

April 2026



ADS-B In-Trail Procedures

US-India ACP Roundtable: ADS-B In Applications



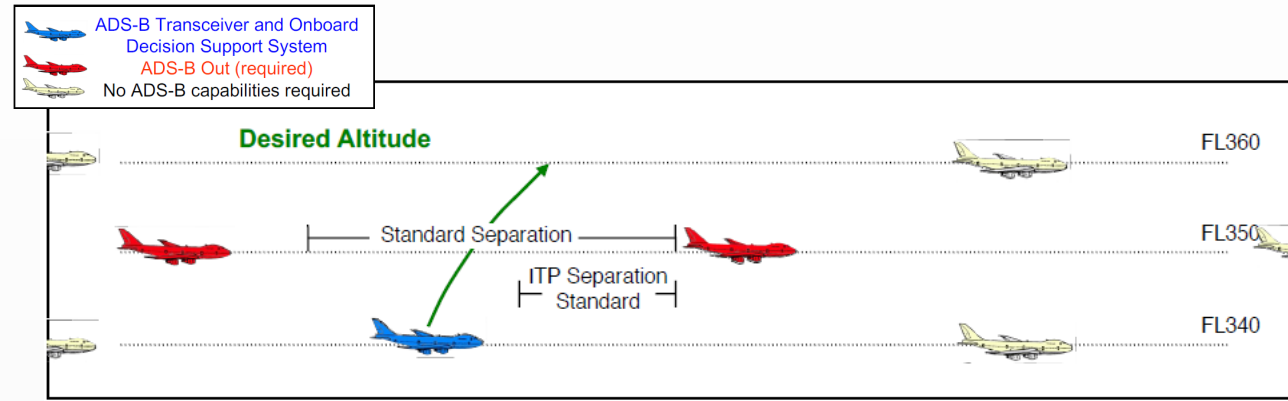
**Federal Aviation
Administration**

ADS-B In-Trail Procedures Overview

- **What:** ITP is an ADS-B In application that allows ITP-equipped aircraft to achieve desired flight level changes in procedural airspace more frequently.
- **Why:** ITP facilitates aircraft flying more often at optimal or less turbulent flight levels in oceanic airspace.
- **How:** ITP uses precise ADS-B location data to allow altitude changes that would otherwise be blocked by non-radar separation procedures.

ADS-B In ITPs enable improvements in flight efficiency and safety

Motivation For ADS-B In-Trail Procedures



Need

Altitude Changes required for better fuel economy and less turbulence

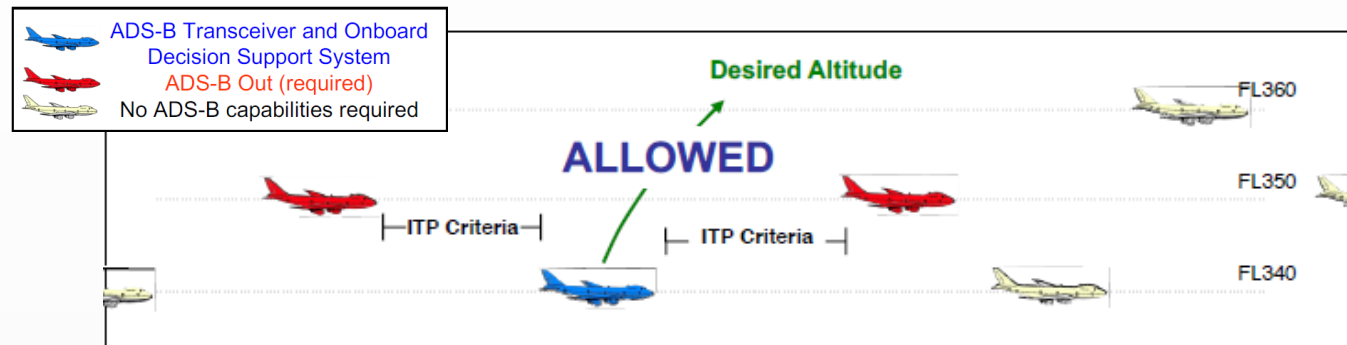
Challenge

Large separation minima limit altitude changes in clustered traffic

Opportunities

ADS-B ITP enable altitude changes otherwise blocked by conventional operations

Execution of ADS-B In-Trail Procedures



Pilot Responsibility

Step 1: Pilot verifies ITP criteria

- ITP distance is greater than 15 NM
- Ground speed difference < 20 kts if 15 NM - 20 NM from reference aircraft or <30 kts if greater than 20 NM

