Document WRC-23-IRW-22/26-E
29 November 2022
English only

ITUEvents

2nd ITU Inter-regional Workshop on WRC-23 Preparation

29 November - 1 December 2022
Geneva, Switzerland

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#ITUWRC

Session 1 – MS, IMT & HIBS issues
WRC-23 agenda items 1.1, 1.2 and 1.4

Hiroyuki ATARASHI
CPM-23 Chapter 1 Co-Rapporteur

10:45-12:30
Session 1 – MS, IMT & HIBS issues

- Roundtable on draft CPM Report Chapter 1 part 1
  - WRC-23 agenda items 1.1, 1.2 and 1.4
- Moderator
  - Dr. Hiroyuki ATARASHI (J), CPM-23 Chapter 1 Co-Rapporteur
- Panellists:
  - APT: Dr. Jae-Woo LIM
  - ASMG: Dr. Mohamed EL-MOGHAZI
  - ATU: Mr. El Hadjar ABDOURAMANE
  - CEPT: Mr. Martin WEBER for AI 1.1 and Mr. Steve GREEN for AI 1.2 & AI 1.4
  - CITEL: Ms. Lisa AMIRAULT for AI 1.1, Ms. Luciana CAMARGOS for AI 1.2 and Mr. Geraldo NETO for AI 1.4
  - RCC: Dr. Sergey PASTUKH

Agenda item 1.1
10:45-11:20

Agenda item 1.1

- *to consider, based on the results of ITU-R studies, possible measures to address, in the frequency band 4 800-4 990 MHz, protection of stations of the aeronautical and maritime mobile services located in international airspace and waters from other stations located within national territories, and to review the power flux-density criteria in No. **5.441B** in accordance with Resolution **223 (Rev.WRC-19)**;*

- *Resolution **223 (Rev.WRC-19)** – Additional frequency bands identified for International Mobile Telecommunications*

Resolution 223 (Rev.WRC-19)

resolves

…

3 that in the frequency bands 4 800-4 825 MHz and 4 835-4 950 MHz, in order to identify potentially affected administrations when applying the procedure for seeking agreement under No. **9.21** by IMT stations in relation to aircraft stations, a coordination distance from an IMT station to the border of another country equal to 300 km (for land path)/450 km (for sea path) applies;

4 that in the frequency band 4 800-4 990 MHz, in order to identify potentially affected administrations when applying the procedure for seeking agreement under No. **9.21** by IMT stations in relation to fixed-service stations or other ground-based stations of the mobile service, a coordination distance from an IMT station to the border of another country equal to 70 km applies;

5 that the power flux-density (pfd) limits in No. **5.441B**, which is subject to review at WRC-23, shall not apply to the following countries: Armenia, Brazil, Cambodia, China, Russian Federation, Kazakhstan, Lao P.D.R., Uzbekistan, South Africa, Viet Nam and Zimbabwe,

Resolution 223 (Rev.WRC-19)

invites the ITU Radiocommunication Sector

…

2 to study the technical and regulatory conditions for the protection of stations of the aeronautical and maritime mobile services located in international airspace or waters (i.e. outside national territories) and operated in the frequency band 4 800-4 990 MHz;

…

4 to include the results of the studies mentioned in *invites the ITU Radiocommunication Sector* above in one or more ITU-R Recommendations and Reports, as appropriate,

invites the 2023 World Radiocommunication Conference

to consider, based on the results of the studies referred to in *invites the ITU Radiocommunication Sector* above, possible measures to address, in the frequency band 4 800-4 990 MHz, protection of stations of the aeronautical and maritime mobile services located in international airspace and waters from other stations located within national territories and to review the pfd criteria in No. **5.441B**.

RR No. 5.441B

5.441B In Angola, Armenia, Azerbaijan, Benin, Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, China, Côte d'Ivoire, Djibouti, Eswatini, Russian Federation, Gambia, Guinea, Iran (Islamic Republic of), Kazakhstan, Kenya, Lao P.D.R., Lesotho, Liberia, Malawi, Mauritius, Mongolia, Mozambique, Nigeria, Uganda, Uzbekistan, the Dem. Rep. of the Congo, Kyrgyzstan, the Dem. People's Rep. of Korea, Sudan, South Africa, Tanzania, Togo, Viet Nam, Zambia and Zimbabwe, the frequency band 4 800-4 990 MHz, or portions thereof, is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. **9.21** with concerned administrations, and IMT stations shall not claim protection from stations of other applications of the mobile service. In addition, before an administration brings into use an IMT station in the mobile service, it shall ensure that the power flux-density (pfd) produced by this station does not exceed −155 dB(W/(m^2 · 1 MHz)) produced up to 19 km above sea level at 20 km from the coast, defined as the low-water mark, as officially recognized by the coastal State. This pfd criterion is subject to review at WRC-23. Resolution **223 (Rev.WRC-19)** applies. This identification shall be effective after WRC-19. (WRC-19)

Results of ITU-R studies

- **Summary and analysis of the results of ITU-R studies are available in section 1/1.1/3 of Draft CPM Report.**
  - The studies were conducted from the viewpoints of “regulatory aspects” as well as “technical aspects (pfd required to protect AMS and MMS systems).”

