



ICAO

CAPACITY & EFFICIENCY

Online Workshop for the NAM/CAR/SAM Regions on Risk Mitigation in Aviation due to the 5G Rollout

SAM States Actions/Measures

ICAO
SAM

Francisco Almeida MSc
Regional CNS Officer
falmeida@icao.int

On line, 08 November 2022



Argentina

The National Civil Aviation Administration (ANAC) contacted the National Communications Entity (ENACOM), informing it on the impact of this new technology in the field of aeronautical telecommunications and requested to keep the civil aviation authority informed regarding the future deployment of 5G nationwide.

To date, and according to information received from said authority, one of the frequency bands considered suitable for the implementation and deployment of mobile communications services that use state-of-the-art technologies in Argentina is 3500 MHz (3300 MHz – 3600 MHz). Initial consultations have also been carried out with telecommunications companies in order to gather information on the possible installations of these 5G systems in airports; informing them that it is necessary to evaluate the cases of potential interference to radio electric systems for aeronautical use, in particular, the radio altimeter.

Likewise, the Empresa Argentina de Navegación Aérea (EANA), the air navigation services provider, will be promptly required to notify ANAC on any reports received from Recommendation No. 9 of WARNING 001/DOA.



Bolivia

The Vice-Ministry of Telecommunications and the Telecommunications and Transport Regulation and Control Authority (ATI) notified the Directorate General of Civil Aeronautics (DGAC) that the 3.3 to 3.6 GHz band is planned to be used for the purpose of 5G, and there are no deployments in the 3.7 to 3.98 MHz band.

In this context, both authorities consider that there would be no impact on the 4.2 to 4.4 GHz band used by radio altimeters.



Brazil

The National Civil Aviation Agency (ANAC) of Brazil is aware of the risks related to the potential interference caused by the 5G system and is working together with the National Telecommunications Agency (ANATEL) to establish the restrictions deemed necessary for its implementation in Brazil, especially in the areas of attention related to the areas near certain aerodromes.

In addition, on 4 July 2022, ANATEL Act No. 9064/2022 was published in the Official State Gazette, which establishes limitations on the transmission power of the 5G signal in areas near certain aerodromes. It is important to point out that the subject is under constant study and evolution and both, ANAC and ANATEL, are making efforts to eventually reduce or eliminate the restrictions imposed.



Chile

The General Directorate of Civil Aeronautics (DGAC) of Chile has maintained constant monitoring of the initiatives to implement 5G cellular technology in Chile, specifically in matters related to the possibility of interference between the frequencies used by the equipment on board of an aircraft and such telephony. This work has been carried out with the participation of State organizations, mainly with the Undersecretary of Telecommunications (SUBTEL) of Chile, which is added to the evaluations carried out by the DGAC specialists in their different areas. Added to this is the interaction with international organizations that can provide relevant information on this matter.

In accordance with the provisions of SUBTEL, responsible in Chile for the assignment of frequencies, in the case of 5G, the frequencies assigned in Chile reach up to 3.7 GHz and the radio altimeters have frequencies from 4.2 GHz, with a large separation bandwidth.

In a working meeting with SUBTEL, it pointed out that the separation range makes it possible to establish that the possibility of interference is extremely low. In addition, in relation to the doubt regarding the assignment of frequencies in the range above the 3.8 GHz spectrum, SUBTEL indicates that it has no plans to assign said spectrum, since that range is assigned to satellite systems (cable operators and other systems).



Colombia

Aerocivil has carried out the necessary coordination with the Ministry of Communications, the National Spectrum Agency (ANE), those responsible for the Colombian radio spectrum and other organizations involved in this issue, to whom it issued the following recommendations:

1. If possible, only use the 3.4 to 3.8 GHz range of the C band for the 5G network.
2. Restrict the installation of antennas in areas close to airports, especially on the approach path.
3. Limit the transmission power and take into account an inclination of the antennas to limit the interference.

At this time, both the Ministry of Communications and ANE are evaluating these recommendations and several meetings have been held in which their viability has been stated. Work is being done to exactly define the restriction zone at international airports and the power limits according to their proximity to them. Once the conditions and definitive actions taken by Colombia are established, ICAO will be informed.



Ecuador

The Telecommunications Regulation and Control Agency (ARCOTEL) ruled out the possibility of interference to radio altimeters by 5G networks to be installed in areas near airports, due to the considerable radioelectric distance between the Medium Band assigned to cellular telecommunications 3.3 GHz to 3.6 GHz, and the operating band of the radio altimetry equipment 4.2 GHz to 4.4 GHz.

