APG23-03 PREPARATIONS FOR WRC-23

WORKING PARTY 1

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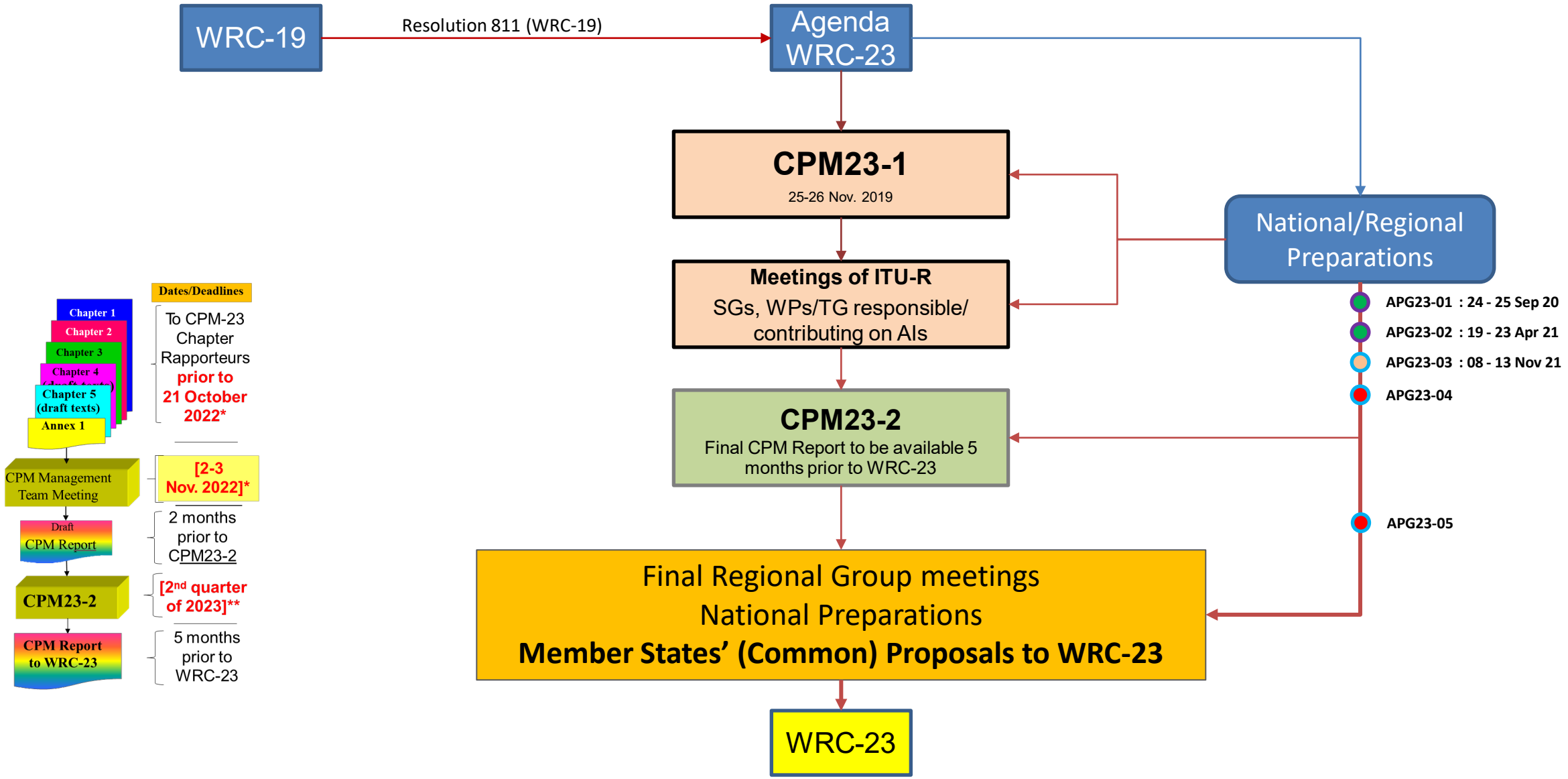
Main Steps towards WRC-23



