



# ITU-R Study Group 5 - “Terrestrial services”

## **Draft new Report ITU-R M.[CAV] “Connected Automated Vehicles (CAV)”**

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# Content

**ITU - the specialised UN-organisation and its responsibilities**

**ITU activities related to ITS**

**LS from ITU-R WP 5A**

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**WRC-23 and its agenda items**



# International Telecommunications Union (ITU)

The International Telecommunication Union (ITU) is the United Nations **specialized agency for information and communication technologies – ICTs**.

- **One of 15** special organizations which are legally and organizationally independent, but part of “UN-family”
- **Founded in 1865** to facilitate international connectivity in communications networks,

## UN Specialized Organizations

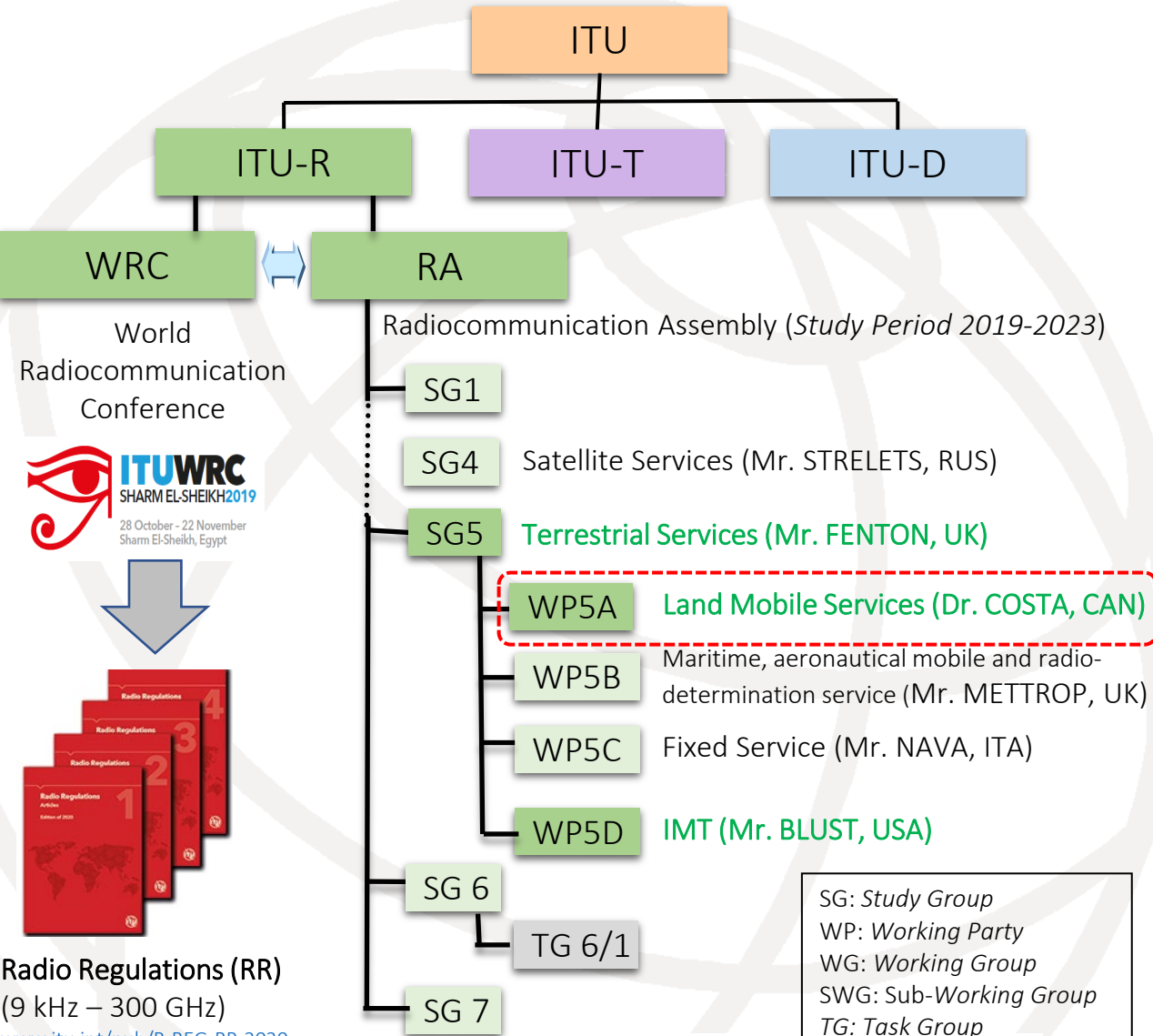
FAO	ICAO	IFAD	ILO
IMO	<b>ITU</b>	IWF	UNESCO
UNIDO	UNWTO	UPU	WBG
WHO	WIPO	WMO	

