

# **First ITU/WMO Seminar**

**Use of Radio Spectrum for Meteorology:  
Weather, Water and Climate Monitoring and Prediction**

**WMO Headquarters  
Geneva, Switzerland, 16-18 September 2009**

[www.itu.int/ITU-R/go/seminar-itu-wmo/](http://www.itu.int/ITU-R/go/seminar-itu-wmo/)



**World  
Meteorological  
Organization**



**International  
Telecommunication  
Union**



# THE FIRST ITU/WMO SEMINAR



# CPM-11 PROCESS

*Albert Nalbandian,  
CPM Chairman for WRC-12*



# ITU Radio Regulations



The provisions concerning radiocommunications are contained in the ITU Constitution (CS), the Convention (CV) and the Radio Regulations (RR) annexed thereto.



The ITU Radio Regulations are the international treaty standards on radiocommunications, which contains:

- Table of Frequency Allocations to the services
- Regulatory and procedural provisions for spectrum utilization



## Purpose of the ITU in relation to spectrum

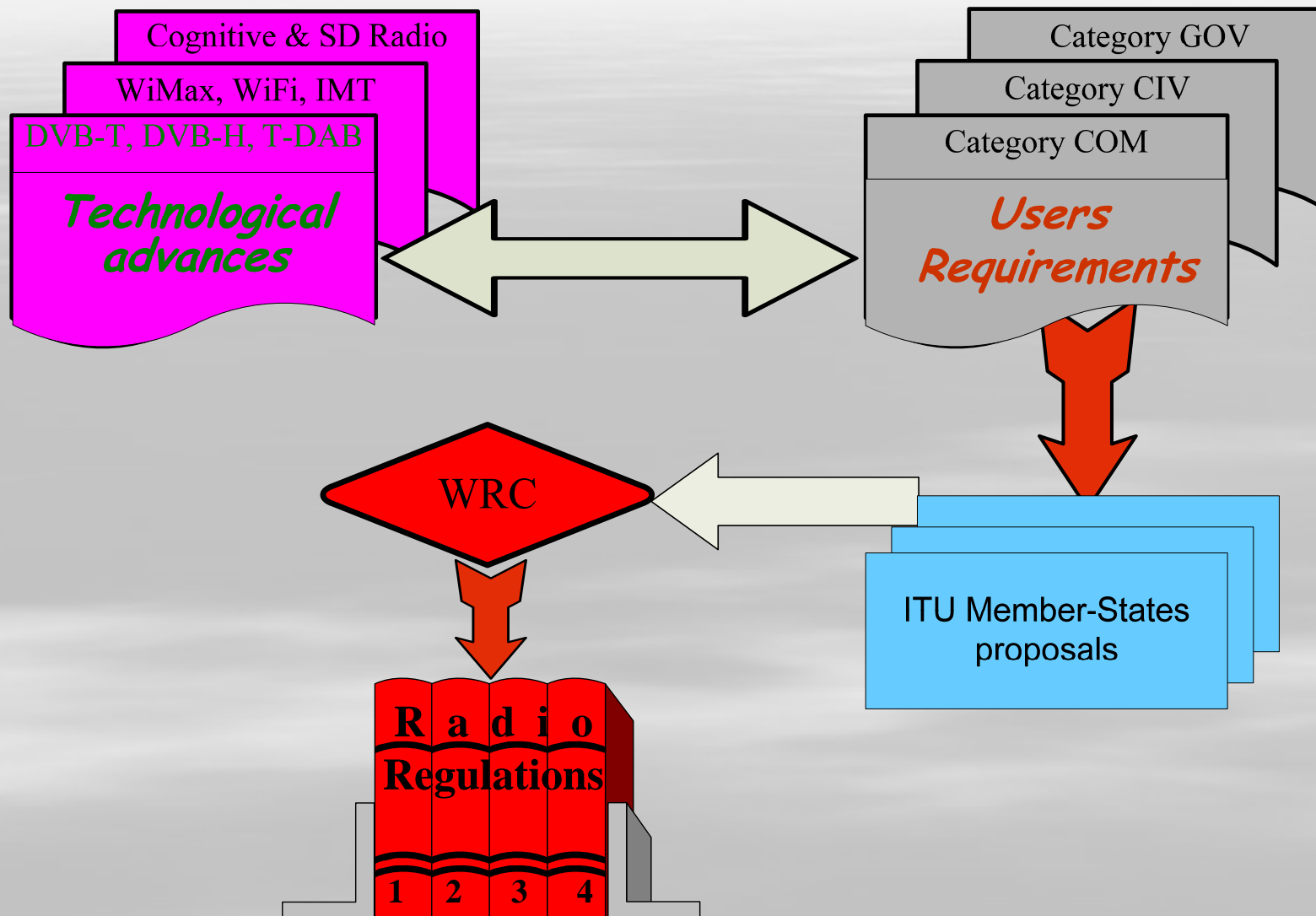


*New spectrum users requirements and achievement of wireless technologies dictate necessity to change the Radio Regulations*

*According to the ITU Constitution and Convention any change of the Radio Regulations is a prerogative of the ITU World Radiocommunication Conferences*



# Purpose of the ITU in relation to spectrum





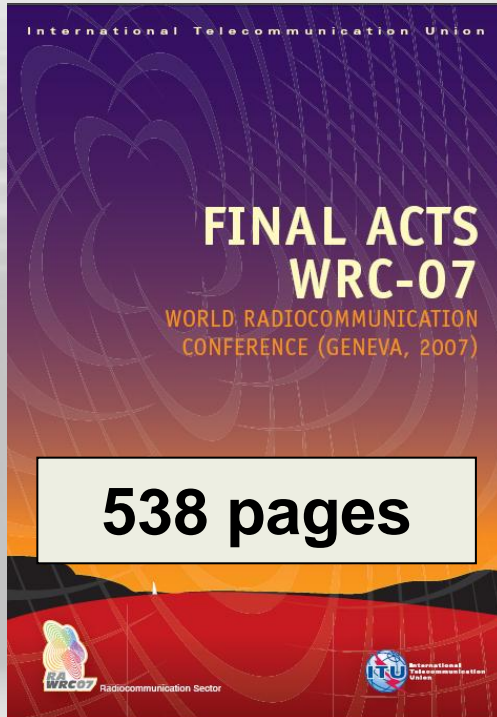
# History of preparations for WRCs and CPMs



|                                  |  |
|----------------------------------|--|
| <i>WARC-92<br/>(Malaga-Tor.)</i> | <i>Chairman IWP-92 M. Hunt (Canada)</i>      |
| <i>PP 1992<br/>(Geneva)</i>      | <i>ITU Radiocommunication Sector (ITU-R)</i> |
| <i>WRC-95</i>                    | <i>Chairman CPM-95 S. Pineiro (Brasil)</i>   |
| <i>WRC-97</i>                    | <i>Chairman CPM-97 R. Taylor (USA)</i>       |
| <i>WRC-2000</i>                  | <i>Chairman CPM-99 R. Barton (Australia)</i> |
| <i>WRC-03</i>                    | <i>Chairman CPM-03 E. George (Germany)</i>   |
| <i>WRC-07</i>                    | <i>Chairman CPM-07 K. Araste (Iran)</i>      |