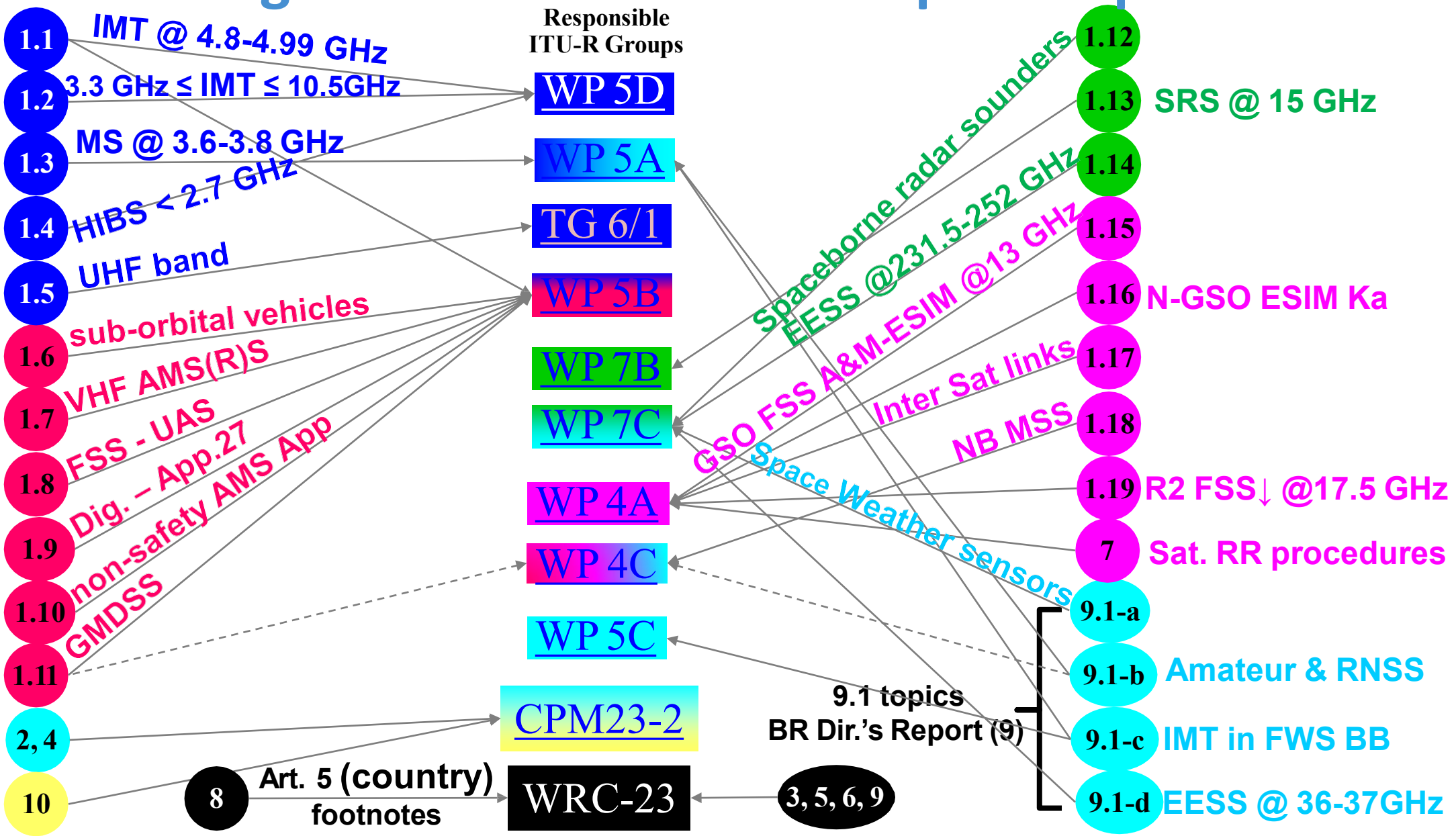
* May be postponed based on CPM23-2 dates ** to be confirmed based on WRC-23 dates

