

WRC-19

Agenda items and challenges

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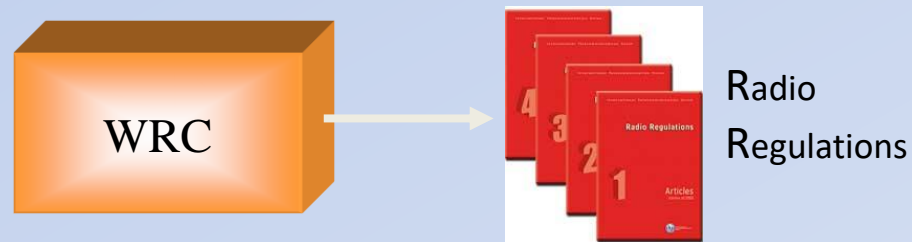
Some main WRC Objectives



- 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!

✓ Updates the Radio Regulations (CS* 89) (*treaty status*)

- Spectrum Allocation
- Coordination and Notification procedures
- Administrative and operational procedures



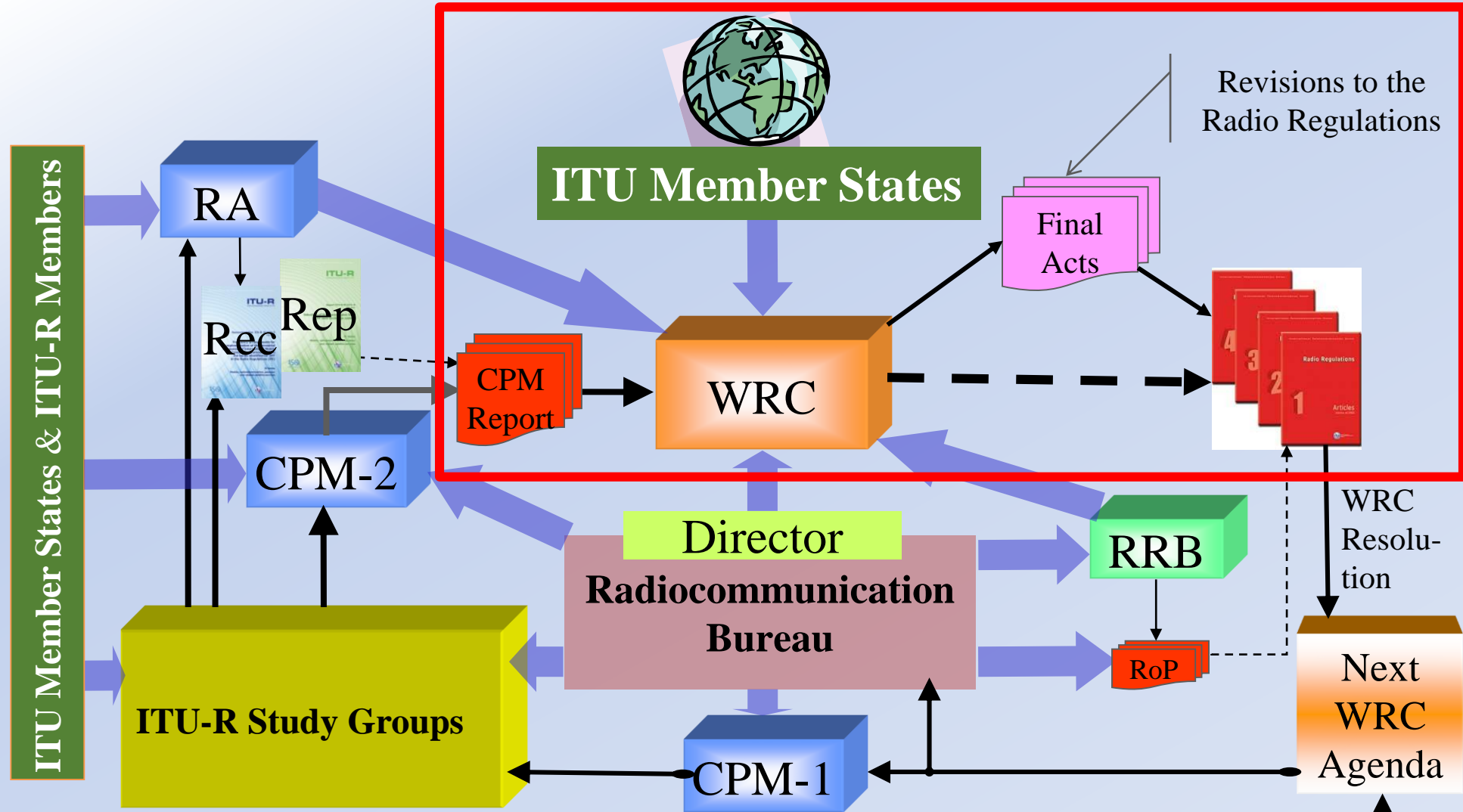
✓ Adopts Resolutions

✓ 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-PLN)