## We are responsible to

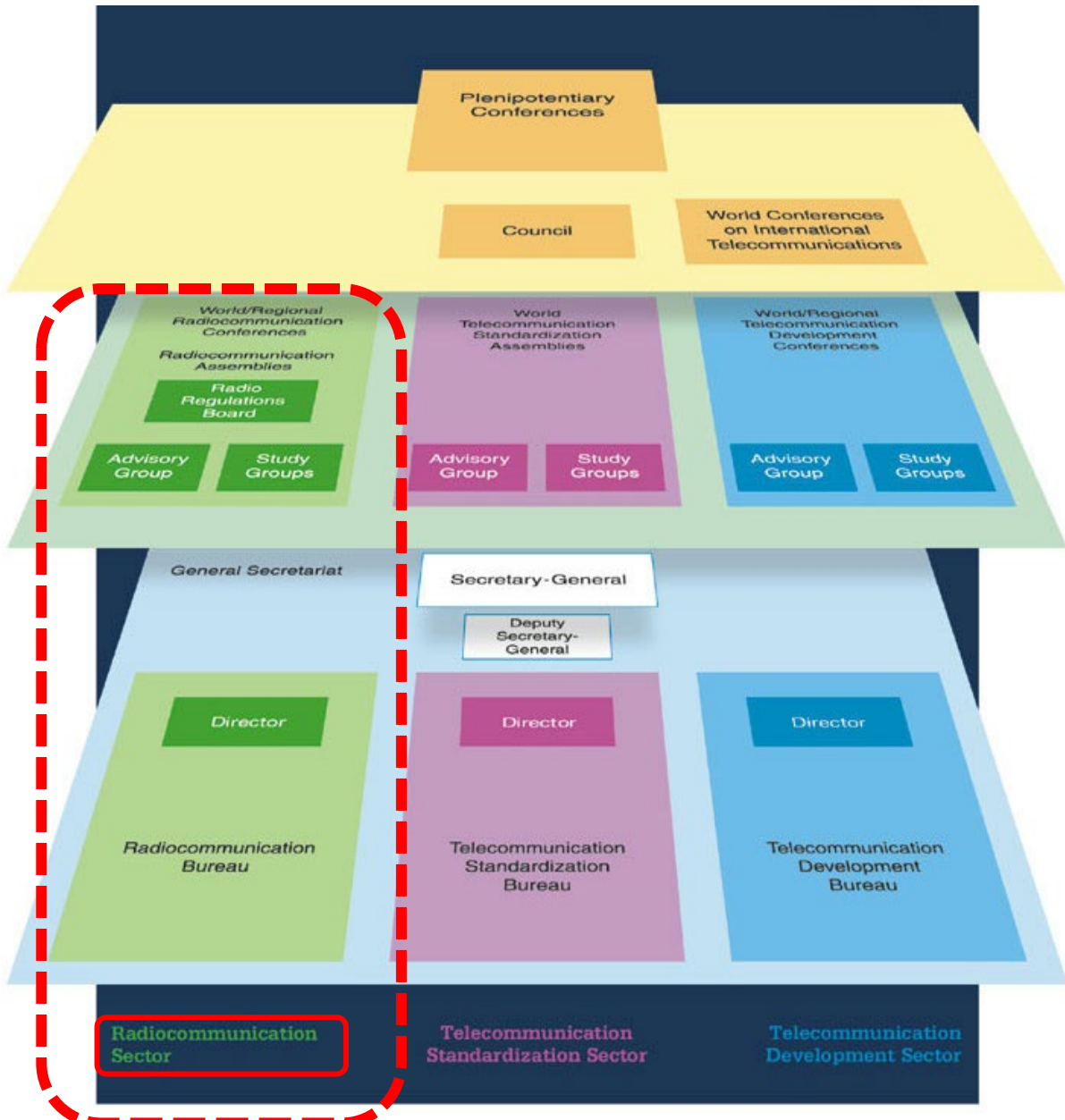
- **allocate global radio spectrum** for wireless services (terrestrial, maritime and aeronautical),
- **coordinate the world’s satellites** through the management of spectrum and orbits,
- **develop the technical standards** that ensure networks and technologies seamlessly interconnect, and strive **to improve access to ICTs to underserved communities worldwide**,
- helps support communications in the wake of **disasters and emergencies**.



