

**ITUEvents**

# 3<sup>rd</sup> ITU Inter-regional Workshop on WRC-23 Preparation

27 - 29 September 2023  
Geneva, Switzerland

[www.itu.int/go/ITU-R/wrc-23-irwsp-23](http://www.itu.int/go/ITU-R/wrc-23-irwsp-23)  
#ITUWRC

## Session 1: IMT issues

WRC-23 agenda item 1.2  
- bands 6 GHz, 7 GHz & 10 GHz  
and  
WRC-23 agenda item 1.4

***Moderator of Session 1***  
***Hiroyuki Atarashi***

# Provisional Timetable

| Topic   | Time   | Items  |
|---|--|--|
| Agenda item 1.2<br>- Frequency bands<br>6 GHz, 7 GHz & 10 GHz | 11:00-11:20<br>(Max. 3-4 minutes introduction/group<br>x 6 groups) | Introduction of positions/views from each regional group                       |
|   | 11:20-12:00  | Discussion with the panelists considering comments/questions from the audience |
| Agenda item 1.4   | 12:00-12:15<br>(Max. 3 minutes introduction /group<br>x 6 groups)  | Introduction of positions/views from each regional group                       |
|   | 12:15-12:30  | Discussion with the panelists considering comments/questions from the audience |

# 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)**

# Panelists (agenda item 1.2)

- **APT:** Dr Tan WANG
- **ASMG:** Dr Mohamed EL-MOGHAZI
- **ATU:** Mr El Hadjar ABDOURAMANE
- **CEPT:** Mr Robert COOPER and Ms Ines ORTEGA CASTELLO
- **CITEL:** Ms Luciana CAMARGOS
- **RCC:** Dr Sergey PASTUKH

# ASMG Preliminary positions WRC 23

## WG-1

### 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

- Arab Common Proposal (ACP) to support Method A (No change to Radio Regulations) in the frequency band 4 800-4 990 MHz for protection of the aeronautical mobile and maritime mobile services located in international airspace and waters from IMT stations

### 1.2) Identification of (IMT) in the frequency bands 3300-3400 MHz, 3600-3800 MHz, 6425-7025 MHz, 7025-7125 MHz and 10.0-10.5 GHz

- 3300-3400 MHz band (Region 1): (ACP) to Support Primary allocation to the mobile service in the frequency band 3 300-3 400 MHz in the Table of Frequency Allocations and identification to IMT in Region 1 without any condition.
- 3300-3400 MHz band (Region 2): Ensure not affecting or imposing any additional restrictions on services allocated in Region 1.
- 3600-3800 MHz band (Region 2): Support the use of this band for IMT within the mobile service and to align the possible conditions for the use of this band for IMT between Regions 1 and 2.
- 6425-7025 MHz band (Region 1): (ACP) to support Method 4B to identify the frequency bands 6425-7025 MHz in Region 1 for IMT and further coordinate at ASMG level to develop possible protection conditions for existing services and discuss possible coexistence measures with other in-band operating applications.
- 7125-7125 MHz band: (ACP) to support Method 5B to identify the frequency bands 7025-7125 MHz in Region 1 for IMT and further coordinate at ASMG level to develop possible protection conditions for existing services and discuss possible coexistence measures with other in-band operating applications.
- 10.0-10.5 GHz band (Region 2): Ensure not affecting or imposing any additional restrictions on services allocated in Region 1.

*APM23-4 agreed to:*

Part 1: Common position:

**1. For the frequency Band 1 (3 300 – 3 400 MHz):**

**a) Support Method 1F**

**b) Not support methods 1A and 1B**, which will result in maintaining the current regulatory situation.

**2. For the frequency Band 4 (6 425 – 7 025 MHz); Band 5 (7 025 – 7 125 MHz):**

**Support Methods 4C and 5C (alternative 2)**, to identify the frequency band 6 425 – 7 125 MHz to IMT with the following set of conditions to protect incumbent services:

- a) For the protection of FSS (earth-to-space) in the frequency band 6 425-7 075 MHz – Mask for the expected equivalent isotropically radiated power (e.i.r.p.) emitted by an IMT base station: Example 3 of the draft resolution associated with method 4C/5C;
- b) For the protection of FSS (space-to-Earth) in the frequency band 6 700-7 075 MHz: through the adoption of site-specific coordination.

