



World Radiocommunication Conference 2019 (WRC-19)

Mario Maniewicz
Deputy Director, Radiocommunication Bureau
International Telecommunication Union



ITU instruments

Constitution (CS) and Convention (CV)

- Establishes the legal basis for the Union
- Defines: purpose, structure, rights and obligations of Member States

Radio Regulations (RR) and Rules of Procedures (RoP)

- Binding international treaty that governs the use of the spectrum and the orbits in an international level
- Administrations adapt their national legislation accordingly

Regional Agreements, Special Agreements, ITU-R Recommendations, Reports and Handbooks

- Complement the basic instruments



Radio Regulations (RR)



RR are revised and updated during the World Radiocommunication Conference (WRC) every 3-4 years

The WRC-19 will be held in Sharm el-Sheikh, Egypt
28 October to 22 November 2019

RR two main concepts:

Frequency allocations: Article 5 of the RR contains the Table of Frequency Allocations and Footnotes

Regulatory procedures: coordination, notification and recording



WRC-19 Cycle



- Defined the agenda for WRC-19
- [Resolution 809 \(WRC-15\)](#)

- Allocates the work of the agenda items to relevant study groups, defines chapter rapporteur and the structure of the CPM report
- [CA/226](#)

- Conducts studies for 4 years and prepares draft CPM text

ITU-R Study Groups:

- SG-1: **Spectrum** management
- SG-3: Radiowave **propagation**
- SG-4: **Satellite** services
- SG-5: **Terrestrial** services
- SG-6: **Broadcasting** service
- SG-7: **Science** services

- Consolidates the CPM text that includes the methods to solve each agenda item
- Feb 2019

- Appoints the chairmans (and vice) of the study groups, revises the structure of the study groups, approves or revises ITU-R resolutions
- Oct 2019

- Modifies the [Radio Regulations](#) (e.g. allocation /identification of frequency bands)
- Oct/Nov 2019

