



ITU preparations for the World Radiocommunication Conference 2019 (WRC-19)



Some main WRC Objectives

- Create **regulatory certainty for a multi-trillion dollars industry** which plays an increasingly important role in the development of our societies
- For fixed, mobile, satellites and broadcasting industries, **global spectrum harmonization is essential for economies of scale, roaming and interoperability**
- Creating certainty **requires consensus** in order to **achieve stable results**. This demands time, efforts and patience!

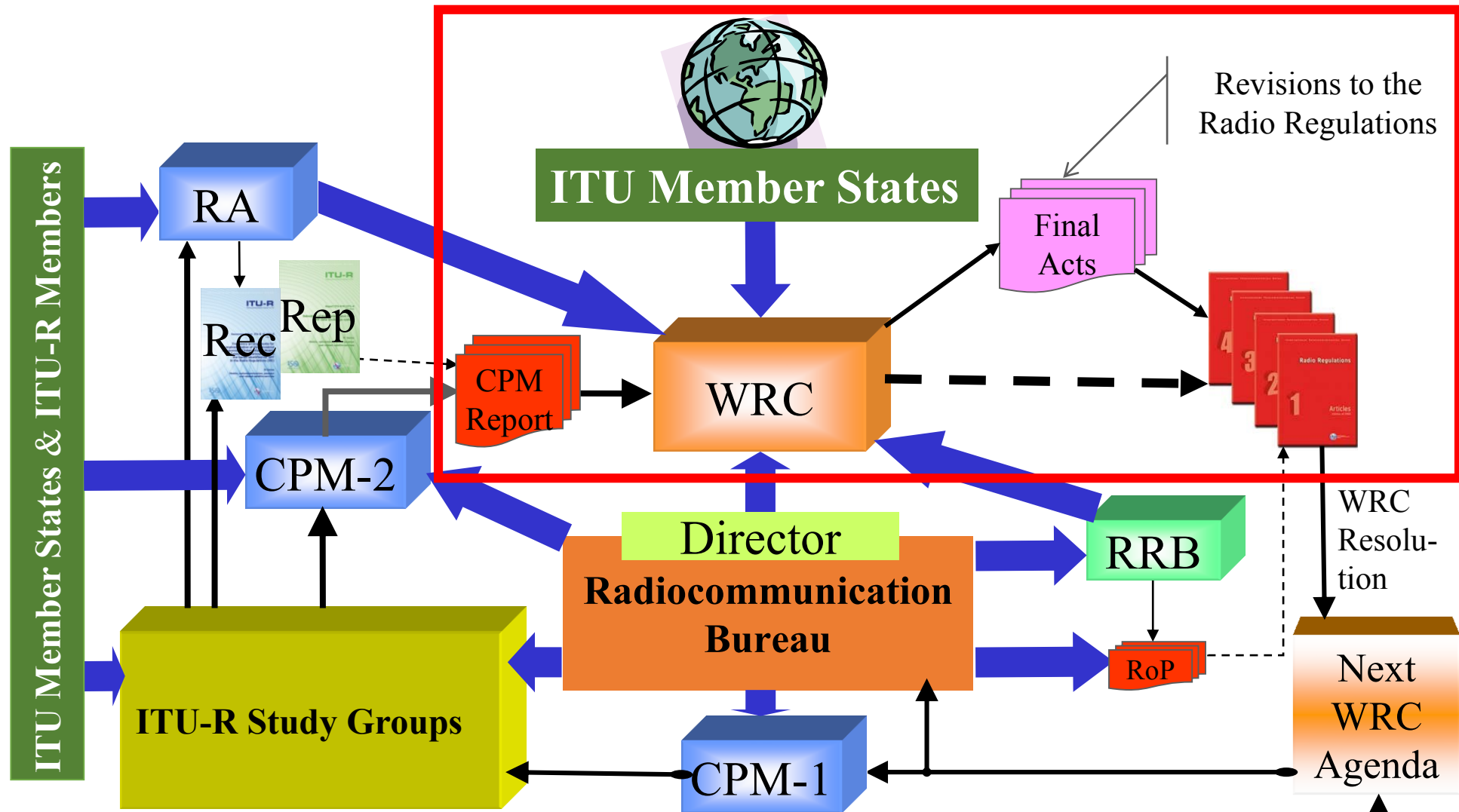


WRC Purposes

- ✓ **Updates the Radio Regulations (CS* 89)**
(treaty status)
 - Spectrum Allocation
 - Coordination and Notification procedures
 - Administrative and operational procedures
- ✓ **Adopts Resolutions**
- ✓ **Held every 3-4 years (CS* 90)**
- ✓ **Additional provisions in CV* and GR***

