**UNITED STATES OF AMERICA**

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

**Agenda Item 1.13**

**Agenda Item 1.13:** *to consider identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution***238 (WRC-15)**

**Background Information:**

Both terrestrial and satellite broadband services play a crucial role in providing access to businesses and consumers worldwide and will be critical components of 5G networks. For continuity, resiliency and broad connectivity solutions, satellite broadband is an indispensable part of the 5G network. Because of increased demand for satellite broadband services, there is a need for additional spectrum being made available to support its growing user base.

Broadband satellite systems require access to unencumbered uplink spectrum to operate widely deployed transmitting user terminals. To satisfy this minimum requirement, ITU footnote 5.516B identifies 2 GHz of uplink spectrum for high-density fixed-satellite service (HDFSS) operations in ITU Region 2 in the 48.2-50.2 GHz band (Earth-to-space), paired with the 40-42 GHz band (space-to-Earth) (see Resolution **143 (Rev. WRC-07)**).

HDFSS operations provide access to a wide range of broadband telecommunication applications, including broadband services and machine-to-machine (M2M) communications, both independently and in complement with other telecommunication systems. Growth in the satellite M2M market is expected to reach $2.9 billion by 2026, driven by 6.8 million in-service terminals.[[1]](#footnote-1) These terminals will be deployed over urban, suburban and rural areas of large geographical extent, and the practicability of techniques to successfully manage co-frequency sharing with ubiquitous terrestrial services, such as IMT, has not been demonstrated.

HDFSS systems require flexible, rapid and ubiquitous deployment of large numbers of cost-optimized earth stations employing small antennas and having common technical characteristics. The identification of bands for HDFSS facilitates its implementation and maximizes global access and economies of scale.

The United States has reserved the HDFSS identifications at 48.2-50.2 GHz and 40-42 GHz for exclusive FSS use, finding that broadband services delivered over satellite networks could play a useful role in bringing the benefits of broadband to more Americans. Given the current state of satellite technology, these systems would need access to spectrum where satellite end user devices can operate and be freely deployed uplink user terminals across the United States.[[2]](#footnote-2) An identification of the 48.2-50.2 GHz and 40-42 GHz frequency bands for IMT is incompatible with this objective.

# Proposals:

# NOC USA/1.13/1

ARTICLE 5

Frequency allocations

**47.5-51.4 GHz**

|  |  |  |
| --- | --- | --- |
| **Allocation to services** | | |
| **Region 1** | **Region 2** | **Region 3** |
| **48.2-48.54**  FIXED  FIXED-SATELLITE  (Earth-to-space) 5.552  (space-to-Earth) 5.516B  5.554A 5.555B  MOBILE | **48.2-50.2**  FIXED  FIXED-SATELLITE (Earth-to-space) 5.516B 5.338A 5.552  MOBILE  5.149 5.340 5.555 | |
| **48.54-49.44**  FIXED  FIXED-SATELLITE  (Earth-to-space) 5.552  MOBILE  5.149 5.340 5.555 |
| **49.44-50.2**  FIXED  FIXED-SATELLITE  (Earth-to-space) 5.338A 5.552  (space-to-Earth) 5.516B  5.554A 5.555B  MOBILE |

**Reason**: An IMT identification at 48.2-50.2 GHz is incompatible with the HDFSS identifications in the same band, which provides dedicated spectrum for ubiquitously deployed user terminals for broadband and M2M services. The current state of satellite technology requires access to spectrum where satellite end user devices can operate and be freely deployed without constraints caused by ubiquitous terrestrial services in the same band.

1. Alan Weissberger, IEEE Communication Society Blog, *NSR: Satellite IoT market forecast at $2.9B by 2026* (Oct. 1, 2017) (*available at* <http://techblog.comsoc.org/2017/10/01/nsr-satellite-iot-market-forecast-at-2-9b-by-2026/>). [↑](#footnote-ref-1)
2. *Spectrum Frontiers Second Report and Order* ¶189. [↑](#footnote-ref-2)