**3. For frequency Band 2 (3 300-3 400 MHz); Band 3 (3 600-3 800 MHz) and Band 6 (10 – 10.5 GHz (Region 2)):**

- a) For frequency band 2 and frequency band 3, **support allocation to mobile service, and possible IMT identification** in these frequency bands under consideration in Region 2, considering that this **would foster global harmonization** for the implementation of IMT;
- b) For frequency band 6, support that IMT identification of this frequency band or part thereof under consideration in Region 2, **shall not affect** services to which this frequency band is allocated to in Region 1.

Part 2: Way forward

*Request ATU administrations to:*

**Support** the AfCP under this agenda item.



# 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)***

## CEPT position (cont.)

### 6425-7025 MHz (Region 1) and 7025-7125 MHz (Globally)

CEPT is neither proposing nor supporting an IMT identification of the frequency range 6425-7125 MHz but could accept it if the conditions below are fulfilled. If these conditions are not fulfilled, CEPT will support NOC (underlined).

CEPT will only accept an IMT Identification if all of the following 5 conditions are fully met:

1. the protection of relevant primary services is ensured (as provided in the European Common Proposal - ECP)
2. continued operation of other services (i.e. those identified in RR Nos. **5.458** for EESS (passive) and **5.149** for Radioastronomy) is addressed (as provided in the ECP) with additionally new EESS (passive) primary allocations in the frequency bands 4.2 – 4.4 GHz, and 8.4 – 8.5 GHz, to allow the continued operation of sea surface temperature (SST) measurements
3. no limitations are imposed on the existing services and their future development
4. the IMT Resolution clearly outlines opportunities for other broadband applications in the mobile services (i.e. WAS/RLAN) as well as sufficient flexibility regarding the future wireless broadband usage, i.e. by IMT, WAS/RLAN or under a shared framework between IMT and WAS/RLAN as provided in the ECP
5. WRC-23 does not approve an agenda item for WRC-27 studying additional IMT identifications in frequency bands between 7 and 30 GHz where IMT would have the potential to jeopardize important European space and governmental spectrum.



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)*

## 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.





## 1.2 - IMT 6425-7125 MHz

RCC Position – 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 constraints for FS stations as well as 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 is considered and adjacent bands (including space stations of FS, SOS, SRS and EESS (passive)).

**RCC Common Proposal: combination of Methods 4D and 5D from the CPM Report**

## 1.2 - IMT 6425-7125 MHz

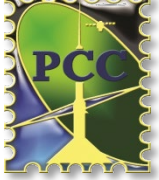
### RCC Common Proposal – IMT identification



Sergey Pastukh

| Allocation to services |   |          |
|------------------------|---|----------|
| Region 1               | Region 2  | Region 3 |
| 5 925-6 700            | FIXED 5.457<br>FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B<br>MOBILE 5.457C <b><u>ADD 5.B12</u></b><br>5.149 5.440 5.458 |          |
| 6 700-7 075            | FIXED<br>FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441<br>MOBILE <b><u>ADD 5.B12</u></b><br>5.458 5.458A 5.458B   |          |
| 7 075-7 145            | FIXED<br>MOBILE <b><u>ADD 5.B12</u></b><br>5.458 5.459  |          |

**5.B12** Frequency bands 6 425 -7 100 MHz in Region 1 and 7 025 - 7 100 MHz in Regions 2 and 3 are identified for use by administrations wishing to implement the terrestrial component of 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. Resolution **[RCCA12-6GHz] (WRC-23)** applies. (WRC-23)