# History of preparations for WRCs and CPMs



*Four-weeks WRC-07 contributed to the further world harmonization of radiocommunications, as part of GII.*

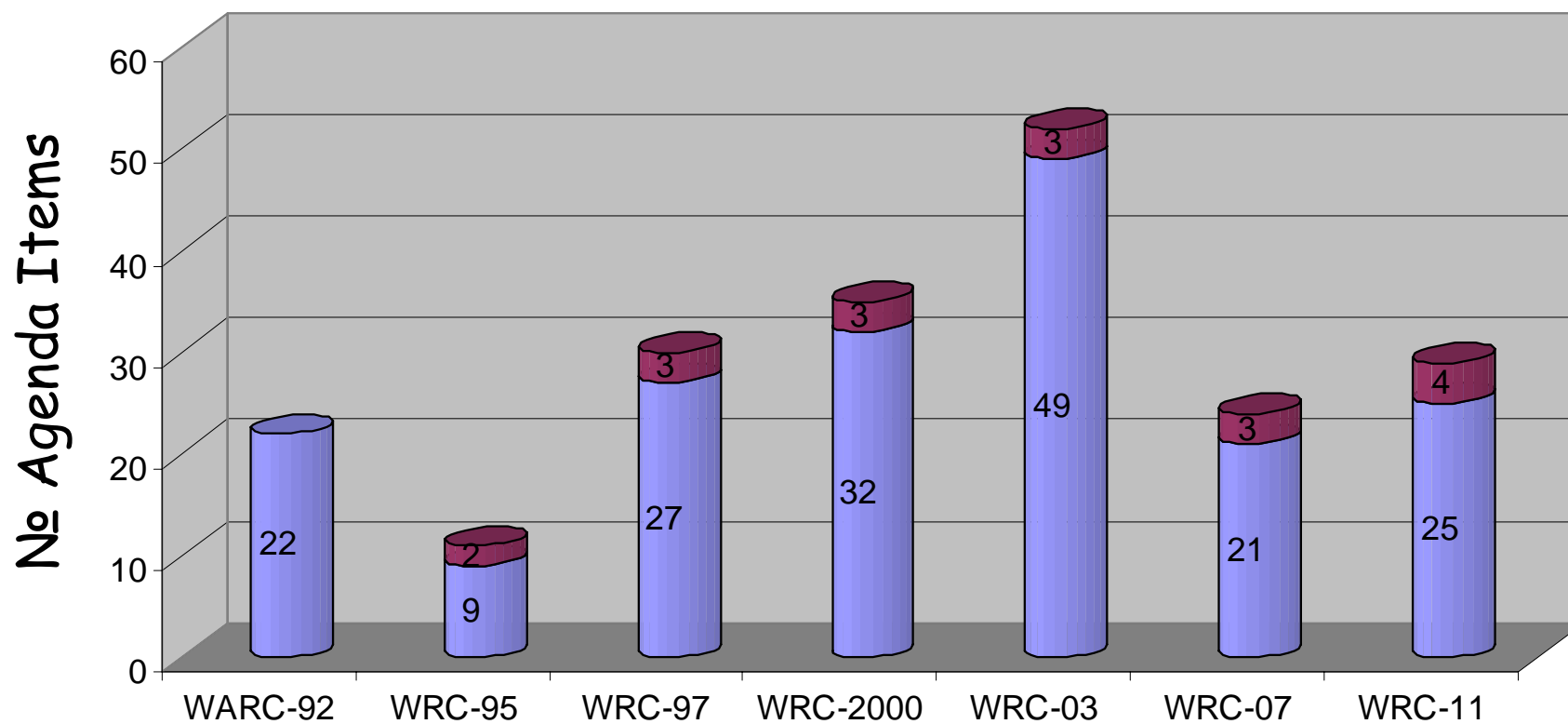




# WRC Agendas (1992 - 2011)



## WRC Agenda Items (1992-2011)







# Legal basis for WRC-12 and CPM



## Resolutions of:

- ❖ The Plenipotentiary Conference
- ❖ ITU Council
- ❖ The 2007 World Radiocommunication Conference
- ❖ The 2007 Radiocommunication Assembly



## Legal basis for WRC-12 and CPM



The 2007 Radiocommunication Assembly by its Resolutions **ITU-R 2-5** and **ITU-R 38-4** re-confirmed necessity of the CPM and the SCRPM for preparation for WRC-11

The 2007 World Radiocommunication Conference:

- by its Res. **805 (WRC-07)**:
  - ✓ recommended Agenda for approval by the ITU Council;
  - ✓ activated the CPM and the SCRPM;
- approved 33 Res. related to **WRC-12**



# Legal basis for WRC-12 and CPM



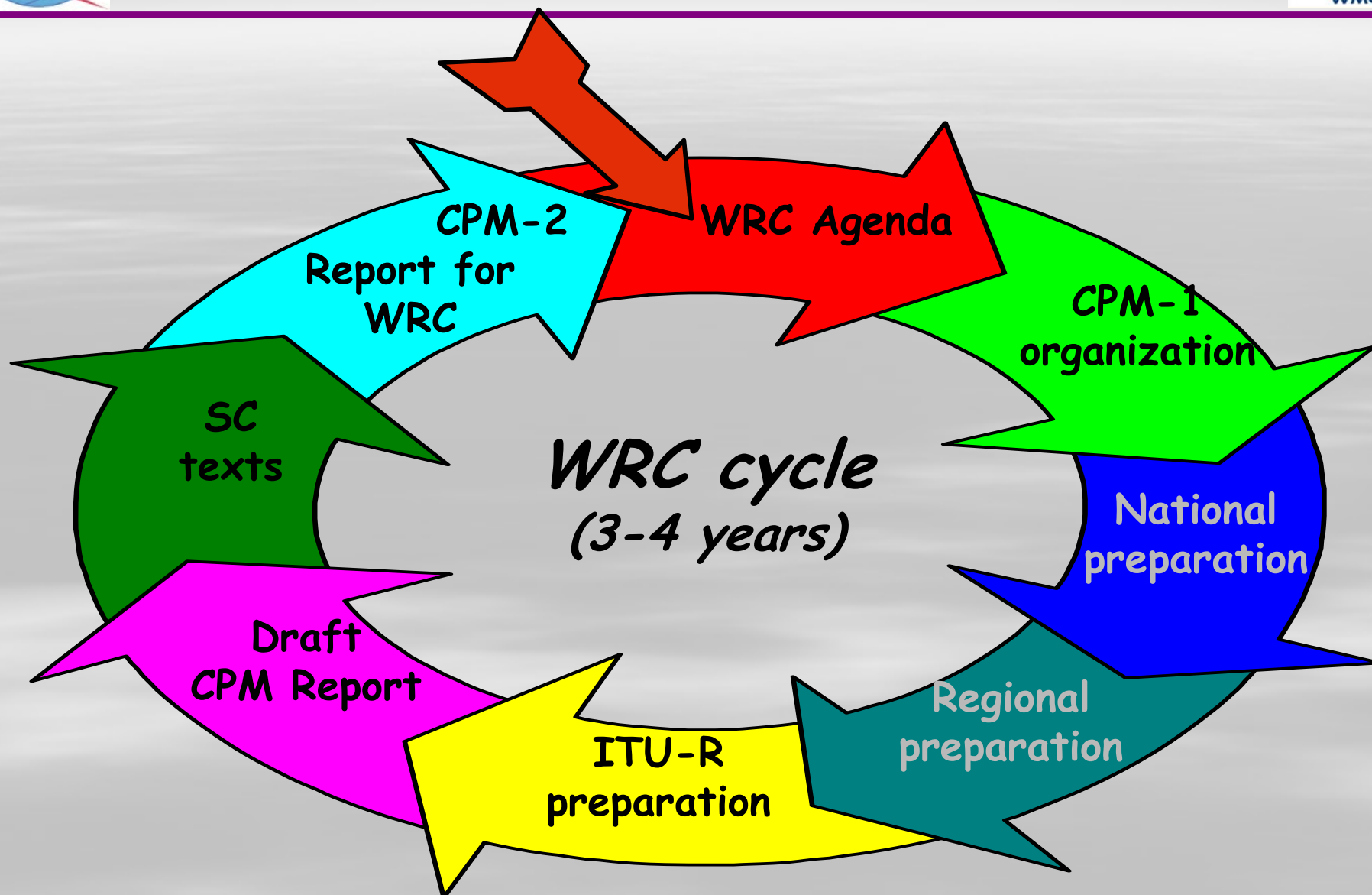
## ITU Council Resolution 1291 (Rev. 09)

