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|  | **DRAFT INTER-AMERICAN PROPOSALS (DIAPs)**  **FOR WRC-19**  **AGENDA ITEM 9.1, ISSUE 9.1.1** | |  |
|  | **(Item on the Agenda: 3.1 (SGT-1))** | |  |
|  | **(Document submitted by CITEL Member States)** | |  |

**SGT – 1**

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**Note: This issue is still under discussion.*Agenda Item 9.1, 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 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](https://www.itu.int/rec/R-REC-M.1036-5-201510-I/en)), 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. CITEL 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/CITEL 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](https://www.citel.oas.org/en/SiteAssets/PCCII/Final-Reports/P2!R-3857r1_i.pdf))[[1]](#footnote-1), which may be relevant for the studies under this issue.

Also, CITEL 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 CITEL 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)](https://www.citel.oas.org/en/SiteAssets/PCCII/Final-Reports/P2!R-3597r1_i.pdf).

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 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.

**DRAFT INTER-AMERICAN PROPOSALS**

**Support: Belize, Brazil, Canada, Mexico, Saint Lucia, United States**

**NOC** DIAP/9.1.1/1

**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.

**Support: Belize, Brazil, Canada, Mexico, Saint Lucia, United States**

**NOC DIAP/9.1.1/2**

**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.

**Support: [Brazil], Canada, United States**

**MOD** DIAP/9.1.1/2

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*

1. hat the terrestrial component of IMT has already been deployed or is being considered for deployment in the frequency bands 1 8852 025 MHz and 2 110-2 200 MHz;

*b)* that the satellite components of IMT has already been deployed or 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;

*d)* that ITU-R studies have identified 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, and that such measures do not constrain the operation of these components.

*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,

*~~administrations~~*

*encourages administrations*

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

*invites ITU‑R*

to continue providing guidance to 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.

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1. The responses from different Administrations received to-date are available in [CCP.II-RADIO/doc. 3988/15 rev.1](https://www.citel.oas.org/es/collaborative/pccii/26_CAN_15/Paginas/default.aspx) (Argentina, Brazil, Canada, Costa Rica, Ecuador, Guatemala, Jamaica, Panama and Nicaragua) and [CCP.II-RADIO/doc. 4054/16](https://www.citel.oas.org/es/collaborative/pccii/27_COL_16/Paginas/default.aspx) (Colombia). [↑](#footnote-ref-1)