## 1.2 - IMT 6425-7125 MHz

### RCC Common Proposal – Resolution [RCCA12-6 GHz] (1/2)



Sergey Pastukh

#### resolves

**2.1** in the frequency band **6425 - 6525 MHz** the level of expected spectral density of equivalent isotropically radiated power (**e.i.r.p.**) emitted by an IMT base station as a function of vertical angle (elevation angle) above the horizon shall not exceed the following values:

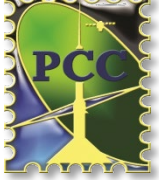
| Vertical angle $\theta$ above the horizon | Expected spectral density of e.i.r.p. (dBm/1 MHz) |
|---|---|
| $0^\circ \leq \theta < 5^\circ$           | 32  |
| $5^\circ \leq \theta < 10^\circ$          | 29  |
| $10^\circ \leq \theta < 15^\circ$         | 22  |
| $15^\circ \leq \theta < 20^\circ$         | 19  |
| $20^\circ \leq \theta < 25^\circ$         | 17  |
| $25^\circ \leq \theta < 30^\circ$         | 15  |
| $30^\circ \leq \theta < 60^\circ$         | 15  |
| $60^\circ \leq \theta \leq 90^\circ$      | 15  |

**NOTE 1.** – The expected spectral density of e.i.r.p. is defined as the average value of the spectral density of e.i.r.p., with the averaging being performed:

- over horizontal angles between  $-180^\circ$  to  $+180^\circ$ , and the IMT base station beamforming in a specific direction within its steering range,
- over different beamforming directions within the IMT base station steering range, and
- over the specified vertical angle measurement window  $\theta$ .

**NOTE 2.** – The IMT base station must comply with the specified limits on the expected spectral density of e.i.r.p. for all mechanical tilts with which it can be deployed.

**NOTE 3.** – To calculate the expected spectral density e.i.r.p. the beamforming directions used in the averaging process are treated with equal probability in both the horizontal and vertical directions within the steering range of the IMT base station.



## 1.2 - IMT 6425-7125 MHz

RCC Common Proposal – Resolution [RCCA12-6 GHz] (2/2)



Sergey Pastukh

### resolves

**2.2** that the *e.i.r.p. spectral density limits* in the frequency band 6425 - 6525 MHz mentioned in *resolves 2.1* shall *remain* in force *unless Article 21* of the Radio Regulations *be revised* by a future competent *WRC* with respect to the mobile stations with an advanced antenna system in this frequency band;

**2.3** the *spurious emissions limits* in the frequency band *7100 - 7155 MHz* shall *comply* with the requirements of Recommendation ITU-R *SM.329 for Category B*;

**2.4** IMT stations shall *not restrict the usage* of the *7145 - 7190 MHz* band by transmitting Earth stations of the *Space Research Service (deep space)* which *conform* to the requirements of Appendix 3 of the Radio Regulations for *unwanted emissions* of Earth stations of the satellite services.



Sergey Pastukh

## 1.2 - IMT 10.0 – 10.5 GHz

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

### RCC position on IMT in 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 constraints should be imposed on radio services in Region 1 operating in accordance with the Radio Regulation.

### RCC Common Proposal:

**NOC** for the band 10.45-10.5 GHz;

**NOC** for Aeronautical mobile service in Region 2 in band 10.45-10.5 GHz

# SGT1 - MOBILE, FIXED & BROADCASTING

## AGENDA ITEM 1.2



OAS | CITEL

- **3 300-3 400 MHz - Inter- American Proposal – already posted in the WRC-23 contributions ([Doc. 44 Add. 2 Add.1](#))**
  - Allocation to the mobile (except aeronautical mobile) service and identification 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.042/23 rev.6
- **3 600-3 800 MHz - Inter-American Proposals**
  - Modification of **5.434** 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, removing existing conditions and adding the sentence: Administrations wishing to implement IMT shall obtain the agreement of neighboring countries to ensure the protection of the fixed-satellite service (space-to-Earth).
  - Add a new footnote for some countries in Region 2 for the identification of the frequency band 3 700-3 800 MHz for IMT, adding the sentence: Administrations wishing to implement IMT shall obtain the agreement of neighboring countries to ensure the protection of the fixed-satellite service (space-to-Earth).