- WRC-12, Geneva, 23 Jan. - 17 Feb. 2012
- Agenda on the basis of Res. 805 (WRC-07)

WRC-11 was included in the list of the ITU conferences, assemblies and forums (Res. 77 (Rev..Antalia, 2006))

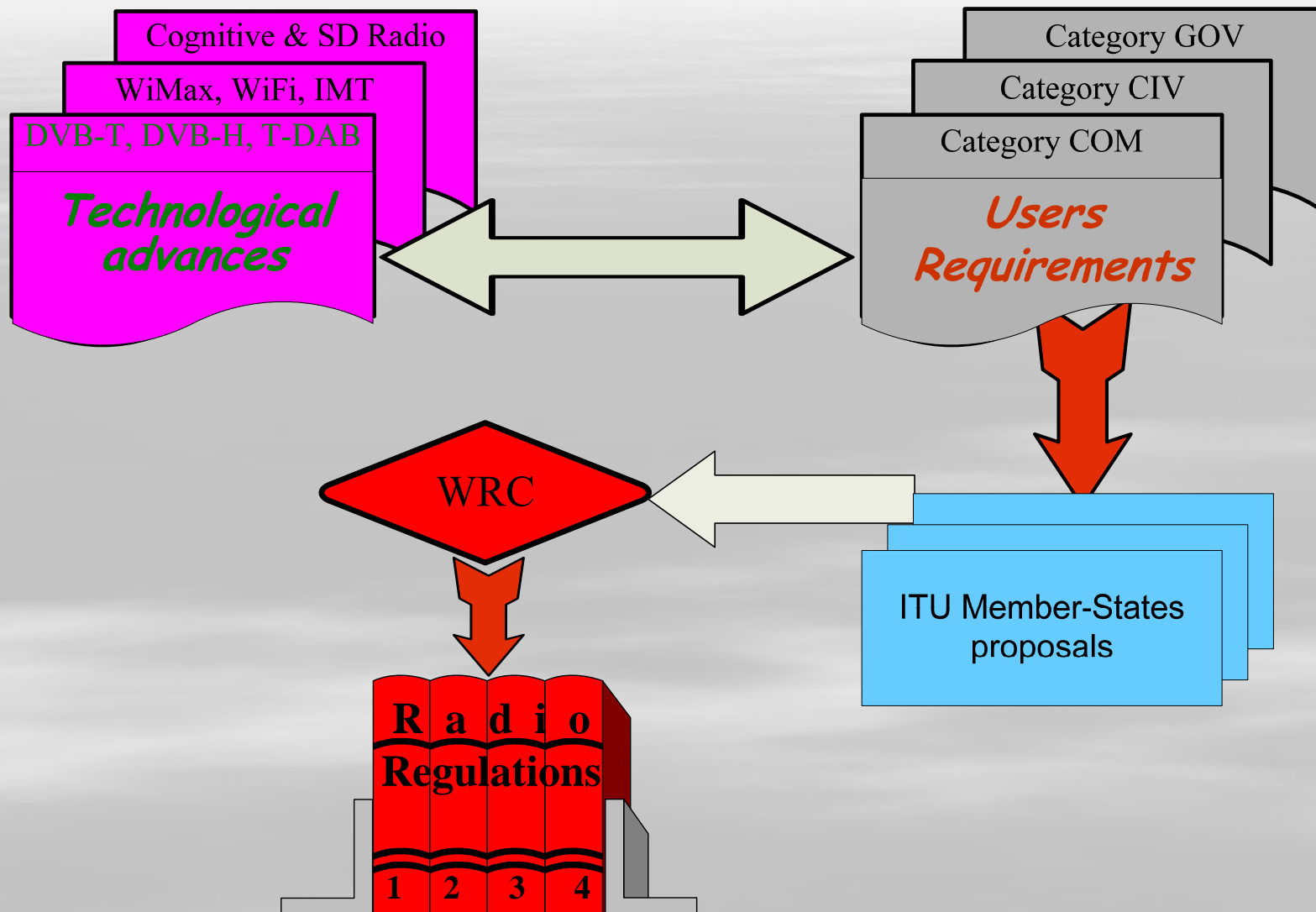


# Cycle of preparatory meetings





# Users requirements





# WRC-12 Agenda



## WRC-12 (Geneva, January-February 2012)

30 Agenda items of WRC-12 concern many services

**Terrestrial:** Amat.S, AM(R)S, BS, FS, MS, MMS, RLS

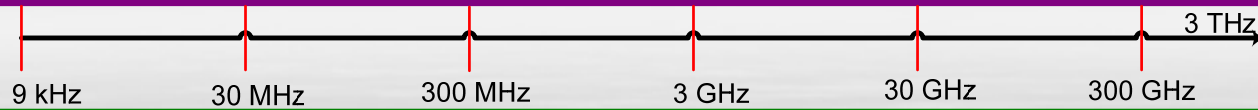
**Space:** AMS(R)S, BSS, MSS, MetAids, MetSat, RDSS, SRS

**Special issues:** Res.951, SRDs, Cognitive Radio, UAS

**Applications:** ENG, HAPS, Lightning, Oceanographic radar



# Terrestrial radiocommunication services



- Fixed
- Broadcasting
- Amateur
- Radio Astronomy
- Meteorological Aids
- Standard Frequency and Time Signals





# Space radiocommunication services



**Mobile-Satellite**

- Aeronautical Mobile-Satellite
  - Aeronautical Mobile-Sat. (R)
  - Aeronautical Mobile-Sat. (OR)
- Land Mobile-Satellite
- Maritime Mobile-Satellite

**Radio determination-Satellite**

- Radionavigation-Sat.
  - Maritime Radionavigation-Sat.
  - Aeronautical Radionavigation-Sat.
- Radiolocation-Sat.