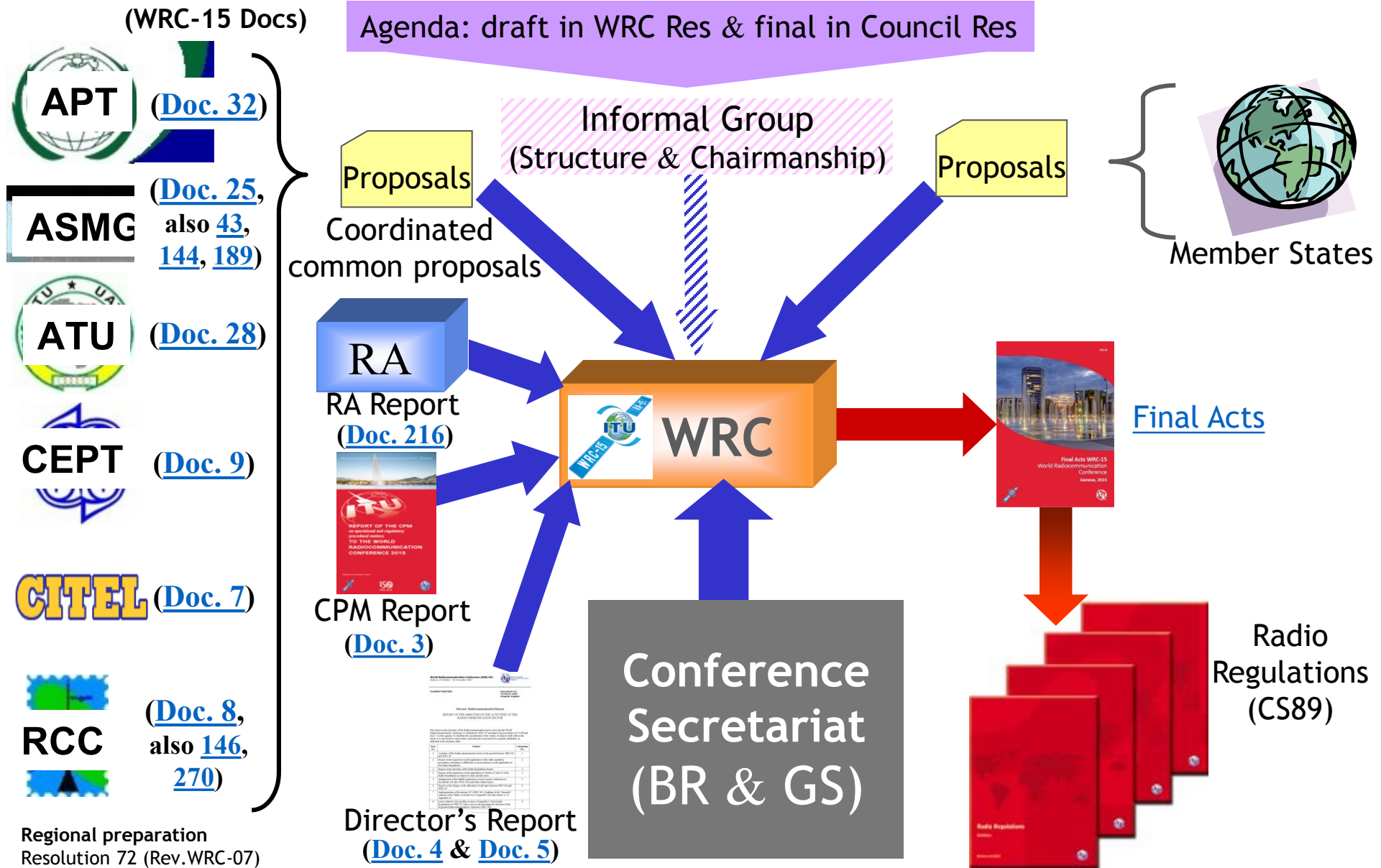
* Constitution (CS), Convention (CV) and General Rules (GR) of Conferences, Assemblies and Meetings of the ITU are available in ITU Collection of Basic Texts (www.itu.int/pub/S-CONF-PLEN)