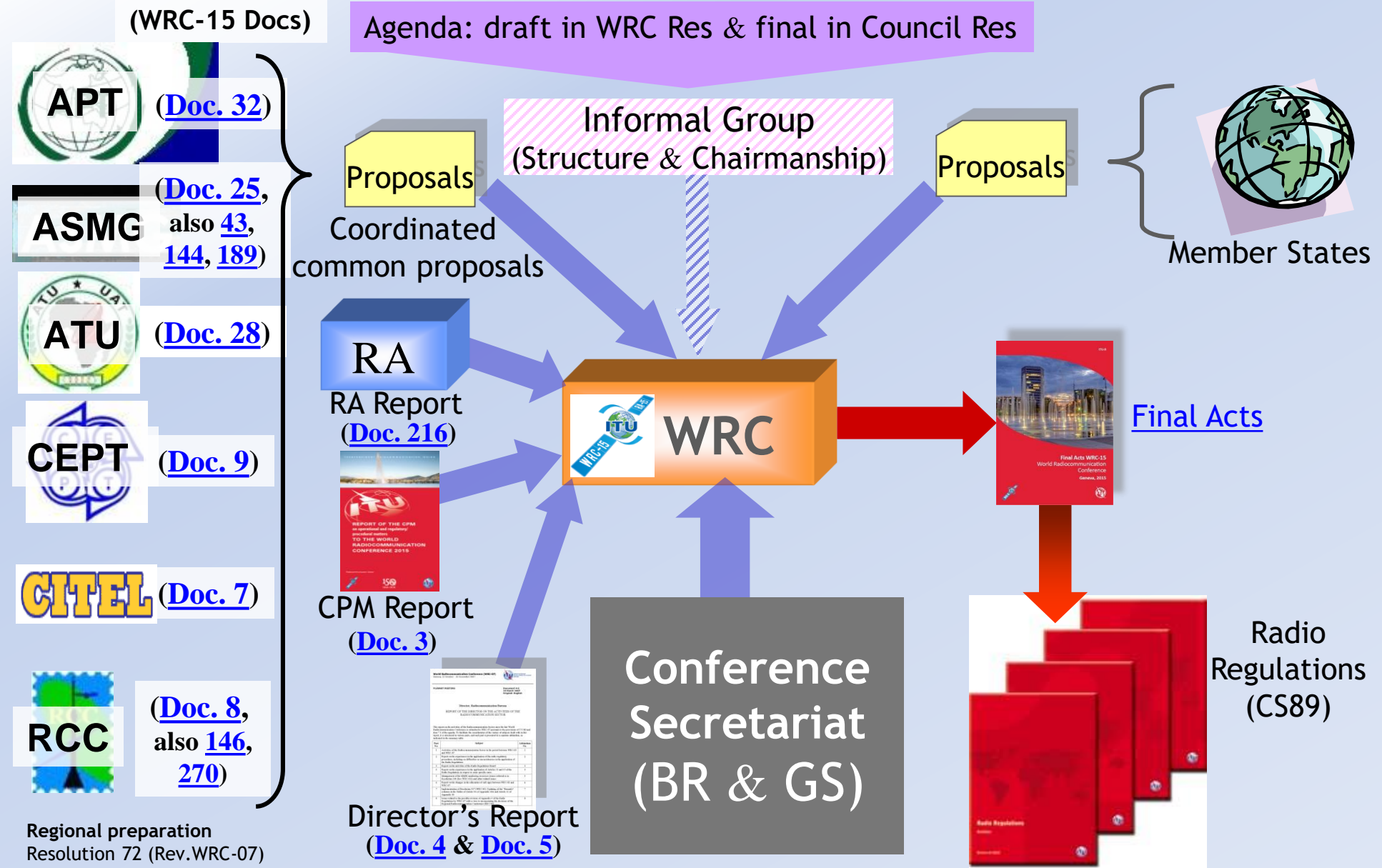
The WRC Cycle



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

Adopted by ITU Council

The WRC Process



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: WRC-19 agenda in **Res. 1380** with dates & venue