**Fixed-Satellite**

**Broadcasting-Satellite**

Amateur-Satellite

Earth Exploration-Satellite

**Meteorological-Satellite**

Standard Frequency and Time Signals-Satellite

Space Operations

**Space Research**

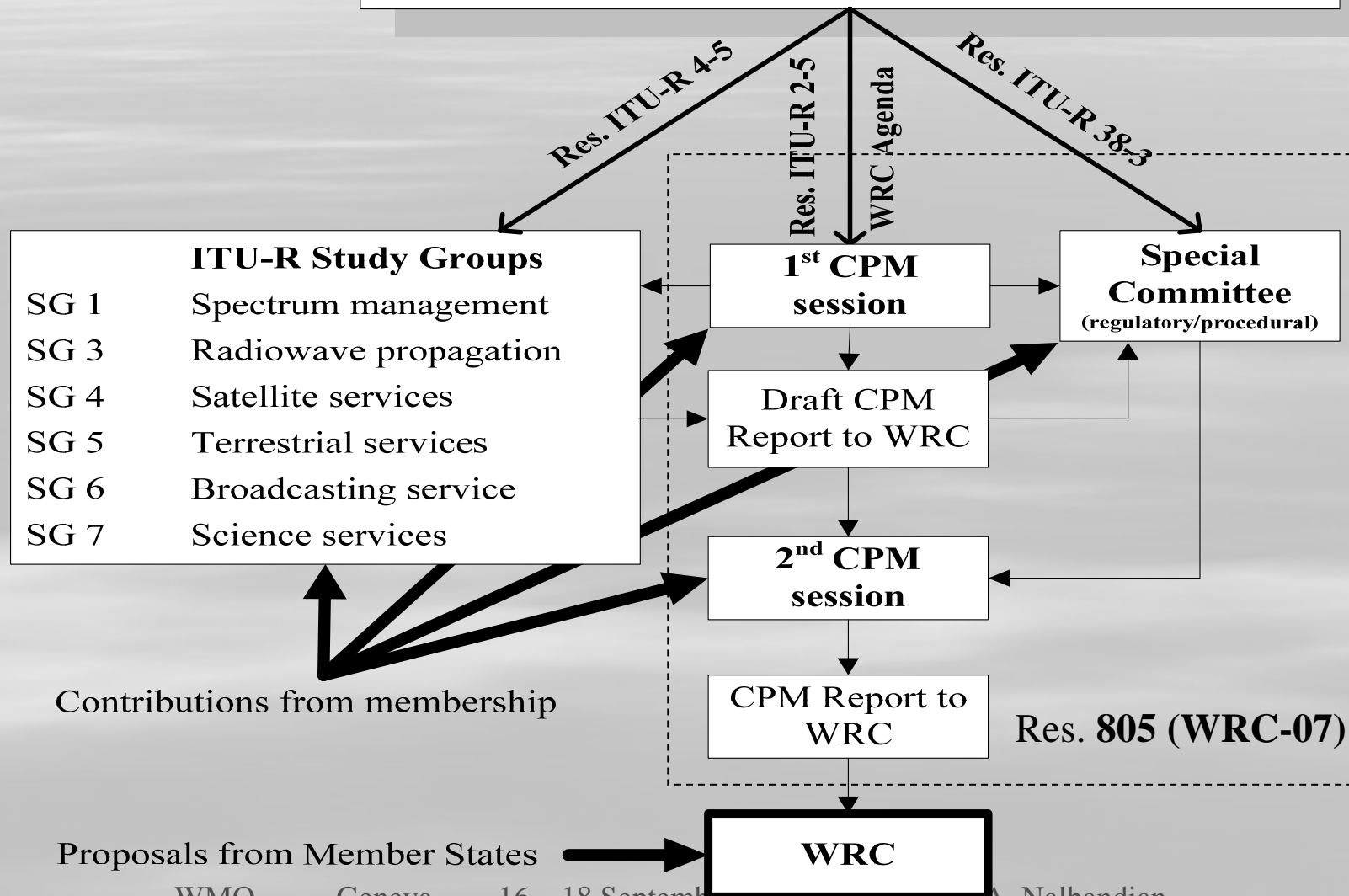
Inter-Satellite



# ITU preparatory process



## Radiocommunication Assembly + World Radiocommunication Conference





## *Purpose of CPM-1: Organization*



### **CPM11-1 (Geneva, 19 - 20 Nov. 2007)**

- ✓ Allocation of work for WRC-12 (see also Annex 2)
- ✓ Structure for the CPM Report to WRC-12
- ✓ Chapter Rapporteurs (see also Annex 1)
- ✓ CPM Working procedures
- ✓ Terms of reference of JTG 5-6
- ✓ Organization of the work of the SC (info, only)

**CA/171+Add 1:** the results of CPM11-1 and Steering Com.

For the CPM Steering Committee and Management Team see Annex 1.



## Allocation of the work (a.i.) to ITU-R SG



The work of the ITU-R Study Groups is focused on technical and operational aspects of Spectrum Management

But the ITU-R Study Groups also carry out preparatory studies of the technical and operational/procedural matters to be considered by a WRC



## Allocation of the work (a.i.) to ITU-R SG



|          |  |     |
|----------|--|-----|
| WP 1A:   | A.i. 1.6, 1.22, 8.1.1 (Issue A)                    | (3) |
| WP 1B:   | A.i.1.2, 1.19                                      | (2) |
| WP 4A:   | A.i. 1.13, 7, 8.1.1 (Issue B)                      | (2) |
| WP 4C:   | A.i. 1.7, 1.18, 1.25                               | (4) |
| WP 5A:   | A.i. 1.23  | (1) |
| WP 5B:   | A.i. 1.3, 1.4, 1.9, 1.10, 1.14, <b>1.15</b> , 1.21 | (7) |
| WP 5C:   | A.i. 1.5, 1.8, 1.20                                | (3) |
| WP 7B:   | A.i. <b>1.11</b> , <b>1.12</b> , <b>1.24</b>       | (3) |
| WP 7C:   | A.i. <b>1.16</b> , <b>8.1.1 (Issue C)</b>          | (2) |
| JTG 5-6: | A.i. 1.17  | (1) |

For details see Annex 2



# Structure of the CPM Report for WRC-11



- CHAPTER 1**      **Maritime and aeronautical issues** (a. i.: 1.3, 1.4, 1.9, 1.10)  
Rapporteur:      Mr. Christian Rissone (France)
- CHAPTER 2**      **Radiolocation and amateur issues** (a. i.: 1.14, 1.15, 1.21, 1.23)  
Rapporteur:      Mr. Timur Kadyrov (Russia)
- CHAPTER 3**      **Fixed, mobile and broadcasting issues**  
(a. i.: 1.5, 1.8, 1.17\*, 1.20, 1.22)  
Rapporteur:      Mr. Naser A. Eidha Alrashedi (UAE)
- CHAPTER 4**      **Science issues** (a. i.: 1.6, 1.11, 1.12, 1.16, 1.24)  
Rapporteur:      Mr. John E. Zuzek (USA)
- CHAPTER 5**      **Satellite issues** (a. i.: 1.7, 1.13, 1.18, 1.25, 7)  
Rapporteur      Mr. Muneo Abe (Japan)
- CHAPTER 6**      **Future work programme and other issues**  
(a. i.: 1.2, 1.19, 2, 4, 8.1, 8.2)  
Rapporteur:      Mr Jean-Jacques Massima Landji (Gabon)

