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INTERNATIONAL CIVIL AVIATION ORGANIZATION

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ICAO WRC-27 Preparatory Workshop

Agenda item 9.1: Activities of the ITU-R Radiocommunication sectors since WRC-23

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ICAO

Workshop on ITU World Radiocommunication Conference 2027 for AFI Region,
(Dakar, Senegal, 2-3 March 2026)

Presentation Overview

01 **Background**

02 **Potential Issues**

03 **ICAO Position**

04 **Conclusion**

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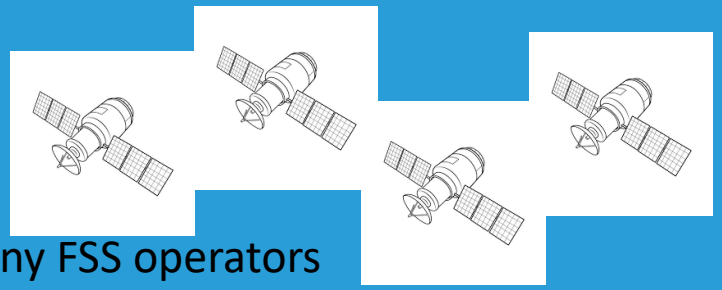
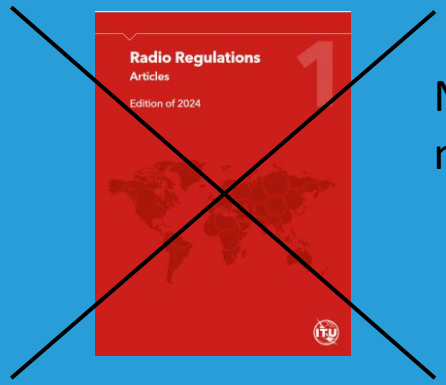
Background

This topic is the result of a very long-term problematic related to the satellite-based Command and Control (C2 Link) for Remotely Piloted Aircraft Systems (RPAS)

Commercial systems in the Fixed Satellite Service



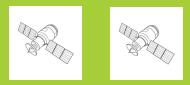
Many FSS operators



No regulatory framework, or not praticable

VS

Aeronautical safety systems in the Aeronautical Mobile Satellite (Route) Service (AMS(R)S)



No operator in the core C2 Link band (5030 – 5091 MHz)
Only 2 operators in other AMS(R)S bands, not primarily designed to support C2 Link

Regulatory framework OK for aeronautical safety services

Background

ITU-R work on Control Non Payload Communication (CNPC ≈ C2 Link) for drones

2012
No 9.11A for AMS(S)R in the 5030 – 5091 MHz

2015
Res 155 on FSS supporting UAS C2 Link

2019
Slight revision of Res 155, waiting for SARPs applicability

2023
Suspension of actions on Res 155
Studies on AMS(R)S for satellite-based C2 Link

2027
??

2014
RPAS Panel creation: SARPs finalization ➔ 2019

2017
SARPs finalization deferment ➔ 2021

2019
SARPs finalization deferment ➔ 2023

2024
SARPs finalization deferment ➔ 2025 at the best

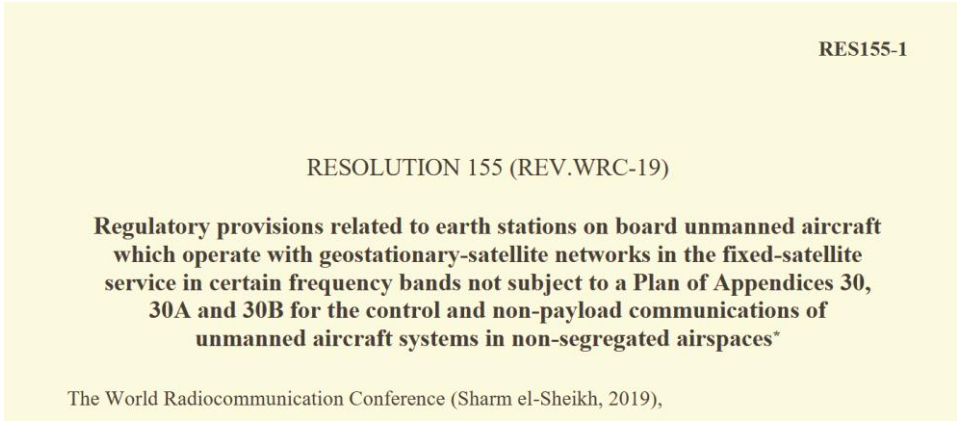
2025
SARPs finalization deferment ➔ 2028 at the best

