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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 4 to Document 89(Add.13)-E** |
|  | **7 October 2019** |
|  | **Original: English** |
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| Angola (Republic of)/Botswana (Republic of)/Eswatini (Kingdom of)/Lesotho (Kingdom of)/Madagascar (Republic of)/Malawi/Mauritius (Republic of)/Mozambique (Republic of)/Namibia (Republic of)/Democratic Republic of the Congo/Seychelles (Republic of)/South Africa (Republic of)/Tanzania (United Republic of)/Zambia (Republic of)/Zimbabwe (Republic of) | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 1.13 | |

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)**;

Part 4 – Frequency bands 45.5-47 GHz, 47.2-50.2 GHz and 50.4-52.6 GHz

Introduction

The above listed Administrations from the Southern African Development Community (SADC) support the identification of IMT in the frequency bands 45.5-47 GHz, 47.2-50.2 GHz and 50.4-52.6 GHz. Studies done within the ITU-R and those submitted to the CPM19-2 meeting indicated that sharing between IMT and existing primary services is feasible. Studies show sufficient protection margins and the distances involved show that any sharing could be done on a national basis. These frequency bands are generally not in use in SADC Administrations and could be made available for IMT. The frequency band 47-47.2 GHz is not supported as its future use for amateur service (ARS) and amateur-satellite service (ARSS) must be retained.

**Band 45.5-47 GHz (Band F)**

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations  
(See No. 2.1)

MOD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/1#49872

40-47.5 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 43.5-47 MOBILE MOD 5.553 ADD 5.F113f  MOBILE-SATELLITE  RADIONAVIGATION  RADIONAVIGATION-SATELLITE  5.554 | | |

**Reasons:** SADC Administrations support the identification of IMT in the band 45.5-47 GHz through the new footnote RR No. **5.F113f**.

ADD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/2#49874

5.F113fThe frequency band 45.5-47 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **[SADC-B113-IMT 50 GHZ] (WRC-19)** applies.     (WRC‑19)

**Reasons:** SADC Administrations support the identification of the band 45.5-47 GHz for IMT through a new footnote (RR No. **5.F113f**) and a new Resolution to address the use of the band.

MOD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/3#49879

5.553In the bands 43.5-45.5 GHz and 66-71 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. **5.43**).     (WRC‑19)

**Reasons:** Sharing studies indicated that sharing between IMT and space radiocommunication services is feasible and therefore the band 45.5-47 GHz can be removed from this footnote.

**Band 47.2-50.2 GHz (Band H)**

MOD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/4#49885

40-47.5 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 47.2-47.5 FIXED  FIXED-SATELLITE (Earth-to-space) 5.552  MOBILE ADD 5.H113b  5.552A | | |

**Reasons:** SADC Administrations support the identification of IMT in the band 47.2-50.2 GHz through the new footnote RR No. **5.H113b** and a new Resolution to address the use of the band.

MOD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/5#49886

47.5-51.4 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 47.5-47.9  FIXED  FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A  MOBILE ADD 5.H113b | 47.5-47.9  FIXED  FIXED-SATELLITE (Earth-to-space) 5.552  MOBILE ADD 5.H113b | |
| **47.9-48.2** FIXED  FIXED-SATELLITE (Earth-to-space) 5.552  MOBILE ADD 5.H113b  5.552A | | |
| 48.2-48.54  FIXED  FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A 5.555B  MOBILE ADD 5.H113b | 48.2-50.2  FIXED  FIXED-SATELLITE (Earth-to-space) 5.516B 5.338A 5.552  MOBILE ADD 5.H113b | |
| 48.54-49.44  FIXED  FIXED-SATELLITE (Earth-to-space) 5.552  MOBILE ADD 5.H113b  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 ADD 5.H113b | 5.149 5.340 5.555 | |

**Reasons:** SADC Administrations support the identification of IMT in the band 47.2-50.2 GHz through the new footnote RR No. **5.H113b**.