# Overall structure of the ITU



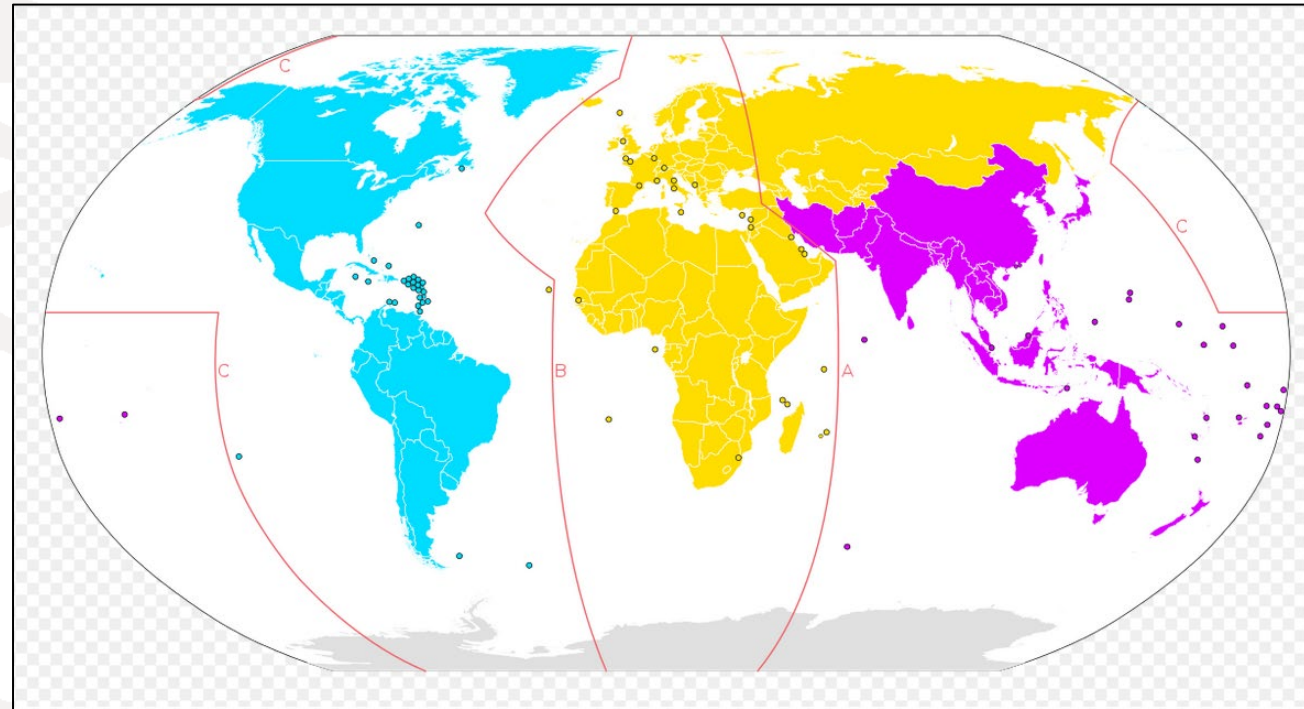
UNECE - IWG on ITS, 17<sup>th</sup> January 2023 & GRVA #15, 23.-27. January 2023



# Application of ITU Radio Regulations in 3 Regions

## ITU-Regions

- Region 1  
Europe, Africa, Russia
- Region 2  
Americas
- Region 3  
Asia-Pacific



## Regional Groups

- CEPT (Region 1) Conference Européen de Poste et Telecommunications
- ASMG (Region 1) Arab Spectrum Management Group
- ATU (Region 1) African Telecommunication Union
- RRC (Region 1 & 3) Regional Commonwealth in the Field of Communications
- APG (Region 3) APT (Asia Pacific Telecommunications) Conference Preparatory Group
- CITEL (Region 2) Inter-American Telecommunication Commission



Regional Commonwealth  
in the Field of  
Communications (RCC)



Inter-American  
Telecommunication  
Commission (CITEL)



European Conference of Postal  
and Telecommunications  
Administrations (CEPT)



African  
Telecommunications Union  
(ATU)



Arab Spectrum  
Management Group  
(ASMG)



Asia-Pacific  
Telecommunity (APT)

# ITU = Activities of ITU-R and ITU-T

## ITU-R

### ITU-R WP 5A

(Land Mobile except IMT)

Work towards a new Report ITU-R M.[CAV] – Connected Automated Vehicles

- Question ITU-R 261/5
- Scheduled finalisation in 2023
- *Content*
  - Radiocommunication elements for CAVs
  - Radiocommunication systems supporting CAV
  - Spectrum needs for CAV radiocommunication
  - Spectrum harmonization

### ITU-R WP 5D

(IMT)

New Report “Application of the Terrestrial Component of IMT for Cellular-V2X” (C-V2X)

- Question ITU-R 262/5
- Approved by SG 5 in 11/2022 and available as ITU-R M.2520
- *Content*
  - C-V2X as specific ITS application supported by IMT technology
  - Relationship between IMT and C-V2X
  - Characteristics and capabilities of C-V2X supported by IMT
  - Required tech. elements/capabilities of C-V2X supported by IMT
  - Case studies