WRC Cycles



RRB: Radio Regulations Board
RA: Radiocommunication Assembly
WRC: World Radiocommunication Conference
CPM: Conference Preparatory Meeting
Rec: ITU-R Recommendation
RoP: Rules of Procedure
Next WRC Agenda: Adopted by ITU Council

WRC Process





Some WRC-15 key achievements

- Providing **spectrum for mobile broadband (IMT)** on a global basis
- Providing **frequencies for Global Flight Tracking**
- Making **new allocations to the FSS, MMSS and EEES**
- Authorizing frequency bands and establishing regulatory conditions for **unmanned aircraft systems**
- Providing required **spectrum for WAIC** as well as for **automotive and maritime transports**
- Improving the **satellite frequency assignments regulatory procedures**

These results have demonstrated once again the **ITU ability to keep up with the pace of technological advancements and to timely respond to the urgent needs of the Membership**

Some statistics on WRC-15

Took place from 2 to 27 November 2015 in Geneva

➤ **3275 Participants**
(2780 from MS & 495 from OE)

➤ **162 Member States**

➤ **130 Observers**

➤ **678 Documents**
submitted with MS proposals

➤ **2888 MS Proposals**
~2/3 of common proposals



WRC-15 Plenary
45h10m / 25 sessions

COMs 4, 5, 6 level:
53h40m / 37 sessions

WG level:
113h45m / 79 sessions

SWG level:
350h15m / 246 sessions

AHG level:
128h50m / 113 sessions



Main Steps towards WRC-19

WRC-15: WRC-19 Agenda - Resolution 809 (WRC-15)

1st Session of Conference Preparatory Meeting: CPM19-1
30 Nov – 1 Dec. 2015; **Results @CA/226 of 23/12/2015**

Council-16&-17: WRC-19 agenda in Res. 1380 with dates & mod venue
➤ **Agenda & dates approved, new venue for consultation of Member States**

2nd Session of Conference Preparatory Meeting: CPM19-2
Planned dates at CICG in Geneva from **18 to 28 February 2019**

**Final meetings of regional groups & preparation of
Member States' proposals and common proposals to WRC-19**

RA-19: 21 to 25 Oct. 2019 ; WRC-19: 28 Oct. to 22 Nov. 2019

Topics on the WRC-19 Agenda

17 specific & 6 standing items, **Res.809** (WRC-15)

- 1.13
- 1.14
- 1.15
- 1.16



Fix. & Mob. BB Apps
 (24.25 < IMT < 86 GHz,
 HAPS, Apps.Id>275 GHz,
 WAS/RLAN @ 5 GHz)

**Maritime (GMDSS
 modernization (+Sat.),
 use of radio devices,
 VDES Sat component)**



- 1.8
- 1.9.1
- 1.9.2

1.1



**Amateur in R1
 @ 50-54 MHz**
 (4WW allocation)

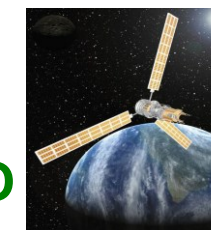


**Aeronautical
 (GADSS needs)**



1.10

Satellite issues
 (BSS/FSS @12 GHz,
 ESIM, regul. for N-GSO
 FSS @ 37.5 to 51.4 GHz)

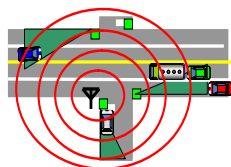


- 1.4, 1.5, 1.6

Regulatory issues
 (Sat. regulations,
 harmonization of
 spectrum use, etc.)