CITEL/GT/CMR-23/doc.134/23 rev.3
- **6 425-7 125 MHz - Inter-American Proposal**
  - Administrations propose NOC for the identification of the frequency band **6 425-7 125 MHz** for IMT in all Regions.

CITEL/GT/CMR-23/doc.067/23 rev.4

# Preliminary APT Common Proposals on WRC-23 Agenda Items: **AI 1.2**

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- **Preliminary APT Common Proposal (PACP):**

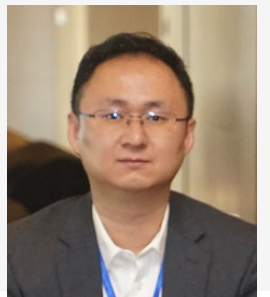
- **Frequency band 7 025-7 125 MHz (Band 5)**

- APT Members support identification of the frequency band 7 025-7 125 MHz for IMT globally through Method 5C together with a new WRC Resolution. APT Members are considering whether this proposed new WRC Resolution could be combined with a potential WRC Resolution for 6 425-7 125 MHz in Region 1, if agreed.

- **Discussion in APT:**

- No PACPs were developed for other frequency bands (Bands 1, 2, 3, 4 and 6) under agenda item 1.2. APT Members agreed to further discuss these frequency bands during WRC-23, as needed.
- APT Members are of the view that any possible IMT identification in these other frequency bands in other Region needs to protect the services to which the frequency band is allocated on a primary basis and in adjacent bands in Region 3 so that these services need to in no way be adversely affected.

DG Chair Mr. Tan Wang (P. R. of China)



# Short summary by the Moderator

| Region | Regional group | Preferred Method(s) / Common positions  |                            |
|--------|----------------|---|----------------------------|
|        |                | 6 425-7 025 MHz (Region 1)  | 7 025-7 125 MHz (globally) |
| 1      | ASMG           | Method 4B → 4C*   | Method 5B → 5C*            |
|        | ATU            | Method 4C (alternative 2)   | Method 5C (alternative 2)  |
|        | CEPT           | <ul style="list-style-type: none"> <li>Neither propose nor support an IMT identification of the frequency range 6 425-7 125 MHz but could accept it if the five conditions are fulfilled</li> <li>If these conditions are not fulfilled, support <b><u>NOC</u></b></li> </ul> |                            |
|        | RCC            | Combination of Methods 4D and 5D  |                            |
| 2      | CITEL          | <b><u>NOC</u> in all Regions</b>  |                            |
| 3      | APT            | No common proposal  | Method 5C                  |

\* During the workshop, it was clarified that ASMG is coordinating to develop possible protection conditions for existing services.



# Observations by the Moderator

- **How to reconcile different positions/views of the regional groups?**
  - How to reconcile regionally for the frequency band 6 425-7 025 MHz in Region 1?
  - How to reconcile globally for the frequency band 7 025-7 125 MHz?
- **For IMT identification, which conditions should be included in a Resolution?**
  - For the protection of FSS (Earth-to-space) → an appropriate e.i.r.p. mask?
  - Any other additional conditions for the protection of other services?
  - Treatment of other broadband applications in the mobile services?

# Short summary by the Moderator (1)

| Region | Regional group | Preferred Method(s) / Common positions  |
|--------|----------------|---|
| 1      | ASMG           | ensure not affecting or imposing any additional restrictions on services allocated in Region 1  |
|        | ATU            | shall not affect services to which this frequency band is allocated to in Region 1  |
|        | CEPT           | <b>The band 10-10.4 GHz should not be identified for IMT in Region 2</b> 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.   |
|        | RCC            | <p><b>Position on IMT in 10.0-10.5 GHz in Region 2:</b></p> <p>If this band is allocated to the MS and identified for IMT in Region 2:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• no additional regulatory and technical constraints should be imposed on radio services in Region 1 operating in accordance with the Radio Regulation.</li> </ul> <p><b>Common Proposal:</b></p> <ul style="list-style-type: none"> <li>• <b>NOC for the band 10.45-10.5 GHz;</b></li> <li>• <b>NOC for Aeronautical mobile service in Region 2 in band 10.45-10.5 GHz</b></li> </ul> |