APG23 : Structure

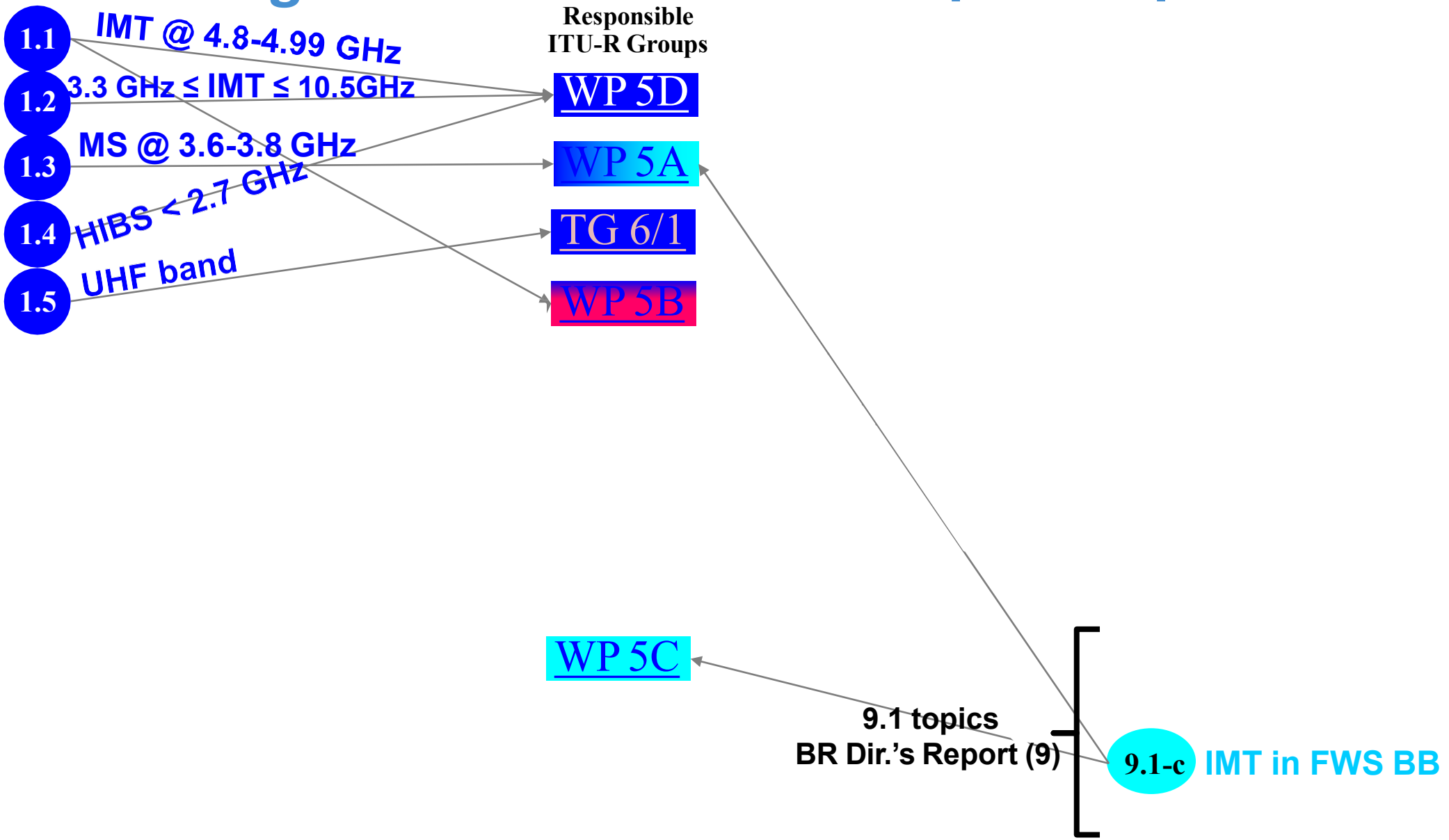
Working Party	Assigned Agenda Items	Working Party Chairman
WP1: Fixed, Mobile and Broadcasting Issues	1.1, 1.2, 1.3, 1.4, 1.5, 9.1 (Topic c) Res. 175 (WRC-19) and RR. No. 21.5 *Note: For AI1.1 WP1 would be responsible for APG preparation in close collaboration with WP2*	Co-Chairmen: Dr. Hiroyuki Atarashi (Japan) *(Email: hiroyuki.atarashi.yt@nttdocomo.com)* Dr. Jae Woo Lim (Rep. of Korea) *(Email: jwlim@korea.kr)*
WP2: Aeronautical and Maritime Issues	1.6, 1.7, 1.8, 1.9, 1.10, 1.11 and Res.427 (WRC-19)	Mr. Bui Ha long (Viet Nam) *(Email: Longbh@rfd.gov.vn)*
WP3: Science Issues	1.12, 1.13, 1.14, 9.1 (Topics: a) Res. 657 (Rev.WRC-19), d) WRC-19 Doc. 535, 2nd section of the Annex) and Res. 655 (WRC-15)	Mr. Wahyudi Hasbi (Rep. of Indonesia) *(Email: wahyudi.hasbi@lapan.go.id)*
WP4: Satellite Issues	1.15, 1.16, 1.17, 1.18, 1.19 & 7	Co-Chairmen: Ms. Fenhong Cheng (People's Rep. of China) *(Email: chengfenhong@chinasatcom.com)* Mr. Mrunmaya Pattanaik (India) *(Email: mailto:pattanaik.mr@gov.in)*
WP5: General Issues	2, 4, 8, 9.1 (Topic: b) Res. 744 (WRC-19)), and 10	Dr. Taghi Shafiee (Islamic Rep. of Iran) *(Email: shafiee@cra.ir)*