ICAO RPAS standardization

Background

WRC-23 “decided to suspend any further action on Resolution 155” (use of the fixed satellite service for Unmanned Aircraft System Command and Control Link).

A new item has been agreed by this conference to study, as a matter of urgency, necessary measures to facilitate C2 Link for non-segregated airspace operation operated in non-segregated airspace using satellite links by the aeronautical mobile satellite (route) service (AMS(R)S) in suitable frequency bands in order to decide on the appropriate course of action to be taken for WRC-31



RES155-1

RESOLUTION 155 (REV.WRC-19)

Regulatory provisions related to earth stations on board unmanned aircraft which operate with geostationary-satellite networks in the fixed-satellite service in certain frequency bands not subject to a Plan of Appendices 30, 30A and 30B for the control and non-payload communications of unmanned aircraft systems in non-segregated airspaces*

The World Radiocommunication Conference (Sharm el-Sheikh, 2019),

WRC-23

All actions suspended, including:
- Work on a possible revision
- ITU-R BR actions on filing processing and class of stations registration

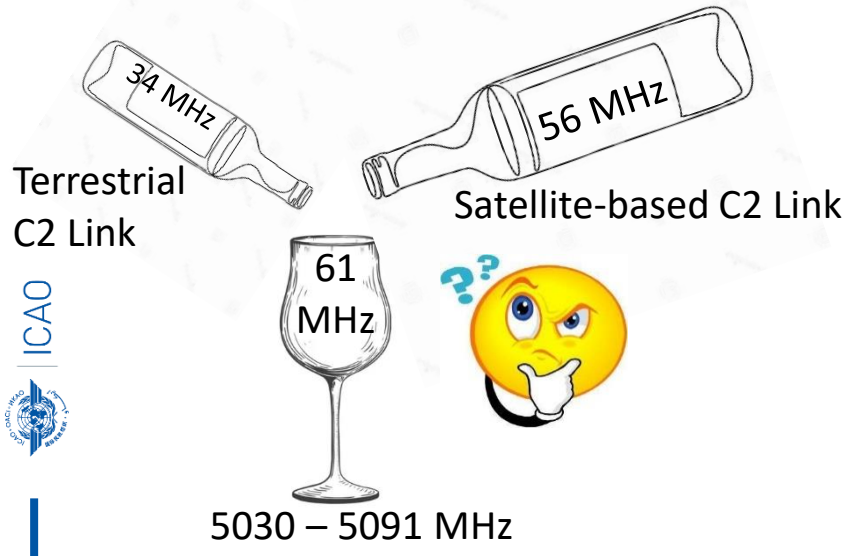
WHAT CAN WE DO WITH SUCH OUTCOME OF WRC-23 ?