## Short summary by the Moderator (2)

| Region | Regional group | General considerations and preferred Method(s) |
|--------|----------------|--|
| 2      | CITEL          | No common proposal                             |
| 3      | APT            | No common proposal                             |

## Observations by the Moderator

- **The frequency band is being considered for potential identification in Region 2, but there is no common proposal from CITEL.**
  - How the frequency band should be handled?  
(e.g., consider a potential country-footnote for IMT identification in Region 2 as a starting point??)

# 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

# Panelists (agenda item 1.4)

- **APT:** Mr Shiro FUKUMOTO
- **ASMG:** Dr Mohamed EL-MOGHAZI
- **ATU:** Mr El Hadjar ABDOURAMANE
- **CEPT:** Dr Azar ZARREBINI
- **CITEL:** Mr Geraldo NETO
- **RCC:** Dr Sergey PASTUKH

# ASMG Preliminary positions WRC 23

## WG-1

### **1.3) Primary allocation of the band 3 600-3 800 MHz to mobile service within Region 1 and take appropriate regulatory actions**

- (ACP) to support upgrade of the allocation to Mobile service on a primary basis in the Table of Frequency Allocation for the frequency band 3 600-3 800 MHz in Region 1 without any additional conditions, and identification of the band for IMT.

### **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**

- (ACP) to support the identification of the frequency bands 694-960 MHz, 1710-1885 MHz, 2500-2690 MHz, 1885-1980 MHz, 2010-2025 MHz, and 2110-2170 MHz or portions thereof, for the use of HIBS without claiming protection from existing primary services and with adopting appropriate conditions for protection of existing services.

Part 1: Common position:

**Support Methods A3, B3, C3, D3** which identify the following frequency bands for use by high-altitude platform stations as International Mobile Telecommunications (IMT) base stations (HIBS) with the related conditions:

**Frequency band 694 - 960 MHz**

1. for the protection of broadcasting in the GE06 agreement area: **Example 2 for resolves 3 to 5** of the draft resolution associated with Method A3;
2. for the protection of IMT mobile and base stations: **Example 2 for resolves 6.1 and 6.2** of the draft resolution associated with Method A3;
3. For protecting radio astronomy in the frequency band 1 610.3 – 1 613.6 MHz from second harmonics of HIBS in the frequency band 694 – 960 MHz: **Example 2 for resolves 6.3 and 6.4, associated with Example 3 for recognizing f)** of the draft resolution associated with Method A3;

**Frequency band 1710 - 1885 MHz**

1. for the protection of IMT mobile and base stations: **Example 1 for resolves 1.2 and 1.3** of the draft resolution associated with Method B3;
2. for the protection of stations in the fixed service: **Example 1 for resolves 1.6** of the draft resolution associated with Method B3;
3. for the protection of aeronautical mobile service systems: **[Example 1/ Example 3] for resolves 1.7 and 1.8** of the draft resolution associated with Method B3;

## **Frequency bands 1885 - 1980 MHz, 2010 - 2025 MHz and 2110 - 2170 MHz**

1. for the protection of IMT mobile and base stations: **Example 1 for resolves 1.1 and 1.2** of the draft resolution associated with Method C3;
2. for the protection of fixed service stations: [**Example 2 for resolves 1.5**] and **Example 1 for resolves 1.6** of the draft resolution associated with Method C3;

## **Frequency band 2500 - 2690 MHz**

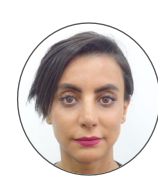
1. for the protection of IMT mobile and base stations: **Example 1 for resolves 1.1 and 1.2** of the draft resolution associated with Method D3;
2. for the protection of stations in the fixed service: **Example 1 for resolves 1.3** of the draft resolution associated with Method D3;
3. for the protection of the broadcasting-satellite service: **Example 2 for resolves 1.4** of the draft resolution associated with Method D3;
4. for the protection of the radiolocation service: **Example 1 of resolves 1.6** of the draft resolution associated with Method D3;
5. for the protection of the mobile satellite service: **Example 2 of resolves 1.9** of the draft resolution associated with Method D3.
6. [For the protection of radioastronomy service: **Example 1 of resolves 1.7 and 1.8**]