Approved/Confirmed in **Geneva** after Member States consultation (CV Nos. 42 & 118)

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

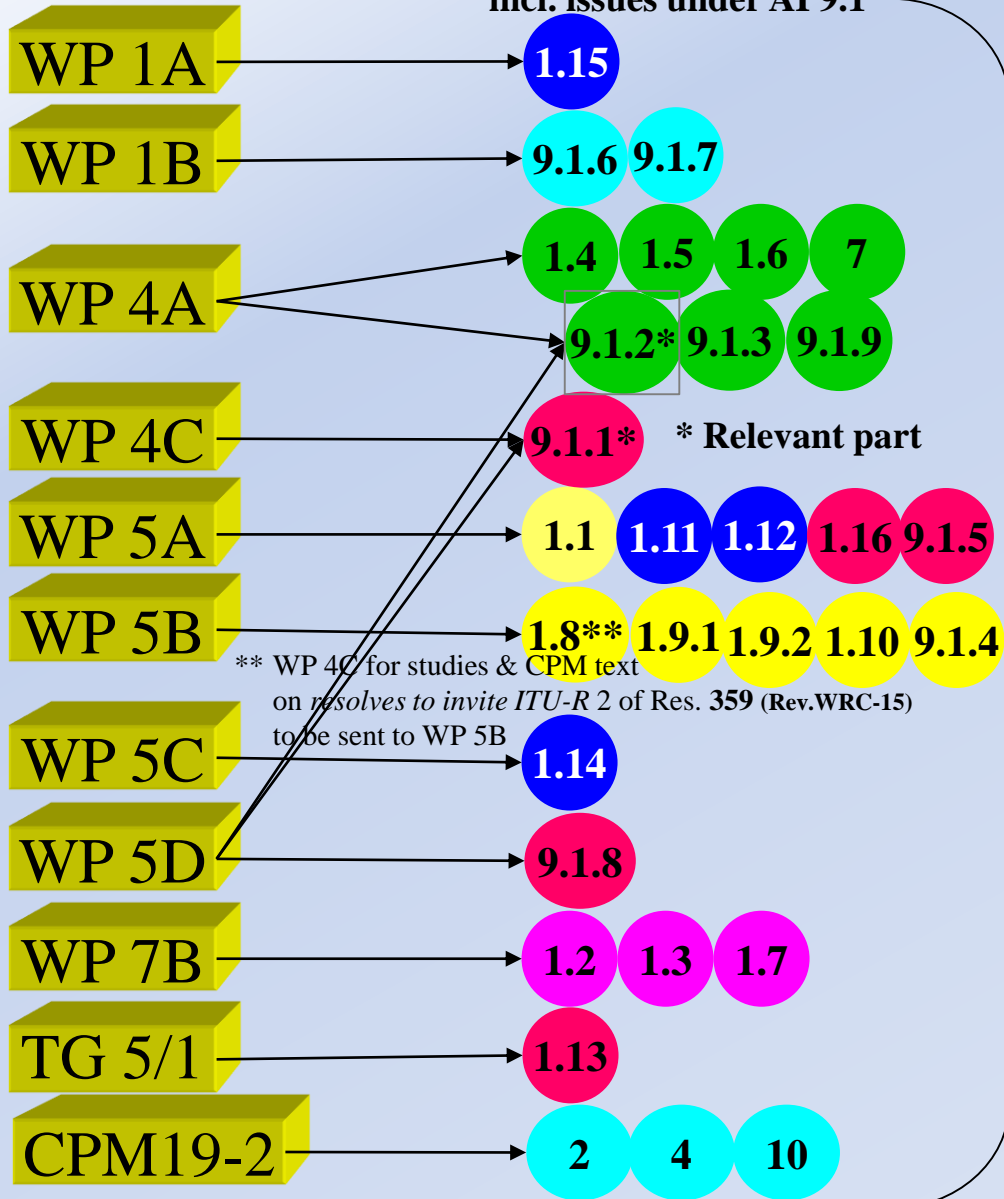
Final meetings of regional groups & preparation of
Member States' proposals and common proposals to WRC-19