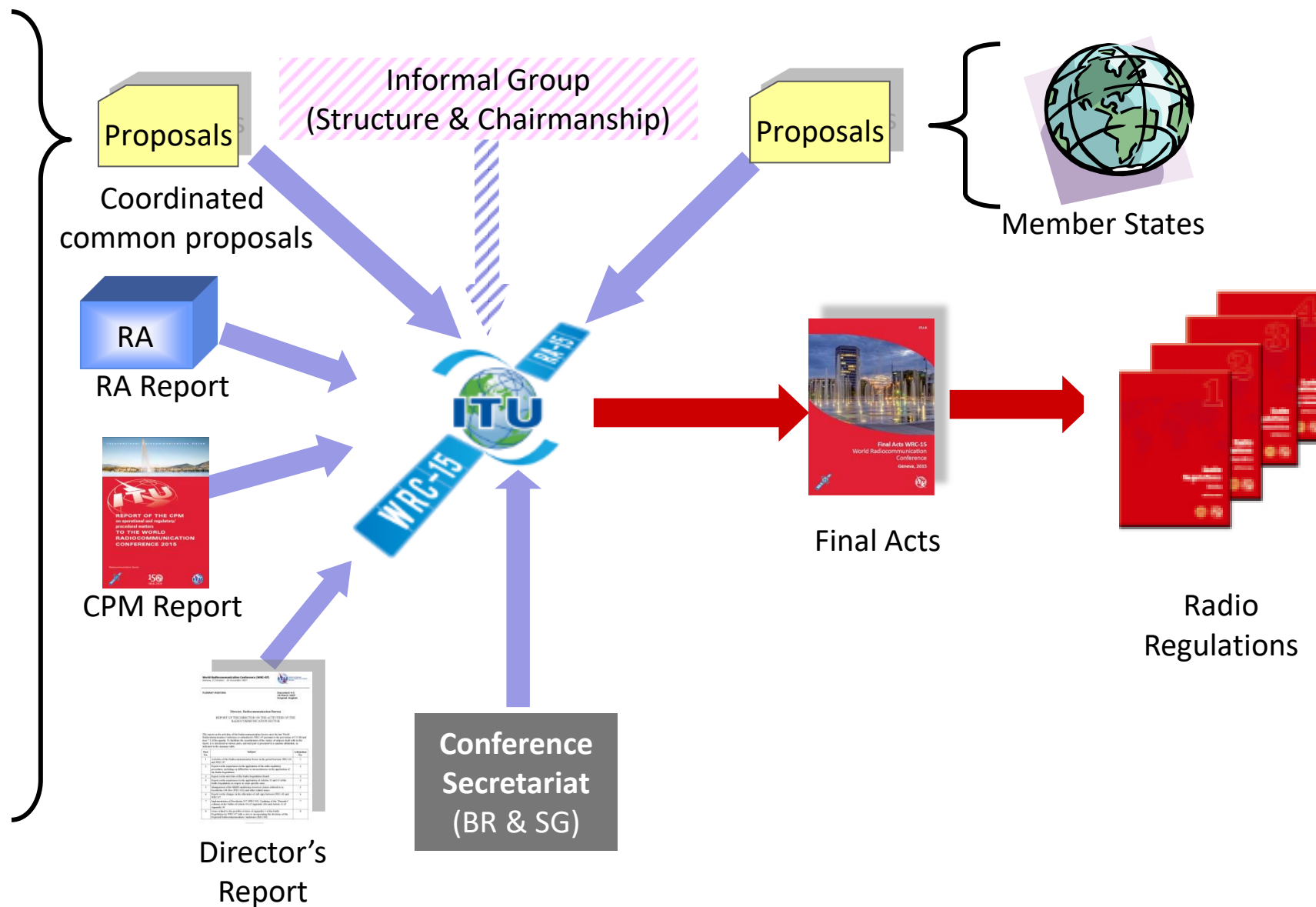


- Consolidates Regional and multi-country proposals





WRC





2019 Conference Preparatory Meeting (CPM19-2)

Aug/2018

- Chapter Rapporteurs will deliver the Draft CPM texts/chapters.

Sept/2018

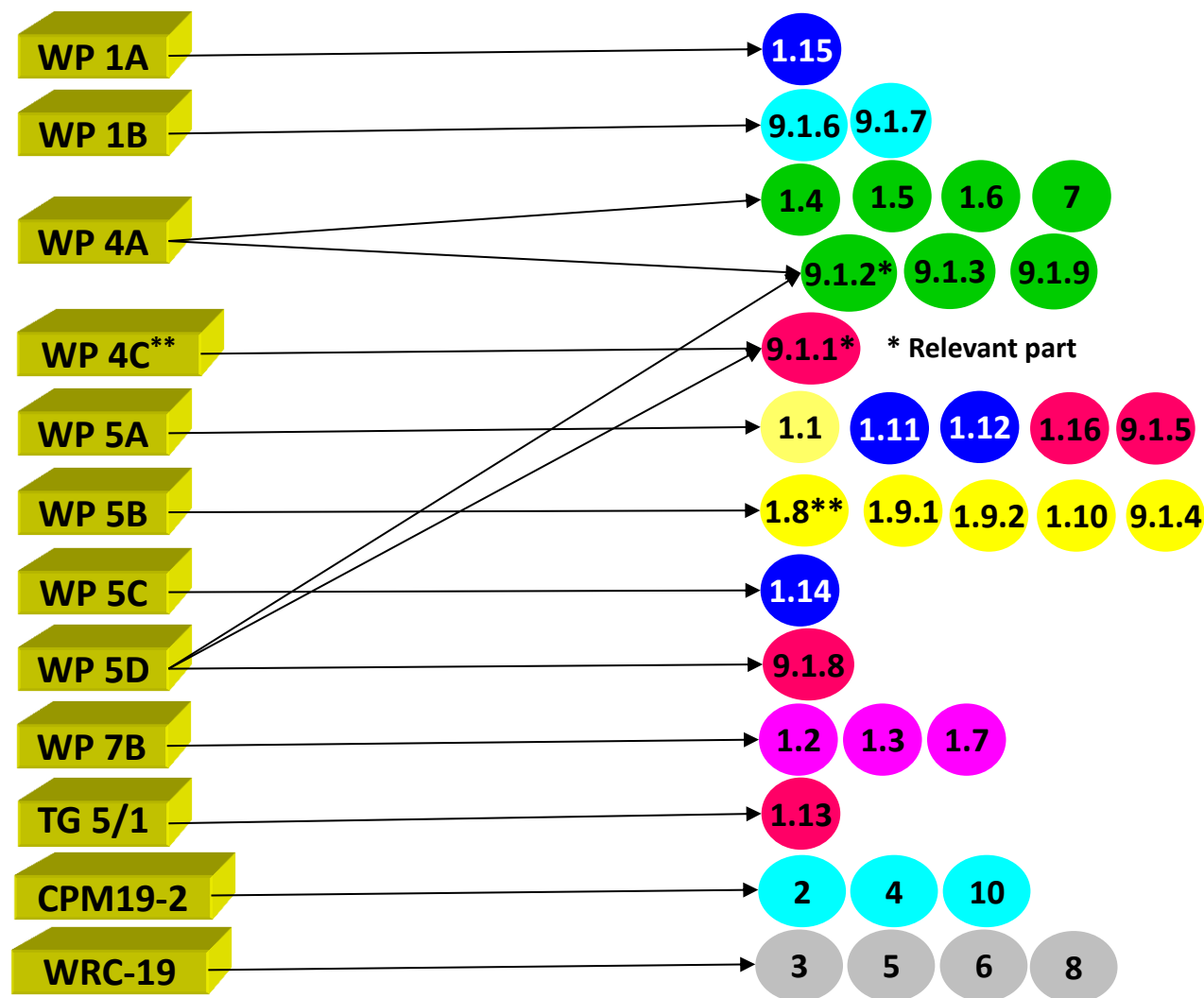
- CPM 19 Management Team will consolidate them into the draft CPM Report to WRC-19 (input to CPM19-2)
- 3 months prior to the CPM 19-2 the Draft CPM Report will be available in six official ITU languages

