

**60th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS**

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AGENDA ITEM 4: AIR NAVIGATION

**PROTECTION OF AERONAUTICAL SPECTRUM – IMPACTS
TO AIRSPACE USERS**

(Presented by IATA)

SUMMARY

This paper discusses the need for continued management of the aeronautical spectrum to ensure flight safety and optimized efficiency. As technologies such as 5G and 6G emerge, they present challenges related to potential interference with critical aeronautical systems, such as radio altimeters.

PROTECTION OF AERONAUTICAL SPECTRUM – IMPACTS TO AIRSPACE USERS

1. INTRODUCTION

1.1 Aviation depends on access to an adequate and predictable radio spectrum. Spectrum is a very limited and valuable resource required for flight, airlines and air traffic management operations.

1.2 Global allocations of radio spectrum are agreed by the member States of the International Telecommunications Union (ITU) at World Radiocommunication Conferences (WRC), which meet every 3-4 years. IATA takes a leading role in defining and representing airline requirements at these meetings.

1.3 Aviation is countering the rising challenge of spectrum interference, and specifically the transmission of 5G signals adjacent to the aeronautical frequency bands. Uncontrolled out-of-band Radio Frequency (RF) and harmonics from telecommunications base stations can sometimes overlap into and across the aeronautical bands, and specifically those used for radio altimeters.

2. DISCUSSION

2.1 Telecommunications companies have invested significant amounts of money in spectrum and modern RF capabilities and are seeking greater access to frequencies adjacent to that part of the radio spectrum used for civil aviation.

2.2 In contrast, the aviation industry remains tied to legacy avionics and long-standing “safety of life” measures which have served the industry well for decades, but the future requires embracing adaptability and resilience to navigate emerging challenges.

2.3 New radio altimeter Minimum Operational Performance Standard (MOPS) for Low Range Radar Altimeters (RAD ALT) will not be published until 2027. Until then, and once corresponding Line Replaceable Units (LRUs) have widespread availability, to ensure safe coexistence with ongoing 5G deployments, it is essential that mitigation measures remain in place to preserve the performance and reliability of aircraft operations.

2.4 Commercial aviation operates across multiple regulatory jurisdictions, and aircraft routinely cross international borders. Unresolved spectrum issues relating to aeronautical safety services can’t be treated as a purely national issue while overlooking their impact on international flight operations.

2.5 Clear material is needed to identify the appropriate method for coordination of frequencies between the regions, including how the regional and inter-regional coordination will happen to prevent harmful interference to terrestrial VHF.

2.6 Frequency management aspects of Space Based-VHF must be carefully considered in ongoing validation assessments to ensure efficient and sustainable spectrum use.

2.7 Any consideration of International Mobile Telecommunications (IMT) or other services operating immediately below and/or above the radio altimeter band needs to be preceded by comprehensive studies incorporating real-world aviation use cases and worst-case RFI assessments.

2.8 Cross-sector collaboration is essential to avoid replicating the interference vulnerabilities experienced with lower ‘C-band’ allocations.

2.9 To ensure aviation remains safe, efficient, and future-ready, the industry must begin a thoughtful transition—complementing its trusted legacy systems with modern, adaptable, and resilient technologies.

2.10 IATA is developing a global strategy to engage on minimising impacts of telecommunications utilising bandwidth adjacent to aviation frequencies. A key message will underline the economic value of aviation to telecom regulators, authorities, and ministers.

2.11 Advocacy goals are to increase awareness with telecom regulators, authorities, and ministers regarding the safety impacts and risks associated with interference with aircraft avionics, and to ensure that there is an operationally viable transition plan for sunseting of any 5G mitigations.

2.12 Ultimately, the aviation industry needs to engage leaders in the telecommunications industry to define a common vision for future evolution of the telecommunications industry and its harmonious coexistence with future avionics.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

- a) note the content of this Discussion Paper; and
- b) discuss solutions for ensuring protection of the aeronautical spectrum band.

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