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INTERNATIONAL CIVIL AVIATION ORGANIZATION

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Agenda item 1.12

Low-data-rate non-GSO MSS

Damon C. Ladson

Technical Policy Advisor
HWG LLP

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IN THIS SESSION

- 01 Background
- 02 The four candidate frequency bands
- 03 Potential issues
- 04 ICAO position and conclusion

Agenda item 1.12 at a glance

MANDATE

Resolution 252 (WRC-23)

Possible new mobile-satellite service allocations for low-data-rate non-GSO systems in four frequency bands

RESPONSIBLE GROUP

ITU-R Working Party 4C

Sharing and compatibility studies, draft CPM text, and the regulatory methods

NEXT MILESTONE

WP 4C 7-16 October 2026

Geneva. Compatibility studies for all four frequency bands and the draft CPM text

AVIATION STAKE

AMS(R)S and AMT

1646.5-1656.5 MHz under No. 5.357A, and aeronautical mobile telemetry in 1435-1535 MHz under No. 5.343 in Region 2

WHERE THE AGENDA ITEM STANDS

WRC-23 examined this matter and made no allocation. The studies now before Working Party 4C have to demonstrate, band by band, compatibility with, and protection of, the incumbent services. The term low data rate itself is still without an agreed definition.

Background

- Agenda item 1.12 considers, on the results of studies, possible new allocations to the mobile-satellite service and possible regulatory actions in four frequency bands required for the future development of low-data-rate non-geostationary mobile-satellite systems, in accordance with Resolution 252 (WRC-23).
- WRC-23 considered the same matter. The conference reached no consensus and adopted no allocation, and instead adopted Resolution 252 (WRC-23) so that the studies could be completed before WRC-27.
- Low-data-rate systems send short messages, work in bursts and tolerate delay. The Radio Regulations contain no definition of low data rate, and Working Party 4C has not agreed one.
- One of the four, the frequency band 1645.5-1646.5 MHz, is limited today under No. 5.375 to distress, urgency and safety communications. An allocation for low-data-rate systems would change the character of that frequency band.

THE FREQUENCY BANDS NAMED IN RESOLUTION 252 (WRC-23)

1427-1432 MHz

1645.5-1646.5 MHz

1880-1920 MHz

2010-2025 MHz

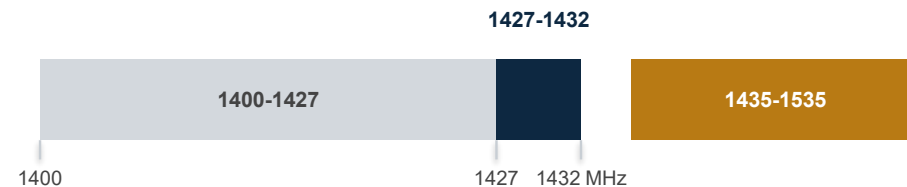
Each frequency band is under study for space-to-Earth use, and all except 1427-1432 MHz for Earth-to-space use as well. Source: Resolution 252 (WRC-23); No. 5.375; ICAO Position for WRC-27, Agenda item 1.12.

The four candidate frequency bands

Each frequency band with the services immediately next to it

■ Candidate frequency band ■ Aviation system ■ Other incumbent service

1427-1432 MHz (space-to-Earth)



Below it, 1400-1427 MHz, where No. 5.340 prohibits all emissions. Above it, aeronautical mobile telemetry, which has priority in 1435-1535 MHz in Region 2 under No. 5.343 and is used to certify commercial aircraft.

1645.5-1646.5 MHz (both directions)



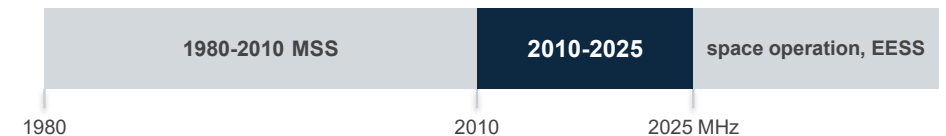
One megahertz wide, limited under No. 5.375 to distress, urgency and safety communications. It is the frequency band immediately below 1646.5-1656.5 MHz, where No. 5.357A applies.

1880-1920 MHz (both directions)



Occupied by terrestrial mobile networks and, in Region 1, by DECT. The incumbents here are terrestrial, so this frequency band raises no direct aviation question. It still has its own methods in the CPM text.

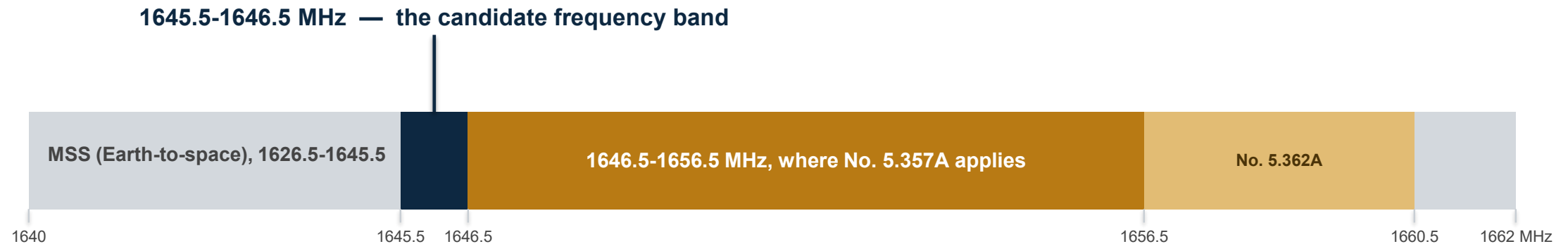
2010-2025 MHz (both directions)



Terrestrial mobile services, high-altitude platform stations and passive services all feature in the studies. Methodology proposals differ on how conservative the assumptions should be.