- 7
- 8



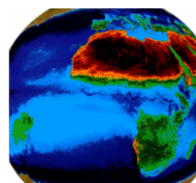
**New Transport
 systems**

(harmonized bands
 for railways, ITS)

- 1.11
- 1.12



1.2 **Earth resources &**
 1.3 **Climate monitoring**
 1.7 **Weather forecast,
 DCS improvement, TT&C for
 N-GSO Sat. of short duration**



Note: WRC-19 agenda item numbers indicated in italic



WRC-23 preliminary items & Resp. Groups

5 preliminary agenda items, **Res. 810 (WRC-15)** Responsible ITU-R Groups

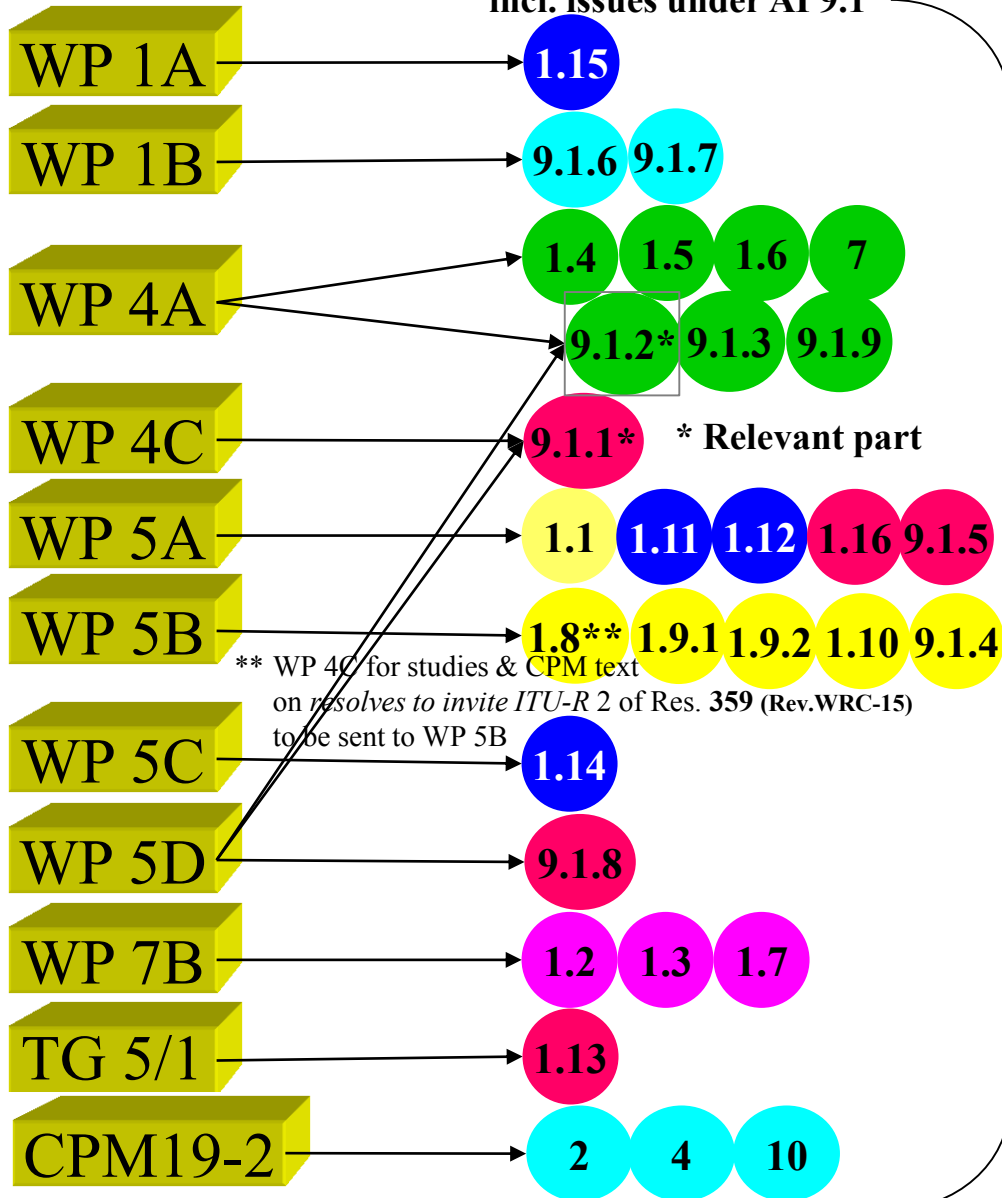
- 2.1 Res. 361 – Spectrum for GMDSS modernization & implementation of e-navigation (WRC-15) → WP 5B
- 2.2 Res. 656 – Possible new allocations for EESS (active) for spaceborne radar sounders @ 45 MHz (WRC-15) → WP 7C
- 2.3 Res. 657 – Spectrum needs & designation of radio services for space weather sensors (WRC-15) → WP 7C
- 2.4 Res. 161 – Possible new allocations for FSS @ 37.5-39.5 GHz (WRC-15) → WP 4A
- 2.5 Res. 235 – Spectrum use and needs of existing services @ 470-960 MHz in Region 1 and possible regulatory actions @ 470-694 MHz in Region 1 (WRC-15) → none



