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| **World Radiocommunication Conference (WRC-19) Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
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| PLENARY MEETING | **Addendum 24 to Document 75-E** |
|  | **18 October 2019** |
|  | **Original: English** |
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| Samoa (Independent State of) | |
| Proposals for the work of the conference | |
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| Agenda item 10 | |

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.

Background

Today almost all commercial Low Earth Orbit (LEO) satellites operate with limited, non-real-time and non-continuous data communication support through a network of earth stations. Discussions with LEO satellite operators have revealed that the addition of space-to-space communications within the MSS will enable a near real-time, on-demand and uninterrupted means for monitoring and control of such LEO satellites. This will not only enhance security and efficiency of operations for the LEO satellites but also enable new use cases for LEO satellite missions, thereby greatly liberating the use of LEO satellites for many innovative and important applications and level the playing field for new players from countries around the world.

Proposals

To address this need, a new agenda item for WRC-23 is proposed to consider an allocation of the frequency bands 1518-1559 MHz, 1626.5-1660.5 MHz and 1668-1675 MHz to the mobile-satellite service (space-to-space). The use of mobile satellite service between space stations (space-to-space) falls within the definition of MSS (mobile-satellite service) in accordance with No. **1.25** of the Radio Regulations.

Proposed study work

An agenda item for WRC-23 is proposed below, with a draft of the WRC Resolution to consider an allocation of the frequency bands 1518-1559 MHz, 1626.5-1660.5 MHz and 1668-1675 MHz to the mobile-satellite service (space-to-space). Using the template provided in Annex 2 of Resolution **804** (**Rev. WRC-12**), the proposal is attached. A draft new WRC Resolution for this new agenda item is also provided.

Member administrations are invited to consider the inclusion of the above item for agenda item 10 in order to provide space to space date communications links in accordance with No.**1.25** of the Radio Regulations for efficient and effective operations of non-GSO constellations together with GSO.

ADD SMO/75A24/1

DRAFT NEW RESOLUTION [SMO/MSS Sat Links in L-Band] (WRC-19)

Consideration of allocations to the mobile-satellite service (space-to-space) in the frequency bands 1 518-1 559 MHz, 1 626.5-1 660.5 MHz and 1 668-1 675 MHz

The World Radiocommunication Conference (Sharm-el-Sheikh, 2019),

considering

*a)* that the definition of mobile-satellite service (MSS) in No. **1.25** of the Radio Regulations includes communication between space stations;

*b)* that many non-GSO satellites operate with limited and non-real-time connectivity to earth stations;

*c)* that space-to-space communication between such non-GSO satellites and geostationary (GSO) MSS satellites would enhance the security and efficiency of operations;

*d)* that GSO MSS satellites operating in the frequency bands 1 518-1 559 MHz, 1 626.5-1 660.5 MHz and 1 668-1 675 MHz can support these types of operation;

*e)* that the above frequency bands are currently allocated to MSS (space-to-Earth) or MSS (Earth-to-space) but not to MSS (space-to-space);

*f)* that ITU-R has begun preliminary studies on the technical and operational issues associated with the operation of space-to-space links between non-GSO satellites and GSO MSS satellites in the above frequency bands,

recognizing

that it is necessary to study the potential operation of MSS (space-to-space) in the above frequency bands to ensure compatibility with all allocated services in this band and avoid harmful interference,

noting

*a)* that section 3.1.3.2 of the Director’s Report to WRC-19 on the activities of the Radiocommunication Sector highlights that the Bureau has received an increased number of Advanced Publication Information (API) for non-geostationary satellite networks in frequency bands which are not allocated by Article **5** of the Radio Regulations for the type of foreseen service, including satellite network filings for inter-satellite applications in bands allocated only in the Earth-to-space or space-to-Earth directions;

*b)* that the same Director’s Report concludes that in view of recent technical developments and the increasing number of submissions of inter-satellite links in frequency bands not allocated to the inter-satellite service or to a space service in the space-to-space direction, the Conference may wish to consider means to give recognition to these uses based on the conditions derived from studies by ITU-R Working Parties 4A and 4C in order to avoid interfering with existing systems operating in the same frequency bands,

resolves to invite ITU-R

1 to study the technical and operational characteristics of different types of non-GSO space stations that operate or plan to operate space-to-space links with GSO MSS networks in the bands 1 518-1 559 MHz, 1 626.5-1 660.5 MHz and 1 668-1 675 MHz;

2 to study sharing and compatibility between space-to-space links between non-GSO and GSO space stations in the above frequency bands and current and planned stations of existing services allocated in the same frequency bands to ensure technical compatibility;

3 to develop technical conditions and regulatory provisions for operation of space-to-space links in these bands, including new or revised allocations as appropriate, taking into account the results of the studies;

4 to complete these studies by the 2023 World Radiocommunication Conference,

invites administrations

to participate in the studies and to provide input contributions,

resolves to invite the 2023 World Radiocommunication Conference

to consider the results of the above studies and take necessary regulatory actions, as appropriate.

Attachment

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| ***Subject:***  Consideration of allocations to the mobile-satellite service (space-to-space) in the frequency bands 1518-1559 MHz, 1626.5-1660.5 MHz and 1668-1675 MHz. | |
| ***Origin:* Samoa** | |
| ***Proposal*:**  To consider an allocation of the frequency bands 1 518-1 559 MHz, 1 626.5-1 660.5 MHz and 1 668-1 675 MHz to the mobile-satellite service (space-to-space). | |
| ***Background/reason:***  Many LEO satellites operate with limited and non-real time support through a network of earth stations. Discussions with LEO satellite operators has revealed that the addition of space-to-space communications within the MSS would provide an effective means for continuous monitoring and control of such LEO satellites, which would enhance security and efficiency of operations through provision of date communications links between non-GSO and GSO constellations. | |
| ***Radiocommunication services concerned*:**  MSS | |
| ***Indication of possible difficulties*:**  Sharing with MSS (space-to-Earth) and MSS (Earth-to space) needs to be studied. | |
| ***Previous/ongoing studies on the issue*:**   |  | | --- | | None | | |
| ***Studies to be carried out by*:**  Administrations and Sector Members of the ITU-R | ***with the participation of*:**  Satellite operators, ICAO, IMO |
| ***ITU‑R Study Groups concerned*:**  WP 4C | |
| ***ITU resource implications, including financial implications (refer to CV126)*:**  This agenda item will be studied within the normal ITU-R procedures and associated budget. No extra cost is foreseen. | |
| ***Common regional proposal*: No** | ***Multicountry proposal: No***  ***Number of countries*: 0** |
| ***Remarks*** | |

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