

**PLENARY MEETING**

**Addendum 2 to  
Document 6401(Add.24)-  
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9 September 2019  
Original: English**

**Member States of the Inter-American Telecommunication Commission (CITEL)**

**PROPOSALS FOR THE WORK OF THE CONFERENCE**

**Agenda item 10**

*{Temporary information note to be deleted before the submission via CPI of this document to the WRC-19 Secretariat: In accordance with Resolution 804 (Rev. WRC-12), Administrations are invited to use the template provided in Annex 2 to that Resolution (TIES-protected) when proposing agenda items for WRCs. This template may be filled out for each of the proposed WRC agenda item and annexed to this document.}*

10 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention.

**Background**

The WRC-2000 agreed on No. **5.388A** which permitted the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Region 1 and 3, and the bands 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2, to be used for high-altitude IMT base stations. Furthermore, Resolution **221 (Rev.WRC-07)** provided the technical conditions necessary to ensure the protection of ground-based IMT stations in neighboring countries, as well as other services allocated in these bands, from emission from high-altitude IMT base stations.

Since the agreement of this provision in 2000, 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. Based on this evolution, it is now timely to review the existing ITU Radio Regulations (RR) provisions in order to provide the same flexibility granted in No. **5.388A** to other bands below 6 GHz regionally harmonized for IMT. This will provide further spectrum efficiency for the provision of mobile services.

In addition, high-altitude IMT base stations are intended to complement the terrestrial IMT networks, and may typically use the same frequency bands with ground-based IMT base stations. In this sense, the user equipment to be served, whether by the high-altitude or the ground-based IMT

base stations, are the same. Currently user equipment already supports a variety of frequency bands identified for IMT, which is another reason to expand the use of high-altitude IMT base stations to other regionally harmonized IMT bands below 6 GHz.

The high-altitude IMT base stations are stations of the Mobile Services, as part of the IMT systems. They are not related to the provision of the Fixed Services, such as those being studied in WRC-19 agenda item 1.14. The new proposed studies should focus on how to provide more flexibility on the existing regionally harmonized IMT identifications.

In summary, and considering the growing demand for mobile broadband, this new agenda item proposes to study the use of high-altitude IMT base stations in the bands below 2.7 GHz already regionally harmonized for IMT. The goal of the studies is to provide flexible and more extensive use of the existing regionally harmonized IMT bands to complement coverage and support 5G use cases, while taking into account compatibility with existing applications and services. It should be highlighted that this proposal does not require new spectrum identification for IMT itself, nor will it revise any existing IMT identifications in the RR. Studies will focus on the possible revision of current RR regulatory provisions, relevant to those provided in No. **5.388A**. The study results and potential RR changes would then be discussed at WRC-23.

**ADD IAP/6401A24A2/1**

**DRAFT NEW RESOLUTION [IAP/10(B)-2023] (WRC-19)**

**Agenda for the 2023 World Radiocommunication Conference**

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

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**1.X** to consider, in accordance with Resolution [IAP/10(B)/HA-IMT] (**WRC-19**), the use of high-altitude IMT base stations in certain bands below 2.7 GHz already identified for IMT, on a global or regional level.

**Reasons:** The new agenda item to study high-altitude IMT base stations in certain existing globally or regionally harmonized IMT bands below 2.7 GHz aims to provide more flexibility on the use of these bands, in order to address the need to expand coverage and capacity in mobile broadband networks. The revision of existing IMT identifications in the Radio Regulations is not within the scope of this agenda item. The study results and potential RR changes would then be discussed at WRC-23.

**ADD IAP/6401A24A2/2**

**DRAFT NEW RESOLUTION [IAP/10(B)/HA-IMT] (WRC-19)**

**Use of high-altitude IMT base stations in certain bands below 2.7 GHz  
regionally harmonized for IMT**

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

*considering*

- a)* that there is growing demand for access to mobile broadband, requiring more flexibility in the approaches to expand the capacity and coverage provided by IMT systems;
- b)* that a significant part of the global population is still without connectivity access, and there are continuing efforts focused on reducing the digital divide;
- c)* 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;
- d)* that studies of new IMT network topologies may provide increased spectrum efficiency for the bands already identified for IMT;

- e) that high-altitude IMT base stations may be used to expand mobile connectivity utilizing its capability to provide service to a large footprint with low latency;
- f) that recent technological advances in battery and solar-panel technologies provide further support for the deployment of high-altitude IMT base stations;
- g) that high-altitude IMT base stations would be used to complement terrestrial IMT networks, and may use the same frequency bands with ground-based IMT base stations in order to provide mobile connectivity to underserved communities, and in rural and remote areas;
- h) that the user equipment to be served, whether by the high-altitude or the ground-based IMT base stations, are the same, and currently support a variety of the frequency bands identified for IMT;
- i) that the use of high-altitude IMT base stations within the terrestrial component of IMT should not have any priority, and shall not cause any undue constraints which result in regulatory changes to the existing IMT identifications in the Radio Regulations;
- j) that studies must be performed to demonstrate that sharing with existing services in the band, including other IMT uses is feasible, and that those existing services are protected with no new regulatory constraints on those existing uses,