- **The supporting material document in Annex 4.8 of Document 5D/1555 contains the details of these regulatory and technical studies.**

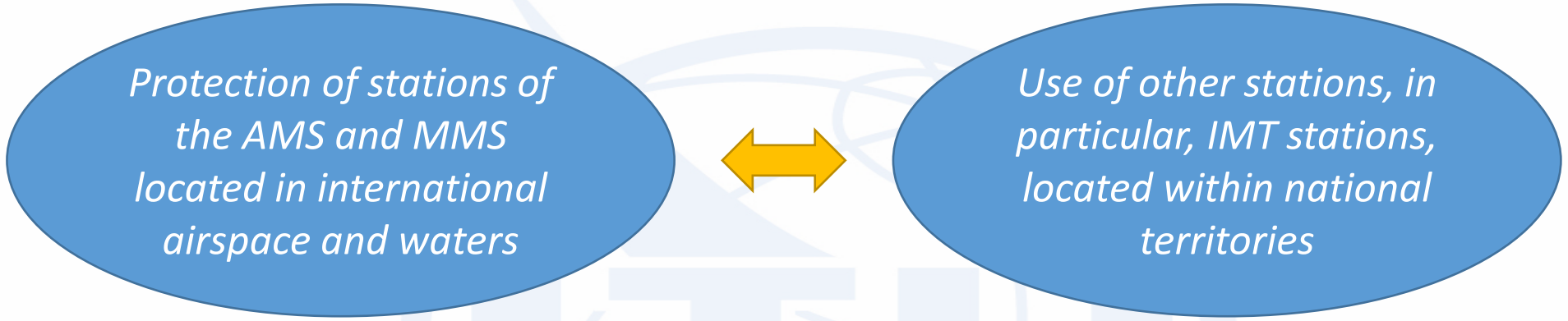
Methods to satisfy the agenda item

- The following **eight methods** are included in the draft CPM Report.
  - **Method A** – NOC to RR except for consequential changes
  - **Method B** – NOC to RR except for modification of Resolution **223** to apply the existing pfd value to all countries listed in RR No. **5.441B**, as well as other consequential changes
  - **Method C** – Modification of the existing pfd criterion in RR No. **5.441B**, as well as other consequential changes
  - **Method D** – Modification of the existing pfd criterion in RR No. **5.441B** and applying it to all countries listed in RR No. **5.441B**, as well as other consequential changes

Methods to satisfy the agenda item

- **Method E** – Keeping the existing pfd and extension of list of countries where it is not applied
- **Method F** – Only application of RR No. **9.21** for the protection of AMS/MMS stations in international airspace and waters
- **Method G** – Application of RR No. **9.21** and bilateral/multilateral coordination agreements with coastal States for the protection of AMS/MMS stations in international airspace and international waters
- **Method H** – Only application of RR No. **9.21** for the protection of AMS/MMS stations in international airspace and waters and protection of AMS/MMS is limited to national territory

Aspects to be considered under agenda item 1.1



- Treatment of pfd criterion in RR No. **5.441B**
  - Retain, modify or remove the existing pfd criterion (i.e., −155 dB(W/(m^2 · 1 MHz)))
  - At which distance the pfd criterion is applied

- Treatment of *resolves 5* of Resolution **223 (Rev.WRC-19)**
  - List of countries that the pfd criterion is not applied

- ...

Panel discussion

- **<u>Panelists</u>**
  - Dr. Jae-Woo LIM (APT)
  - Dr. Mohamed EL-MOGHAZI (ASMG)
  - Mr. El Hadjar ABDOURAMANE (ATU)
  - Mr. Martin WEBER (CEPT)
  - Ms. Lisa AMIRAULT (CITEL)
  - Dr. Sergey PASTUKH (RCC)

Panel discussion

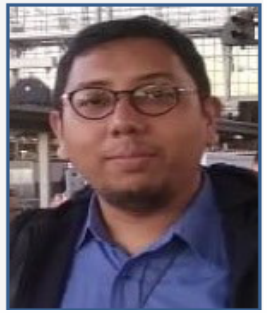
- **What are the current views/positions of your regional group for agenda item 1.1?**
  - Has your group agreed on any harmonized positions?
  - Has your group agreed to support any of the methods to satisfy the agenda item?

APT Preliminary Views on WRC-23 Agenda Items: **AI 1.1**

- **APT Preliminary Views :**
  - APT Members support the on-going ITU-R studies relating to Agenda Item 1.1.

- **Issues in APG-23:**
  - The following issues will be discussed further
    - ✓ The use of spectrum in "international airspace and waters",
    - ✓ The pfd issues in RR No. **5.441B**
    - ✓ The "*resolve 5*" of Resolution **223 (Rev.WRC-19)**

DG Chair: Mr. Fierza Mutuahdi Pasaribu (Republic of Indonesia)



ASMG

1.1) Protection of stations of the aeronautical and maritime mobile services and review the pfd criteria in the frequency band 4 800-4 990 MHz

- Follow up on current studies to examine how the systems currently used in the 4800-4990 MHz frequency band coexist, with an emphasis on ensuring the protection of existing services and not imposing additional restrictions on them.