Step 2: Pilot requests ITP climb from ATC

Step 5: Pilot revalidates ITP criteria

Step 6: Executes maneuver

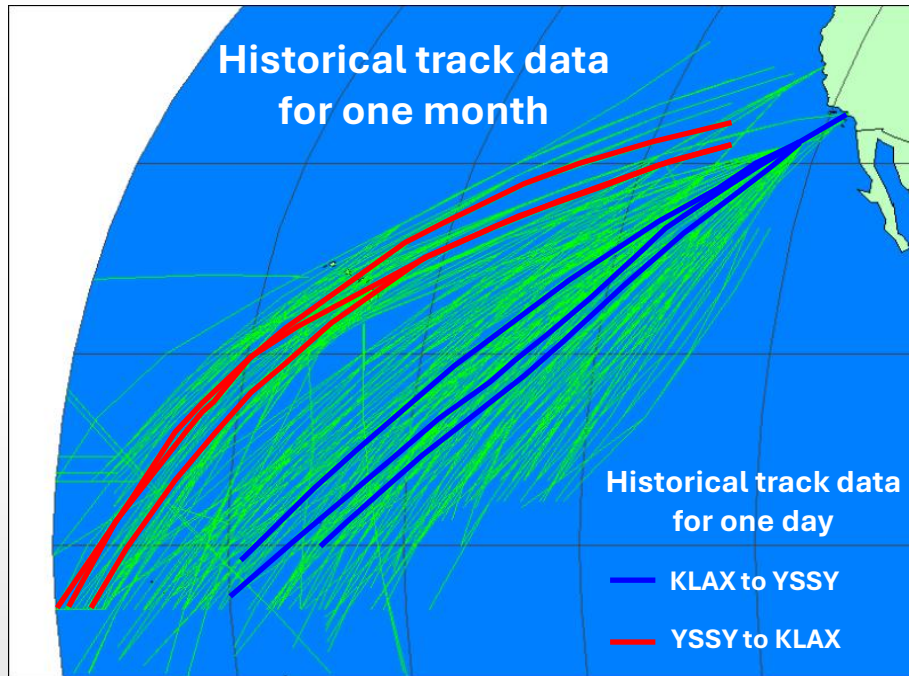
Controller Responsibility

Step 3: Controller verifies

- Altitude requested is available
- Closing Mach number difference between aircraft requesting ITP and reference aircraft < 0.06

