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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 1 to Document 75(Add.21)-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 9.1(9.1.1) | |

9 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:

9.1 on the activities of the Radiocommunication Sector since WRC-15;

9.1 (9.1.1) Resolution **212 (Rev.WRC-15) -** Implementation of International Mobile Telecommunications in the frequency bands 1 885-2 025 MHz and 2 110 2-200 MHz

**Agenda item 9, Issue 9.1.1:**

*to study possible technical and operational measures to ensure coexistence and compatibility between the terrestrial component of IMT (in the mobile service) and the satellite component of IMT (in the mobile service and the mobile-satellite service) in the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz where those frequency bands are shared by mobile service and the mobile-satellite service in different countries, in particular for the deployment of independent satellite and terrestrial components of IMT and to facilitate development of both the satellite and terrestrial components of IMT*

Background

The frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz have been identified in the Radio Regulations (RR) for use by International Mobile Telecommunications (IMT). Within these broader frequency ranges, the frequency bands 1 980‑2 010 MHz and 2 170-2 200 MHz are allocated to the fixed service (FS), mobile service (MS) and mobile-satellite service (MSS) on a co-primary basis. The MSS allocation in the Earth‑to-space direction is in the 1 980-2 010 MHz band and in the space-to-Earth direction is in the 2 170‑2 200 MHz band. Both the satellite and terrestrial components of IMT have been deployed or are being considered for further deployment in these bands.

Pursuant to Resolution **212 (Rev.WRC-15)**, ITU-R studies considered the issue of coexistence and compatibility between the terrestrial component of IMT (comprised of base station(s) (BS(s)) and user equipment (UE)) and the satellite component of IMT (comprised of MSS space stations and mobile earth station(s) (MES(s)) in different countries for four interference scenarios. Potential interference may be managed for three of the four sharing scenarios by technical and operational measures through the application of the coordination procedures in the Radio Regulations. For the remaining case of transmitting IMT terrestrial stations in respect of receiving IMT space stations in the frequency band 1 980-2 010 MHz (Scenario A1), the level of potential interference from IMT UE into IMT space stations is low and can be mitigated by technical and operational measures while the level of potential interference from IMT BS into IMT space stations is high and cannot wholly be eliminated by technical and operational measures. There is no coordination procedure in the Radio Regulations for this case.

To enable coexistence and compatibility of the two services, modifications to Resolution **212 (Rev.WRC-15)** are proposed that will limit the use of the frequency band 1 980-2 010 MHz by the terrestrial component of IMT to transmissions from user equipment to base stations.

MOD SMO/75A21A1/1

RESOLUTION 212 (Rev.WRC‑19)

Implementation of International Mobile Telecommunications in the frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz

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

considering

*a)* that Resolution ITU‑R 56 defines the naming for International Mobile Telecommunications (IMT);

*b)* that the ITU Radiocommunication Sector (ITU‑R), for WRC‑97, recommended approximately 230 MHz for use by the terrestrial and satellite components of IMT;

*c)* that ITU‑R studies forecast that additional spectrum may be required to support the future services of IMT and to accommodate future user requirements and network deployments;

*d)* that ITU‑R has recognized that space techniques are an integral part of IMT;

*e)* that, in No. **5.388**, WARC‑92 identified frequency bands to accommodate certain mobile services, now called IMT,

noting

*a)* that the terrestrial component of IMT has already been deployed or is being considered for deployment in the frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz;

*b)* that the satellite component of IMT has already been deployed and is being considered for further deployment in the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz;

*c)* that the availability of the satellite component of IMT in the frequency bands 1 980‑2 010 MHz and 2 170-2 200 MHz simultaneously with the terrestrial component of IMT in the frequency bands identified in No. **5.388** would improve the overall implementation and the attractiveness of IMT;

*d)* that technical and operational measures exist that allow coexistence and compatibility between the terrestrial component of IMT and the satellite component of IMT in the frequency bands 1 980-2 010 MHz and 2 170‑2 200 MHz in different countries for most sharing scenarios;

*e)* that for the case of transmitting IMT terrestrial stations in respect of receiving IMT space stations in the frequency band 1 980-2 010 MHz, the level of potential interference from IMT user equipment into IMT space stations is low and can be mitigated by technical and operational measures while the level of potential interference from IMT base stations into IMT space stations is high and cannot wholly be eliminated by technical and operational measures,

noting further

*a)* that co‑coverage, co-frequency deployment of independent satellite and terrestrial IMT components is not feasible unless techniques, such as the use of an appropriate guardband or other mitigation techniques, are applied to ensure coexistence and compatibility between the terrestrial and satellite components of IMT;

*b)* that, when the satellite and terrestrial components of IMT are deployed in the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz in different geographical areas, technical or operational measures may need to be implemented to avoid harmful interference;

*c)* that some difficulties have been raised in addressing potential interference between the satellite and terrestrial components of IMT,

resolves

1) that administrations which implement IMT:

*a)* should make the necessary frequencies available for system development;

*b)* should use those frequencies when IMT is implemented;

*c)* should use the relevant international technical characteristics, as identified by ITU‑R and ITU‑T Recommendations;

*d)* should employ technical and operational measures to allow coexistence and compatibility between the terrestrial component of IMT and the satellite component of IMT in the frequency bands 1 980-2 010 MHz and 2 170‑2 200 MHz;

2) that the use of the frequency band 1 980-2 010 MHz by the terrestrial component of IMT is limited to transmissions from user equipment to base stations,

invites ITU‑R

to continue the study of possible technical and operational measures to ensure coexistence and compatibility between the terrestrial component of IMT (in the mobile service) and the satellite component of IMT (in the mobile service and the mobile-satellite service) in the frequency bands 1 980-2 010 MHz and 2 170‑2 200 MHz where those frequency bands are shared by the mobile service and the mobile-satellite service in different countries, in particular for the deployment of independent satellite and terrestrial components of IMT and to facilitate development of both the satellite and terrestrial components of IMT,

encourages administrations

to give due consideration to the accommodation of other services currently operating in these frequency bands when implementing IMT.

**Reasons:** Modifications to Resolution **212 (Rev.WRC-15)** are proposed to ensure coexistence and compatibility between the terrestrial component of IMT (in the mobile service) and the satellite component of IMT (in the mobile service and the mobile-satellite service) in the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz where those frequency bands are shared by mobile service and the mobile-satellite service in different countries.

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