ATU

The APM23-3 agreed to:

Part 1: Common position:

1. **Support,** based on the results of the studies, global/regional harmonization of the frequency band 4800-4990 MHz for the implementation of IMT, taking into account the protection of incumbent services;
2. **Encourage** ATU Administrations to consider including their names in footnote 5.441B for those Administrations not in the footnote, in order to achieve global/regional harmonization of the frequency band 4800-4990 MHz for the implementation of IMT;
3. **Decide** that, in the case of protection of Radio Astronomy, within 4800-4990 MHz (secondary) and the adjacent band 4990-5000 MHz, it should be addressed as a national matter (where applicable);
4. **Support**, based on the current status of the results of the studies, that no additional measures for protection of AMS/MMS in international airspace and waters is required and bi- or multilateral agreements between the concerned administrations can provide an efficient mechanism of AMS/MMS protection in international airspace and waters in the frequency band 4800-4990 MHz in geographical areas where it is necessary

CEPT Coordinator:
Didier CHAUVEAU (F)

CEPT ECC
Electronic Communications Committee

WRC-23 Agenda item 1.1

*to consider, based on the results of the ITU-R studies, possible measures to address, in the frequency band 4 800-4 990 MHz, protection of stations of the aeronautical and maritime mobile services located in international airspace and waters from other stations located within national territories, and to review the pfd criteria in No. **5.441B** in accordance with Resolution **223 (Rev.WRC-19)***

Preliminary CEPT position

CEPT is of the view that, AMS and MMS stations located in international airspace or waters and operated in the band 4800-4990 MHz shall be protected on the basis of the pfd limit provided in RR No. **5.441B**, which will be reviewed taking into account all detailed AMS and MMS characteristics and protection criteria.

Preliminary Proposal:

- An administration propose **MOD 5.441B / MOD RESOLUTION 223**

Reasons: Studies are ongoing regarding the pfd limit in **No. 5.441B** and area boundaries to protect AMS and MMS operating in international waters and airspace. Text indicating the review of the pfd criterion at WRC-23 and the IMT identification effective date is no longer required.

CITEL/GT/CMR-23/ doc. 43/22 rev.1

RCC

Regional Commonwealth in the field of Communications

1.1 - IMT 4.9 GHz

Unlock and harmonize 190 MHz spectrum for IMT

Aleksander Pastukh

The RCC Administrations oppose applying the PFD limits to protect stations of the aeronautical and maritime mobile services located in international airspace and waters (i.e., outside national territories) since:

- this imposes restrictions on services within national territories;
- administrations do not hold exclusive spectrum rights in international airspace and waters and there is no notification and registration procedure in international airspace and waters for AMS and MMS in this band;
- AMS and MMS stations do not have priority over other applications of terrestrial services in international airspace and waters or within national territories of countries.

Protection of AMS and MMS stations' frequency assignments in international airspace and waters can be provided if agreed by concerned administration(s) since it can impose restrictions on their frequency assignments within national territories. Such agreement may be reached, for example, through developing the relevant harmonized spectrum utilization plans for AMS and MMS, based on the standards approved by ICAO and IMO.

Method F, G or H from the draft CPM Report

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Any questions on agenda item 1.1 to the panelists?

Agenda item 1.2
11:20-11:55

Agenda item 1.2

- *to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC-19)***

- *Resolution **245 (WRC-19)** – Studies on frequency-related matters for the terrestrial component of International Mobile Telecommunications identification in the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz, and 10.0-10.5 GHz*

Resolution 245 (WRC-19)

resolves to invite ITU-R

1 to conduct and complete in time for WRC-23 the appropriate studies of technical, operational and regulatory issues pertaining to the possible use of the terrestrial component of IMT in the frequency bands in *resolves to invite ITU-R* 2, taking into account:

- evolving needs to meet emerging demands for IMT;
- technical and operational characteristics of terrestrial IMT systems that would operate in these specific frequency bands, including the evolution of IMT through advances in technology and spectrally efficient techniques;
- the deployment scenarios envisaged for IMT systems and the related requirements of balanced coverage and capacity;
- the needs of developing countries;
- the time-frame in which spectrum would be needed;

Resolution 245 (WRC-19)

resolves to invite ITU-R

…

2 to conduct and complete in time for WRC-23 the sharing and compatibility studies[1], with a view to ensuring the protection of services to which the frequency band is allocated on a primary basis, without imposing additional regulatory or technical constraints on those services, and also, as appropriate, on services in adjacent bands, for the frequency bands:

- 3 600-3 800 MHz and 3 300-3 400 MHz (Region 2);
- 3 300-3 400 MHz (amend footnote in Region 1);
- 7 025-7 125 MHz (globally);
- 6 425-7 025 MHz (Region 1);
- 10 000-10 500 MHz (Region 2),

1 Including studies with respect to services in adjacent bands, as appropriate.

Results of ITU-R studies

- **Summary and analysis of the results of ITU-R studies are available in section 1/1.2/3 of Draft CPM Report.**
  - Sharing and compatibility studies were conducted between IMT and other incumbent applications/systems in the respective frequency bands.

- **The details of these sharing and compatibility studies are available in the Annexes 4.11 to 4.26 to Document 5D/1555.**

Methods to satisfy the agenda item

Band 1 – 3 300-3 400 MHz (amend footnote in Region 1)

- **Method 1A:** No change.
- **Method 1B:** Modification of RR No. 5.429A and RR No. 5.429B to add interested Region 1 countries south of 30° parallel north to allocate the frequency band 3 300-3 400 MHz to the mobile service (except aeronautical mobile) on a primary basis and to identify it for IMT in those countries.
- **Method 1C:** Modification of RR No. 5.429A and RR No. 5.429B, including the revision of conditions and to add interested Region 1 countries to allocate the frequency band 3 300-3 400 MHz to the mobile service (except aeronautical mobile) on a primary basis and to identify it for IMT in those countries.
- **Method 1D:** Primary allocation to the mobile (except aeronautical mobile) service in the frequency band 3 300-3 400 MHz in interested Region 1 countries and identification of IMT.
- **Method 1E:** Primary allocation to the mobile (except aeronautical mobile) service in the frequency band 3 300-3 400 MHz in the Table of Allocations and identification to IMT in Region 1.

