



## ANATEL Public Consultation Number 36

### Establishment of Attention zones around airport runways to safeguard aviation and public safety by protecting aviation safety systems, particularly aircraft radio altimeters operating at 4,200-4,400 MHz

The International Air Transport Association (IATA) - representing some 293 member airlines in 120 countries, many of which are operating internationally and domestically in Brazil - and The Boeing Company welcome the opportunity to provide joint comments in response to ANATEL's Public Consultation No. 36, regarding the establishment of Attention zones around airport runways to safeguard aviation and public safety by protecting aviation safety systems, particularly aircraft radio altimeters operating at 4,200-4,400 MHz, from harmful interference from IMT systems operating around 3,300-3,800 MHz as provided for in Resolution No. 742/2021.

The radio altimeter is one of the most critical mandatory components on an aircraft. It is the only sensor onboard providing a direct and precise measurement of the aircraft's clearance over terrain and/or other obstacles. Undetected failure or incorrect information been provided by this sensor can lead to catastrophic results. Erroneous radio altimeter information may affect multiple aircraft systems, including the Flight Control System, Autoland Systems, Terrain Awareness Warning Systems (TAWS), Wind Shear detection systems, Traffic Alert and Collision Avoidance Systems (TCAS), and negatively influence the pilot's situational awareness due to erroneous or unexpected behaviour.

This safety criticality of fully functioning and reliable radio altimeters and the need for governments to provide appropriate mitigations to prevent harmful interference to the altimeters are well recognized and emphasized by the International Civil Aviation Organization (ICAO) – the United Nation Specialized Agency responsible for aviation safety.<sup>1</sup>

In this regard, IATA and The Boeing Company appreciate and support ANATEL's proposal to establish mitigation measures such as attention zones around airport vicinities (approach and landing) and runways where 5G antenna down-tilt would be required. This establishment, when appropriately combined with suitable limits for the location of IMT base stations near the airports, maximum IMT transmission power and spurious emission into nearby frequency bands, can help mitigating the risk of harmful interference to incumbent aircraft radio altimeters.

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<sup>1</sup> In ICAO's State Letter SP 74/1-21/22 dated 25 March 2021, ICAO Secretary General notes "[t]he radio altimeter is a mandated critical aircraft safety system used to determine an aircraft's height above terrain. Its information is essential to enable several safety related flight operations and navigation functions on all commercial aircraft as well as a wide range of other civil aircraft. Such functions and systems include terrain awareness, aircraft collision avoidance, wind shear detection, flight controls, and functions to automatically land an aircraft. If not properly mitigated, harmful interference to the function of the radio altimeter during any phase of flight may pose a serious safety risk to passengers, crew and people on the ground." The letter also encourages "Administration to consider as a priority, public and aviation safety when deciding how to enable cellular broadband/5G services in radio frequency bands near the bands used by radio altimeters."



We believe this establishment effort is well aligned with ANATEL's and the Brazilian Government's continuing commitments to ITU Constitution and ITU Radio Regulations, which prioritizes safety-of-life services and emphasizes the need for governments to protect such services from any harmful interference.<sup>2</sup>

IATA and The Boeing Company also applaud ANATEL's on-going coordination with the Agência Nacional de Aviação Civil (ANAC). The close coordination and common understandings between responsible competent regulators and government agencies are crucial in preserving aviation safety and uninterrupted services to the Brazilian society and economy, while facilitating a successful, well-managed roll-out of new IMT services. Through this coordination with ANAC and in cooperation with other aviation stakeholders, ANATEL should be well-served with appropriate information necessary to determine the comprehensive mitigation strategy and to make decisions on future steps. IATA, its airline members, and the Boeing Company stand ready to support this important effort.

We greatly appreciate the opportunity to provide our input and are looking forward to continued cooperation with ANATEL.

  
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<sup>2</sup> Article 40 of the ITU Constitution states, "international telecommunication services must give absolute priority to all telecommunications concerning safety of life at sea, on land, in the air or in outer space, as well as to epidemiological telecommunications of exceptional urgency of the World Health Organization." Article 4.10 of the International Telecommunication Union (ITU) Radio Regulation also emphasizes states that Member States recognize that the safety aspects of radio navigation and other safety services require special measures to ensure their freedom from harmful interference; it is necessary therefore to take this factor into account in the assignment and use of frequencies.