The security range between bands is 600 MHz. The Agency ratified this statement in the documented response issued to the General Directorate of Civil Aviation (DGAC) with Official Letter No. ARCOTEL-ARCOTEL2022-0103-OF, dated 17 March 17 2022.



Guyana

Currently, there is no 5G network system in operation within 3 NM of Guyana's international airports.

The Guyana Civil Aviation Authority (GCAA) has contacted the Guyana Telecommunications Agency to develop and implement a plan to maintain this status to the extent possible and to facilitate necessary regulations where appropriate. Guyana will keep the SAM Regional Office informed of these plans as they become available.



Panama

Consultations were made with the National Authority for Public Services, the entity responsible for assigning radio frequencies in Panama and, in accordance with the National Frequency Allocation Plan, the 4.2 - 4.4 GHz band is assigned to the Aeronautical Mobile and Aeronautical Radio Navigation Service, for the exclusive use of the Civil Aeronautical Authority, in accordance with ICAO recommendations.

In this sense, Panama is not affected by the 5G system, since the radio altimeter band is protected exclusively for aeronautical uses.



Paraguay

The regulatory body for the use of spectrum in Paraguay (CONATEL) has informed that there is still no deployment of IMT (International Mobile Telecommunications) systems, using 5G technology in any frequency band, so that, once the frequency bands for the deployment of new IMT system technologies have been defined, additional mitigation measures could be adopted, such as the establishment of operating areas with reduced powers, the use of antennas with orientation, inclination and radiation pattern that reduce the probability of occurrence of harmful interference, as well as other international provisions and recommendations in force.



Peru

Through a press release dated 13 April 2021, the Ministry of Transport and Communications authorized the implementation of 5G technology to three telecommunications operators (Claro, Entel and Movistar). In this press release, the Vice Minister of Communications indicated that it would be done under the NSA standard (over existing networks) in the previously assigned spectrum blocks in the 1.7 GHz, 2.1 GHz, 2.5 GHz and 3.5 GHz bands.

Contact was made with the main national air operators who are taking preventive measures on the possible impact of 5G technology on radio altimeters and others, in coordination with the manufacturers of their aircraft, communicating them to their organizations through Operational Circulars and Safety Alerts.

Meetings have been planned with the competent technical areas of the General Directorate of Civil Aeronautics (DGAC) and the General Directorate of Policies and Regulation in Communications and the General Directorate of Communications Programs and Projects to learn about the planning regarding the implementation of 5G technology in the Peruvian State, as well as the mitigation measures planned to avoid possible effects on aircraft radio altimeters.



Suriname

This matter was discussed in a meeting with the Telecommunications Authority of Suriname. They confirmed that the 5G network was introduced in Suriname earlier this year. However, they indicated that this was implemented in Paramaribo.

There are no 5G transmitters located within a 45 km radius of the international airport (Johan Adolf Pengel Airport, SMJP).

The Civil Aviation Authority has requested that, with plans to expand 5G services, it be consulted in order to mitigate potential impacts on air navigation services.



Uruguay

The Communications Services Regulatory Unit (URSEC) was informed on the safety risk for aviation, which entails assigning the use of the 5G band from 3.7 to 3.98 GHz.

It was considered to create a coordinated and joint work instance between the National Directorate of Civil Aviation and Aeronautical Infrastructure (DINACIA) and URSEC so that, if necessary, the authorization of transceiver installations in the 5G band from 3.7 to 3.98 GHz is possible, taking into account its geographical location, power and antenna radiation pattern, so that they do not constitute a factor affecting safe air operations using radio altimeters.

In addition, a publication was made of the location of the transceivers working in the 5G band from 3.7 to 3.98 GHz so that operators know the location of probable sources of interference to radio altimeters. Advisory circulars will be also issued, if necessary, regarding the possibility of interference in the radio altimeter that could affect the safe operation of aircraft, so that operators take the corresponding precautions.



Venezuela

After evaluating the National Table of Frequency Band Allocation published by the National Telecommunications Commission (CONATEL), it was determined that, at present, the frequency bands in which radio altimeters operate are not in use by 5G technologies.

There are any short-term projects for the installation of the aforementioned technology in the territory of Venezuela, hence aircraft operations in the State will not be affected.



| ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