*noting*

that Recommendations ITU-R M.1456 and M.1641 provide technical characteristics and operational conditions, as well as methodology for the studies between high-altitude IMT base stations and ground-based IMT system in certain bands around 1.9/2.1 GHz,

*recognizing*

- a) that a high-altitude platform station is defined in No. **1.66A** as a station located on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the Earth;
- b) that the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3, and the bands 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2, are included in No. **5.388A** for the use of high-altitude IMT base stations, in accordance with the provisions in Resolution **221 (Rev.WRC-07)**;
- c) that different frequency bands below 2.7 GHz are globally or regionally harmonized for IMT in accordance with Nos. **5.286AA**, **5.317A**, **5.341A**, **5.341B**, **5.341C**, **5.346A**, **5.384A**, and **5.388**;
- d) that any potential new regulatory procedural considerations resulting from potential identifications of high-altitude IMT base stations should not apply to existing IMT identifications in the RR;
- e) that studies should be limited to sharing and compatibility between the high-altitude IMT base stations and other existing services and applications;

f) that the bands identified for IMT below 2.7 GHz are used extensively to provide mobile broadband services using ground based IMT systems,

*resolves to invite ITU-R*

1 to conduct and complete in time for WRC-23, taking into account the results of studies already performed and those in progress within ITU-R, the appropriate sharing and compatibility studies to ensure the protection of services to which the band is allocated on a primary basis, including other IMT uses, and adjacent services, as appropriate, for certain frequency bands below 2.7 GHz globally or regionally harmonized for IMT, i.e.:

- 450-470 MHz, 698-960 MHz, 1 427-1 518 MHz, 1 710-1 885 MHz, 2 160-2 200 MHz, 2 300-2 400 MHz, and 2 500-2 690 MHz,

2 to study appropriate modifications to the existing footnote and associated resolution in the *recognizing b)* in order to facilitate the use of high-altitude IMT base stations with the latest radio interfaces technologies of IMT systems;

3 to develop ITU-R Recommendations and/or Reports, as appropriate, taking into account *resolves to invite ITU-R 1, and 2,*

*further resolves to invite WRC-23*

to consider, based on the results of the above studies, the use of high-altitude IMT base stations in certain bands below 2.7 GHz already identified for IMT, on a global or regional level, and take necessary regulatory actions, as appropriate, taking into account that changes to the footnotes in the *recognizing c)* are outside of scope and there should be no additional regulatory or technical constraints imposed on the deployment of the bands referred in those footnotes by the ground based IMT systems,

*invites administrations*

to participate actively in these studies by submitting contributions to ITU-R.

**R16-WRC19-C-6401!A24-A2!MSW-EReasons:** The proposed Resolution on the new agenda item to study high-altitude IMT base stations in existing regionally harmonized IMT bands below 2.7 GHz aims to provide more flexibility on the use of these bands, in order to address the need to expand coverage and capacity in mobile broadband networks. The study results and potential RR changes would then be discussed at WRC-23. Changes to any existing IMT identifications are not within the scope of this agenda item.

ANNEX

PROPOSAL FOR FUTURE AGENDA ITEM FOR WRC-23

**Subject:** Proposal for WRC-23 agenda item on the use of high-altitude IMT base stations in the bands below 2.7 GHz already identified for IMT, on a global or regional level.

**Origin:** the CITEL Member States

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**Proposal:** to consider, in accordance with Resolution [IAP/10(B)] (WRC-19), the use of high-altitude IMT base stations in certain bands below 2.7 GHz already identified for IMT, on a global or regional level.

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**Background/reason:**

The new agenda item to study high-altitude IMT base stations in certain existing globally or regionally harmonized IMT bands below 2.7 GHz aims to provide more flexibility on the use of these bands, in order to address the need to expand coverage and capacity in mobile broadband networks. The study results and potential RR changes would then be discussed at WRC-23.

Changes to any existing IMT identifications are not within the scope of this agenda item.

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**Radiocommunication services concerned:**

Broadcasting, Broadcasting-Satellite, Fixed, Fixed-Satellite, Mobile, Mobile-Satellite, and Radiolocation.

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**Indication of possible difficulties:** The proposed bands are widely used for terrestrial and space services, although they are already identified for IMT, on a global or regional level, with which compatibility has already been agreed. The possible identifications of high-altitude IMT base stations would result in separate regulatory procedural considerations than those for existing IMT identifications.

**Previous/ongoing studies on the issue:** Studies have been ongoing in ITU-R Working Party 5D on co-channel sharing analysis for high-altitude IMT base stations considering IMT-Advanced, in accordance with No. 5.338A. Recommendations ITU-R M.1456 and M.1641 provide technical requirements and methodology for studies on the use of high-altitude IMT base stations in the bands around 1.9/2.1 GHz.

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**Studies to be carried out by:**

ITU-R Working Party 5D

**with the participation of:**

ITU-R membership

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**ITU-R Study Groups concerned:**

ITU-R Study Groups 4, 5, and 6

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**ITU resource implications, including financial implications (refer to CV126):** Minimal, as the proposed agenda item should be studied by ITU-R WP 5D within its existing framework of meetings.

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***Common regional proposal:*** [Yes/No]

***Multicountry proposal:*** [Yes/No]

***Number of countries:***

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***Remarks***