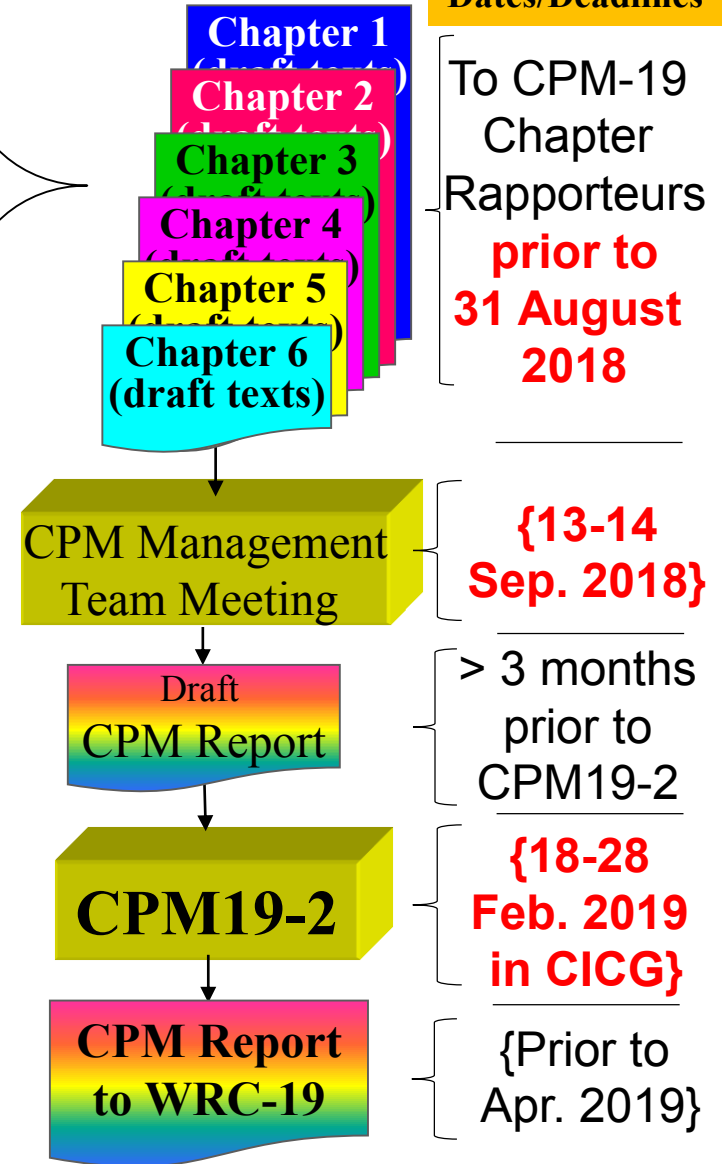
Summary of CPM Report Preparation

ITU-R Responsible Groups

WRC-19 agenda items (AI), incl. issues under AI 9.1



Dates/Deadlines





WRC-19 Agenda item 9.1 Issues

- 9.1.1** **Res. 212 – Terrestrial & Satellite components of IMT**
(Rev.WRC-15) co-existence & compatibility @1885-2025 & 2110-2200 MHz
- 9.1.2** **Res. 761 – IMT and BSS sound @ 1452-1492 MHz**
(WRC-15) in Regions 1 and 3
- 9.1.3** **Res. 157 – Technical/Operational/Regulatory studies for**
(WRC-15) new N-GSO Sat. in “C-Band” allocated to FSS
- 9.1.4** **Res. 763 – Stations on board sub-orbital vehicles**
(WRC-15)
- 9.1.5** **Res. 764 – IbR* of Rec. ITU-R M.1638-1 & M.1849-1**
(WRC-15) (MS(RLAN)@5GHz & new radar characteristics)
- 9.1.6** **Res. 958 – 1) Urgent studies on Wireless Power**
(WRC-15) Transmission (WPT) for electric vehicles
- 9.1.7** **Res. 958 – 2) Managing unauthorized operations of**
(WRC-15) Earth Station terminals
- 9.1.8** **Res. 958 – 3) Narrowband & BB machine-type**
(WRC-15) communication infrastructures
- 9.1.9** **Res. 162 – FSS needs @ 51.4-52.4 GHz**
(WRC-15)

