



*International Civil Aviation Organization*

**The Third Meeting of the APANPIRG ATM Sub-Group  
(ATM /SG/3)**

Bangkok, Thailand, 03-07 August 2015

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**Agenda Item 4: ATM Systems (Modernization, Seamless ATM, CNS, ATFM)**

**ADS-B IN-TRAIL PROCEDURES**

(Presented by the United States of America)

**SUMMARY**

This paper presents the United States (U.S.) Federal Aviation Administration (FAA) activities associated with the Automatic Dependent Surveillance – Broadcast In-Trail Procedures (ADS-B ITP).

**1. INTRODUCTION**

1.1 The FAA Surveillance and Broadcast Services (SBS) Program has developed an airborne Automatic Dependent Surveillance - Broadcast (ADS-B) application to provide benefits to operators that choose to equip their aircraft with appropriate avionics, including "ADS-B In" (i.e. the ability to receive, process, and display ADS-B data from surrounding aircraft). The airborne ADS-B application that has been developed is the ADS-B In-Trail Procedure (ITP).

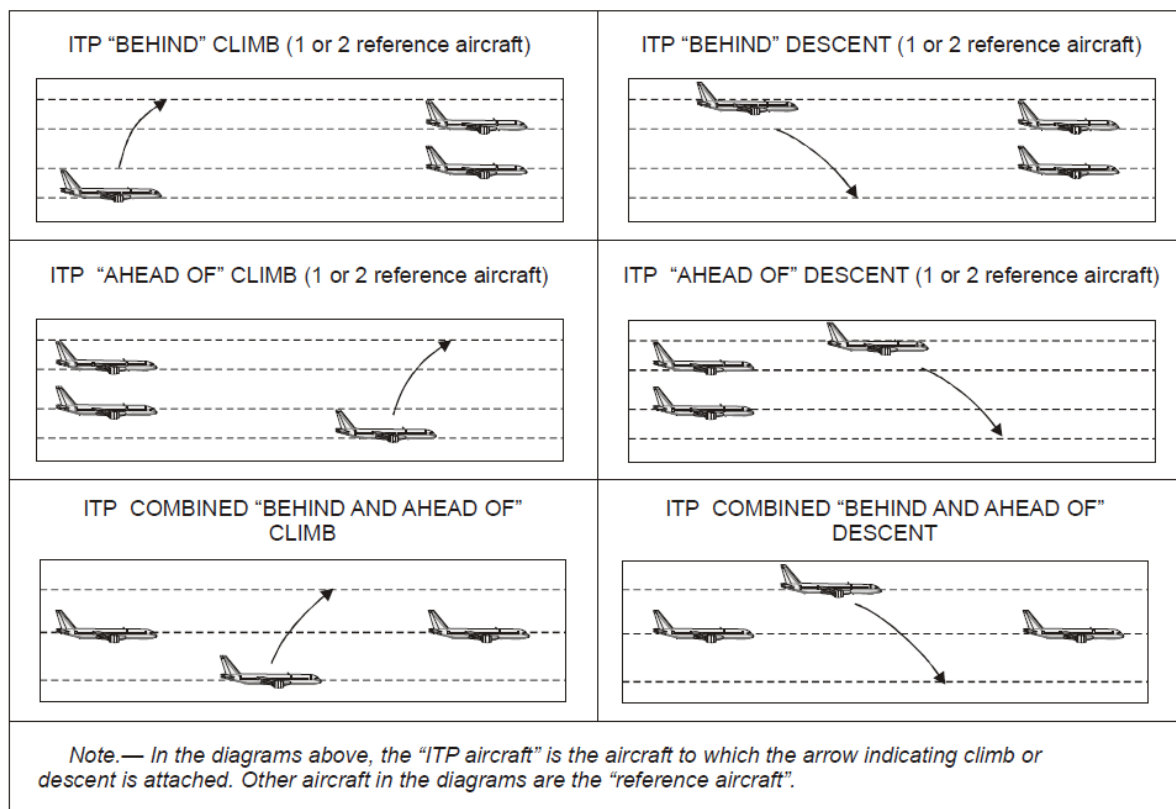
1.2 Aircraft operating in oceanic airspace are, at times, held at non-optimal flight levels due to conflicting traffic either at the desired flight level or at flight levels between the existing flight level and the optimal flight level. The use of flight level changes enabled by ADS-B ITP can supplement existing oceanic procedures, creating greater operational efficiency.

**2. DISCUSSION**

**Concept Overview**

2.1 For ADS-B ITP, the maneuvering (trailing or leading) aircraft obtains the flight identification (ID), altitude, position and ground speed transmitted by proximate ADS-B equipped non-maneuvering aircraft. Based on the ADS-B data from the non-maneuvering, or reference aircraft, a pilot can request clearance for an ITP altitude change to air traffic control (ATC). The controller verifies that the ITP and reference aircraft are same direction traffic and that the maximum closing Mach differential is less than or equal to a Mach number of 0.06. If the controller determines that the requesting aircraft will maintain standard separation minima with all aircraft other than the ITP reference aircraft, a clearance for the climb or descent may be issued. After re-validating that the ITP initiation criteria are still valid, the maneuvering aircraft may then vertically transition through the altitude of the non-maneuvering aircraft utilizing the 10 Nautical Mile ITP longitudinal separation standard (15 NM at initiation of the ITP).

2.2 While there is no limit on the total climb authorized in the ADS-B ITP flight level change, the other aircraft cannot be more than 2,000 feet above or below the ADS-B ITP aircraft's altitude. ADS-B ITP maneuvers may be conducted with up to two other aircraft.



2.3 The ADS-B ITP was published on November 13, 2014 in ICAO Procedures for Air Navigation Services and Air Traffic Management (PANS-ATM, Doc 4444), paragraph 5.4.2.7.

2.4 A manual trial has been ongoing in the South Pacific (SOPAC) airspace since August 15, 2011. In December 2011, the FAA authorized Oakland Center to expand the manual trial to include the entire Oakland Oceanic Flight Information Region (FIR).

2.5 New York, Oakland and Anchorage oceanic airspace will receive a software update to automate the procedure in January 2016. The projected initial operating capability (IOC) of the ADS-B ITP is June 2016.

### 3. CONCLUSION

3.1 The meeting is invited to note the information contained in this paper.

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