UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 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 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 volume of traffic over the RLAN networks is growing as it supports local area networks as well as data offloading for mobile networks. As devices such as tablets that connect to the internet solely through RLANs increase, data traffic over RLANs can be expected to grow.

The 2003 World Radiocommunication Conference- (WRC-03) allocated the bands 5150-5350 MHz and 5470-5725 MHz on a primary basis to the mobile (except aeronautical) service for the implementation of wireless access systems including RLANs, subject to Resolution **229 (Rev. WRC-12)** (see No. **5.446A**). The WRC-03 action has enabled significant growth of RLANs. Resolution **229 (Rev. WRC-12)** establishes the regulatory, operational and technical provisions that are intended to enable some level of compatibility with the primary services in the subject bands. Resolution **229 (Rev. WRC-12)** also invites the ITU-R to continue:

- work on regulatory mechanisms and further mitigation techniques to avoid incompatibilities which may result from aggregate interference into the FSS in the band 5 150-5 250 MHz from a possible prolific growth in the number of wireless access system (WAS), including RLANs;
- studies on mitigation techniques to provide protection of EESS from stations in the mobile service;
- studies on suitable test methods and procedures for the implementation of dynamic frequency selection, taking into account practical experience.

For over a decade RLANs have provided local area access to the Internet. During that period, RLAN technology has evolved to provide higher data rates. However, wired and wireless broadband connections into the home or business also have increased data rates with expanded fiber-optic connections and new, wireless deployments (Long Term Evolution (LTE), WiMAX, etc.). It is, therefore, crucial for RLAN technology to continue to evolve to support these increased data rates.

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.

To meet the growing data traffic demands, the newest RLAN standard currently in development, IEEE 802.11ac, can support higher speeds with a theoretical maximum speed of 3.5 Gbps and actual throughputs for end users of greater than 2 Gbps utilizing four antennas. The increasing traffic on RLAN networks requires wider channels to support higher data rates, which in turn create a need for additional spectrum. In this regard, the 5350-5470 MHz band is particularly attractive for RLANs for reasons that include:

- RLAN devices already operate in spectrum immediately adjacent to the 5350-5470 MHz band (i.e. 5150-5350 MHz and 5470-5725 MHz) subject to Resolution **229 (Rev WRC-12)**. Equipment cost and complexity for development of RLAN devices in 5350-5470 MHz may be less complicated than other bands not adjacent to the existing RLAN bands.
- 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 two additional 80 MHz channels as well as one additional 160 MHz channel. (Note: the increase in channel bandwidth is greater than the corresponding increase in spectrum to enable a more efficient spectrum utilization and band plan.)

The 5350-5470 MHz band is allocated on a primary basis to the Earth exploration-satellite, space research, and radiolocation services. In addition, the 5350-5460 MHz band segment has the aeronautical radionavigation service on a primary basis and the 5460-5470 MHz band segment has the radionavigation service on a primary basis. Many of these services also operate within all or portions of 5470-5725 MHz, where dynamic frequency selection (DFS) has already been employed in an attempt to protect some of these incumbent services. However, the systems and requirements for the primary services in 5350-5470 MHz band have evolved, thus changing the interference environment in which RLAN systems will operate. In preparation for WRC-15, the compatibility studies in the 5350-5470 MHz band should include examination of the applicability of the technical and regulatory solutions stipulated in Resolution **229 (WRC-12)**, including whether DFS will be a viable option, for facilitating compatibility between RLANs and existing services, in the 5350-5470 MHz band.

The modeling considerations for the 5350-5470 MHz band will vary from previous studies completed in the ITU-R and the detailed analyses are expected to be more complex than those previously utilized to determine the sharing conditions in the 5150-5250 MHz, 5250-5350 MHz, and 5470-5725 MHz bands. In order to consider a mobile allocation for implementation of wireless access systems, including RLANs in the 5350-5470 MHz band, studies need to determine compatibility, sharing feasibility and mitigation measures, including appropriate regulatory solutions to ensure protection of existing services..

U.S. VIEW: If compatibility studies determine sharing feasibility and mitigation measures, including appropriate technical and regulatory mechanisms to protect existing services, the United States supports a primary allocation to the mobile (except aeronautical) service for the implementation of wireless access systems including RLANs in the 5350-5470 MHz band.