Methods to satisfy the agenda item

Band 2 – 3 300-3 400 MHz (Region 2)

- **Method 2A:** No change.
- **Method 2B:** Allocation of the frequency band 3 300-3 400 MHz to the mobile service on a primary basis and identification of IMT in Region 2.
- **Method 2C:** Allocation of the frequency band 3 300-3 400 MHz to the mobile (except aeronautical) service on a primary basis and identification of IMT in Region 2.

Methods to satisfy the agenda item

Band 3 – 3 600-3 800 MHz (Region 2)

- **Method 3A:** No change.
- **Method 3B:** Identification of the frequency band 3 600-3 800 MHz for IMT in Region 2 with conditions (RR Table **21-4**).
- **Method 3C:** Identification of the frequency band 3 600-3 800 MHz for IMT in Region 2 with conditions (RR Table **21-4**, pfd limit and RR Nos. **9.17**, **9.18**).
- **Method 3D:** Identification of the frequency band 3 600-3 800 MHz for IMT in Region 2 with conditions (RR Table **21-4**, pfd limit (short-term criteria) and RR Nos. **9.17**, **9.18**).
- **Method 3E:** Identifications of the frequency band 3 600-3 700 MHz for IMT in additional countries in Region 2 in RR No. **5.434** while maintaining all existing conditions.
- **Method 3F:** Identification of the frequency band 3 600-3 700 MHz for IMT in Region 2 by modifying RR No. **5.434** while maintaining all existing conditions.

Methods to satisfy the agenda item

Band 4 – 6 425-7 025 MHz (Region 1)

- **Method 4A:** No change.
- **Method 4B:** Identification of the frequency band 6 425-7 025 MHz in Region 1 for IMT without any conditions.
- **Method 4C:** Identification of the frequency band 6 425-7 025 MHz in Region 1 for IMT with conditions contained in a draft new WRC Resolution.
- **Method 4D:** Identification of the frequency band 6 425-7 025 MHz in Region 1 for IMT with conditions contained in a draft new WRC Resolution, applied only within a portion of the band.
- **Method 4E:** Identification of the frequency band 6 425-7 025 MHz in Region 1 for IMT with conditions contained in a draft new WRC Resolution, with use expected as of 2030.

Methods to satisfy the agenda item

Band 5 – 7 025-7 125 MHz (globally)

- **Method 5A:** No change.
- **Method 5B:** Identification of the frequency band 7 025-7 125 MHz for IMT without any conditions.
- **Method 5C:** Identification of the frequency band 7 025-7 125 MHz for IMT by creating a new RR footnote with conditions contained in a draft new WRC Resolution.
- **Method 5D:** Identification of the frequency band 7 025-7 125 MHz for IMT by creating a new RR footnote with a requirement to implement technical measures to protect SOS (Earth-to-space) in the band 7 100-7 155 MHz.
- **Method 5E:** Identification of the frequency band 7 025-7 125 MHz for IMT with conditions contained in a draft new WRC Resolution, with use expected as of 2030.

Methods to satisfy the agenda item

Band 6 – 10.0-10.5 GHz (Region 2)

- **Method 6A:** No change.
- **Method 6B:** Allocation of the frequency band 10-10.5 GHz to the mobile service on a primary basis in Region 2 and identification for IMT with conditions contained in a draft new WRC Resolution.
- **Method 6C:** Allocation of the frequency band 10-10.5 GHz to the mobile (except aeronautical) service on a primary basis in Region 2 and identification for IMT with conditions contained in a draft new WRC Resolution, and protection of the radiolocation service and radio astronomy service.

Aspects to be considered under agenda item 1.2

- **Based on the results of ITU-R studies, which frequency band(s) can be identified for IMT at WRC-23?**

- **When identify the frequency band(s) for IMT, what kind of conditions on the use of IMT should be stipulated in RR?**

Panel discussion

- **<u>Panelists</u>**
  - Dr. Jae-Woo LIM (APT)
  - Dr. Mohamed EL-MOGHAZI (ASMG)
  - Mr. El Hadjar ABDOURAMANE (ATU)
  - Mr. Steve GREEN (CEPT)
  - Ms. Luciana CAMARGOS (CITEL)
  - Dr. Sergey PASTUKH (RCC)

Panel discussion

- **What are the current views/positions of your regional group for agenda item 1.2?**
  - Has your group agreed on any positions for any of the frequency bands?

- **Which frequency bands are extensively discussed in your regional group?**
  - What are the issues in that discussion?