CPM Co-Rapporteur in Chapter 1
Dr. ATARASHI
for AI 1.1, 1.2 and 1.4

WRC-23 agenda items & ITU-R Resp. Groups



WRC-23 agenda items & ITU-R Resp. Groups



+Studies to be reported directly to the BR Director by:
(see CA/251 Annex 4)

- **WP 5D** on No. **21.5** limit

WRC-23 Agenda items on Fixed, Mobile & Broadcasting issues

Working Party 1 : Structure

Co-Chairman : Dr. Hiroyuki Atarashi (Japan) and Dr. Jae Woo Lim (Republic of Korea)

DG	WRC-23 Agenda Items	DG Chairs
DG AI 1.1*	Review of RR No. 5.441B regarding IMT identification in 4 800-4 990 MHz	Mr. Fierza Mutuahdi Pasaribu (Republic of Indonesia)
DG AI 1.2#	IMT identification in 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	Mr. Tan Wang (People's Republic of China)
DG AI 1.3*	MS allocation in 3.6-3.8 GHz in Region 1	Dr. Azim Fard (Islamic Republic of Iran)
DG AI 1.4*	Use of HIBS below 2.7 GHz	Mr. Shiro Fukumoto (Japan)
DG AI 1.5*	Review of UHF band in Region 1	Dr. Azim Fard (Islamic Republic of Iran)
DG AI9.1.c#	Use of IMT in FS bands	Dr. Yongseok Seo (Republic of Korea)
DG RR21.5#	Studies on RR No. 21.5	Mr. Dong Zhou (People's Republic of China)

* Dr. Jae Woo Lim (Republic of Korea) is responsible for these DGs.
\# Dr. Hiroyuki Atarashi (Japan) is responsible for these DGs.

Important Guidance

a) Resolution 139 (Rev. Dubai, 2018) of the ITU Plenipotentiary Conference calls for bridging the digital divide worldwide through the use of telecommunications/information and communication technologies to bridge the digital divide and build an inclusive information society;

b) Resolution 37 (Rev. Buenos Aires, 2017) of the World Telecommunication Development Conference calls for bridging the digital divide;

WRC-23 Agenda items on Fixed, Mobile & Broadcasting issues

Working Party 1 : WRC-23 agenda item 1.1

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

1.1 : In the band **4 800-4 990 MHz** (identified for IMT in about 40 countries), consider the pfd criteria in No. 5.441B for the protection of stations of the aeronautical and maritime mobile services located in international airspace and waters from other stations located within national territories ► Res. 223 (Rev.WRC-19)