* Incorporation
by Reference

Overlapping frequency bands** between some WRC-19 agenda items

1.6 – NGSO FSS Res. 159 (WRC-15)	1.13 – IMT Res. 238 (WRC-15)	1.14 – HAPS Res. 160 (WRC-15)	9.1 (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 bands in GHz

Studies to **address mutual compatibility & sharing feasibility** among the **services/applications** for which **allocation/identification is envisaged** under the corresponding Res. relating to the AI in the overlapping bands



Review of RR Art. 5 Country footnotes (WRC-19 agenda item 8)

- Consider/take appropriate action on **requests from ADMs to delete their country footnotes** or to **have their country name deleted from footnotes**, if no longer required, taking into account Resolution **26 (Rev.WRC-07)**
- **Last two WRCs adopted a similar approach:**
(see WRC-15 Doc. 142 (Rev.1) at: www.itu.int/md/R15-WRC15-C-0142)
 - ✓ **ADD of FN or MOD of FN** addressed by Res. 26 (Rev. WRC-07) **were considered under the relevant WRC agenda item**, as appropriate, and had to be re-submitted under that relevant AI. (would be better to submit them directly under the relevant AI)
 - ✓ Other **ADD of FN** were **not considered!**
 - ✓ Other **MOD of FN** to add ADM's name **were accepted**, until the end of the 1st week and treated under AI 8, under certain circumstances on a purely exceptional basis & if justified, **subject to the express condition of no objections** from affected countries
 - ✓ **SUP of FN or MOD of FN** to sup. ADM's name **were accepted**, until end of the 2nd week, and considered under AI 8



Overview of the ITU-R Calendar towards WRC-19 Agenda

Year	January – March	April – June	July – September	October – December
2015	CPM15-2	Last meetings of the Responsible Groups	WS on WRC-15	RA-15 WRC-15 CPM19-1
2016	WP 5D (1 st)	WPs 7B & 7C (1 st) WP 4C+WP 4A (1 st) WPs 5A, 5B & 5C (1 st) TG 5/1 (1 st) WPs 1A & 1B (1 st) WP 5D (2 nd)	WP 4C+WP 4A (2 nd) CPM-19 Steering	WP 5D (3 rd) WPs 7B & 7C (2 nd) WPs 5A, 5B & 5C (2 nd) WPs 1A & 1B (2 nd)
2017	[WP 5D (4 th)]	[WPs 7B & 7C (3 rd)] [WP 4C+WP 4A (3 rd)] TG 5/1 (2 nd) [WPs 5A, 5B & 5C (3 rd)] [WPs 1A & 1B (3 rd)] [WP 5D (5 th)]	[Responsible Groups Meetings]	[Responsible Groups Meetings] [WS on WRC-19]
2018	[Responsible Groups Meetings]	[Responsible Groups Meetings]	[Responsible Groups Meetings]	[Responsible Groups Meetings] CPM-19 Manag ^{nt} Team [WS on WRC-19]
2019	CPM19-2	[Last meetings of the Responsible Groups]		[WS on WRC-19] RA-19 WRC-19

[...] = planned meetings

WS on WRC-19 = ITU Inter-regional Workshop on WRC-19 Preparation



ITU-R Preparatory Studies for WRC-19

Resolution 809 (WRC-15) contains the WRC-19 agenda.

