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| **42 MEETING OF PERMANENT**  **CONSULTATIVE COMMITTEE II:**  **RADIOCOMMUNICATIONS**  **August 28 to September 01, 2023**  **Ottawa, Canada** | | **OEA/Ser.L/XVII.4.2.42**  **CCP.II-RADIO /doc. 5942/23**  **13 August 2023**  **Original: English** | |
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|  | **PROPOSALS FOR THE WORK OF THE CONFERENCE AGENDA ITEM 10 - NEW MSS SPECTRUM** | |  |
|  | **(Item on the Agenda: 3.1 (SGT-5))** | |  |
|  | **(Document submitted by the delegation of the United States of America)** | |  |

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| **Impact on the sector:** |
| This document supports the work of CITEL’s PCC.II Working Group for WRC under 3.1 of the agenda. |

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| **Executive Summary:** |
| Under agenda item 10, the United States proposes a new WRC-27 agenda item to study new mobile-satellite service (MSS) allocations and attendant regulatory mechanisms. |

**United States of America**

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 10

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10 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention.

**Introduction**

This is a proposal for a new agenda item for WRC-27 to study new mobile-satellite service (MSS) allocations and attendant regulatory mechanisms.

**Background/Discussion**

The landscape of MSS is witnessing a transformative evolution. There is an escalating demand propelling the need for additional spectrum, particularly in the lower bands where a significant shortfall continues. This increasing demand requires the allocation of more MSS spectrum to enable service expansion and meet future needs. The proposal envisions studying and potentially allocating additional frequency bands - 2010-2025 MHz, 2120-2160 MHz, and 2160-2170 MHz, to further enhance MSS capabilities.

Multiple factors drive this surge in MSS demand. Primarily, it's the growing need for increased mobility in satellite services, alongside the demand for expanded capacity to extend existing and introduce new services, for example, satellite internet of things (IoT). Moreover, the imperative requirement for improved coverage in remote and underserved regions is also a significant catalyst.

Moreover, Technical advancements and recent external standards organization work have fostered new terminal designs and opportunities, that can significantly intensify MSS traffic demand by bringing services direct to consumer electronic small devices for voice and data services.

Furthermore, as recognized in numerous UN and ITU reports, there is still a connectivity gap which has led to increasing reliance on satellites for consistent connectivity. This has resulted in a compelling synergies into new industry sectors including agriculture, energy, environment, healthcare, logistics, real estate, retail, and transportation. Notably, it is also playing a pivotal role in enhancing safety services like Aeronautical Mobile-Satellite (R) Service (AMS(R)S) and Global Maritime Distress and Safety System (GMDSS). By bolstering emergency communication capabilities, MSS is becoming indispensable for disaster management and relief operations, hence underscoring the urgency for more MSS spectrum.

Significant strides have been made since the last MSS allocations in 2003, with MSS systems now significantly evolved, especially in the realm of continuous data communications.

This proposal, in tune with these advancements, aims to study the sharing and compatibility considerations of adding primary MSS spectrum allocations in the mentioned frequency bands. As the existing MSS allocations, may fall short of accommodating future applications, thus additional spectrum should be studied to address the growing spectrum needs.

At the same time, in all of the bands proposed for study for potential MSS allocations, the importance of protecting incumbent services is acknowledged. The overall aim is to fully leverage the evolving dynamics of MSS by providing additional spectrum, without imposing additional constraints on the existing services.

**Proposal**

The United States proposes to identify spectrum requirements and possible allocations for WRC-27 and based on the results of sharing and compatibility studies with incumbent services, consider new or amended allocations to the MSS.

**Preliminary agenda for the 2027 World Radiocommunication Conference**

**ADD** USA/10 (MSS SPECT)/1

RESOLUTION [A10 MSS.SPECT] (WRC-23)

**Potential New and Amended Frequency Allocations to the Mobile-Satellite Service in the Frequency Bands 2010-2025 MHz (Earth-to-space) in Regions 1 and 3, 2120-2160 MHz (space-to-Earth) in all three Regions, 2160-2170 MHz (space-to-Earth) in Regions 1 and 3**

The World Radiocommunication Conference (Dubai, 2023),

*considering*

*a)* that demand for mobility communications has driven an increasing demand for mobile-satellite services and connectivity anywhere;

*b)* that recent developments in technology design and external standards organization work are facilitating the integration of mobile-satellite solutions into new design types to address connectivity to consumer electronic small devices including for consumers, agriculture, business and other industry sectors, which significantly increases the market of potential users of MSS services;

*c)* that no new MSS allocations have occurred since WRC-03 and therefore the spectrum shortfall for MSS applications requires attention;