\* **JTG 5-6** - Chairman Mr. Alexandre Kholod (Switzerland) deals with a.i. 1.17



# Chapter structure of the CPM Report



## Chapter N Agenda Item 1.XY

[Relevant WRC Resolutions if any]

- N/1.XY/1 Executive Summary
- N/1.XY/2 Background
- N/1.XY/3 Summary of technical and operational studies and relevant ITU-R Recs
- N/1.XY/4 Analysis of the results of studies
- N/1.XY/5 Methods to satisfy the Agenda Item
- N/1.XY/6 Regulatory and procedural considerations

Proposed detailed Structure for the Draft CPM Report to WRC-11 at:  
<http://www.itu.int/ITU-R/study-groups/docs/ties/rcpm-structure-report-wrc-11-end.doc>

Annex 1 contains the List of the CPM Chapter Rapporteurs





# CPM working procedures



- **Coordination between responsible and concerned groups**
- **Executive summaries**
- **Page limit and format for draft CPM texts**
- **RR edition for draft regulatory/procedural texts**
- **Important dates**



## Responsible and concerned groups



According to Resolution ITU-R 2-5, CPM11-1 identified:

*responsible* groups (**RG**) (i.e. ITU-R WP and JTG);

*concerned* groups (i.e. ITU-R WP of the relevant SG):

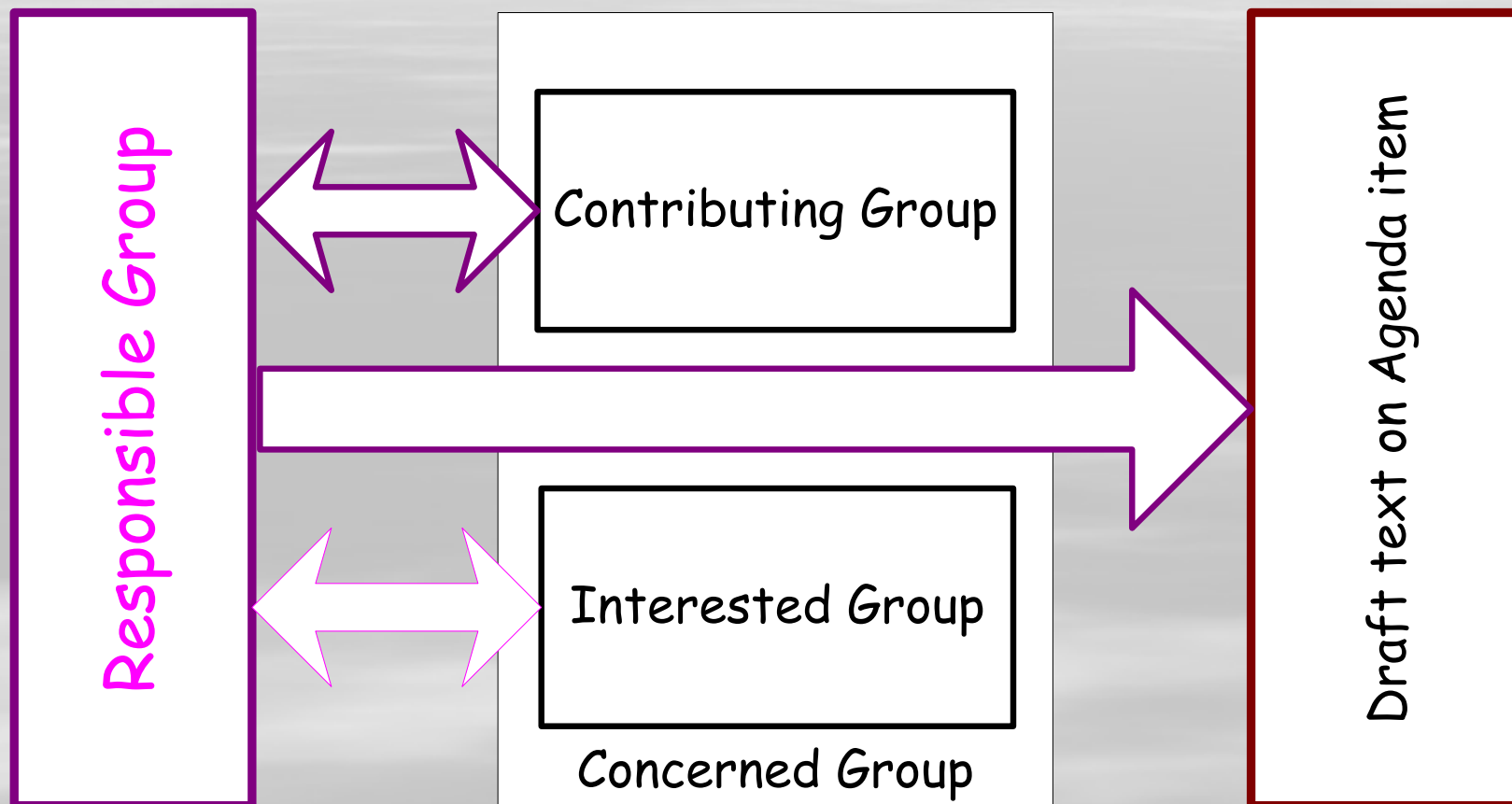
a *contributing* group (should prepare a contribution)

an *interested* group (may prepare a contribution).

The **RG** should ensure the coordination with the **contributing** Group(s) and the **interested** group(s).



# Responsible and concerned groups





## Important point



To determine for each WRC-11 agenda item:

- ✓ the topics of study
- ✓ sequence of their consideration,  
in particular for those a. i. which are formulated in a  
general way leading to possible different understanding  
of the topics to be studied.

Such determination facilitates:

- ✓ national preparation of each a.i.;
- ✓ regional preparatory studies;
- ✓ inter-regional coordination.



## Executive summaries



According to Res. ITU-R 2-5, the progress reports providing executive summaries of the on-going studies have to be developed by the responsible groups for each WRC-12 a.i. the final executive summaries are expected to be submitted to the CPM Chapter Rapporteurs with the draft final texts.