www.itu.int/go/rcpm-wrc-19-studies

WRC-19 agenda Item (Chapter)	Issue	WRC Resolution (*)	Responsible Group(s)	Information from Responsible Group(s) ^{ITU-R}
1		-	-	-
1.1 (5)		Res. 658 (WRC-15)	WP 5A	Doc. 5A/298 Sections 3.3 & 4 and Annexes 4 (c), 5 (b), 14 & 15 Doc. 5/32
1.2 (4)		Res. 765 (WRC-15)	WP 7B	Doc. 7B/112 Section 3.3.1 and Annexes 1 (b), 2 (c) & 19
1.3 (4)		Res. 766 (WRC-15)	WP 7B	Doc. 7B/112 Section 3.3.2 and Annexes 3 (b), 4 (c) & 20
1.4 (3)		Res. 557 (WRC-15)	WP 4A	Doc. 4A/196 Section 4.1.1 and Annexes 5 & 26 (b)
1.5 (3)		Res. 158 (WRC-15)	WP 4A	Doc. 4A/196 Section 4.1.2 and Annexes 16 to 20 & 27 (b)
1.6 (3)		Res. 159 (WRC-15)	WP 4A	Doc. 4A/196 Section 4.1.3 and Annexes 4, 8, 9 & 28 (b)
1.7 (4)		Res. 659 (WRC-15)	WP 7B	Doc. 7B/112 Section 3.1.3 and Annexes 5 (b), 6 (c), 15, 16 & 17
1.8 (5)		Res. 359 (Rev.WRC-15)	WP 5B (1)	Doc. 5B/195 Sections 2.1.1 & 3.3.1.2 and Annexes 1 (c) & 2 (b) Doc. 4C/43 Sections 3.2.4 & 4.2
1.9 / 1.9.1 (5)		Res. 362 (WRC-15)	WP 5B	Doc. 5B/195 Sections 2.1.1 & 3.3.1.3 and Annexes 3 (c), 4 (b), 19, 23, 33 & 36
1.9 / 1.9.2 (5)		Res. 360 (Rev. WRC-15)	WP 5B	Doc. 5B/195 Sections 2.1.1 & 3.3.1.4 and Annexes 5 (c), 6 (b) & 26
1.10 (5)		Res. 426 (WRC-15)	WP 5B	Doc. 5B/195 Sections 2.1.1 & 3.2.1.1 and Annex 8
1.11 (1)		Res. 236 (WRC-15)	WP 5A	Doc. 5A/298 Sections 3.4, 3.7 & 4 and Annexes 6 (c), 7 (b) & 16 Doc. 5/29
1.12 (1)		Res. 237 (WRC-15)	WP 5A	Doc. 5A/298 Sections 3.7 & 4 and Annexes 8 (c), 9 (b) & 30
1.13 (2)		Res. 238 (WRC-15)	TG 5/1 (2)	Doc. 5-1/15 and its annexes

•••



Regional preparation for WRCs

✓ Resolution 80 (Rev. Marrakesh, 2002)

“World radiocommunication conference process”

Administrations of ITU membership encouraged to:

- **Plan WRC preparations** on the basis of 2 consecutive WRCs
- **Harmonize** regional common **proposals** for WRC
- Formally/informally **collaborate** with a view to **resolving differences** on WRC agenda items (a.i.)
- **Indicate** for proposed WRC a.i., the **possible financial implications** on the BR (ITU-R studies and BR implementation)

✓ Resolution 72 (Rev. WRC-07)

“World and regional preparations for world radiocommunication conferences”

- *resolves* to **invite the regional groups to continue** their **preparations for WRCs**, including the possible convening of joint meetings of regional groups formally and informally



Regional preparation for WRC-19

Pursuant to [Resolution 72 \(Rev. WRC-07\)](#)

See details @ www.itu.int/go/wrc-19-regional

Regional preparation for WRC-19

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Asia-Pacific
Telecommunity (APT)



Arab Spectrum
Management Group
(ASMG)



African
Telecommunications Union
(ATU)



European Conference of Postal
and Telecommunications
Administrations (CEPT)



Inter-American
Telecommunication
Commission (CITEL)



Regional Commonwealth
in the Field of
Communications (RCC)

▸ [Resolution 72 \(Rev. WRC-07\)](#)

Asia-Pacific Telecommunity (APT)

Arab Spectrum Management Group (ASMG)

African Telecommunications Union (ATU)

**European Conference of Postal and Telecommunications
Administrations (CEPT)**

Inter-American Telecommunication Commission (CITEL)

Regional Commonwealth in the Field of Communications (RCC)



ITU Inter-Regional Workshops on WRC-19 Prep.