- **Initial Views** : Japan, Thailand, New Zealand, Australia, Korea, Indonesia, China, Vietnam
- **Additional Info** : ASMG, ATU, GSMA, CITEL, CEPT, RCC
- **Output :** APG23-2/OUT-05
- **Summary of Views**
  - Support the on-going ITU-R studies relating to agenda item 1.1 (Japan, Thailand, NZL, Indonesia);
  - Australia and some others supported protection of stations of the aeronautical mobile service
  - Some members expressed that it is not necessary to apply the pfd criteria in RR. No. 5.441B

Issues for Consideration at APG23-3 Meeting

- More inputs will help in formalizing APT preliminary views

Recommended Preliminary View from India

- Not necessary to apply the pfd criteria in RR. No. 5.441B
- Support the on-going ITU-R studies for this agenda item

WRC-23 Agenda items on Fixed, Mobile & Broadcasting issues

Working Party 1 : WRC-23 agenda item 1.2

DG Chairman : Mr. Tan Wang (People's Republic of China)

1.2 : Consider the identification for IMT of the following frequency bands:
3 300-3 400 MHz (R1 & R2), **3 600-3 800 MHz** (R2), **6 425-7 025 MHz** (R1), **7 025-7 125 MHz** (globally) and **10.0-10.5 GHz** (R2)► Res. 245 (WRC-19)

- **Initial Views** : Japan, New Zealand, Australia, Korea, Singapore, Indonesia, China, Vietnam
- **Additional Info** : IARU, ASMG, GSMA, CITEL, CEPT, RCC
- **Output :** APG23-2/OUT-06
- **Summary of Views**
  - APG-23 should focus on the frequency band 7 025-7 125 MHz only
  - Some supported development of APT Preliminary Views for all frequency bands
  - For frequency bands for R1 and R2, discuss impact on the existing services in R3 in same and adjacent frequency bands
  - Issues related to global impact on EESS (active) with identification of 10-10.5 GHz for IMT in R2

Issues for Consideration at APG23-3 Meeting

- More inputs will help in formalizing APT preliminary views
- Possible identification of frequency band 7 025-7 125 MHz for terrestrial component of IMT in R3
- Impact of possible IMT identification in frequency bands in other Regions on services in R3
- Impact on adjacent bands in these bands on services in R3

Recommended Preliminary View from India

- Support the on-going ITU-R studies for this agenda item
- Support IMT identification in 7 025-7 125 MHz

WRC-23 Agenda items on Fixed, Mobile & Broadcasting issues

Working Party 1 : WRC-23 agenda item 1.3

DG Chairman : Dr. Azim Fard (Islamic Republic of Iran)

1.3 : Consider a primary allocation of the band **3 600-3 800 MHz** to the mobile service within Region 1 ► Res. 246 (WRC-19)

This agenda was driven by ASMG and number of African countries in WRC-19

ECC is already having this as primary 5G band and there are 5G MFCN operation in 3400-3800 MHz band

- **Initial Views** : Japan, Australia, Korea, China, Vietnam
- **Additional Info** : ASMG, GSMA, CITEL, CEPT
- **Output :** APG23-2/OUT-07
- **Summary of Views**
  - Desirable to satisfy this agenda item with similar technical and regulatory conditions as of the lower/upper adjacent bands
  - Non-overlapping scope of AI 1.2 and 1.3 in dealing with frequency band 3 600-3 800 MHz
  - Agreed not to include a phrase on general support of ITU-R studies
  - Allocation of 3 600-3 800 MHz to mobile service on a primary basis within R1, should not have any adverse effect on existing services and their future development in R3

Issues for Consideration at APG23-3 Meeting

- More inputs will help in formalizing APT preliminary views

Recommended Preliminary View from India

- Support studies regarding any adverse effect on the existing services and their future development in R3

WRC-23 Agenda items on Fixed, Mobile & Broadcasting issues

Working Party 1 : WRC-23 agenda item 1.4

DG Chairman : Mr. Shiro Fukumoto (Japan)

1.4 : Consider 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 ► Res. 247 (WRC-19)

* studies of bands **694-960 MHz**, **1 710-1 885 MHz** (**1 710-1 815 MHz** for ↑ only in R3), **2 500-2 690 MHz** (**2 500-2 535 MHz** for ↑ only in R3, except **2 655-2 690 MHz** in R3)