ADD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/6#49888

5.H113bThe frequency band 47.2-50.2 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **[SADC-B113-IMT 50 GHZ] (WRC-19)** apply.     (WRC‑19)

**Reasons:** SADC Administrations support the identification of the band 47.2-50.2 GHz for IMT through a new footnote (RR No. **5.H113b**) and a new Resolution dealing with the use of the band. As per RR No. **5.340.1**, the allocation to the Earth exploration-satellite service (passive) and the space research service (passive) in the band 50.2-50.4 GHz should not impose undue constraints on the use of the adjacent bands by the primary allocated services in those bands. SADC Administrations therefore does not support the inclusion of any part of the band 47.2-50.2 GHz in Resolution **750 (WRC-15)** for the use of this band by the mobile service.

**Band 50.4-52.6 GHz (Band I)**

MOD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/7#49894

47.5-51.4 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 50.4-51.4 FIXED  FIXED-SATELLITE (Earth-to-space) 5.338A  MOBILE ADD 5.I113b  Mobile-satellite (Earth-to-space) | | |

**Reasons:** SADC Administrations support the identification of IMT in the band 50.4-52.6 GHz through the new footnote RR No. **5.I113b** and a new Resolution dealing with the use of the band.

MOD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/8#49895

51.4-55.78 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 51.4-52.6 FIXED  MOBILE ADD 5.I113b  MOD 5.338A 5.547 5.556 | | |

**Reasons:** SADC Administrations support the identification of IMT in the band 50.4-52.6 GHz through the new footnote RR No. **5.I113b** and a new Resolution dealing with the use of the band.

ADD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/9#49897

5.I113bThe frequency band 50.4-52.6 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolutions **[SADC-B113-IMT 50 GHZ] (WRC‑19)** and **750 (Rev.WRC‑19)** apply.     (WRC‑19)

**Reasons:** SADC Administrations support the identification of the band 50.4-52.6 GHz for IMT through a new footnote (RR No. **5.I113b**) and the adoption of a new Resolution on the use of this band. SADC Administrations also support the modification of Resolution **750 (WRC-15)** to ensure the protection of the EESS (pas) services operating in the band 52.6-54.25 GHz. As per RR No. **5.340.1**, the allocation to the Earth exploration-satellite service (passive) and the space research service (passive) in the band 50.2-50.4 GHz should not impose undue constraints on the use of the adjacent bands by the primary allocated services in those bands. SADC Administrations therefore does not support the inclusion of any part of the band 47.2-50.2 GHz in Resolution **750 (WRC-15)** for the use of this band by the mobile service. SADC Administrations support the inclusion of emission values not more stringent than –32 dB(W/200 MHz) and –28 dB(W/200 MHz) for base stations and user equipment respectively in the active service band of 51.6-52.6 GHz in Resolution **750 (WRC-15)**.

MOD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/10#49891

5.338AIn the frequency bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 30‑31.3 GHz, 49.7‑50.2 GHz, 50.4-50.9 GHz, 51.4-52.6 GHz, 51.6-52.6 GHz, 81-86 GHz and 92‑94 GHz, Resolution **750 (Rev.WRC‑19)** applies.     (WRC‑19)

**Reasons:** SADC Administrations support the modification of 5.338A to add the active services band of 51.6-52.6 GHz.

MOD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/11#49932

RESOLUTION 750 (Rev.WRC‑19)

Compatibility between the Earth exploration-satellite service (passive) and relevant active services

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

…

resolves

1 that unwanted emissions of stations brought into use in the frequency bands and services listed in Table 1‑1 below shall not exceed the corresponding limits in that table, subject to the specified conditions;

…

TABLE 1-1

|  |  |  |  |
| --- | --- | --- | --- |
| EESS (passive) band | Active service band | Active service | Limits of unwanted emission power from active service stations in a specified bandwidth within the EESS (passive) band1 |
| … | … | … | … |
| 52.6-54.25 GHz | 51.6-52.6 GHz | Mobile | –32 dBW Total Radiated Power in any 200 MHz of the EESS (pas) band for IMT base stations  −28 dBW Total Radiated Power in any 200 MHz of the EESS (pas) band for IMT user equipment |
| … | … | … | … |
| 1 The unwanted emission power level is to be understood as/is understood to mean the level measured at the antenna port, unless specified in terms of total radiated power.  … | | | |

**Reasons:** SADC Administrations support the addition of the EESS (pas) protection levels in Table 1-1 of Resolution **750 (REV.WRC-19**) within the active service band as indicated.