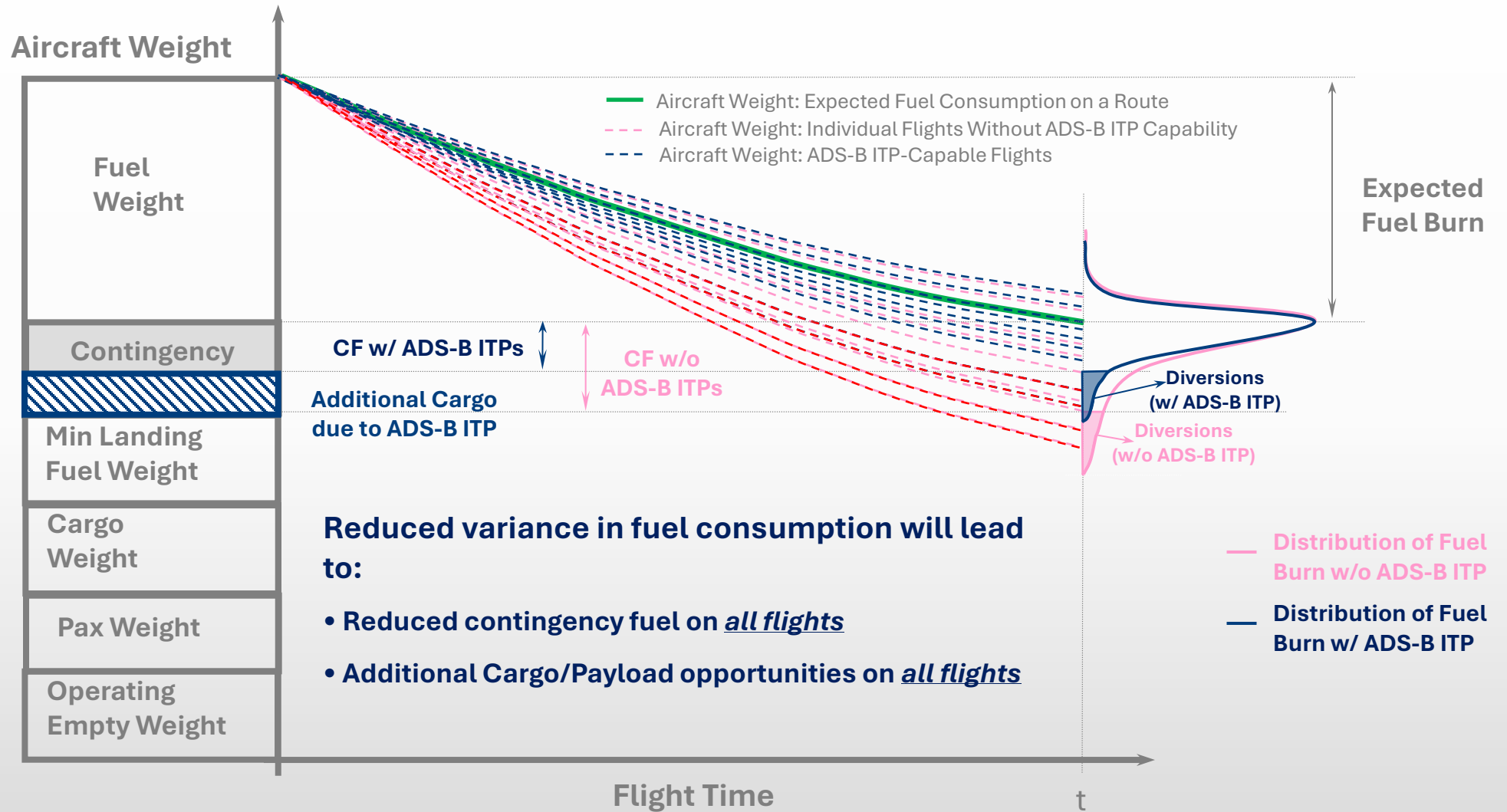
Step 4: Controller grants ITP climb

ADS-B ITP Along User Preferred Routes (UPRs)



- Traffic interactions along UPRs are infrequent, but very hard to predict
- Consequently, contingency fuel requirements are high on all flights
- Trade-off management
 - Contingency fuel reserve
 - Cargo/payload
 - Risk of fuel-related diversions

Flight Efficiency Improvement Potential



Additional Resources

ADS-B ITP Concept

RTCA DO-312 / EUROCAE ED-159, “*ADS-B ITP Safety, Performance and Interoperability Requirements (SPR) Documents*”

Avionics Surveillance Standard

RTCA DO-317A / EUROCAE ED-194, “*Minimum Operational Performance Standards for Aircraft Surveillance Applications System*”

Additional information about ADS-B ITPs

FAA Advisory Circular 90-114C, *Automatic Dependent Surveillance-Broadcast Operations*

ICAO Circular 325, *In-Trail Procedure (ITP) Using Automatic Dependent Surveillance - Broadcast (ADS-B)*

ICAO document 9994, *Manual on Airborne Surveillance Applications*

ICAO document 4444, Section 5.4.2.7, *Longitudinal Separation Minima Based on Distance Using ADS-B In-Trail Procedure (ITP)*



Thank You!

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