APT, ATU and PNG were the main proponents of this agenda item in WRC-19

- **Initial Views** : Japan, Australia, Korea, Indonesia, Vietnam
- **Additional Info** : ASMG, ATU, CITEL, CEPT, RCC
- **Output :** APG23-2/OUT-08
- **Summary of Views**
  - LS to AWG
    - inviting them to provide information on HIBS gateway links (*Not agreed*)
    - to study impact of HIBS in R1 and R2 on existing services in R3 in bands 2655-2690 MHz and 2500-2535 MHz (*Not agreed*)
  - Support ongoing ITU-R studies for establishing a new globally or regionally harmonised regulatory framework for HIBS
  - Ensure protection of the existing services, to which the frequency band is allocated on a primary basis
  - No imposing of any additional technical or regulatory constraints in existing services including other IMT uses

Issues for Consideration at APG23-3 Meeting

- More inputs will help in formalizing APT preliminary views

Recommended Preliminary View from India

- Support ongoing ITU-R studies for establishing a new globally or regionally harmonised regulatory framework for HIBS
- Ensure protection of existing services, to which these frequency bands are allocated on a primary basis
- No imposing of any additional technical or regulatory constraints in existing services including other IMT uses

WRC-23 Agenda items on Fixed, Mobile & Broadcasting issues

Working Party 1 : WRC-23 agenda item 1.5

DG Chairman : Dr. Azim Fard (Islamic Republic of Iran)

1.5 : Review the spectrum use and spectrum needs of existing services in **470-960 MHz** in Region 1 and consider regulatory actions in **470-694 MHz** in Region 1 ► Res. 235 (WRC-15)

- **Initial Views** : Australia, Vietnam
- **Additional Info** : ASMG, GSMA, CITEL, RCC
- **Output :** APG23-2/OUT-09
- **Summary of Views**
  - General view - agenda item 1.5 is a R1 issue
  - Concerns about possible interference from R1 future application in mobile service to existing services and applications in R3
  - Heavy workload of TG 6/1 with six planned meetings on this agenda item
  - Agreed not to include a phrase on general support of ITU-R studies

Issues for Consideration at APG23-3 Meeting

- More inputs will help in formalizing APT preliminary views

Recommended Preliminary View from India

- Support sharing and compatibility studies

WRC-23 Agenda items on Fixed, Mobile & Broadcasting issues

Working Party 1 : WRC-23 agenda item 9 issue 9.1 (topic c)

DG Chairman : Dr. Yongseok Seo (Republic of Korea)

9.1(c) : Study the use of IMT system for fixed wireless broadband in the frequency bands allocated to the fixed services on primary basis ► Res. 175 (WRC-19)

- **Initial Views** : Thailand, Australia, Korea, Singapore, New Zealand
- **Additional Info** : ASMG, CEPT, RCC
- **Output :** APG23-2/OUT-10
- **Summary of Views**
  - No change to RR is required under this topic for fixed wireless broadband applications using IMT technology
  - ITU-R studies shall take into account the coexistence between IMT and existing systems in bands currently allocated to FS
  - Lack of consensus for LS to AWG on this topic
  - APT Members support the on-going ITU-R studies

Issues for Consideration at APG23-3 Meeting

- More inputs will help in formalizing APT preliminary views

Recommended Preliminary View from India

- No change to the ITU RR is required under this topic for fixed wireless broadband applications using IMT technology

RR 21.5

Studies to be Reported Directly to the BR Director

DG Chairman : Mr. Dong Zhou (People's Republic of China)

21.5 : ITU-R is invited to study, as a matter of urgency, the **applicability of the limit specified in No. 21.5 of the Radio Regulations to IMT stations, that use an antenna that consists of an array of active elements**, with a view to recommend ways for its possible replacement or revision for such stations, as well as any necessary updates to Table 21-2 related to terrestrial and space services sharing frequency bands. Furthermore, the ITU-R is invited to study, as a matter of urgency, verification of No. 21.5 regarding the notification of IMT stations that use an antenna that consists of an array of active elements, as appropriate. (WRC-19 Document 550)

