems including RLANs, subject to Resolution **229 (Rev. WRC-12)** (see **No.5446A**). Resolution **229 (Rev. WRC-12)** establishes the regulatory, operational and technical provisions that ensure compatibility with the primary services in the subject bands. The WRC-03 action has enabled significant growth of RLANs while ensuring protection of other services.

Since the allocation in 2003, RLANs have been utilized in the 5 GHz frequency range to provide local area access to the Internet. Over that period, RLAN technology has evolved to provide higher data rates than those supported in 2003. However, the capacity of wired and wireless broadband connections into the home or business also has increased at the same time as fiber is now closer to the premise, 3G deployments are being replaced by LTE, etc. Therefore, it is crucial for RLAN technology to continue to evolve to support the increased data rates consumers have come to expect.

The newest RLAN evolution, IEEE 802.11ac, can support data rates with a theoretical maximum of 3.5 Gbps and actual throughputs for end users of greater than 2 Gbps utilizing four antennas. However, these throughputs depend on the availability of wide spectrum channels. IEEE 802.11ac utilizes 80 to 160 MHz wide channels compared to 20-40 MHz channels utilized by the RLAN technologies in 2003.

In addition to distributing local area internet traffic and providing offloading of data for mobile networks, RLANs can also be utilized for direct device to device connectivity. For example, content can be streamed over RLANs from a smart device to a larger screen or support data back-up directly to servers.

The increasing data traffic on RLAN networks necessitates wider channel sizes to support higher data rates. Considering existing allocations in the adjacent bands (5150-5350 MHz and 5470-5725 MHz), the 5350-5470 MHz bands are particularly attractive for RLANs.

The United States recognizes that protection of the existing services is a prerequisite for the introduction of RLANs in the 5350-5470 MHz bands. The proposal presented below establishes the international regulatory framework to protect the existing services. Under the proposed framework, the domestic regulators have the flexibility to implement varying combinations of technical, operational and regulatory techniques for the protection of all existing services in the band 5350-5470 MHz consistent with their national priorities.

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)**;

ARTICLE 5

Frequency allocations

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

MOD USA/1.1/1

4 800-5 570 MHz

Allocation to services		
Region 1	Region 2	Region 3
5 150-5 250	FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION 5.446 5.446C 5.447 5.447B 5.447C	
5 250-5 255	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.447E 5.448 5.448A	
5 255-5 350	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.447E 5.448 5.448A	
5 350-5 460	EARTH EXPLORATION-SATELLITE (active) 5.448B RADIOLOCATION 5.448D AERONAUTICAL RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448C <u>MOBILE except aeronautical mobile 5.XXX</u>	
5 460-5 470	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449 SPACE RESEARCH (active) <u>MOBILE except aeronautical mobile 5.XXX</u> 5.448B	
5 470-5 570	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active) 5.448B 5.450 5.451	

Reasons: A new international allocation to the Mobile service for 5350-5470 MHz would facilitate contiguous spectrum for RLANs, which would increase the number of non-overlapping channels available for use. The contiguous spectrum would enable more efficient use of the spectrum. Additionally, these bands are adjacent to other bands where RLANs operate which would facilitate the possibility of reduced equipment cost and complexity.

ADD USA/1.1/2

5.XXX In the bands 5 350-5 460 and 5460-5470 MHz, stations in the mobile service shall not claim protection from stations in the radiolocation and radionavigation services and space

stations in the earth-exploration-satellite (active) and space research (active) services, and No. **5.43A** shall apply. (WRC-15)

MOD USA/1.1/3

5.448C The space research service (active) operating in the band 5 350-5 460 MHz shall not cause harmful interference to nor claim protection from other services to which this band is allocated. This provision does not apply to the mobile service, see 5.XXX.

Reasons: The proposed provision would mandate protection of the existing services in the 5 350-5 470 MHz bands. In order to comply with this provision, the domestic regulators are compelled to adopt a combination of technical, operational and regulatory techniques for the protection of all existing services in the bands 5350-5470 MHz consistent with national priorities and based on ITU-R recommendations and Reports.