



ICAO

International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

NACC/WG/10 — WP/36

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Tenth North American, Central American and Caribbean Working Group Meeting (NACC/WG/10)

Tulum, Mexico, from 8 to 12 September 2025

Agenda Item 5: NACC/WG/10 Working Session

FANS 1/A: Implementation and Regulation in the Pacific Oceanic Airspace of Central America

(Presented by COCESNA)

EXECUTIVE SUMMARY

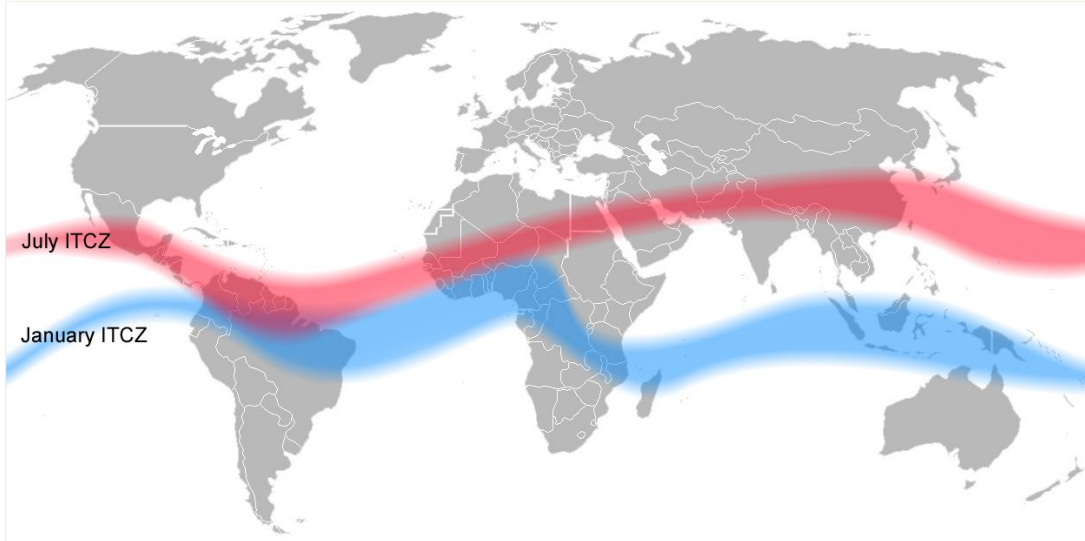
The FANS 1/A system offers improved efficiency, accuracy and safety, especially beneficial in the central American FIR's oceanic airspace, which is affected by adverse weather conditions. Given these circumstances, it is envisaged to implement a mandate for aircraft flying over the oceanic airspace of the Central American Pacific between flight levels F290 to F390, under the principle of "better equipped, better served", to guarantee the benefits of FANS 1/A technology and mitigate operational risks.

Action:	Actions suggested in item 5 of this working paper.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency• Economic Development of Air Transport• Environmental Protection
<i>References:</i>	<ul style="list-style-type: none">• RIS CA Safety and Capacity Management Program.

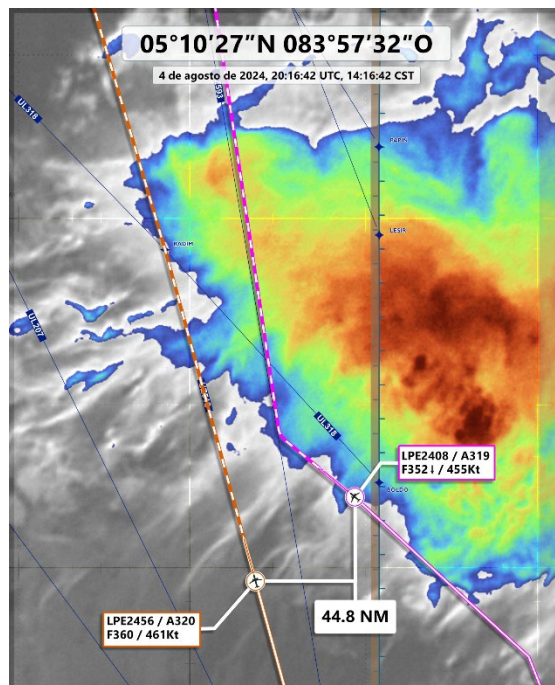
1. Introduction

1.1 The Central American Corporation for Air Navigation Services (COCESNA) announced through the AIC Series A 8/14 the start of tests with the ADS-C/CPDLC data link systems to provide communications to equipped aircraft. This process was carried out from July 22 to October 22, 2014. However, due to the renovation of the COCESNA control center systems in 2015 and 2016, the testing phase was temporarily suspended.