Potential issues … or opportunities

Capacity of the 5030 – 5091 MHz to support terrestrial and satellite based C2 Link

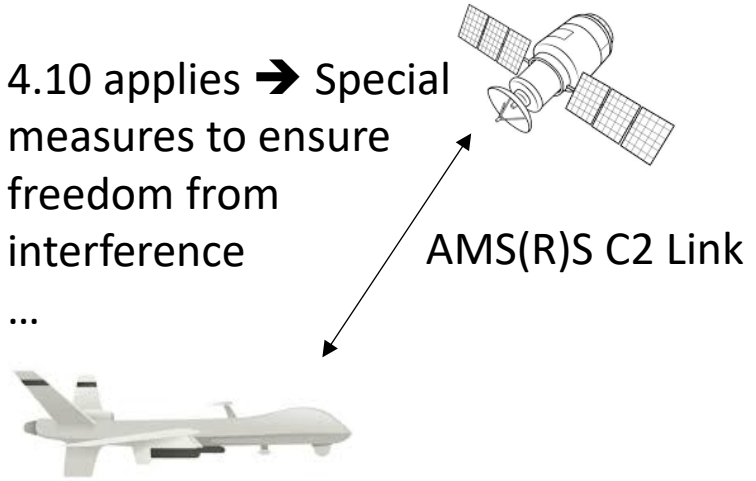
ITU-R Rep M.2171 concluded that the maximum amount of spectrum required for UAS are:

- 34 MHz for terrestrial C2 Link
- 56 MHz for satellite C2 Link



Safe operation of C2 Link

- Access to spectrum appropriate to aeronautical safety-of-life applications (No 4.10 applies)

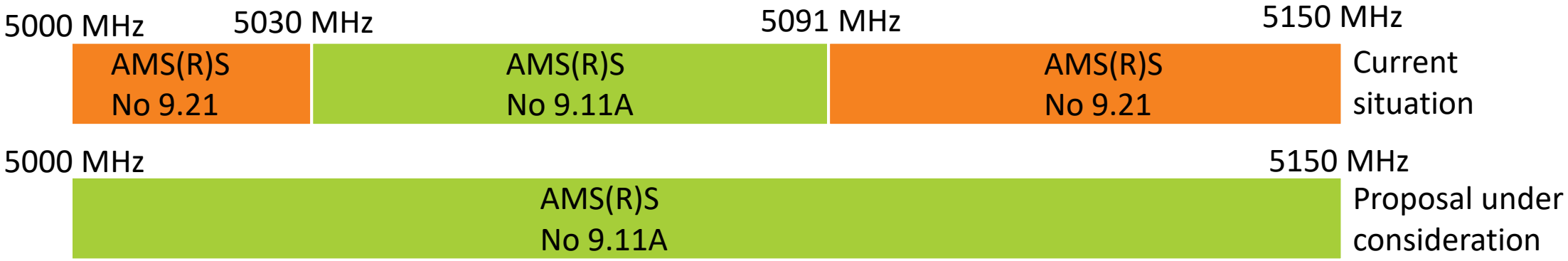


On-going work at ITU-R and regional telecommunications organizations

ITU-R responsible group for this topic is WP-5B, with support of WP-4C.
No contribution has been submitted to ITU-R for the moment.

CEPT is considering a proposition on this issue:

- Proposition consists in extending the coordination under No 9.11A to the bands 5000 – 5030 MHz and 5091 – 5150 MHz of the currently existing AMS(R)S allocation
- Currently, only the band 5030 – 5091 MHz is under No 9.11A. No 9.21 applies in the bands 5000 – 5030 MHz and 5091 – 5150 MHz
- Compared to No 9.21, coordination with 9.11A facilitates the use of safety services with appropriate protection on a global basis



ICAO Position

9.1

To support ITU-R studies, as a matter of urgency, on necessary measures to facilitate the operation of Earth stations on board unmanned aircraft used for control and non-payload communication operated in non-segregated airspace using satellite links by the aeronautical mobile satellite (route) service (AMS(R)S) in suitable frequency bands in order to decide on the appropriate course of action to be taken for WRC-31

Conclusion

The question of spectrum for satellite-based C2 Link is open since 2007.

WRC-27 represents an opportunity for civil aviation to ask access to spectrum with suitable protection and to facilitate the long term accomodation of aviation satellite-based data communication need.

ICAO should assess the need for any WRC-27 action by actively contributing to ITU-R studies on this topic.

Thank You

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