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

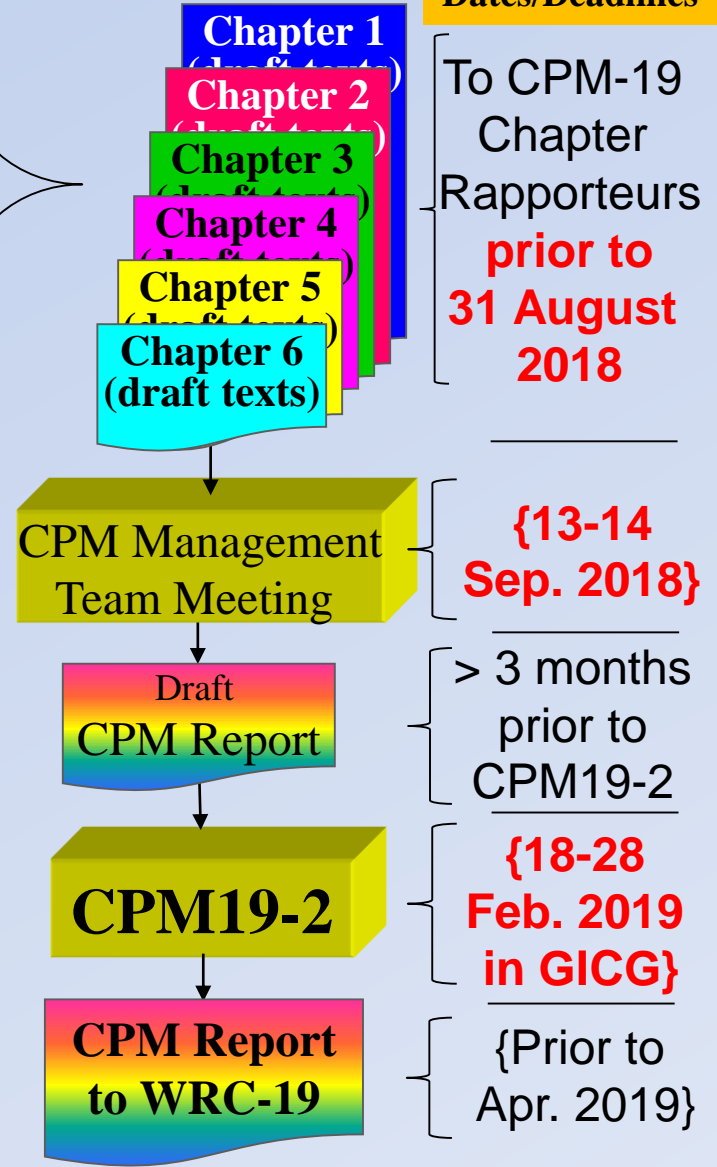
Summary of CPM Report Preparation

ITU-R Responsible Groups

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



Dates/Deadlines





Overview of the ITU-R Calendar towards WRC-19



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

Up-to-date information online at: www.itu.int/en/events/Pages/Calendar-Events.aspx?sector=ITU-R

✓ 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

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

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

Regional preparation for WRC-19

YOU ARE HERE [HOME](#) > [ITU-R](#) > [CONFERENCES AND MEETINGS](#) > [WRC](#) > [WRC-19](#) > [REGIONAL PREPARATION FOR WRC-19](#)

SHARE    



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 \(RCC\)](#)

**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**

**[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**

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

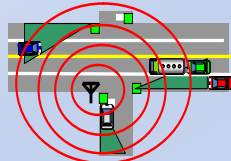
Regulatory issues
(Sat. regulations,
harmonization of
spectrum use, etc.)