APT Preliminary Views on WRC-23 Agenda Items: **AI 1.2**

- **APT Preliminary Views:**
  - **7 025-7 125 MHz (globally):** APT Members support the on-going sharing and compatibility studies in ITU-R in accordance with Resolution **245 (WRC-19)**. APT Members support potential IMT identification in the frequency band 7 025-7 125 MHz to achieve globally harmonized utilization with appropriate regulatory and technical conditions, where applicable, taking into account the results of studies to ensure the protection of services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate).
  - **3 300-3 400 MHz (Region 2 and amend footnote in Region 1):** APT Members support ITU-R studies with a view that any possible IMT identification/or action in the frequency band 3 300-3 400 MHz in Region 1 and Region 2 shall protect the services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3 so that these services shall in no way be adversely affected.
  - **3 600-3 800 MHz (Region 2):** APT Members support ITU-R studies with a view that any possible IMT identification in the frequency band 3 600-3 800 MHz in Region 2 shall protect the services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3 so that these services shall in no way be adversely affected.
  - **6 425-7 025 MHz (Region 1):** APT Members are of the view that any possible IMT identification in the frequency band 6 425-7 025 MHz in Region 1 shall protect the services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3 so that these services shall in no way be adversely affected. APT Members support the on-going sharing and compatibility studies in ITU-R in accordance with Resolution **245 (WRC-19)** for the frequency band.
  - **10 000-10 500 MHz (Region 2):** APT Members support ITU-R studies with a view that any possible IMT identification in the frequency band 10.0-10.5 GHz in Region 2 shall protect the services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3 so that these services shall in no way be adversely affected.

ASMG

1.2) Identification of (IMT) in the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz

- Reviewing the regulatory conditions attached to the footnote (5.429b), and then identifying the frequency band 3300-3400MHz for the IMT systems of countries wishing to do so within the current footnote or the possibility of considering a new footnote with an emphasis on protecting existing services and systems and not affecting them.
- Follow-up studies with regard to identifying the frequency range 6425-7125 MHz while emphasizing on the protection of existing services and systems and not affecting them, and then determining the Arab position on identifying the range for IMT systems in the last meeting.

ATU

APM23-3 agreed to:

Part 1: Common position:

1. **For the frequency band 3 300 – 3 400 MHz**:
   a) **Support** removal of stringent conditions through amendment of footnotes 5.429A and 5.429B or adopting a new footnote, as appropriate.
   b) **Encourage** African countries not yet listed in footnote 5.429B to consider adding their names to the footnote at WRC-23, in order to achieve harmonization;
   c) **not support** any method that will result in maintaining the current regulatory situation.

2. **For the frequency band 6 425-7 125 MHz**:

   a) **Preliminarily support** identification of the frequency band 6 425-7 125 MHz for IMT;
   b) **Support** consideration of appropriate measures to ensure the protection of the existing services, taking into account the result of the coexistence studies in ITU-R;

CEPT Coordinator:
Robert COOPER (G)

CEPT ECC
Electronic Communications Committee

WRC-23 Agenda item 1.2 (1/4)

*to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC-19)***

Preliminary CEPT position

3300-3400 MHz (Amend Footnote in Region 1)

CEPT does not support amendments to footnotes **5.429A** and **5.429B** which could extend them to countries north of 30° parallel north. Thus, CEPT does not support an IMT identification for the entire Region 1. Furthermore, CEPT opposes amending the footnote to change the regulatory provisions applicable to IMT stations in the band. In particular, IMT stations shall not cause harmful interference to, or claim protection from, systems in the radiolocation service in various national and international operational environments and shall meet unwanted emission levels specified in the relevant ITU-R Recommendations. In addition, protection of FSS in the frequency band 3400-3800 MHz should also be ensured, as appropriate.

CEPT Coordinator:
Robert COOPER (G)

CEPT ECC
Electronic Communications Committee

WRC-23 Agenda item 1.2 (2/4)

*to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC-19)***

Preliminary CEPT position (cont.)

3300-3400 MHz (Region 2)

CEPT supports maintaining the regulatory provisions in the footnotes Nos. **5.429C** and **5.429D** applicable to IMT stations in this band. In particular, IMT stations shall not cause harmful interference to, nor claim protection from, systems in the radiolocation service in various national and international operational environments, and shall meet unwanted emission levels specified in the relevant ITU-R Recommendations.

3600-3800 MHz (Region 2)

To be developed

CEPT Coordinator:
Robert COOPER (G)

CEPT ECC
Electronic Communications Committee

WRC-23 Agenda item 1.2 (3/4)

*to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC-19)***

Preliminary CEPT position (cont.)

6425-7025 MHz (Region 1)

To be developed

7025-7125 MHz (Globally)

To be developed

CEPT Coordinator:
Robert COOPER (G)

Coordination team:
Ines ORTEGA (D)

WRC-23 Agenda item 1.2 (4/4)

*to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC-19)***

Preliminary CEPT position (cont.)

10000-10500 MHz (Region 2)

CEPT is of the view that the result of a possible identification of the frequency band 10-10.5 GHz in Region 2 under this agenda item has a global impact on EESS (active) in the band 10.0-10.4 GHz and may have a global impact on EESS (passive) in the band 10.6-10.7 GHz due to the required protection of these services on a global basis. Moreover, interference would be detrimental to airborne and shipborne radars operating in 10-10.5 GHz under the radiolocation service operated by some CEPT countries in all Regions at 10-10.5 GHz. Sharing and compatibility studies between IMT and EESS (active) show that sharing between IMT and those services is not possible. Therefore, CEPT is of the view that the band 10-10.4 GHz should not be identified for IMT in Region 2 in order to ensure the protection of the radiolocation and the globally operating EESS (active) systems and in order to not impose any additional regulatory or technical constraints to these services.