# Page limit for the draft CPM texts



The average page limit per agenda item  
-  
10 pages



## RR edition



*The text of the current 2008 edition of the RR shall be used for preparation of any draft regulatory/procedural texts*

The current 2008 edition of the RR, which shall be used for preparation of any proposal for the regulatory/ procedural texts, consists of four volumes:



**Articles**

**Appendices**

**WRC Resolutions and Recommendations**

**Recommendations ITU-R**





## Important dates



- ❖ **draft CPM texts**            **16 July 2010**
- ❖ **draft CPM Report**        **26-30 July 2010**
- ❖ **SCRPM Report**            **01-05 Nov. 2010**
- ❖ **CPM Report**                **14-25 Feb. 2011**



## *Purpose of CPM-2: CPM Report*

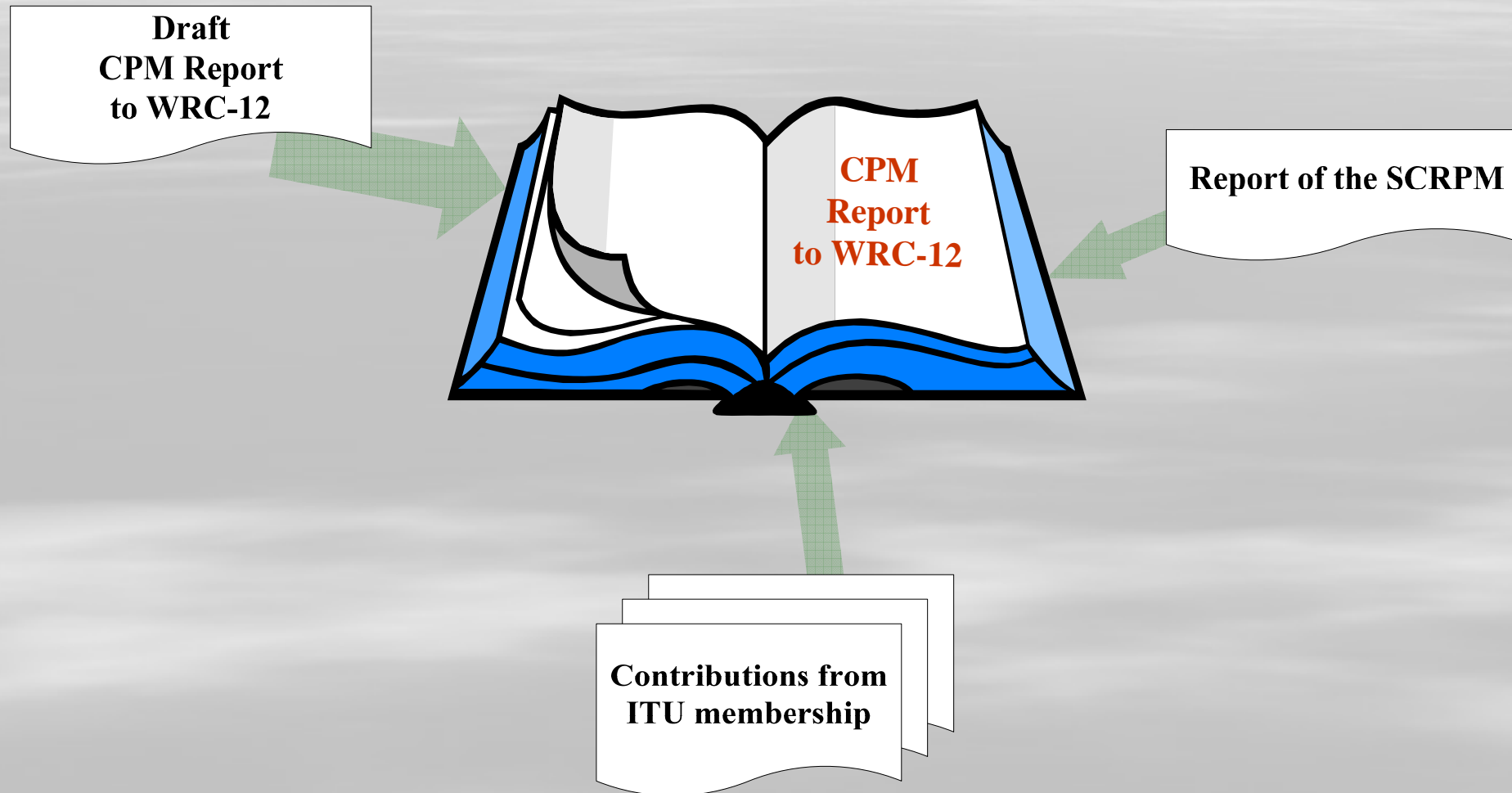


**CPM-2                  Geneva                  14-25 February 2011**

- **Draft CPM Report**
- **Special Committee Report**
- **Contributions from membership**



# Purpose of CPM-2: CPM Report





## *Regional preparation for WRC-11*



**National/regional/international preparations,  
with emphasis on CITELE**



# Regional preparation for WRC-11



*Six regional organizations prepare Common proposals*





# WRC-12 A.I. in interest of WMO



## WRC-12 a.i. 1.15, 1.16, 1.24, 8.1 (Issue C)

1.15 to consider possible allocations in the range 3-50 MHz to the RLS for oceanographic radar applications, taking into account the results of ITU-R studies, in accordance with Resolution **612 (WRC-07)**;

1.16 to consider the needs of passive systems for lightning detection in the meteorological aids service, including the possibility of an allocation in the frequency range below 20 kHz, and to take appropriate action, in accordance with Resolution **671 (WRC-07)**;

1.24 to consider the existing allocation to the meteorological-satellite service in the band 7 750-7 850 MHz with a view to extending this allocation to the band 7 850-7 900 MHz, limited to non-geostationary meteorological satellites in the space-to-Earth direction, in accordance with Resolution **672 (WRC-07)**;

8.1.1 activities of the ITU-R Sector since WRC-07

**Issue C:** Radiocommunications use for Earth observation applications



*2012*



*The 2012 Radiocommunication Assembly  
(RA-12, Geneva, 16 - 20 January 2012)*

*The 2012 World Radiocommunication Conference  
(WRC-12, Geneva, 23 Jan. - 17 Feb. 2012)*



## *ITU RR and WRC*



**Annexes 1 - 3  
contain the additional information**

***Thank you***

**???**





# *ITU RR and WRC*



## **Annex 1**

**Chairmen and Vice-Chairmen nominated by  
the 2007 Radiocommunication Assembly**

**Conference Preparatory Meeting for WRC-11 (CPM-11)**

**Special Committee on regulatory and procedural matters**

**ITU-R Study Groups (SG)**

**Radiocommunication Advisory Group (RAG)**



# CPM for WRC-12



## Chairman, CPM-11

Mr A. Nalbandian (Armenia)  
e-mail: [albert.nalbandian@ties.itu.int](mailto:albert.nalbandian@ties.itu.int)

## Vice-Chairmen, CPM-11

Mr K. Abdelkader (Tunisia)  
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Mr A. Jonsson (Sweden)  
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Mr V. Glushko (RF)  
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Mr J.J. Massima Landji (Gabon)  
e-mail: [landjimassima@yahoo.fr](mailto:landjimassima@yahoo.fr)

Ms S. Taylor (USA)  
e-mail: [shayla.taylor@itt.com](mailto:shayla.taylor@itt.com)



# CPM Chapter Rapporteurs



## Chapter 1

Mr C. Rissone (France) [rissone@anfr.fr](mailto:rissone@anfr.fr)

## Chapter 2

Mr T. Kadyrov (Russia) [kadyrov@geyser.ru](mailto:kadyrov@geyser.ru)

## Chapter 3

Mr N.A. Alrashedi (UAE) [writngto@hotmail.com](mailto:writngto@hotmail.com)