## *Part 2: Way forward*

### ***Request ATU administrations to:***

**Support** the AfCP under this agenda item.





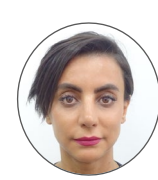
# WRC-23 Agenda item 1.4 (1/2)

*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*

## CEPT position

CEPT supports regulatory provisions applying to HIBS in order to enable their use of the frequency bands 694-960 MHz, 1710-1885 MHz and 2500-2690 MHz while protecting other services and applications in these frequency bands as well as in the adjacent bands. . Under the same line, the conditions pertaining to the IMT applications using high altitude platform stations (HAPS) as base stations as currently defined through RR N° **5.388A** and Resolution **221 (Rev. WRC-07)** are also proposed to be revised.

The regulatory provisions proposed by CEPT to ensure protection of other services are of three different nature applying as appropriate, specific geographical coordination, in-band or adjacent band pfd masks and limitation of the HIBS emissions to a specific direction.



# WRC-23 Agenda item 1.4 (2/2)

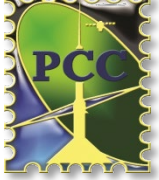
*to consider, in accordance with Resolution 247 (WRC-19), the use of high-altitude platform stations as IMT base stations (HIBS) in the mobile service in certain frequency bands below 2.7 GHz already identified for IMT, on a global or regional level*

## CEPT position (cont.)

CEPT is of the view that the use by HIBS of these frequency bands should be on a non-protection basis, since studies have not addressed the risk that HIBS may require more protection than conventional IMT base stations.

CEPT is of the view that the use of HIBS should be enabled at an altitude lower than 20 km, down to a minimum of 18 km, since ITU-R studies have confirmed that there is a negligible difference in terms of impact to other services.

CEPT is of the view that there needs to be a pfd limit for the protection of broadcasting and not a coordination trigger since that would allow an alternative coordination procedure for the band 694 – 960 MHz.



# 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 and should not cause interference and impose additional restrictions on the use:

- of the band 645-960 MHz by IMT, MS, ARNS stations
- of the band 1675-1710 MHz by Meteorological Satellite Service;
- of the band 2025-2110 MHz by SOS, SRS, EESS, FS;
- of the bands 2170-2200 MHz by MSS.

| Frequency band for HIBS                        | RCC Common Proposals |
|--|----------------------|
| 694-960 MHz                                    | A1 of CPM Report     |
| 1710-1885 MHz                                  | B3 of CPM Report     |
| 1885-1980 MHz, 2010-2025 MHz and 2110-2170 MHz | C3 of CPM Report     |
| 2500-2690 MHz                                  | D3 of CPM Report     |

# SGT1 - MOBILE, FIXED & BROADCASTING

## AGENDA ITEM 1.4



OAS | CITEL

### Inter-American Proposals:

- Administrations propose identification for HIBS in accordance with CPM text methods A2, B2, C2, and D2, including:
  - ✓ **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*
  - ✓ **MOD Article 5 - 2 170-2 520 MHz / MOD article 5 - 2 520-2 700 MHz**
  - ✓ **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 11.26A**
  - ✓ **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.*

# Preliminary APT Common Proposals on WRC-23 Agenda Items: AI 1.4

- **Preliminary APT Common Proposal (PACP):**

DG Chair: Mr. Shiro Fukumoto (Japan)



- **Issue A (694-960 MHz):** None
- **Issues B and C (1 710-1 885 MHz, 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz):**
  - APT Members support the use of HIBS in the frequency bands 1 710-1 885 MHz, 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz, or portions thereof, globally through Methods B3 and C3 with the modification of Resolution 221 (Rev.WRC-23).
  - APT Members have the following views on Examples under the respective conditions in Resolution 221 (Rev.WRC-23) contained in the CPM Report.