- ***Responsible Group: WP 5D (Six WP 5D meetings after CPM 23-1)***

- **Initial Views** : Japan, Samoa, New Zealand, Australia, Korea, China
- **Additional Info** : CEPT, RCC
- **Output :** APG23-2/OUT-11(Rev.1)
- **Summary of Views**
  - Equal rights between terrestrial IMT and space services in relation to the studies on RR No. 21.5
  - APT Members support on-going ITU-R studies on applicability of RR No. 21.5 RR to IMT stations using AAS
  - Considering complexity of studies on RR No. 21.5, Members encouraged to participate in discussion of ITU-R WP 5D

Issues for Consideration at APG23-3 Meeting

- More inputs will help in formalizing APT preliminary views

Recommended Preliminary View from India

- No changes are necessary to RR No. 21.5 when considering IMT stations that may or may not use an antenna system consisting of an array of active elements for the band 24.45-27.5 GHz
- Support approach of conducted power delivered by a single transmitter

Brief Summary of Views

WRC23-AI	Description /Band	Australia	China	India	Indonesia	Japan	Korea	New Zealand	Singapore	Thailand	Vietnam	Remarks
1.1	4 800-4 990 MHz	Negative Support	Remove PFD limit	No Views	No Change on PFD but may change to Positive Support	Negative Support	Negative Support	Negative Support		Positive	Remove PFD limit	
1.2	• 7 025-7 125 MHz • Other Bands	• Support Studies • Negative	• Support Studies and IMT • Neutral	No Views	• Support Studies • Negative	• Support Studies and IMT	• Support Studies • Concerns with 10-10.2 GHz	• Support Studies • Negative	• Support Studies • Negative		• Support Studies • Support 3 600-3 800 MHz	Many administrations of view that studies in other bands to focus on impact of IMT identification in other regions to protecting incumbents in R3
1.3	3 600-3 800 MHz	Positive	Positive	No Views	Negative	Positive	Positive	Negative		Negative	Positive	Iran stressed only mobile, not IMT. R1 may impact border compatibility in R3
1.4	IMT bands below 2.7 GHz	Support	Support	No Views but Supported studies in WP5D	Support	Support	Negative				Negative	
1.5	470-694 MHz	No Position		No Views							Positive	R1 issue. Reluctance in R3
9.1c RR 21.5	Applicability of RR21.5 (26 GHz band)	No Change to RR	TRP with Reference BW	No Views		TRP with Reference BW	No Change to RR	Support TRP, +10dBW per 1 MHz	21.5 is about input power to antenna			

India : Summary of Preliminary Views

AI 1.1 : Band **4 800-4 990 MHz**

- Not necessary to apply the pfd criteria in RR. No. 5.441B
- Support the on-going ITU-R studies for this agenda item

AI 1.2 : Band **3 300-3 400 MHz (R1 & R2), 3 600-3 800 MHz (R2), 6 425-7 025 MHz (R1), 7 025-7 125 MHz (R1,R2,R3) & 10.0-10.5 GHz (R2)**

- Support the on-going ITU-R studies for this agenda item
- Support IMT identification in 7 025-7 125 MHz

AI 1.3 : Band **3 600-3 800 MHz (R1)**

- Support studies regarding any adverse effect on the existing services and their future development in R3

AI 1.4 : IMT Bands below **2.7 GHz**

- Support ongoing ITU-R studies for establishing a new globally or regionally harmonised regulatory framework for HIBS
- Ensure protection of existing services, to which these frequency bands are allocated on a primary basis
- No imposing of any additional technical or regulatory constraints in existing services including other IMT uses

AI 1.5 : Band **470-694 MHz**

- Support sharing and compatibility studies

AI 9.1 (c) : IMT for FWB for Bands identified for FS

- No change to the ITU RR is required under this topic for fixed wireless broadband applications using IMT technology

RR No. 21.5 : Band **24.45-27.5 GHz**

- No changes are necessary to RR No. 21.5 when considering IMT stations that may or may not use an antenna system consisting of an array of active elements for the band 24.45-27.5 GHz
- Support approach of conducted power delivered by a single transmitter

Thank You