1645.5-1646.5 MHz and the frequency band above it

One megahertz, limited today to distress, urgency and safety communications in the GMDSS, immediately below the frequency band 1646.5-1656.5 MHz, where No. 5.357A applies



What the frequency band is today. Under No. 5.375, use of 1645.5-1646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress, urgency and safety communications in the GMDSS. An allocation for low-data-rate systems would change that.

What the adjacency requires. A low-data-rate system 1 MHz below 1646.5-1656.5 MHz, where No. 5.357A applies, has to demonstrate compatibility with, and protection of, the aeronautical mobile-satellite (R) service.

No. 5.375 limits use of 1645.5-1646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links to distress, urgency and safety communications (see Article 31). In applying Section II of Article 9 to the mobile-satellite service in 1646.5-1656.5 MHz, No. 5.357A gives priority to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service.

Potential issues

01

Adjacent-band compatibility. A low-data-rate system in 1645.5-1646.5 MHz would operate immediately below 1646.5-1656.5 MHz, where No. 5.357A applies. The studies have to demonstrate compatibility with, and protection of, the aeronautical mobile-satellite (R) service in that frequency band.

02

Aeronautical mobile telemetry. In Region 2, No. 5.343 gives aeronautical mobile telemetry priority in 1435-1535 MHz. The candidate frequency band 1427-1432 MHz is close by, and telemetry is used to certify commercial aircraft.

03

The definition of low data rate. Working Party 4C has no agreed definition, and the definition adopted determines the systems the studies have to consider.

04

Study assumptions. The assumptions used differ between contributions, and the results follow the assumptions.

05

Current and future aviation systems. Compatibility for 1645.5-1646.5 MHz has to be demonstrated against the aviation safety systems operating in the adjacent frequency band today and those planned for it.

Where the ITU-R record stands

Settled

- All four frequency bands remain under study.
- The draft CPM text is structured to include both allocation methods and no-change methods for each frequency band.
- Contributions accept that incumbent services in and adjacent to the four frequency bands must be protected.

Open

- No agreed definition of low data rate, and proposals range from a broad description to fixed numerical ceilings.
- The coexistence work on 1645.5-1646.5 MHz is still unresolved.
- Methodology proposals for 2010-2025 MHz differ on how conservative the assumptions should be.
- 1880-1920 MHz has terrestrial mobile and DECT coexistence questions that are not yet resolved.

Documents: WP 4C Chairman's Report and its Agenda item 1.12 annexes, and the contributions from administrations and operators submitted to WP 4C during 2026.

ICAO position

Source: ICAO Position for the ITU World Radiocommunication Conference 2027, Agenda item 1.12.

To ensure that the results of this agenda item do not reduce the protection of, or impose additional regulatory or technical constraints on, aeronautical mobile-satellite (R) communications provided under the mobile satellite service allocations in the frequency band 1646.5-1656.5 MHz where No. 5.357A applies.

FREQUENCY BANDS CONCERNED

1646.5-1656.5 MHz, No. 5.357A

Adjacent: 1645.5-1646.5 MHz

Region 2: 1435-1535 MHz, No. 5.343

What the position asks of the studies. The studies should demonstrate compatibility with, and protection of, the incumbent services in the frequency bands under study and in the adjacent frequency bands,

Conclusion

01

October 2026 is where the adjacent-band case has to be on the record. Resolution 252 (WRC-23) makes any allocation conditional on the results of studies. The studies for each frequency band come before Working Party 4C at its meeting of 7-16 October 2026.

02

The adjacent-band case is where aviation is affected. The candidate frequency band 1645.5-1646.5 MHz has no aeronautical allocation. It is 1 MHz below 1646.5-1656.5 MHz, where No. 5.357A applies. In Region 2, 1427-1432 MHz also merits attention, because aeronautical mobile telemetry has priority over other uses by the mobile service in 1435-1535 MHz under No. 5.343.

03

ICAO continues to take part in the work of Working Party 4C. The aviation interest is that the studies demonstrate compatibility with, and protection of, the aeronautical mobile-satellite (R) service in 1646.5-1656.5 MHz, where No. 5.357A applies, and in Region 2 the aeronautical mobile telemetry that has priority in 1435-1535 MHz under No. 5.343.

Thank you

Damon C. Ladson

Technical Policy Advisor, HWG LLP

Agenda item 1.12 | Lima, Peru, 31 August-1 September 2026