

**PLENARY MEETING**

**Addendum 1 to  
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29 August 2019  
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**Member States of the Inter-American Telecommunication Commission (CITEL)**

**PROPOSALS FOR THE WORK OF THE CONFERENCE**

**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

**BACKGROUND**

The basis for Agenda Item 9.1, Issue 9.1.1 originated at WARC-92 with the addition of No. **5.388**. This footnote identified certain frequencies for use by both satellite (MSS), and terrestrial (MS) for what are now called International Mobile Telecommunications (IMT). The frequency ranges in the footnote are 1 885-2 025 and 2 110-2 200 MHz. Within these broader frequency ranges, the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz are allocated to the fixed, mobile, and mobile-satellite services on a co-primary basis. Both the satellite and terrestrial components of IMT have already been deployed or are being considered for further deployment within the 1 980-2 010 MHz and 2 170-2 200 MHz frequency bands as noted in Resolution **212 (WRC-15)**.

Resolution **212 (Rev. WRC-15)** further notes that it is not feasible to implement the terrestrial and satellite components of IMT on the same frequency and in the same geographical area is not feasible unless techniques such as use of an appropriate guard band or other mitigation techniques are applied to ensure the coexistence and compatibility of the terrestrial and satellite components of IMT. Finally, it invites the ITU-R to study possible technical and operational measures to ensure coexistence and compatibility between MS in one country and MSS in another country.

This *Issue* seeks to identify and study only technical and operational measures. It does not include any regulatory studies and is confined to seeking those technical and operational measures that can be used to obtain coexistence and compatibility between the terrestrial and satellite components of IMT specified within ITU-R Recommendations. Only the results for such systems specified as part

of ITU-R Recommendations or Reports should be included in the conclusions of the studies undertaken by the ITU-R for this Issue and used as a basis for decisions made at WRC-19.

ITU-R WP 5D is responsible for the studies related to the protection of the terrestrial component of IMT, taking into account the technical and operational characteristics of satellite systems provided by ITU-R WP 4C. Similarly, the ITU-R WP 4C is responsible for the studies related to the protection of the satellite component of IMT, taking into account the technical and operational characteristics of terrestrial IMT systems provided by ITU-R WP 5D. An ITU-R report or recommendation will be prepared based on the studies. CPM text was developed by these two working parties summarizing the current status of the ITU-R studies. Prior ITU-R studies have focused on co-existence and compatibility of terrestrial and satellite components of IMT within the same geographic area. WRC-19 Agenda Item 9.1, Issue 9.1.1 is focused on studying the technical or operational measures that may need to be implemented to avoid harmful interference, when the two components are deployed in adjacent geographical areas between neighboring countries.

Several compatibility studies have been performed by the ITU-R under AI 9.1.1 for adjacent geographic areas of neighboring countries. The compatibility studies display a wide range of results that depend on the deployment scenarios and the propagation characteristics assumed for the satellite and terrestrial components of IMT as well as the characteristics of the satellite and terrestrial IMT systems. As part of these studies, several technical and operational measures for both the satellite and the terrestrial component of IMT have also been identified and studied. The results of the study of these technical and operational measures indicate that the compatibility of the terrestrial and satellite IMT component operation in adjacent countries can be achieved through application of some of these technical and operational measures depending on the actual deployment characteristics of the two systems involved. Administrations can flexibly adopt a variety of these measures based on actual system characteristics during the bilateral coordination processes currently available as part of the existing ITU-R Radio Regulations. This flexibility should be maintained, as any change to the Radio Regulations (which would be outside the terms of reference for this issue), would limit this flexibility.

The bands 1 980-2 010 MHz and 2 170-2 200 MHz overlap with parts of existing commercial mobile bands in some countries in the frequency ranges 1 850-1 920 / 1 930-2 000 MHz, 1 710-1 780 / 2 110-2 180 MHz and 2 000-2 020 / 2 180-2 200 MHz (see [ITU-R Recommendation M.1036](#)), in which terrestrial IMT systems exist or are expected to be deployed. The band 2 000-2 020 / 2 180-2 200 MHz is also licensed for MSS use in some countries. CITELE PCC.II has conducted a survey entitled “Request for information about the current and planned use of the bands 1 980-2 025 MHz and 2 160-2 200 MHz by the OAS/CITELE administrations for terrestrial and satellite services” in February 2015 (see Decision PCC.II/DEC. 173 (XXV-15) in [CCP.II-RADIO/doc. 3857/15 rev.1](#))<sup>1</sup>, which may be relevant for the studies under this issue.