## Chapter 4

Mr J.E. Zuzek (USA) [john.e.zuzek@nasa.gov](mailto:john.e.zuzek@nasa.gov)

## Chapter 5

Mr M. Abe (Japan) [Abe.Muneo@cj.MitsubishiElectric.co.jp](mailto:Abe.Muneo@cj.MitsubishiElectric.co.jp)

## Chapter 6

Mr J.J. Massima (Gabon) [landjimassima@yahoo.fr](mailto:landjimassima@yahoo.fr)



# Special Committee on RPM



Chairman, SC Mr M. Ghazal (LBN)

[ghazal@ties.itu.int](mailto:ghazal@ties.itu.int),  
[mghazal@intracom.net.lb](mailto:mghazal@intracom.net.lb)

Vice-Chairmen, SC

Mr R.J.S. Kushvaha (IND) [rjs\\_kushvaha@rediffmail.com](mailto:rjs_kushvaha@rediffmail.com)

Mr T. Kadyrov (RF) [kadyrov@geyser.ru](mailto:kadyrov@geyser.ru)

Mr L. Olson (USA) [larry.olson@fcc.gov](mailto:larry.olson@fcc.gov)

Mr B. Soury-Lavergne (F) [soury-lavergne@anfr.fr](mailto:soury-lavergne@anfr.fr)

Mr T. Shafiee (IRN) [shafiee@cra.ir](mailto:shafiee@cra.ir)

Mr J. Edane Nkwele (GAB) [artel@inet.ga](mailto:artel@inet.ga)

Mr P.V. Giudici (V) [dirtecct@vatiradio.va](mailto:dirtecct@vatiradio.va)

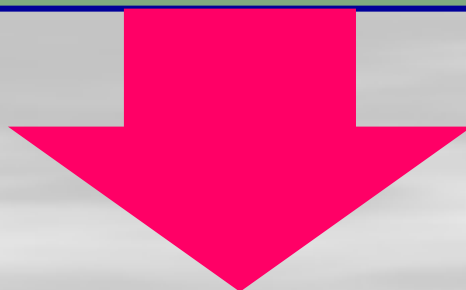


# CPM Steering Committee



## Resolution ITU-R 2-5

|                         |     |
|-------------------------|-----|
| The CPM Chairman        | (1) |
| The CPM Vice-Chairmen   | (5) |
| The Chapter Rapporteurs | (6) |
| The SC Chairman         | (1) |
| The SC Vice-Chairmen    | (7) |



**The CPM Steering Committee (20)**



# ITU-R Study Groups & CCV



## *SG 1 - Spectrum management*

Mr. R. H. Haines (USA) [rhaines@ntia.doc.gov](mailto:rhaines@ntia.doc.gov)

## *SG 3 - Propagation*

Mr. B. Arbesser-Rastburg (ESA) [bertram.arbesser-rastburg@ties.itu.int](mailto:bertram.arbesser-rastburg@ties.itu.int)

## *SG 4 - Satellite services*

Dr. V. Rawat (Canada) [Rawat.Veena@ic.gc.ca](mailto:Rawat.Veena@ic.gc.ca)

## *SG 5 - Terrestrial services*

Mr. A. Hashimoto (Japan) [hashimoto@nttdocomo.co.jp](mailto:hashimoto@nttdocomo.co.jp)

## *SG 6 - Broadcasting service*

Mr. C. Dosch (Germany) [dosch@irt.de](mailto:dosch@irt.de)

## *SG 7 - Science services*

Mr. V. Meens (France) [vincent.meens@cnes.fr](mailto:vincent.meens@cnes.fr)

## *CCV - Coordination Committee for Vocabulary*

Mr. N. Kisrawi (Syria) [nabil.kisrawi@ties.itu.int](mailto:nabil.kisrawi@ties.itu.int)



## CPM Responsible Groups



|         |                   |       |  |
|---------|-------------------|-------|--|
| WP 1A   | Mr. X. Zhou       | (CHN) | <a href="mailto:zhouxg@srrc.gov.cn">zhouxg@srrc.gov.cn</a>                           |
| WP 1B   | Mr. S. Pastukh    | (RF)  | <a href="mailto:sup@caemc.ru">sup@caemc.ru</a>                                       |
| WP 4A   | Mr. J. Wengryniuk | (USA) | <a href="mailto:jwengryniuk@directv.com">jwengryniuk@directv.com</a>                 |
| WP 4C   | M. A. Vallet      | (F)   | <a href="mailto:vallet@anfr.fr">vallet@anfr.fr</a>                                   |
| WP 5A   | Mr. J.M. Costa    | (C)   | <a href="mailto:costa@nortel.com">costa@nortel.com</a>                               |
| WP 5B   | Mr. J. Mettrop    | (UK)  | <a href="mailto:john.mettrop@dap.caa.co.uk">john.mettrop@dap.caa.co.uk</a>           |
| WP 5C   | Mr. C. Glass      | (USA) | <a href="mailto:cglass@ntia.doc.gov">cglass@ntia.doc.gov</a>                         |
| WP 7B   | Mr. B. Kaufman    | (USA) | <a href="mailto:bkaufman@nasa.gov">bkaufman@nasa.gov</a>                             |
| WP 7C   | Mr. E. Marelli    | (ESA) | <a href="mailto:edoardo.marelli@esa.int">edoardo.marelli@esa.int</a>                 |
| JTG 5-6 | Mr. A. Kholod     | (CH)  | <a href="mailto:alexandre.kholod@bakom.admin.ch">alexandre.kholod@bakom.admin.ch</a> |





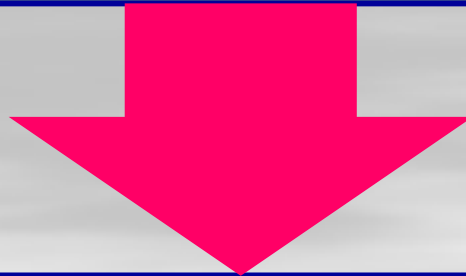
# CPM Management Team



**The CPM Steering Committee (20)**



**The ITU-R RG/TG Chairmen (10)  
The Study Group Chairmen (6)**



**The CPM Management Team (36)**





# Radiocommunication Advisory Group



## *Chairman, RAG*

*M. Kouakou Jean-Baptiste YAO, Côte d'Ivoire*

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## *Vice-Chairmen, RAG*

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*Mr. Alfredo MAGENTA, Italy*

*e-mail: [magenta@rai.it](mailto:magenta@rai.it)*

*Ms. Hyangsuk SEONG, Korea (Republic of)*

*e-mail: [seong@kcc.go.kr](mailto:seong@kcc.go.kr)*

*Mr. Victor STRELETS, Russian Federation*

*e-mail: [vstrelets2000@mail.ru](mailto:vstrelets2000@mail.ru)*



# *ITU RR and WRC*



## Annex 2

Allocation of the preparatory works on  
WRC-12 agenda items to ITU-R SG



# ITU-R SG 1, Working Group 1A (3)



## WRC-12 A.i. 1.6, 1.22, 8.1.1 (Issue A)

1.6 to review No. **5.565** of the RR in order to update the spectrum use by the passive services between 275 GHz and 3 000 GHz, in accordance with Resolution **950 (Rev.WRC-07)**, and to consider possible procedures for free-space optical-links, taking into account the results of ITU-R studies, in accordance with Resolution **955 (WRC-07)**;