| Provisions           |   | Supported Example |
|----------------------|---|-------------------|
| resolves 1.2 and 1.3 | Protection measures for IMT in the frequency bands 1 710-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz               | Example 1         |
| resolves 1.5         | Protection measures for the fixed service in the adjacent frequency band 2 010-2 100 MHz                              | Example 1         |
| resolves 1.6         | Protection measures for the fixed service in the frequency bands 1 710-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz | Example 1         |
| resolves 1.7 and 1.8 | Protection measures for the aeronautical mobile service in the frequency band 1 780-1850 MHz                          | Example 3         |

# Preliminary APT Common Proposals on WRC-23 Agenda Items: **AI 1.4**

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- **Preliminary APT Common Proposal (PACP) (Cont'd):**

- **Issue D (2 500-2 690 MHz):**

- APT Members support the use of HIBS in the frequency band 2 500-2 690 MHz, or portions thereof, globally through Method D3 with a new WRC Resolution.
- APT Members have the following views on Examples under the respective conditions in Resolution [B14-HIBS 2 500-2 690 MHz] (WRC 23) contained in the CPM Report.

| Provisions           |  | Supported Example                 |
|----------------------|--|-----------------------------------|
| resolves 1.1 and 1.2 | Protection measures for IMT in the frequency band 2 500-2690MHz  | Example 1                         |
| resolves 1.3         | Protection measures for the fixed service in the frequency band 2 500-2690MHz  | Example 1                         |
| resolves 1.4         | Protection measures for the broadcasting satellite service in the frequency band 2 520-2630 MHz  | Example 2 with some modifications |
| resolves 1.6         | Protection measures for the radiolocation service systems operating in accordance with No. 5.423, in the frequency band 2 700-2 900 MHz                              | Example 1                         |
| resolves 1.7 and 1.8 | Protection measures for the radio astronomy service operating in the frequency band 2 690-2 700 MHz  | Example 1                         |
| resolves 1.9         | Protection measures for the radiodetermination satellite service (s-to-E) and the mobile satellite service (s-to-E) in the adjacent frequency band 2 483.5-2 500 MHz | Example 2                         |

# Short summary by the Moderator

| Region | Regional Group | Issue A<br>694-960 MHz |    |    |    | Issue B<br>1 710-1 885 MHz |    |    |    | Issue C<br>1 885-1 980 MHz<br>2 010-2 025 MHz<br>2 110-2 170 MHz |    |    | Issue D<br>2 500-2 690 MHz |    |    |    |
|--------|----------------|------------------------|----|----|----|----------------------------|----|----|----|--|----|----|----------------------------|----|----|----|
|        |                | A1                     | A2 | A3 | A4 | B1                         | B2 | B3 | B4 | C1   | C2 | C3 | D1                         | D2 | D3 | D4 |
| 1      | ASMG           |                        |    | X  |    |                            |    | X  |    |  |    | X  |                            |    | X  |    |
|        | ATU            |                        |    | X  |    |                            |    | X  |    |  |    | X  |                            |    | X  |    |
|        | CEPT           |                        |    | X  |    |                            |    | X  |    |  |    | X  |                            |    | X  |    |
|        | RCC            | X                      |    |    |    |                            |    | X  |    |  |    | X  |                            |    | X  |    |
| 2      | CITEL          |                        | X  |    |    |                            | X  |    |    |  | X  |    |                            | X  |    |    |
| 3      | APT            | No common proposal     |    |    |    |                            |    | X  |    |  |    | X  |                            |    | X  |    |

# Observations by the Moderator

- **For Issues B, C and D, positions/views are relatively converged among the regional groups.**
  - Any potential difficulties to agree on conditions in the Resolutions for these issues?
- **For Issue A, different positions/views exist among the regional groups.**
  - Any possibility to reconcile different positions/views in the frequency band 694-960 MHz?