Feb/2019

- **CPM 19-2** will consider contributions from ITU Member States & ITU-R Sector Members and the preliminary draft version of the BR Director's Report to WRC-19 to **finalize the CPM Report to WRC-19 (incl. draft solutions (methods) to satisfy the agenda items)**



ITU-R Study Groups - Responsible for Agenda Items/Issues



<http://www.itu.int/en/ITU-R/study-groups/rcpm/Pages/wrc-19-studies.aspx>

CA/226:
Results of the first session of the
Conference Preparatory Meeting for
WRC-19 (CPM19-1)
<http://www.itu.int/md/R00-CA-CIR-0226/en>

E.g.
Agenda Item 1.5 – ESIM
Agenda Item 1.6 – non-GSO
Agenda Item 1.13 – IMT
Agenda Item 1.14 – HAPS
Agenda Item 1.16 – RLAN



Overlapping frequency bands

AI1.6 – NGSO FSS Res. 159 (WRC-15)	AI1.13 – IMT Res. 238 (WRC-15)	AI1.14 – HAPS Res. 160 (WRC-15)	AI9.1 (9.1.9) – FSS Res. 162 (WRC-15)
	24.25-27.5	24.25-27.5 (Reg. 2)	
37.5-39.5 (s-E*)	37-40.5	38-39.5 (globally)	
39.5-42.5 (s-E*)	40.5-42.5		
47.2-50.2 (E-s*)	47.2-50.2		
50.4-51.4 (E-s*)	50.4-52.6		51.4-52.4 (E-s*)
* E-s: Earth-to-space; s-E: space-to-Earth ** Frequency in GHz			

Studies will be done to address mutual compatibility & sharing feasibility among the services/applications for which allocation/identification is envisaged



WRC-23 Preliminary Agenda Items

[Res. 361](#) (WRC-15) – Spectrum for GMDSS modernization & implementation of e-navigation

[Res. 656](#) (WRC-15) – Possible new allocations for EESS (active) for spaceborne radar sounders @ 45 MHz

[Res. 657](#) (WRC-15) – Spectrum needs & designation of radio services for space weather sensors

[Res. 161](#) (WRC-15) – Possible new allocations for FSS @ 37.5-39.5 GHz

[Res. 235](#) (WRC-15) – Spectrum use and needs of existing services @ 470-960 MHz in Region 1 and possible regulatory actions @ 470-694 MHz in Region 1

[Res. 810 \(WRC-15\)](#)



ITU WRC-19 Regional Workshop for Region 2 - La Havana, Cuba 21-23 March 2018

- Sponsored by: Ministry of Communications of Cuba (MINCOM), the International Telecommunication Union (ITU)
- The Workshop will cover topics related to ITU's purpose and mission in radiocommunications, ITU-R's process for managing spectrum worldwide, the Radio Regulations, it's objectives, concepts, structure and tools, the WRC process, the ITU-R Study Groups, the WRC-19, it's agenda, preparatory process and submission of contributions.
- The Workshop will also enable participants to learn about other Regional and Sub-Regional Organizations, their structure and positions for WRC-19. Participants will have the opportunity to debate and exchange views on WRC-19 Agenda items, including IMT, space services and other services.
- Website: <https://www.itu.int/en/ITU-R/conferences/wrc/2019/workshops/r2/Pages/default.aspx>





Thank you for your attention!

Mario Maniewicz
ITU/BR
Feb/2018



Backup Slides



Agenda Item 1.5 – ESIM

1.5 to consider the use of the frequency bands **17.7-19.7 GHz** (space-to-Earth) and **27.5-29.5 GHz** (Earth-to-space) by **earth stations in motion** communicating with geostationary space stations **in the fixed-satellite service** and take appropriate action, in accordance with Resolution **158 [COM6/17] (WRC-15)**;

► [Res. 158 \(WRC-15\)](#)