## ITU-T

- **Collaboration on Intelligent Transport System (CITS)**
- **Symposium on the Future Networked Car (FNC-2023, 13.-16.03.2023)**

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# LS from ITU-R WP 5A to 15<sup>th</sup> GRVA (doc “GRVA-15-13”)

- Introduction
- WP 5A is working under:
  - Question [ITU-R 205-6/5](#) on Intelligent Transport Systems
  - Question [ITU-R 261/5](#) on Radiocommunication requirements for connected automated vehicles
- List of ITU-R Recommendations and Reports developed by WP 5A, e.g.:
  - Recommendation [ITU-R M.2084](#) on specific radio interface standards and technical specifications for vehicle-to-vehicle and vehicle-to-infrastructure
  - Recommendation [ITU-R M.2121](#) provides guidance on harmonized frequency bands to be used by ITS
  - Report [ITU-R M.2445](#) identifies current and planned usage of ITS technologies, frequency bands, status of standardization, applications and deployments in ITU Member States
- WP 5A is currently developing **Report ITU-R M.[CAV] “Connected Automated Vehicles (CAV)”**

# Draft New Report ITU-R M.[CAV]

- Addresses radio communication aspects of CAV, such as descriptions of communication methods, use cases and radiocommunication systems for CAV, as well as radiocommunication requirements and spectrum needs for CAV.
- The scope of this Report is focused on the ad-hoc, short range radiocommunication for ITS among vehicles, and among vehicles and infrastructure.
- The target completion date of the draft report is **May 2023**  
(contribution deadline: 2<sup>nd</sup> May 2023, 16:00 UTC)

**Note:** As referenced in the LS, the latest version of the draft new report can be found in [Annex 16](#) to [Doc. 5A/708](#) (chairman report).



# Draft New Report ITU-R M.[CAV] - table of content

## Annex 16 to Working Party 5A Chairman's Report

WORKING DOCUMENT TOWARDS A PRELIMINARY DRAFT NEW  
REPORT ITU-R M.[CAV]

### Connected Automated Vehicles (CAV)

(Question ITU-R 261/5)

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# How to contribute?

## What role can/should WP.29 play to support the deployment of V2V communication, if any?

As has been shown before, WP 5A and WP 5D of ITU-R SG 5 develop various recommendations which are already or will become the basis for the global spectrum regulation and spectrum usage, and several reports provide information of its Member States about ITS-usage. **UNECE (WP.29 and GRVA) and its participants should be given the opportunity to comment on the work within ITU-R and provide new and/or complimentary information as appropriate.**

## What items, if any, should WP.29 focus on?

UNECE may want to consider having a review of the draft report on CAV by its expert groups (e.g. WP.29, GRVA) and if comments arise, responding back to the next meeting of ITU-R WP 5A.

## Is there a guidance from your side on the time by which WP.29 should start activities or by which WP.29 should deliver an outcome?

May 2023 is envisaged for the completion date of the draft new report with the official contribution deadline to be the 2<sup>nd</sup> May 2023 (16:00 UTC) – any comments would need to be provided by that date (via a reply-LS).



ITU – Radiocommunication Bureau

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# Topics on the WRC-23 Agenda



### Mobile Services

**1.1** **Mobile** **3.3 ≤ MS & IMT ≤ 10.5 GHz**

**1.2** **1.3** **1.4** **1.5** **Broadcasting** **0.694 ≤ HIBS ≤ 2.7 GHz** **470 ≤ BS, MS ≤ 960 MHz**

### Scientific Services

**Spaceborne radar sounders (2<sup>nd</sup>ary)**

**EESS (active) @ 45 MHz** **Science** **1.12**

**SRS @ 14.8-15.35 GHz** **1.13**

**Remote-sensing observation requirements - EESS (passive) @ 231.5-252 GHz** **1.14**

**1.6** **1.7** **1.8** **1.9** **1.10** **1.11** **Aviation** **Sub-orbital vehicles** **New AMS(R)S VHF alloc.** **UAS CNPC links via FSS** **Dig. techno. for aviation safety-of-life applications (App.27)** **New AMS alloc. (around 15.5 & 22 GHz) for non-safety applications** **GMDSS modernization and e-navigation**

**Aero-nautical and Maritime Services**

**A-ESIM & M-ESIM (GSO Ku-FSS)** **1.15**

**ESIM (NGSO Ka-FSS)** **Satellite** **1.16**

**ISS / Sat.-to-Sat. links** **1.17**

**NB MSS for IoT (L/S-bands)** **1.18**

**Ka-FSS (s-E) (R2)** **1.19**

**Satellite regulatory issues** **7**

### Satellite Services

*Note: The WRC-23 agenda item numbers are indicated in italic (agenda items 2, 3, 4, 5, 6, 8, 9 (9.1, 9.2, 9.3) and 10 are not mentioned here).*