ADD AGL/BOT/SWZ/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/TZA/ZMB/ZWE/89A13A4/12#49927

DRAFT NEW RESOLUTION [SADC-B113-IMT 50 GHZ] (WRC‑19)

International Mobile Telecommunications in frequency bands   
45.5-47 GHz, 47.5-50.2 GHz and 50.4-52.6 GHz

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

considering

*a)* that International Mobile Telecommunications (IMT), including IMT-2000, IMT‑Advanced and IMT-2020, is intended to provide telecommunication services on a worldwide scale, regardless of location and type of network or terminal;

*b)* that the evolution of IMT is being studied within ITU‑R;

*c)* that adequate and timely availability of spectrum and supporting regulatory provisions is essential to realize the objectives in Recommendation ITU‑R M.2083;

*d)* that there is a need to continually take advantage of technological developments in order to increase the efficient use of spectrum and facilitate spectrum access;

*e)* that IMT systems are now being evolved to provide diverse usage scenarios and applications such as enhanced mobile broadband, massive machine-type communications and ultra-reliable and low-latency communications;

*f)* that ultra-low latency and very high bit-rate applications of IMT will require larger contiguous blocks of spectrum than those available in frequency bands that are currently identified for use by administrations wishing to implement IMT;

*g)* that the properties of higher frequency bands, such as shorter wavelength, would better enable the use of advanced antenna systems including MIMO and beam-forming techniques in supporting enhanced broadband;

*h)* that harmonized worldwide bands for IMT are desirable in order to achieve global roaming and the benefits of economies of scale,

noting

Recommendation ITU‑R M.2083 “IMT Vision –Framework and overall objectives of the future development of IMT for 2020 and beyond”,

recognizing

*a)* that the identification of a frequency band for IMT does not establish priority in the Radio Regulations and does not preclude the use of the frequency band by any application of the services to which it is allocated;

*b)* the identification of high-density applications in the fixed-satellite service in the space-to-Earth direction in the bands 39.5-40 GHz in Region 1, 40-40.5 GHz in all Regions and 40.5-42 GHz in Region 2 and in the Earth-to-space direction in the bands 47.5-47.9 GHz in Region 1, 48.2-48.54 GHz in Region 1, 49.44-50.2 GHz in Region 1 and 48.2-50.2 GHz in Region 2 (see No. **5.516B**),

resolves

that administrations wishing to implement IMT consider the use of frequency bands 45.5-47 GHz, 47.2-50.2 GHz and 50.4-52.6 GHz identified for IMT in Nos. **5.F113b, 5.H113b** and **5.I113b** and the benefits of harmonized utilization of the spectrum for the terrestrial component of IMT taking into account the latest relevant ITU‑R Recommendation,

invites ITU‑R

1 to develop harmonized frequency arrangements to facilitate IMT deployment in the frequency bands 45.5-47 GHz, 47.2-50.2 GHz and 50.4-52.6 GHz;

2 to continue providing guidance to ensure that IMT can meet the telecommunication needs of the developing countries and rural areas in the context of the studies referred to above;

3 to develop generic unwanted emission characteristics for mobile and base stations of the terrestrial radio interfaces of IMT-2020.

**Reasons:** SADC Administrations supports this IMT Resolution to address the use of IMT in the bands 45.5-47 GHz, 47.2-50.2 GHz and 50.4-52.6 GHz.

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