1st Workshop
[21-22]*
Nov. 2017

- To be scheduled halfway through the preparatory cycle
 - ⇒ Presentation and review of the on-going preparatory studies of the ITU-R responsible groups for CPM-19
 - ⇒ Presentation of the organization, preliminary views, draft priorities and positions of the regional groups

* Subject to the confirmation of the dates of the ITU-R SG 5 meeting currently planned on 20 Nov. 2017 **

2nd Workshop
[Q4 2018]**

- To be scheduled few months prior to CPM19-2
 - ⇒ Presentation of the Draft CPM Report to WRC-19 (explanation of the draft Methods to satisfy the WRC-19 agenda items)
 - ⇒ Presentation and review of the regional groups' draft views, positions and common proposals

3rd Workshop
[Q3 2019]**

- To be scheduled few months prior to WRC-19
 - ⇒ Presentation of the CPM & Dir. Reports to WRC-19
 - ⇒ Presentation and review of the regional groups' draft views, positions and common proposals

** Updated information on meeting dates to be provided later on at: www.itu.int/en/events/Pages/Calendar-Events.aspx?sector=ITU-R



Thank you!

ITU-R Study Groups: www.itu.int/ITU-R/go/rsg;

Email: brsgd@itu.int

ITU-R Conference Preparatory Meeting

www.itu.int/ITU-R/go/rcpm

World Radiocommunication Conference 2019

www.itu.int/go/wrc-19



RA-15 > some key study topics > RA-19

- In response to updated [ITU-R Resolutions](http://www.itu.int/pub/R-RES) (www.itu.int/pub/R-RES) related to, e.g.:
 - Harmonization of **Short-range devices (SRDs)** – [Res. ITU-R 54-2](#)
 - **Disaster prediction, detection, mitigation & relief** – [Res. ITU-R 55-2](#) (now incl. 53-1)
 - Implementation and use of **Cognitive radio systems (CRS)** – [Res. ITU-R 58-2](#)
 - Terrestrial **Electronic News Gathering (ENG)** systems – [Res. ITU-R 59-2](#)
- [Res. ITU-R 64](#) – Guidelines for the management of **unauthorized operation of earth station terminals** (referred to in WRC-15 Res. 958 (i.e. AI 9.1, issue 9.1.7))
- [Res. ITU-R 65](#) – Principles for the process of **future development of IMT for 2020 and beyond** (see also [Circular Letter 5/LCCE/59](#) of 22 March 2016)
[Res. ITU-R 56-2](#) – **Naming for IMT (incl. IMT-2000, IMT-Advanced & IMT-2020)**
- [Res. ITU-R 66](#) – **Studies related to wireless systems and applications for the development of the Internet of Things (IoT)**
- [Res. ITU-R 67](#) – **Telecommunication/ICT accessibility for persons with disabilities and persons with specific needs**
- [Res. ITU-R 68](#) – Improving the dissemination of knowledge concerning the **applicable regulatory procedures for small satellites, incl. nano- & pico-satellites**
- [Res. ITU-R 69](#) – Development and deployment of **international public telecommunications via satellite in developing countries**



RA-15 > ITU-R Study Groups > RA-19

- **Rev. Working Methods** - streamline & clarify procedures ([Res. ITU-R 1-7](#))
- **Unchanged basic Structure of Study Groups** (see [Res. ITU-R 4-7](#))
- **Updated Work Programme & Questions** (see [Res. ITU-R 5-7](#))
- **ITU-R collaboration with:**
 - **ITU-T** (new possibility of **Intersector Rap. Groups (IRG)**, [Res. ITU-R 6-2](#))
 - **ITU-D** (substantial **areas of mutual interest** identified, [Res. ITU-R 7-3](#),
e.g.: **SM, BB & IMT, CRS, LSA, DSA**)
 - **Other relevant organizations**, incl. ISO, IEC & CISPR ([Res. ITU-R 9-5](#))
- **Study Groups (SG) and sub-groups (e.g. Working Parties):**
 - List of **SG Chairmen and Vice-Chairmen** [online](#)
 - List of **sub-groups Chairmen and Vice-Chairmen** [online](#)
 - **Assignment of texts to the Sub-Groups on:**

Spectrum Management (SG 1, Doc. 1/1)	Radiowave Propagation (SG 3, Doc. 3/1)
Satellite Services (SG 4, Doc. 4/1)	Terrestrial Services (SG 5, Doc. 5/1)
Broadcasting Service (SG 6, Doc. 6/1)	Science Services (SG 7, Doc. 7/1)