1.2 Implementation of the FANS 1/A systems resumed on January 11, 2017, with COCESNA communicating to users via AIC Series A 6/17 about testing over a 4-month period until April 30, 2017. Subsequently, the AIC Series A 33/17 was published on April 26, 2017 to continue operational testing from May 1 to August 31, 2017.



- a) Turbulence: Inter-Tropical Convergence Zone (ITCZ) is known for its intense convective activity, resulting in the formation of thunderstorms and storm clouds. Such conditions can cause significant atmospheric turbulence, affecting the comfort and safety of flights.
- b) Flight routes: The position of the ITCZ influences the flight routes adopted by airlines operating in this airspace. Pilots and operators must dynamically adjust flight paths to avoid areas of bad weather and ensure the safety of air operations.



1.3 After obtaining positive results in the different phases of tests, on July 13, 2017, COCESNA permanently implemented the ADS-C/CPDLC surveillance and communication services as an alternative for aircraft equipped with these systems. This decision was reflected in AIC Series A 94/17 and A4/19, establishing that the use of such systems was optional for users.

2. Benefits of FANS 1/A

2.1 The FANS 1/A (Future Air Navigation System) system offers several significant advantages for air operations in ocean airspace. Some of the advantages are:

- a) Improved pilot-controller communication
 - Replace HF communications, which are often noisy and unreliable, with clearer, more reliable and faster CPDLC digital messages.
 - Reduces the workload on voice communications.
 - Minimize errors of interpretation and repetition.
- b) Greater efficiency in air traffic management
 - Allows the reduction of longitudinal and lateral separation in ocean airspace.
 - Facilitates more timely flight level, route or speed changes, thanks to improved ATC responsiveness.
- c) Airspace capacity enhancement
 - Improved Communication (CPDLC) allows more air traffic safely in airspace where there is no radar or VHF coverage.
 - Optimization of flight routes and profiles is enabled.
- d) Reduction in fuel consumption and emissions
 - More efficient routes, timely level changes, and less need for "suboptimal levels" result in reduced fuel consumption.
 - This directly translates into reduced CO₂ emissions, which is key to sustainability goals.
- e) Better contingency management
 - In the event of loss of voice communication, CPDLC allows contact with the aircraft to be maintained, increasing safety.
 - ADS-C provides automated alerts for drifts, path losses, or emergencies, improving ATC's responsiveness.

2.2 The FANS 1/A system offers key advantages in terms of efficiency, accuracy, safety and flexibility in air operations, which can translate into benefits for both airlines and passengers in terms of costs, reduced flight times and increased reliability in operations.

3. Current Situation

3.1 The oceanic airspace of the FIR Central America is affected by the activation of the Intertropical Convergence Zone (ITCZ) in various ways due to the adverse weather conditions it generates in the regions near the equator. These include:

3.2 Due to the fact that this airspace is mostly oceanic and does not have VHF communications, together with the degradation of HF frequencies due to seasonality, route deviations caused by this meteorological phenomenon may pose a safety risk. In addition, in case of facing adverse

weather conditions, the authorization to change level and/or flight route becomes more difficult to obtain.

4. Regulation: Better Equipped Better Served

4.1 Considering that since July 13, 2017, COCESNA has permanently implemented CPDLC communication services as an alternative for aircraft equipped with this capacity, and that most of the aircraft transiting through the Central American FIR comply with the FANS 1/A avionics requirements, it is projected, in order to mitigate risks associated with the current situation and maximize the benefits of this technology, the implementation as of the first half of 2026 of a specific regulation for aircraft flying over the oceanic airspace of the Central American Pacific, between flight levels FL310 and FL390.

4.2 This regulation will be aligned with the operational concept "**better equipped, better served**", promoting the priority use of optimal levels for those aircraft that have the required technology.

5. Request for action

- a) The meeting is invited to take note of the information submitted
- b) ICAO is requested to support the establishment of a regulation for aircraft flying over the oceanic airspace of the Central American Pacific within the framework of the operational concept of "better equipped, better served".