7

8

➤ See additional information in the slides attached to this presentation



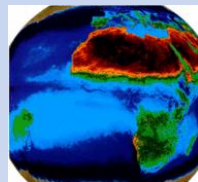
**New Transport
systems**

(harmonized bands
for railways, ITS)

- 1.11
- 1.12



- 1.2
- 1.3
- 1.7



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

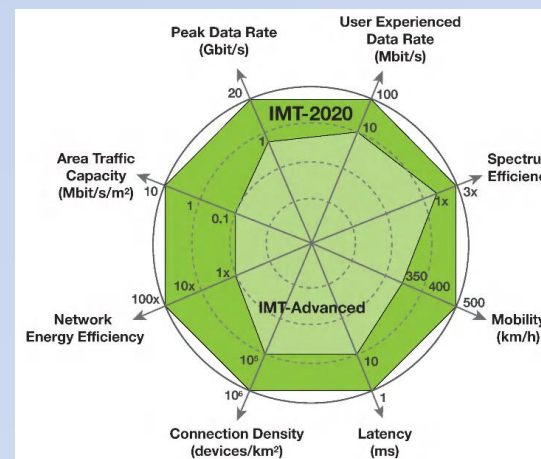
Broadband applications in the MS (WRC-19 agenda items 1.13 and 1.16)

The following bands, which are already allocated to mobile, will be studied with a view to an **IMT-2020** identification:

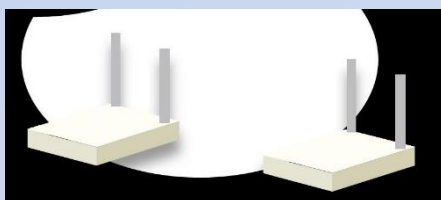
- 24.25 – 27.5 GHz
- 37 – 40.5 GHz
- 42.5 – 43.5 GHz
- 45.5 – 47 GHz
- 47.2 – 50.2 GHz
- 50.4 – 52.6 GHz
- 66 – 76 GHz
- 81 – 86 GHz

The following bands will also be studied, although they **do not currently have global mobile allocations**:

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



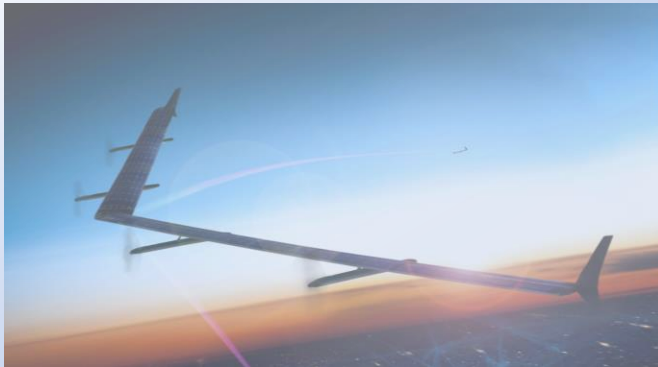
► **Res. 238 (WRC-15)**



Appropriate regulatory actions, incl. additional MS allocations, for **WAS/RLAN** will be studied in the bands between **5 150-5 925 MHz**

► **Res. 239 (WRC-15)**

Other LMS & FS Systems & Apps. (WRC-19 agenda items 1.14 and 1.15)



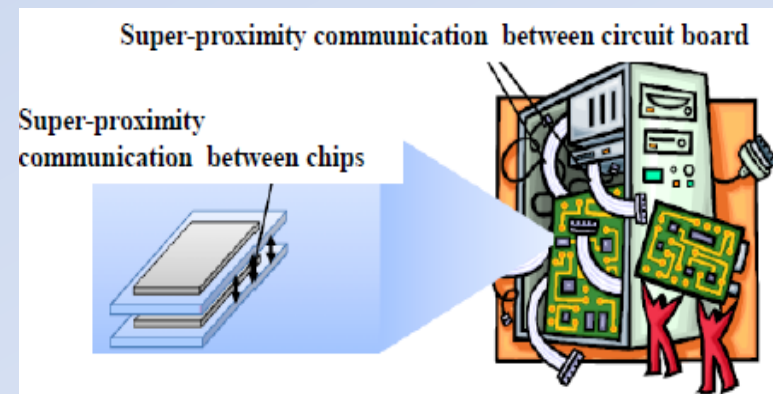
Studies for considering **appropriate regulatory actions for HAPS***, within existing FS alloc. at 47.2-47.5, 47.9-48.2 & 31.0-31.3**/27.9-28.2** GHz (**outside Reg. 2, +5 ADMs @6.5/6.5 MHz) or

study new bands: 38-39.5 GHz & 21.4-22*** & 24.25-27.5*** GHz
(*high-altitude platform stations (HAPS);
*** in Region 2)

