International Civil Aviation Organization

Sixth Meeting of the FANS I/A Interoperability Team (SAT/FIT/6)
(Recife, Brazil, 3 May 2011)

Agenda item 3: Review of ADS/CPDLC programs and implementation activities in SAT FIRs

ADS/CPDLC IMPLEMENTATION IN SAL OCEANIC FIR

(Presented by Cape Verde)

This paper presents information concerning the operational status of implementation of ADS/CPDLC in SAL FIR

1. Introduction

Communication through data link connection represents one of the basic pillars of the new CNS/ATM system and can support Controller Pilot Data Link Communication (CPDLC) and the transmission of Automatic Dependent Surveillance (ADS) data. Such applications will resolve certain deficiencies of existing systems, through the provision of communication and surveillance coverage at any flight altitude. It involves the exchange of digital data between systems on the ground and onboard the aircraft.

Controller Pilot Data Link Communication (CPDLC) is a data link application that provides a means of direct communication between pilot and controller. The CPDLC is one of the main tools to be used in future Air Traffic Management and has the potential to provide highly reliable data communication between aircraft and ATC Units.

Automatic Dependent Surveillance (ADS) is a surveillance application in which the aircraft provides automatically derived information from the onboard navigation system to ATC through data links.

2. Background

In accordance with CNS/ATM implementation plan for AFI region, a new system, SISTASAL, was installed in Sal in 2004 with ADS/CPDLC capabilities using FANS 1/A functions.

The SISTASAL was technically ready to operate but there were some operational constraints that delayed the implementation plan in Sal FIR.

Conclusion SAT FIT 4/1 urged SAT members “to implement the various conclusions related to the need for the implementation/operational application of ADS/CPDLC in the SAT area by not later than the end of 2010”.

Although December of 2010 was envisaged as a target date of implementation, some questions were still pending about the harmonization of procedures, AIP supplement, LOAs,

etc. Therefore, an AIC on implementation of FANS 1/A service in SAL FIR/UIR airspace only recently has been developed and will be published in June 2011.

With SISTASAL the ADS information received will be used as follows:

- Position monitoring
- Compulsory fix point position reporting avoidance
- Conformance monitoring
- Conflict detection
- Conflict prediction
- Clearance validation and
- Tracking

Some trails are being conducted in SAL Oceanic FIR with participating aircraft.

ADS/CPDLC it is expected to be operational by September 2011

3. Discussion

ADS-C will be used for operational purposes for monitoring deviations from the nominal flight path or from the terms of ATC clearances, compulsory fix point position reporting and detecting emergencies and inconsistencies between flight plan on board and flight plan on ground.

The use of ADS for separation purposes will require an extensive evaluation and agreements with adjacent FIRs.

The operator is responsible for correctly inserting items 10 and 18 of the ICAO flight plan according the FANS procedures.

The aircraft identification used for logon must be the same as the registration filed in the ATS flight plan.

5. Benefits

Expected improvements to be achieved once SISTASAL system becomes fully operational are:

- More direct flight paths;
- More optimal climb and descend profiles;
- Increased access to cruise altitudes close to optimal;
- Reduced air-traffic controllers and pilots workload;
- Increased level of safety.

6. Action by the meeting:

The meeting is invited to:

- Take note of the information provided above
- Encourage the airlines to use ADS-C and CPDLC