Also, CITELE adopted a recommendation on the frequency arrangement for the use of the 1 710-1 780 / 2 110-2 180 MHz band for broadband mobile services, recommending CITELE administrations that plan to use this spectrum do so by adding additional contiguous bandwidth as an expansion of the existing bands in the 1 710-1 770 / 2 110-2 170 MHz or 1 710-1 755 / 2 110-2 155 MHz in some countries (see Decision PCC.II/REC. 43 (XXIII-14) in [CCP.II-RADIO/doc.3597 /14 rev.1](#)).

ITU-R studies in response to this issue indicate that while compatibility of the terrestrial and satellite components of IMT in adjacent countries may require certain technical and operational

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<sup>1</sup> The responses from different Administrations received to-date are available in [CCP.II-RADIO/doc. 3988/15 rev.1](#) (Argentina, Brazil, Canada, Costa Rica, Ecuador, Guatemala, Jamaica, Panama and Nicaragua) and [CCP.II-RADIO/doc. 4054/16](#) (Colombia).

measures, these measures are varied and may not be universally applicable to all possible cross-border cases. Several technical and operational measures have been identified. Administrations presently have the flexibility to adopt a variety of such measures, based on actual system characteristics and confidential information, during the bilateral coordination processes, and this flexibility should be maintained. A change to the Radio Regulations would restrict the present flexibility for deployments by individual countries.

**NOC**      **IAP/6185A21A1/1**

## ARTICLES

**Reasons:** A change to the Radio Regulations would limit the flexibility for deployments by individual countries and therefore it is not necessary to make changes to the Radio Regulations.

**NOC**      **IAP/6185A21A1/2**

## APPENDICES

**Reasons:** A change to the Radio Regulations would limit the flexibility for deployments by individual countries and therefore it is not necessary to make changes to the Radio Regulations.

**MOD**      **IAP/6185A21A1/3**

### RESOLUTION 212 (REV.WRC-1995)

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

The World Radiocommunication Conference ([Geneva, 2015](#) [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-~~1 980~~ MHz, ~~2 010~~-2 025 MHz and 2 110-~~2 170~~200 MHz; ~~b) that both the terrestrial and satellite components of IMT have already been deployed or are being considered for deployment in the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz;~~
- b) that ~~both the terrestrial and satellite components~~ of IMT ~~have~~has already been deployed or ~~are~~is being considered for 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;

*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 adjacent geographical areas, technical or operational measures may need to be implemented to avoid harmful interference, and further studies by ITU-R are required in this regard;~~

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

~~d) that Report ITU-R M.2041 addresses sharing and adjacent band compatibility in the 2.5 GHz band between the terrestrial and satellite components of IMT 2000;~~

d) that ITU-R studies have technical and operational measures that may be implemented to allow co-existence and compatibility between satellite and terrestrial components of IMT when deployed in the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz in adjacent geographic areas.

*resolves*

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, as practicable, take technical and operational measures as indicated in *noting d)* to allow the 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.

*invites ITU-R*

~~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 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*

~~1 to give due consideration to the accommodation of other services currently operating in these frequency bands when implementing IMT;~~

~~2 to participate actively in the ITU-R studies in accordance with *invites ITU-R* above,~~

*instructs the Director of the Radiocommunication Bureau*

~~to include in his report, for consideration by WRC-19, the results of the ITU-R studies referred to in *invites ITU-R* above;~~

*further invites ITU-R*

to continue providing guidance to ~~to continue its studies with a view to developing suitable and acceptable technical characteristics for IMT that will~~ facilitate worldwide use and roaming of IMT, and ensure that IMT can also meet the telecommunication needs of the developing countries and rural areas.

**Reasons:** The studies responsive to this issue will be complete by WRC-19 and will document technical and operational measures to promote compatibility between the terrestrial and satellite components of IMT in different countries.