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- **3 300-3 400 MHz**

Inter- American Proposal

Identification of the mid-band frequency spectrum for IMT in Region 2 in the band 3 300-3 400 MHz by modification of **5.429C**, **5.429D** and the addition of **5.12AI**:

5.12AI Stations in the mobile service operating in the frequency band 3 300-3 400 MHz in Region 2 shall not cause harmful interference to, or claim protection from, stations operating in the radiolocation service. (WRC 19)

CITEL/GT/CMR-23/doc.042r2/22

- **3 600-3 800 MHz**

Draft Inter-American Proposals

- Some Administrations propose the modification of **5.434** to remove the list of countries and to extend the existing IMT footnote(s) to the entire Region 2 for the identification of the frequency band **3 600-3 800** MHz for IMT, removing existing conditions.

- Other Administrations propose the modification of **5.434** to add new countries in the identification of the frequency band **3 600-3 700** MHz for IMT while maintaining all existing conditions.

Preliminary Proposals

- An Administration proposes the modification of **5.434** to remove the list of countries and to extend the existing IMT footnote(s) to the entire Region 2 for the identification of the frequency band **3 600-3 700** MHz for IMT.

- An Administration proposes the modification of **5.434** to remove the list of countries and to extend the existing IMT footnote(s) to the entire Region 2 for the identification of the frequency band **3 600-3 800** MHz for IMT

CITEL/GT/CMR-23/doc.022/22 rev.5
CITEL/GT/CMR-23/doc.055/22 rev.1

- **6 425-7 125 MHz**

Draft Inter-American Proposal

Some Administrations propose NOC for the identification of the frequency band **6 425-7 125 MHz** for IMT.

CITEL/GT/CMR-23/doc.040/22 rev.1

- **10-10.5 GHz**

Draft Inter-American Proposal

Several Administrations propose allocation to the mobile service and identification of IMT in Region 2 in the band 10-10.5 GHz by amending **5.480**, **5.481**, and adding **5.A12E** and Resolution **A12 10 GHz** (WRC-23) "Studies on frequency-related matters for the terrestrial component of International Mobile Telecommunications identification in the frequency band 10.0-10.5 GHz", still TBD.

Preliminary Proposal

An Administration proposes NOC for the identification of the frequency band **10-10.5 GHz** for IMT.

CITEL/GT/CMR-23/doc.037/22 rev.4
CITEL/GT/CMR-23/doc.029/22 rev.2

RCC

Regional Commonwealth in the field of Communications

1.2 - IMT 6425-7125 MHz

Harmonize spectrum to enhance flexibility of IMT deployment

Sergey Pastukh

6425-6525 MHz (Region 1): No objection to the identification of the frequency band 6425-6525 MHz or parts of it for IMT. Protection of FSS (E-s) and FS should be ensured by regulatory and technical conditions developed based on the results of ITU-R studies.

6525-7025 MHz (Region 1) and 7025-7100 MHz (Global): Support identification of the frequency band 6525-7100 MHz for IMT systems under the following conditions:

- ✓ insure compatibility of IMT stations with non-GSO MSS (s-E) feeder links in the band 6700-7075 MHz;
- ✓ insure compatibility of IMT stations with FSS (E-s) stations on GSO and HEO in the band 6725-7025 MHz;
- ✓ insure protection of SOS / SRS stations in the band 7100-7250 MHz from unwanted emissions of IMT stations operating in the band 6525-7100 MHz,
- ✓ not imposing regulatory or technical constrains for SOS / SRS stations operating in the band 7100-7250 MHz and keep possibility for the further use of the EESS (passive) in the 7075-7250 MHz.

7100-7125 MHz (Global): Protect existing radio services from interference in coinsidered and adjacent bands (including space stations of SOS, SRS and EESS (passive)).

Methods 4D and 5D from the draft CPM Report

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1.2 - IMT 3.6-3.8 GHz & 10 GHz

Protect Region 1 services in case of identification of these bands for IMT in Region 2

Sergey Pastukh

3600-3800 MHz in Region 2: If this frequency band is identified for IMT in Region 2, it is necessary to adopt relevant provisions to the RR ensuring protection of FSS and FS of Region 1.

Protection should be provided based on the results of studies carried out in ITU-R in preparation for WRC- 07, WRC-12 and WRC-15 (i.e. ITU-R Report F.2328, M.2109, S.2199, S.2368 and M .2111).

Method 3A or 3D from the draft CPM Report

10.0-10.5 GHz in Region 2: If this band is allocated to the MS and identified for IMT in Region 2:

- protection of services for which the band 10-10.5 GHz is allocated in Region 1, as well as protection of EESS (passive) in the 10.6-10.7 GHz should be ensured.
- no additional regulatory and technical constrains should be imposed on radio services in Region 1 operating in accordance with the RR.

Method 6A or 6C from the draft CPM Report

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1.2 - IMT 3.3-3.4 GHz

Protect existing services and extend where possible IMT usage in this band

Sergey Pastukh

Region 1

No objection for the extension of country name list in the footnotes 5.429, 5.429A, 5.429B, 5.429C, 5.429D, 5.429E, 5.429F but advocate for the protection of the RLS in-band and FSS / EESS (active) in adjacent band (i.e. above 3400 MHz and below 3300 MHz).

Protection of RLS, FSS and EESS (active) should be based on ITU-R Reports ITU-R M.2481 and S.2368.