▶ **Res. 160 (WRC-15)**

Studies towards an **identification** for use by administrations for **LMS and FS applications** operating in the frequency range **275-450 GHz**

▶ **Res. 767 (WRC-15)**

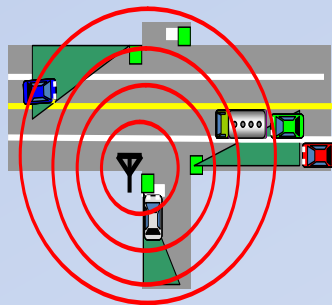


New transport systems in the MS (WRC-19 agenda items 1.11 & 1.12)



Studies to take necessary actions, as appropriate, to facilitate **global or regional harmonized bands to support railway radiocommunication systems** between train & trackside within existing MS allocations

▶ **Res. 236 (WRC-15)**



Studies to consider possible **global or regional harmonized bands**, to the maximum extent possible, for **implementation of evolving ITS*** within existing MS allocations

▶ **Res. 237 (WRC-15)**

* Intelligent Transport systems (ITS)

Maritime issues

(WRC-19 agenda items 1.8, 1.9.1 & 1.9.2)



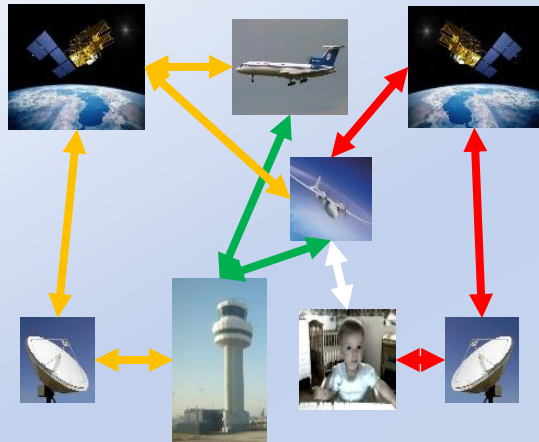
Studies to consider possible **regulatory actions** to **support GMDSS** (Global Maritime Distress and Safety Systems) **modernization** and the introduction of **additional satellite systems** into the GMDSS ▶ **Res. 359 (Rev.WRC-15)**



Studies to consider **regulatory actions** within the band **156-162.05 MHz** for **autonomous maritime radio devices** to protect the GMDSS and AIS (Automatic Identification System) ▶ **Res. 362 (WRC-15)**

Studies to consider RR MODs, including **new MMSS (E-s & s-E)** allocations, preferably **within 156.0125-157.4375 MHz & 160.6125-162.0375 MHz** of RR App. 18, to enable a new **VDES** (VHF data exchange system) **satellite component** ▶ **Res. 360 (Rev.WRC-15)**

Aeronautical and Amateur issues (WRC-19 agenda items 1.10 & 1.1)



Studies to consider **spectrum needs & regulatory provisions for introduction and use of the GADSS** (Global Aeronautical Distress and Safety System)

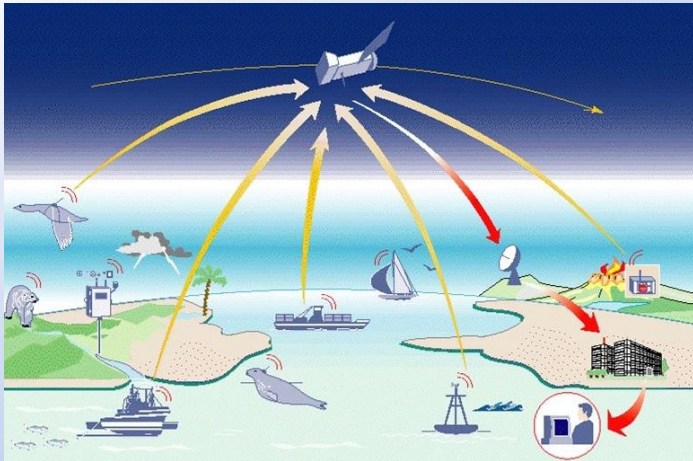
▶ **Res. 426 (WRC-15)**



Studies for consideration of an allocation of the band **50-54 MHz to the amateur service in Region 1** (towards a worldwide allocation for harmonized weak signal communications) ▶ **Res. 658 (WRC-15)**

