



International Civil Aviation Organization

The Second Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/2)

Bangkok, Thailand, 22– 25 May 2012

Agenda Item 4: Implementation of CNS/ATM Systems

ADS-B implementation Plan

(Presented by Airports Authority of India)

SUMMARY

This paper presents an over view of ADS-B implementation plan for India and the present status on ADS-B data sharing among BOBASIO region.

This paper relates to –

Strategic Objectives:

A: *Safety – Enhance global civil aviation safety*

C: *Environmental Protection and Sustainable Development of Air Transport – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

Global Plan Initiatives:

GPI-1 Flexible use of airspace

GPI-9 Situational awareness

GPI-10 Terminal area design and management

GPI-17 Data link applications

1. INTRODUCTION

India has an ambitious plan to enhance the surveillance through the use of ADS-B on major air routes and in terminal areas. ADS-B ground stations at these locations will be with redundant configuration and will be integrated with the ATC Automation system for the purpose of supplementing the coverage of the existing Radars. In next phase by the end of 2012, it is proposed to install seven more ADS-B Ground stations to cater to medium traffic density at the airports as well as to provide redundancy to the existing Radar systems. India is also planning to install ADS-B Ground system in the North-East & Northern part of India airports where terrain limitations are restricting Radar installation.

2. DISCUSSION

- 2.1 New ATC Automation Systems installed at Nagpur, Ahmadabad, Mangalore, Trivandrum, Guwahati and Varanasi have the capability of processing ADS-B input and presenting on the Air-situation display. ADS-B ground system at Amritsar, Varanasi, Ahmedabad, Nagpur, Cochin, Mangalore, Trivandrum and Guwahati will provide supplementary surveillance

coverage as standby to radar systems. ADS-B ground stations at other airports i.e. Jaipur, Lucknow, will facilitate in filling the surveillance gap due to non-availability of radars at these airports.

- 2.2 India has also successfully integrated Radars and ADS-B in Chennai FIR thus enabling seamless upper airspace with lower limit as FL 260. AAI is also having a similar plan to integrate Surveillance sensors from the stations within Delhi, Kolkata and Mumbai FIRs with the ATM automation system of the respective station.
- 2.3 ADS-B ground station at Port Blair will provide the surveillance coverage over Bay of Bengal up to the FIR boundary of Chennai/ Kuala Lumpur and Kolkata/ Yangon. The data to be derived from Port Blair ADS-B station would be fed into ATC Automation Systems at Chennai and Kolkata respectively. Analysis of upper air space around Port Blair for a distance of approximately 200 NM indicates that there are close to 200 aircraft over flying Port Blair in addition to arrivals and departures at Port Blair.
- 2.4 Implementing ADS-B at Port Blair will enable provision of efficient air traffic services on ATS routes P628, L510, N877, N 571, P761, P762 and L759 and aid the controllers in better conflict detection and separation management over crossing points. The existing separation of 15 minutes over crossing points can be reduced to ATS surveillance separation minima allowing aircraft on crossing tracks to maintain optimum levels. The provision of ADS-B in Port Blair will permit efficient resolution of En route traffic particularly in the critical areas East of Port Blair.
- 2.5 ADS-B Site survey has been completed for all 14 locations. The 14 ADS-B ground stations installations would be completed by May 2012 in the first phase and 7 more ADS-B ground stations by December 2012 in the second phase.
- 2.6 India is considering to issue mandate for carriage and use of ADS-B equipment in the entire Indian airspace and to operationalise ADS-B stations by December 2013 as per Asia/Pacific regional plan.
- 2.7 India has planned to depute two teams of ten each comprising of officials from DGCA, ATM and CNS to Melbourne and Canberra ATC Centres in Australia for a period of 4 days familiarisation programme from 2nd to 6th July 2012 to cover every aspect of ADS-B implementation. AAI would like to place its sincere thanks on record to Air Services Australia for having consented to the above programme.
- 2.8 India announced its willingness to share ADS-B data with neighbouring states to enhance the surveillance capability in the Bay of Bengal area in (SEA/BOB ADS-B WG/7) meeting. India's plan for sharing ADS-B data with neighbouring states is as under:
 - a) Malaysia for sharing data after Commissioning of New ATC Automation in 2012.
 - b) ADS-B Data from Maldives, Pakistan and Sri Lanka. However, ADS-B Plan of these Countries is not known.
 - c) ADS-B Data from Coco Island and Pathein (Myanmar).
 - d) Mutual sharing with Indonesia may be agreed if Indonesia needs Port Blair feed.

2.9 Male Stated in the recently concluded BOBASIO/02 meeting that

- a) One of the major requirements for implementing ADS-B is to provide some kind of monitoring during the radar shutdown period and provide some kind of surveillance capability and maintain target level of safety of air traffic services in Male' FIR.
- b) Expected to start with at least two ADS-B ground stations. one could be installed at centre (most probably Male' airport) and the other in the southern most islands of Maldives. The successful bidder will be responsible for integrating the ADS-B message output with existing SELEX ATM SYSTEM. SELEX SI is the current supplier for Data Fusion and Display.
- c) like to have an agreement with India and Sri Lanka for ADS-B data sharing

2.10 Neighbouring States were requested to take necessary action for the sharing of ADS-B data with India and operators were urged to equip their aircraft suitably in a time-bound manner to facilitate implementation of ADS-B in the Region.

2.11 Chairman SEA/BOB ADS-B WG/7 noted the strategic importance of the India ADS-B program and appreciated India's commitment towards ADS-B implementation and ADS-B data sharing in the region.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note ADS-B implementation plan for India;
- b) urge states to express their views and readiness on sharing of ADS-B data to neighboring ANSPs; and
- c) discuss any relevant matters as appropriate.

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ADS-B COVERAGE (PHASE-I & II) WITH IN INDIAN FIR