Region 2

No objection for identification of the band 3300-3400 MHz in Region 2 for IMT but advocate for the protection of RLS of Region 1 in-band, FSS/ EESS (active) of Region 1 taking into account ITU-R Reports ITU-R M.2481 and S.2368 and results of studies be carried out by ITU-R in preparation for WRC-23.

Method 1A or 1B from the draft CPM Report

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Any questions on agenda item 1.2 to the panelists?

Agenda item 1.4
11:55-12:30

Agenda item 1.4

- *to consider, in accordance with Resolution **247** (WRC-19), the use of high-altitude platform stations as IMT base stations (HIBS) in the mobile service in certain frequency bands below 2.7 GHz already identified for IMT, on a global or regional level;*

- *Resolution **247 (WRC-19)** – Facilitating mobile connectivity in certain frequency bands below 2.7 GHz using high-altitude platform stations as International Mobile Telecommunications base stations*

Resolution 247 (WRC-19)

resolves to invite ITU-R

1 to study spectrum needs, as appropriate, for high-altitude platform stations as IMT base stations to provide mobile connectivity in the mobile service taking into account:

- the existing identification in *recognizing b)*;
- the usage and deployment scenario envisioned for high-altitude platform stations as IMT base stations as complementary for terrestrial IMT networks;
- the technical and operational characteristics and requirements of high-altitude platform stations as IMT base stations;

Resolution 247 (WRC-19)

resolves to invite ITU-R

…

2 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, sharing and compatibility studies to ensure the protection of services, without imposing any additional technical or regulatory constraints in their deployment, to which the frequency band is allocated on a primary basis, including other IMT uses, existing systems and the planned development of primary allocated services, and adjacent services, as appropriate, for certain frequency bands below 2.7 GHz, or portions thereof, globally or regionally harmonized for IMT, i.e.:

- 694-960 MHz;
- 1 710-1 885 MHz (1 710-1 815 MHz to be used for uplink only in Region 3);
- 2 500-2 690 MHz (2 500-2 535 MHz to be used for uplink only in Region 3, except 2 655-2 690 MHz in Region 3);

3 to study appropriate modifications to the existing footnote and associated resolution in the identification in *recognizing b)* in order to facilitate the use of high-altitude platform stations as IMT base stations with the latest radio interface technologies of IMT;

Resolution 247 (WRC-19)

resolves to invite ITU-R

…

4 to study the definition of high-altitude platform stations as IMT base stations (HIBS) including possible modifications to the provisions of the Radio Regulations, as appropriate;

5 to develop ITU-R Recommendations and Reports, as appropriate, taking into account *resolves to invite ITU-R* 1, 2, 3, and 4 above,

further resolves to invite WRC-23

to consider, based on the results of the above studies, the use of high altitude platform stations as IMT base stations in certain frequency 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 d)* are outside the scope and there should be no additional regulatory or technical constraints imposed on the deployment of ground-based IMT systems in the frequency bands referred to in those footnotes,

Results of ITU-R studies

- **Summary and analysis of the results of ITU-R studies are available in section 1/1.4/3 of Draft CPM Report.**
  - Usage and deployment scenarios, spectrum needs, and technical and operational characteristics of HIBS were studied.
  - Sharing and compatibility studies were conducted between HIBS and other incumbent applications/systems in the respective frequency bands.

- **The details of these ITU-R studies are available in the Annexes 4.29 to 4.35 to Document 5D/1555.**

Methods to satisfy the agenda item

Issues – Frequency band(s)	No change to the Radio Regulations (RR)	Use by HIBS in single footnote	Use by HIBS in single footnote not claiming protection	Use by HIBS in regional footnotes
A - 694-960 MHz	A1	A2	A3	A4
B - 1 710-1 885 MHz	B1	B2	B3	B4
C - 1 885-1 980 MHz, 2 010-2 025 MHz, and 2 110-2 170 MHz	C1	C2	C3	-
D - 2 500-2 690 MHz	D1	D2	D3	D4

Aspects to be considered under agenda item 1.4

- **Based on the results of ITU-R studies,**
  - **Which frequency band(s) can be additionally identified for HIBS at WRC-23?**
  - **Should we require any modifications to the existing footnote?**

- **What kind of conditions for the use of HIBS should be stipulated in RR to protect the incumbent applications/systems?**

Panel discussion

- **<u>Panelists</u>**
  - Dr. Jae-Woo LIM (APT)
  - Dr. Mohamed EL-MOGHAZI (ASMG)
  - Mr. El Hadjar ABDOURAMANE (ATU)
  - Mr. Steve GREEN (CEPT)
  - Mr. Geraldo NETO (CITEL)
  - Dr. Sergey PASTUKH (RCC)

Panel discussion

- **How about interests in HIBS among the members in your group?**
- **What are the current views/positions of your regional group for agenda item 1.4?**
  - Has your group established any agreed positions for certain frequency bands?
  - Does your group have any issues in certain frequency bands?