Science issues

(WRC-19 agenda items 1.2, 1.3 and 1.7)



Studies to consider **in-band power limits** for earth stations in **MetSat & EESS** @ **401-403 MHz** for DCS* and in the **MSS @ 399.9-400.05 MHz**

▶ **Res. 765 (WRC-15)**

Studies to consider possible upgrading of the **2ndary MetSat (s-E)** allocation to **1^{mary}** status & a possible **1^{mary} EESS (s-E)** allocation @ **460-470 MHz** for DCS

▶ **Res. 766 (WRC-15)**



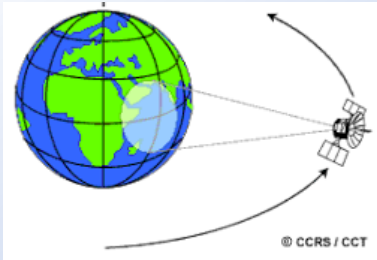
Study spectrum needs for **TT&C in the SOS** for non-GSO satellites with short duration missions & consider, if necessary, new SOS allocations

▶ **Res. 659 (WRC-15)**

* Data Collection Systems (DCS) are used to monitor and predict climate change, monitor oceans, weather and water resources, weather forecasting and assisting in protecting biodiversity, improving maritime security

Satellite issues

(WRC-19 agenda items 1.4, 1.5, 1.6 & 7)



Consider results of studies on review, and possible revision if necessary, of RR App. 30 Annex 7 limitations, incl. orbital position limitations

▶ **Res. 557 (WRC-15)**

Studies to consider the use of the bands 17.7-19.7 GHz (s-E) and 27.5 29.5 GHz (E-s) by earth stations in motion communicating with GSO space stations in the FSS and take appropriate action

▶ **Res. 158 (WRC-15)**



Studies on development of a regulatory framework for non-GSO FSS systems that may operate in the bands 37.5-39.5 GHz (s-E), 39.5-42.5 GHz (s-E), 47.2-50.2 GHz (E-s) and 50.4-51.4 GHz (E-s)

▶ **Res. 159 (WRC-15)**



Satellite Regulatory issues

▶ **Res. 86 (Rev.WRC-07)**

- ✓ **Seven issues identified so far under AI 7:**
 - A. Factors related to the **BiU of frequency assignments of non-GSO systems subject to coordination**
 - B. Modification** (characteristics reduction) of a **recorded assignment** under RR App. **30 & 30A** Reg. 1 and 3 List
 - C. Discrepancy and/or inconsistency between RR provisions dealing with any changes to characteristics of assignment
 - D. Ident. specific sat. networks & systems** to coordinate with, under RR Nos. **9.12, 9.12A** and **9.13** or **9.21**
 - E. Harmonization of RR App. **30B** with RR App. **30 & 30A**
 - F. Enhancement of RR App. 30B** provisions to observe the principles based on which it was initially established
 - G. Updating ref. sit. for networks in RR App. **30 & 30A** after conversion into definitive of provisionally recorded assign^{nts}

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

Other ITU-R Studies for WRC-19 (WRC-19 agenda item 9.1)

- 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

5 preliminary agenda items, **Res. 810** (WRC-15)

Responsible
ITU-R Groups

- 2.1 Res. 361 – Spectrum for GMDSS modernization & implementation of e-navigation → WP 5B
- 2.2 Res. 656 – Possible new allocations for EESS (active) for spaceborne radar sounders @ 45 MHz
- 2.3 Res. 657 – Spectrum needs & designation of radio services for space weather sensors
- 2.4 Res. 161 – Possible new allocations for FSS @ 37.5-39.5 GHz → 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 → none

Radio service abbreviations (1/2)

