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| A close up of a sign  Description automatically generated | **World Radiocommunication Conference (WRC-23)Dubai, 20 November - 15 December 2023** |  |
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| PLENARY MEETING | **Addendum 1 toDocument 99(Add.27)-E** |
|  | **27 October 2023** |
|  | **Original: English** |
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| Japan |
| PROPOSALS FOR THE WORK OF THE CONFERENCE |
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| Agenda item 10 |

10to recommend to the ITU Council items for inclusion in the agenda for the next world radiocommunication conference, and items for the preliminary agenda of future conferences, in accordance with Article 7 of the ITU Convention and Resolution **804 (Rev.WRC‑19)**,

Introduction

Japan proposes a new agenda item for WRC-27 to consider new allocations to the mobile-satellite service (MSS) intended to use only for direct communications between non-GSO satellite and IMT user equipment in terrestrial IMT systems with a view to ensuring the protection of services to which the frequency bands are allocated on a primary basis, in the frequency bands of 698-960 MHz, 1 427-1 518 MHz, 1 710-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz identified to terrestrial component of IMT, under the condition that the newly allocated MSS shall not cause harmful interference to, nor claim protection from, the stations of other services allocated on a primary basis, including the terrestrial IMT systems in the neighbouring countries.

Proposal

ADD J/99A27A1/1

RESOLUTION [below 2.2 GHz MSS for IMT] (WRC‑23)

Studies on frequency-related matters of the bands below 2.2 GHz identified to IMT for the future development of mobile-satellite systems

The World Radiocommunication Conference (Dubai, 2023),

considering

*a)* that there may be a need for additional frequency bands allocated to the mobile-satellite service (MSS) below 2.2 GHz to complement the terrestrial component of International Mobile Telecommunications (IMT) for mobile users globally;

*b)* that some satellite network operators are collaborating with terrestrial IMT network operators around the world to develop a network enabling direct communications between mobile-satellite systems and existing IMT user equipment (UE) using the frequency bands identified to IMT in the Radio Regulations (RR);

*c)* that mobile-satellite systems may provide supplemental coverage for mobile connectivity from space as a part of IMT systems to areas such as high mountains, remote islands and deserts, where reliable power sources along with other infrastructure are not sufficient to deploy terrestrial base stations;

*d)* that the mobile-satellite system may provide alternative network resilience in case of failure of terrestrial IMT base stations due to unexpected incidents, such as natural disasters and network outages;

*e)* that IMT systems have evolved significantly in terms of spectrum identification, network deployment and radio access technology, with the standardization of IMT‑Advanced and IMT‑2020;

*f)* that studies of new IMT network topologies may provide increased spectrum efficiency for the frequency bands already identified to IMT;

*g)* that the non-terrestrial network (NTN) is expected to be one of the technology enablers to enhance IMT-2030 terrestrial network;

*h)* that mobile-satellite systems may provide mobile connectivity to underserved communities and in rural and remote areas;

*i)* that ITU‑R has performed studies on integrated MSS and ground component systems, and that some administrations have performed such usage;

*j)* with the development of technology, mobile-satellite systems can be compatible and shared with existing services under specific technical methods and conditions below 2.2 GHz;

*k)* that in consideration of the frequency band below 2.2 GHz for new allocation of MSS, there is a need to determine the co-existence conditions and regulatory provisions between the services sharing this band,

recognizing

*a)* that the frequency band 698-960 MHz is identified to IMT in accordance with Nos. **5.313A** and **5.317A**;

*b)* that the frequency bands 1 427-1 452 MHz, 1 452-1 492 MHz and 1 492-1 518 MHz are identified to IMT in accordance with Nos. **5.341A**, **5.341B**, **5.341C**, **5.346** and **5.346A**;

*c)* that the frequency bands 1 710-1 885 MHz, 1 885-2 025 MHz, and 2 110-2 200 MHz are identified to IMT in accordance with Nos. **5.384A** and **5.388**;

*d)* that the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz are allocated to the MSS on a primary basis,

resolves to invite ITU Radiocommunication Sector

to conduct the appropriate sharing and compatibility, technical, operational and regulatory studies, in time for consideration by WRC‑27, pertaining to the MSS intended to use only for direct communications between non-GSO satellite and IMT user equipment in terrestrial IMT systems with a view to ensuring the protection of services to which the frequency bands are allocated on a primary basis, in the following frequency bands identified to terrestrial component of IMT under the condition that the newly allocated MSS shall not cause harmful interference to, nor claim protection from, the stations of other services allocated on a primary basis, including the terrestrial IMT systems in the neighbouring countries:

• 698-960 MHz;

• 1 427-1 518 MHz;

• 1 710-1 980 MHz;

• 2 010-2 025 MHz;

• 2 110-2 170 MHz,

resolves to invite the 2027 World Radiocommunication Conference

based on the results of the above studies, to consider regulatory provisions, if needed, for new allocation to the non-GSO MSS below 2.2 GHz,

invites administrations

to participate actively in these studies by submitting contributions to the ITU Radiocommunication Sector.

**Reasons:** See the following Table that has been prepared using the template given in Annex 2 to Resolution **804 (Rev.WRC-19)**.

Template for the submission of proposals for agenda items

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| **Subject:** Studies on frequency-related matters of the bands below 2.2 GHz for the future development of mobile-satellite systems

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| **Origin: Japan** |
| ***Proposal:***to consider new allocations to the mobile-satellite service (MSS) on a primary basis in the frequency bands below 2.2 GHz identified to IMT |
| ***Background/reason:***In recent years, the cost for deployment of non-GSO satellite constellations, which can provide broadband connectivity, is decreasing as a result of innovations of satellite technologies. Besides, progress in communication technologies have made it possible for satellites and terrestrial systems to share the same frequencies without causing harmful interference to terrestrial systems. Since terrestrial IMT systems tend to provide coverage from the population point of view, the extension of geographical coverage is one of the key issues to be solved by mobile operators. Thus, it would be beneficial to provide IMT connectivity via satellite systems to existing unmodified mobile terminals.In order to achieve the above objectives, it would be natural that mobile operators will use their authorized spectrum to extend their mobile broadband coverage to currently unserved areas. Currently, there are no allocations to the MSS in most of the frequency bands used for terrestrial IMT systems. It should be also noted that for developing such networks in a timely manner, it is desirable that the scope of studies and considerations to be focused to the frequency bands having higher feasibility (i.e. low frequency bands identified to IMT, which tend to be occupied and used by terrestrial IMT systems). In this regard, allocations to the MSS, which is intended to use only for direct communications between non-GSO satellite and IMT user equipment in terrestrial IMT systems in the frequency bands below 2.2 GHz identified to IMT, should be considered. |
| ***Radiocommunication services concerned:***mobile service, fixed service, broadcasting service, mobile-satellite service, and other services |
| ***Indication of possible difficulties:***How to protect the incumbent services on a primary basis from the newly allocated MSS. |
| ***Previous/ongoing studies on the issue:***None. |
| ***Studies to be carried out by:***ITU‑R WP 4C as responsible group | ***with the participation of:***Administrations and sector members of the ITU‑R |
| ***ITU‑R Study Groups concerned:***Study Groups 4, 5, 6 and 7 |
| ***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:******No*** | ***Multicountry proposal: No******Number of countries: N/A*** |
| ***Remarks******N/A*** |

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