Responsible Group: WP 4A





Agenda Item 1.6 – non-GSO FSS

1.6 to consider the development of a regulatory framework for **non-GSO FSS satellite** systems that may operate in the frequency bands **37.5-39.5 GHz** (space-to-Earth), **39.5-42.5 GHz** (space-to-Earth), **47.2-50.2 GHz** (Earth-to-space) and **50.4-51.4 GHz** (Earth-to-space), in accordance with Resolution **159 [COM6/18] (WRC-15)**;

► Res. 159 (WRC-15)

Responsible Group: WP 4A





Agenda Item 1.13 – IMT

5G

1.13 to consider **identification** of frequency bands for the future development of **International Mobile Telecommunications (IMT)**, including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **238 [COM6/20] (WRC-15)**

Bands which have allocations to the mobile service on a primary basis:

- 24.25-27.5 GHz
- 37-40.5 GHz, 42.5-43.5 GHz, 45.5-47 GHz, 47.2-50.2 GHz, 50.4-52.6 GHz,
- 66-76 GHz, 81-86 GHz

Bands that may require additional allocations to the mobile service on a primary basis:

- 31.8-33.4 GHz
- 40.5-42.5 GHz, 47-47.2 GHz

► [Res. 238 \(WRC-15\)](#)





Working Party 5D

5G

1. Frequency arrangements: continuation of work due to new IMT identifications in WRC-15
2. 5G spectrum aspects: preparation for WRC-19 (characteristics, spectrum needs and modelling of IMT systems)
3. 5G technology aspects: IMT-2020 requirements (2017), proposals (2019), evaluation and assessment (2020), specification of each IMT-2020 technology



ITU-R Task Group (TG)

5G

Groups
WG 1 – CPM
WG 2 – 30 GHz
WG 3 – 40/50 GHz
WG 4 – 70/80 GHz

1 st Meeting (May 2016)	<ul style="list-style-type: none">• Structure of TG 5/1• Work plan for AI 1.13
2 nd – 5 th Meeting (2017 – 2018)	<ul style="list-style-type: none">• Drafting of CPM Text• Sharing and compatibility studies
6 th Meeting (TBD 2018)	<ul style="list-style-type: none">• Completion of draft CPM Text



5G Spectrum Bands

5G

Bands Below 1 GHz

- E.g. 700 MHz

Bands Between 1 and 6 GHz

- E.g. 3.4 - 3.8 GHz

Bands Above 6 GHz - new spectrum bands under study (AI 1.13)

- 24.25-27.5 GHz, 37-40.5 GHz, 42.5-43.5 GHz, 45.5-47 GHz, 47.2-50.2 GHz, 50.4-52.6 GHz, 66-76 GHz and 81-86 GHz; and 31.8-33.4 GHz, 40.5-42.5 GHz and 47-47.2 GHz. See next slides.



Bands above 6 GHz (WRC-19)

5G

	Frequency bands (GHz) mentioned in Resolution 238 (WRC-15) in which studies are supported											
	24.25-27.5	31.8-33.4	37-40.5	40.5-42.5	42.5-43.5	45.5-47	47-47.2	47.2-50.2	50.4-52.6	66-71	71-76	81-86
CEPT	X	X		X								
ASMG	X	X		X		X						
RCC	X	X		X						X		
APT*	X	X	X	X	X							
ATU**												
CITEL***												

* Some APT Members support studies in the bands indicated
** ATU has conducted a questionnaire to compile the information of Members
*** Some CITEL Members are of the view that all bands should be studied

Reference docs:
APG19-2/OUT-23(R Rev.1)
CEPT presentation APG19-2 Denpasar Jul17
CCP.II-RADIO/doc. 4236-1-13/17
APG19-2/INF-05 (version of 14 April, 2017)
CCP.II-RADIO/doc. 4356-1-13/17



Agenda Item 1.14 – HAPS

1.14 to consider, on the basis of ITU R studies in accordance with Resolution **160 [COM6/21] (WRC-15)**, appropriate regulatory actions for **high-altitude platform stations (HAPS)**, within existing fixed-service allocations.

Existing HAPS identifications:

- on a global level: 47.2-47.5, 47.9-48.2 GHz
- on a regional level, outside Region 2: 27.9-28.2 GHz and 31.0-31.3 GHz
- and in 5 countries (Footnote 5.457): 6 440-6 520 MHz and 6 560-6 640 MHz

Study new frequency bands:

- on a global level: 38-39.5 GHz,
- on a regional level, in Region 2: 21.4-22 GHz and 24.25-27.5 GHz





Agenda Item 1.16 – RLAN



1.16 to consider issues related to wireless access systems, including radio local area networks **(WAS/RLAN)**, in the frequency bands between **5 150 MHz and 5 925 MHz**, and take the appropriate regulatory actions, including additional spectrum allocations to the mobile service, in accordance with Resolution **239 [COM6/22] (WRC-15)**

▶ **Res. 239 (WRC-15)**

Responsible Group: WP 5A