Abbreviations	Radio services	RR definition
AMS	aeronautical mobile service	No. 1.32
AM(R)S	aeronautical mobile (route) service	No. 1.33
AMSS	aeronautical mobile-satellite service	No. 1.35
AMS(R)S	aeronautical mobile-satellite (route) service	No. 1.36
ARNS	aeronautical radionavigation service	No. 1.46
ARNSS	aeronautical radionavigation-satellite service	No. 1.47
ARS	amateur service	No. 1.56
ARSS	amateur-satellite service	No. 1.57
BS	broadcasting service	No. 1.38
BSS	broadcasting-satellite service	No. 1.39
EESS	Earth exploration-satellite service	No. 1.51
FS	fixed service	No. 1.20
FSS	fixed-satellite service	No. 1.21
ISS	inter-satellite service	No. 1.22
LMS	land mobile service	No. 1.26
LMSS	land mobile-satellite service	No. 1.27
MetAids	meteorological aids service	No. 1.50
MetSat	meteorological-satellite service	No. 1.52

Radio service abbreviations (2/2)

Abbreviations	Radio services	RR definition
MMS	maritime mobile service	No. 1.28
MMSS	maritime mobile-satellite service	No. 1.29
MRNS	maritime radionavigation service	No. 1.44
MRNSS	maritime radionavigation-satellite service	No. 1.45
MS	mobile service	No. 1.24
MSS	mobile-satellite service	No. 1.25
RAS	radio astronomy service	No. 1.58
RDS	radiodetermination service	No. 1.40
RDSS	radiodetermination-satellite service	No. 1.41
RLS	radiolocation service	No. 1.48
RLSS	radiolocation-satellite service	No. 1.49
RNS	radionavigation service	No. 1.42
RNSS	radionavigation-satellite service	No. 1.43
SOS	space operation service	No. 1.23
SFTSS	standard frequency and time signal service	No. 1.53
SFTSSS	standard frequency and time signal-satellite service	No. 1.53
SRS	space research service	No. 1.55

Other abbreviations (1/3)

Abbreviations	Description	RR Nos.
ADS-B	Automatic Dependent Surveillance-Broadcast	-
AIS	Automatic Identification System	-
Art. or AP/App	An Article or an Appendix of the RR	-
BB	Broadband	-
BIPM	International Bureau of Weights and Measures	-
(D)BiU	(Date of) Bringing Into Use	-
BR	ITU Radiocommunication Bureau	-
DCS	Data Collection System	-
E-s, s-E	Earth-to-space, space-to-Earth	-
ES	Earth station	No. 1.63
ESIM	ES In Motion	-
ESV	ES on board Vessels	-
GE06	Geneva 2006	-
GFT	Global Flight Tracking	-

Other abbreviations (2/3)

Abbreviations	Description	RR Nos.
GMDSS	Global Maritime Distress and Safety System	-
GSO	Geostationary-Satellite Orbit	No. 1.190
HAPS	High Altitude Platform Station	No. 1.66A
HF VHF UHF	High Frequency: 3 to 30 MHz Very High Frequency: 30 to 300 MHz Ultra High Frequency: 300 to 3000 MHz	No. 2.1
ICAO	International Civil Aviation Organization	-
IMT	International Mobile Telecommunications	-
ITS	Intelligent Transport Systems	-
ITU	International Telecommunication Union	-
ITU-R	ITU Radiocommunication Sector	-
PPDR	Public Protection and Disaster Relief	-
SARPs	Standards and recommended practices	Nos. 5.2 to 5.9
R1, R2, R3	RR Regions 1, 2 or 3	Nos. 5.2 to 5.9

Abbreviations	Description	RR Nos.
Rec. / Rap.	Recommendation / Report	-
Res.	Resolution	-
RLAN	Radio Local Area Network(s)	-
RR	ITU Radio Regulations	-
RRB	ITU Radio Regulations Board	-
TT&C	Telemetry, Tracking and Command	(See Nos. 1.131-1.136)
UA / UAS	Unmanned Aircraft / Unmanned Aircraft Systems	-
UTC	Coordinated Universal Time	No. 1.14
VDES	VHF Data Exchange System	-
VSAT	Very Small Aperture Terminal	-
WAIC	Wireless Avionics Intra-Communications	-
WAS	Wireless Access System(s)	-
WRC	World Radiocommunication Conference	-