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WORKING PAPER

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Agenda Item 5: Toward More Effective Implementation Support

FANS 1/A: IMPLEMENTATION AND REGULATION IN CENTRAL AMERICA'S PACIFIC OCEAN AIRSPACE

(Presented by Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua)

EXECUTIVE SUMMARY

The FANS 1/A system offers improved efficiency, precision and safety, especially beneficial in the oceanic airspace of the Central American IRF, which is affected by adverse weather conditions. Given these circumstances, it is contemplated to implement a mandate for aircraft overflying the Pacific Oceanic Airspace of Central America between flight levels F290 to F390, under the principle of “better equipped, better served”, to ensure the benefits of FANS 1/A technology and mitigate operational risks.

Action:	• The meeting is invited to take note of the information presented • Support the establishment of a regulation for aircraft that fly over the oceanic airspace of the Pacific of Central America framed in the operational concept of "better equipped, better served" • Promote the regulation/implementation of this functionality on a regional basis for the benefit of users.
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Security & Facilitation • Economic Development of Air Transport • Environmental Protection
References:	• ***

1. Introduction

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

1.2 Implementation of the FANS 1/A systems resumed on January 11, 2017, with COCESNA communicating to users through AIC Series A 6/17 about the trials for a period of 4 months until April 30, 2017. Subsequently, AIC Series A 33/17 was issued on April 26, 2017 to continue operational trials from May 1 through August 31, 2017.

1.3 After obtaining positive results in the various test phases, on July 13, 2017, COCESNA permanently implemented 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) offers several significant advantages for air operations. Some of the key advantages are:

a) Improved communications efficiency: FANS 1/A uses high frequency data links, such as CPDLC (Controller-Pilot Data Link Communications), to facilitate communication between pilots and air traffic controllers. This reduces congestion on traditional radio frequencies and allows clearer and more efficient communication.

b) Improved surveillance: FANS 1/A allows more accurate surveillance of aircraft through technologies such as ADS-C (Automatic Dependent Surveillance-Contract) that automatically transmit position and other aircraft data to air traffic controllers.

c) Increased safety: By improving navigation accuracy and aircraft surveillance, FANS 1/A contributes to increased safety by reducing the risk of airspace conflicts and improving the situational awareness of pilots and controllers.

d) Ability to operate on preferential routes and airways: Due to increased navigation and communication accuracy, aircraft equipped with FANS 1/A have more flexibility to operate on preferential routes and airways, which can result in significant time and fuel savings.

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 cost, reduced flight times and improved reliability of operations.

3. Current Situation

3.1 The oceanic airspace of the Central American IRF is affected by the activation of the intertropical convergence zone (ITCZ) in several ways due to the adverse weather conditions it generates in regions close to the equator. These include:

a) Turbulence: The 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 flight comfort and safety.

b) Flight paths: The position of the ITCZ influences the flight paths adopted by airlines operating in this airspace. Pilots and operators must dynamically adjust flight routes to avoid areas of bad weather and ensure safe air operations.

3.2 Since this airspace is mostly oceanic and has no VHF communications, together with the seasonal degradation of HF frequencies, route deviations caused by this meteorological phenomenon may represent a risk to operational safety. In addition, in case of adverse weather conditions, the authorization to change level and/or flight path becomes more difficult to obtain.

4. Regulation: *Better Equipped Better Served*

4.1 Whereas since July 13, 2017, COCESNA permanently implemented ADS-C/CPDLC surveillance and communication services as an alternative for aircraft equipped with these systems, that most of the aircraft flying through the Central American FIR complies with the FANS 1/A avionics requirements and with the purpose of mitigating the risk of the current situation and guaranteeing the benefits of this technology, the implementation of a regulation is contemplated for aircraft overflying the Pacific Oceanic airspace of Central America between flight levels F310 to F390. This regulation is framed within the operational concept of *"better equipped, better served".*

5. Request for Action

a) The meeting is invited to take note of the information presented.
b) Support the establishment of a regulation for aircraft that fly over the oceanic airspace of the Pacific of Central America framed in the operational concept of "better equipped, better served"
c) Promote the regulation/implementation of this functionality on a regional basis for the benefit of users.

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