APT Preliminary Views on WRC-23 Agenda Items: **AI 1.4**

- **APT Preliminary Views:**
  - APT Members support the ongoing ITU-R studies for establishing a new globally or regionally harmonized regulatory framework for HIBS with a view to providing flexibility of spectrum usage for HIBS in certain frequency bands below 2.7 GHz already identified for IMT referred to in Resolution **247 (WRC-19)**, while ensuring the protection of the existing services, to which the frequency band is allocated on a primary basis, and adjacent bands, as appropriate, without adversely affecting in their deployment including other IMT uses, existing systems and the planned development of primary services.
  - APT Members are considering that there is a need to develop the definition of HIBS with a view to potentially be included in the ITU-R Radio Regulations

ASMG

1.4) The use of high-altitude platform stations as IMT base stations (HIBS) in the mobile service in certain frequency bands below 2.7 GHz already identified for IMT, on a global or regional level

- Follow-up studies of the possibility of using high-altitude platforms as base stations for International Mobile Telecommunications (HIBS) in the frequency bands referred to in Resolution 247 (WRC-19) with follow-up studies of sharing and compatibility in order to ensure the protection of existing services to which the frequency band is allocated on a primary basis and services operating in adjacent bands as appropriate, in addition to the measures required for coordination with neighboring countries regarding exceeded coverage.
- Protection of existing systems and the future development of services to which bands are distributed on a primary basis and services operating in neighboring bands as necessary.
- To continue to study the spectrum needs of high-altitude platform stations as base stations for International Mobile Communications (HIBS), taking into account that no additional regulatory or technical restrictions are imposed on IMT terrestrial systems and determining the position on the possibility of using these applications in the bands mentioned in Resolution 247 (WRC-19) or not in the upcoming Arab meetings

ATU

APM23-3 agreed to:

Part 1: Common position:

1. **Support** studies to enable the use of HIBS in bands below 2 700 MHz, already identified for IMT;
2. **Support** the ITU-R sharing and compatibility studies for HIBS usage and protection of existing co-primary and primary services in adjacent bands without adversely affecting these services;
3. **Support,** based on the result of studies, the global/regional harmonization on the use of the frequency bands for HIBS, which may include addition of African countries names in the existing footnotes in the RR.
4. **Support** the identification of the candidate bands for the use of high altitude platform stations as base stations for International Mobile Communications (HIBS), taking into account that no additional regulatory or technical restrictions should be imposed on the existing IMT terrestrial systems and applications operating in the same bands or in adjacent bands and also to identify the necessary measures required for coordination with neighbouring countries regarding exceeded coverage.

Interim CEPT Coordinator:
Steve GREEN (G)

CEPT ECC
Electronic Communications Committee

WRC-23 Agenda item 1.4

*to consider, in accordance with Resolution **247 (WRC-19)**, the use of high-altitude platform stations as IMT base stations (HIBS) in the mobile service in certain frequency bands below 2.7 GHz already identified for IMT, on a global or regional level*

Preliminary CEPT position

CEPT considers the development of regulatory provisions applying to HIBS in order to protect other services and applications in the frequency bands proposed for HIBS as well as in the adjacent bands.

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SGT1 - MOBILE, FIXED & BROADCASTING
AGENDA ITEM 1.4

OAS | CITEL

Preliminary Proposal

- An Administration propose **NOC**

CITEL/GT/CMR-23/doc. 023/22 rev3

Draft Inter-American Proposals:

- An Administration proposes the following modifications:
  - ✓ **MOD article 5 - 460-890 MHz / MOD article 5 890-1 300 MHz**
  - ✓ **ADD 5.A14 ADD 5.B14**
  - ✓ **ADD RESOLUTION [A14-HIBS 698-960 MHZ] (WRC-23)** *Use of high-altitude platform stations as International Mobile Telecommunications base stations (HIBS) in the frequency band 694-960 MHz, or portions thereof*
  - ✓ ***MOD article 5 - 1 710-2 170 MHz***
  - ✓ **MOD 5.388A**
  - ✓ **MOD RESOLUTION 221 (REV.WRC 07)** *Use of high altitude platform stations providing IMT in the bands 1 885 1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2*
  - ✓ **ADD 5.L14**
  - ✓ **ADD RESOLUTION [B14-HIBS 2 500-2 690 MHZ] (WRC-23)** *Use of high-altitude platform stations as International Mobile Telecommunications base stations (HIBS) in the frequency band 2 500-2 690 MHz, or portions thereof.*
  - ✓ ***MOD 11.9***
  - ✓ ***MOD 11.26A***
  - ✓ ***SUP RESOLUTION 247 (WRC-19)*** Facilitating mobile connectivity in certain frequency bands below 2.7 GHz using high-altitude platform stations as International Mobile Telecommunications base stations.

CITEL/GT/CMR-23/doc. 060/22 rev1

RCC

Regional Commonwealth in the field of Communications

1.4 – HIBS below 2.7 GHz

Improve IMT BS coverage and protect of existing services in and adjacent bands

Dmitry Aronov

Technical and regulatory conditions for the use of HIBS in the bands mentioned in Res. 247 (WRC-19) shall be based on the results of relevant ITU-R compatibility studies and should take into account the requirements for the protection of services with the primary allocation in these and adjacent frequency bands, including other uses of IMT systems.

- 694-960 MHz: shall not cause interference and impose additional restrictions on the use of the 645-862 MHz and 960-1164 MHz bands by aeronautical radio navigation service stations;
- 1710-1885 MHz, 1885-1980 MHz, 2010-2025 MHz and 2110-2170 MHz: should not cause interference and impose additional restrictions on the use:
  - of the band 1675-1710 MHz by Meteorological Satellite Service;
  - of the band 2025-2110 MHz by SOS, SRS, EESS;
  - of the bands 1980-2010 MHz, 2170-2200 MHz by MSS.

Methods A4, B3, C3 and D3 from the draft CPM Report

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Any questions on agenda item 1.4 to the panelists?