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| **31 MEETING OF PERMANENT**  **CONSULTATIVE COMMITTEE II:**  **RADIOCOMMUNICATIONS**  **July 16 to 20, 2018**  **Guadalajara, Jalisco, Mexico** | | **OEA/Ser.L/XVII.4.2.31**  **CCP.II-RADIO/doc. /18**  **6 June 2018**  **Original:** | |
|  | | | |
|  | **U.S. PROPOSAL ON WRC-19 AGENDA ITEM 1.15** | |  |
|  | **(Item on the Agenda: 3.1)** | |  |
|  | **(Document submitted by the delegation of the United States of America)** | |  |

Introduction

This document contains an attachment including the USA proposal on WRC-19 Agenda Item 1.15 for consideration in CITEL’s preparation to WRC-19 Agenda Item 1.15.

**ATTACHMENT**

**Agenda item 1.15**:*to consider identification of frequency bands for use by administrations for the land-mobile and fixed services applications operating in the frequency range 275-450 GHz, in accordance with* ***Resolution 767 (WRC-15)***

**Background Information**: WRC-19 agenda item1.15 considers the introduction of land-mobile and fixed service applications operating in the frequency range 275-450 GHz. At present, there are no allocations to radiocommunications services above 275 GHz in the Radio Regulations (RR’s).

Recent advances in microwave technology make possible the use of the frequency range 275-450 GHz by active services for communications and other uses. While optical fiber is generally the least expensive terrestrial communications medium in terms of equipment cost per Gb/s-km, there are some applications where fixed radio systems of comparable bandwidth have unique advantages. In some locations, *e.g.* highly urbanized areas, optical fiber has very high installation costs which greatly exceeds component costs. Optical fiber cannot be installed quickly in certain place for special events and may not be economical for short-term events at a given location. Optical fiber has a time latency greater than radio systems due to the index of refraction of the fiber material which results in a group velocity about 25% less than in radio systems. While for many applications this latency is insignificant, for some applications it is an issue. Finally, in case of disaster, especially earthquakes with ground rupture along a fault, fiber optics systems cannot be restored quickly and temporary radio systems with comparable capacity would be beneficial in restoring communications networks for both land line service and mobile service.

Footnote No. **5.565** identifies frequency bands in the range 275-450 GHz for use by administrations for radio astronomy, Earth exploration-satellite (passive) and space research (passive) service applications. Consistent with No. **5.565**, frequencies above 275 GHz can be utilized for active service applications such as those in the fixed and land mobile services, provided “all practicable steps” are taken to protect passive services.

The studies concerning the compatibility of EESS(passive)/RAS and LMS and FS applications concluded that the following bands can be identified for LMS/FS applications without the need for regulatory restrictions: 275-296 GHz, 306-313 GHz, 320-330 GHz and 356-450GHz. However, in the case where LMS/FS applications will be deployed in the same geographical area as RAS sites, separation distances and/or avoidance angles may be needed (per national arrangements) to protect RAS sites.

**Proposals**:

**MOD** **USA/1.15/1**

ARTICLE 5

**Frequency allocations**

**Section IV – Table of Frequency Allocations**

|  |  |  |
| --- | --- | --- |
| **248-3 000 GHz** | | |
| **Allocation to services** | | |
| **Region 1** | **Region 2** | **Region 3** |
| **275-3 000** (Not allocated) 5.565, ADD 5.A115 | | |

**ADD** **USA/1.15/2**

**5.A115** The following frequency ranges are identified for use by administrations for land-mobile and fixed service applications:

– 275-296 GHz, 306-313 GHz, 320-330 GHz and 356-450 GHz.

**Reasons**: While much of the spectrum in 275-450 GHz has been previously identified in No. **5.565** for Earth exploration-satellite service (passive) and space research service (passive), compatibility studies in ITU-R have shown that sharing of these bands between passive users and terrestrial use is possible under the existing provisions of No. **5.565,** which are unchanged here.

**NOC USA/1.15/3**

**5.565**

**Reasons:** Modifications to No. **5.565** are not necessary as the addition of fixed and land-mobile active services to the 275-450 GHz frequency range can be accomplished through the addition of a new footnote.

**SUP USA/1.15/4**

RESOLUTION 767 (WRC-15)

**Studies towards an identification for use by administrations for land-mobile and fixed services applications operating in the frequency range 275-450 GHz**

The World Radiocommunication Conference (Geneva, 2015),

**Reasons:** Consequential action. Studies have been completed and frequency bands for FS/LMS applications have been identified.

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