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ICAO WRC-27 Preparatory Workshop

Agenda item 1.11: MSS Space-to-Space Links

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Presentation Overview

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Background

- Agenda Item 1.11 focuses on technical and regulatory provisions for space-to-space links among non-GSO and GSO satellites in the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660 MHz, 1 670-1 675 MHz and 2 483.5-2 500 MHz allocated to the mobile-satellite service, per Resolution **249 (WRC-23)**. It aims to evaluate compatibility and sharing conditions for these links for use by small-sats served by host non-GSO and GSO constellations.
- No. 1.25 – the definition of the mobile-satellite services contemplates space-to-space links but does not provide guidance for their use.
- The impetus for this agenda item is partially driven by the numbers of small-sats operating under No. 4.4.

Potential Issues

- Lack of space-to-space direction indicators in MSS allocations.
- Potential interference with existing Earth-to-space and space-to-Earth services.
- Compatibility concerns with primary allocated services in the same and adjacent bands.
- Regulatory gaps in ensuring MSS space-to-space operations comply with ITU rules.

ICAO Position

- Ensure that safety-related aeronautical satellite communications for (AMS(R)S) remain protected.
- Prevent any additional regulatory or technical constraints on AMS(R)S in the frequency bands:
 - 1 545-1 555 MHz and 1 646.5-1 656.5 MHz;
 - 1 555-1 559 MHz and 1 656.5-1 660.5 MHz ; and
 - 1 610-1 626.5 MHz.
- Ensure aviation radionavigation satellite service (RNSS) receivers in the adjacent 1 559-1 610 MHz band remain free from harmful interference.

Conclusion

- Ongoing ITU-R studies are critical for establishing a framework and technical boundaries for MSS space-to-space links.
- Stakeholders should engage in compatibility studies to determine compatibility and to prevent harmful interference.
 - The upcoming meeting of WP 4C (October 2025) will consider the first series of study submissions.
- ICAO continues to monitor and contribute to discussions to safeguard aviation spectrum needs.

Thank You