1.22 to examine the effect of emissions from short-range devices on radiocommunication services, in accordance with Resolution **953 (WRC-07)**;

8.1.1 activities of the ITU-R Sector since WRC-07

**Issue A: Protection of radiocom. services against (ISM) Interference**



## ITU-R SG 1, Working Group 1B (2)



### WRC-12 a.i. 1.2, 1.19

1.2 taking into account the ITU-R studies carried out in accordance with Resolution **951 (Rev.WRC-07)**, to take appropriate action with a view to enhancing the international regulatory framework;

1.19 to consider regulatory measures and their relevance, in order to enable the introduction of software-defined radio and cognitive radio systems, based on the results of ITU-R studies, in accordance with Resolution **956 (WRC-07)**;



## ITU-R SG 4, Working Group 4A (3)



### WRC-12 a.i. 1.13, 7, 8.1.1 (Issue B)

1.13 to consider the results of ITU-R studies in accordance with Resolution **551 (WRC-07)** and decide on the spectrum usage of the 21.4-22 GHz band for the broadcasting-satellite service and the associated feeder-link bands in Regions 1 and 3;

7 to consider possible changes in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference:  
"Advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks", in accordance with Resolution **86 (Rev. WRC-07)**;

8.1.1 activities of the ITU-R Sector since WRC-07

**Issue B:** Updating of the "Remarks" columns in the Tables of Art.9A of App. 30A and Art. 11 of App. 30 to the RR



## ITU-R SG 4, Working Group 4C (3)



### WRC-12 a.i. 1.7, 1.18, 1.25

1.7 to consider the results of ITU-R studies in accordance with Resolution 222 (Rev.WRC-07) in order to ensure long-term spectrum availability and access to spectrum necessary to meet requirements for the aeronautical mobile-satellite (R) service, and to take appropriate action on this subject, while retaining unchanged the generic allocation to the mobile-satellite service in the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz;

1.18 to consider extending the existing primary and secondary RDSS (space-to-Earth) allocations in the band 2 483.5-2 500 MHz in order to make a global primary allocation, and to determine the necessary regulatory provisions based upon the results of ITU-R studies, in accordance with Resolution 613 (WRC-07);

1.25 to consider possible additional allocations to the MSS, in accordance with Resolution 231 (WRC-07);



## WRC-12 a.i. 1.23

1.23 to consider an allocation of about 15 kHz in parts of the band 415-526.5 kHz to the amateur service on a secondary basis, taking into account the need to protect existing services;





# ITU-R SG 5, Working Group 5B (7)



## WRC-12 a.i. 1.3, 1.4, 1.9 (3)

1.3 to consider spectrum requirements and possible regulatory actions, including allocations, in order to support the safe operation of unmanned aircraft systems (UAS), based on the results of ITU-R studies, in accordance with Resolution **421 (WRC-07)**;

1.4 to consider, based on the results of ITU-R studies, any further regulatory measures to facilitate introduction of new AM(R)S systems in the bands 112-117.975 MHz, 960-1 164 MHz and 5 000-5 030 MHz in accordance with Resolutions **413 (Rev.WRC-07)**, **417 (WRC-07)** and **420 (WRC-07)**;

1.9 to revise frequencies and channelling arrangements of App. 17 to the RR, in accordance with Resolution **351 (Rev.WRC-07)**, in order to implement new digital technologies for the maritime mobile service;





## ITU-R SG 5, Working Group 5B (7)



### WRC-12 a.i. 1.10, 1.14, 1.15, 1.21 (4)

1.10 to examine the frequency allocation requirements with regard to operation of safety systems for ships and ports and associated regulatory provisions, in accordance with Resolution **357 (WRC-07)**;

1.14 to consider requirements for new applications in the RLS and review allocations or regulatory provisions for implementation of the RLS in the range 30-300 MHz, in accordance with Resolution **611 (WRC-07)**;

1.15 to consider possible allocations in the range 3-50 MHz to the RLS for oceanographic radar applications, taking into account the results of ITU-R studies, in accordance with Resolution **612 (WRC-07)**;

1.21 to consider a primary allocation to the RLS in the band 15.4-15.7 GHz, taking into account the results of ITU-R studies, in accordance with Resolution **614 (WRC-07)**;



## ITU-R SG 5, Working Group 5C (3)



### **WRC-12 a.i. 1.5, 1.8, 1.20**

1.5 to consider worldwide/regional harmonization of spectrum for electronic news gathering (ENG), taking into account the results of ITU-R studies, in accordance with Resolution **954 (WRC-07)**;

1.8 to consider the progress of ITU-R studies concerning the technical and regulatory issues relative to the fixed service in the bands between 71 GHz and 238 GHz, taking into account Resolutions **731 (WRC-2000)** and **732 (WRC-2000)**;

1.20 to consider the results of ITU-R studies and spectrum identification for gateway links for high altitude platform stations (HAPS) in the range 5 850-7 075 MHz in order to support operations in the fixed and mobile services, in accordance with Resolution **734 (Rev. WRC-07)**;



# ITU-R SG 7, Working Group 7B (3)



## WRC-12 a.i. 1.11, 1.12, 1.24

1.11 to consider a primary allocation to the space research service (Earth-to-space) within the band 22.55-23.15 GHz, taking into account the results of ITU-R studies, in accordance with Resolution **753 (WRC-07)**;

1.12 to protect the primary services in the band 37-38 GHz from interference resulting from aeronautical mobile service operations, taking into account the results of ITU-R studies, in accordance with Resolution **754 (WRC-07)**;

1.24 to consider the existing allocation to the meteorological-satellite service in the band 7 750-7 850 MHz with a view to extending this allocation to the band 7 850-7 900 MHz, limited to non-geostationary meteorological satellites in the space-to-Earth direction, in accordance with Resolution **672 (WRC-07)**;



## WRC-12 A.i. 1.16, 8.1.1 (Issue C)

1.16 to consider the needs of passive systems for lightning detection in the meteorological aids service, including the possibility of an allocation in the frequency range below 20 kHz, and to take appropriate action, in accordance with Resolution 671 (WRC-07);

8.1.1 activities of the ITU-R Sector since WRC-07

**Issue C:** Radiocommunications use for Earth observation applications



## WRC-12 a.i. 1.17

1.17 to consider results of sharing studies between the mobile service and other services in the band 790-862 MHz in Regions 1 and 3, in accordance with Resolution **749 (WRC-07)**, to ensure the adequate protection of services to which this frequency band is allocated, and take appropriate action;



# *ITU RR and WRC*



## **Annex 3**

**List of the radiocommunication services  
defined in the RR**





## List of the radiocommunication services



| Abbreviations | Radiocommunication 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      |
| AS            | amateur service                                | No. 1.56      |
| ASS           | 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      |



## List of the radiocommunication services



| Abbreviations | Radiocommunication services                | RR definition |
|---------------|--|---------------|
| MetSat        | meteorological-satellite service           | No. 1.52      |
| 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      |
| SRS           | space research service                     | No. 1.55      |



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