*d)* that the range of MSS applications has expanded manyfold since the last MSS allocations were made at WARC-92 and WRC-95, and the number of MSS systems is growing and the spectrum demand for suitable MSS allocations is increasing;

*e)* that existing MSS allocations are heavily oversubscribed,

*considering also*

*a)* that MSS allocations in the frequency bands bands 2010-2025 MHz (Earth-to-space)for Regions 1 and 3, 2120-2160 MHz (space-to-Earth) in all three Regions, 2160-2170 MHz (space-to-Earth)in Regions 1 and 3 may help address MSS spectrum demands;

*b)* that MSS characteristics can be found ITU-R Recommendations and Reports, such as M.1184, but characteristics of new systems are evolving,

*noting*

*a)* that Report ITU-R M.2218 estimated the spectrum requirement for MSS broadband between 240 MHz and 355 MHz;

*b)* that Report ITU-R M.2218 suggests that the operational characteristics of incumbent MSS systems may constrain and effectively hamper the sharing of existing MSS spectrum, resulting in a requirement for additional spectrum for new applications;

*c)* that No. **1.25** contemplates the use of radiocommunications between space stations of the MSS,

*recognizing*

*a)* that the growth in demand for mobile-satellite systems is increasing traffic to the point of spectrum congestion, making it difficult to sustain MSS services on a long-term basis in the existing bands;

*b)* that mobile-satellite systems implementing various applications, including data applications, to the communities in remote and underserved areas require additional spectrum;

*c)*  that some existing satellite allocations may be adapted to provide further MSS capacity,

*resolves to invite the ITU Radiocommunication Sector*

1 to conduct studies on the spectrum requirements, as well as system characteristics of representative MSS systems planned to operate in the frequency bands 2010-2025 MHz (Earth-to-space)for Regions 1 and 3, 2120-2160 MHz (space-to-Earth) in all three Regions, 2160-2170 MHz (space-to-Earth)in Regions 1 and 3;

2 to complete, for WRC-27, studies of possible new allocations to the mobile-satellite service in the frequency bands in *resolves to invite the ITU Radiocommunication*

*Sector* *1*, taking into account the results of sharing and compatibility studies, with a view to ensure the protection of incumbent services without imposing additional constraints on them.

*invites the 2027 World Radiocommunication Conference*

to consider, on the basis of the studies conducted under *resolves to invite the ITU Radiocommunication Sector* above, appropriate allocations in the frequency bands listed in *resolves to invite the ITU Radiocommunication Sector* 1, and associated regulatory conditions for the mobile-satellite service.

*invites administrations*

to participate in the studies by submitting contributions to the ITU-R.

**Reason:** This resolution permits studies on the possibility of adding at WRC-27 primary MSS allocations, and associated regulatory provisions, in the frequency bands 2010-2025 MHz **(**Earth-to-space)in Regions 1 and 3, 2120-2160 MHz (space-to-Earth) in all three Regions, 2160-2170 MHz (space-to-Earth) in Regions 1 and 3.

**ATTACHMENT**

**Potential New and Amended Frequency Allocations to The Mobile-Satellite Service in the Frequency Bands 2010-2025 MHz (Earth-to-space) in Regions 1 and 3, 2120-2160 MHz (space-to-Earth) in all three Regions, 2160-2170 MHz (space-to-Earth) in Regions 1 and 3**

**Subject**:This is a proposal for a new agenda item for WRC-27 to adopt new mobile-satellite service allocations and attendant regulatory mechanisms.

**Origin**: United States of America

*Proposal:* Potential New and Amended Frequency Allocations to The Mobile-Satellite Service in the frequency bands 2010-2025 MHz (Earth-to-space)for Regions 1 and 3, 2120-2160 MHz (space-to-Earth) in all three Regions, 2160-2170 MHz (space-to-Earth)in Regions 1 and 3.

***Background/reason****:* Allocating more MSS spectrum is necessary to address the increasing demand for mobile satellite applications (and satellite mobility generally), a persistent MSS spectrum shortfall, and crowding in lower bands. MSS can provide coverage to underserved and remote areas, support evolving technologies, and facilitate the integration into new terminals.

***Radiocommunication services concerned****:*Fixed Service, Mobile Service.

***Indication of possible difficulties****:* None foreseen

***Previous/ongoing studies on the issue****:* None

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| ***Studies to be carried out by: WP4C*** | *with the participation of:*  Administrations and Sector members of the ITU-R |

***ITU-R Study Groups concerned****:* ***SGs 3, 4 and 5***

***ITU resource implications, including financial implications (refer to CV126)****:* This proposed agenda item will be studied within the normal ITU-R procedures and planned budget.

***Common regional proposal****:* Yes/No ***Multicountry proposal:*** Yes/No

*Number of countries:*

***Remarks***