



**Combined Fourth Meeting of Arabian Sea/Indian Ocean ATS Coordination Group  
ASIOACG/8 and Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE/4) –**

**Melbourne, Australia 25<sup>th</sup> November – 28<sup>th</sup> November 2013**

**Agenda Item 5: [ADS-B Implementation]**

**ADS-B Implementation and Data Sharing**

[(Presented by Airports Authority of India)]

**SUMMARY**

This paper provides an insight into the status of ADS-B implementation in India. The Indian ADS-B plan aims at providing redundancy where Radar coverage exists and also fill the surveillance gaps, where Radar coverage is not possible due to high terrain and remote areas. This paper also presents the possible exchange of ADS-B data between India and its neighbouring States.

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-9 Situational awareness

GPI-12 Functional integration of ground systems with airborne systems

GPI-16 Decision support systems and alerting systems

GPI-17 Data link applications

GPI-21 Navigation systems

GPI-22 Communication infrastructure

**1. INTRODUCTION**

- 1.1** In line with ICAO Global Plan Initiative and Aviation System Block Upgrades (ASBU), India has taken the initiative to provide seamless surveillance coverage by augmenting the existing radar coverage through the installation of fourteen ADS-B ground stations at strategic locations.
- 1.2** ADS-B Implementation was consistent with ICAO APAC Regional implementation plan in terms of augmentation of surveillance coverage and adherence to time-lines.

## 2. DISCUSSION

### 2.1 ADS-B Implementation

- 2.1.1** India is committed to seamless ATM and has committed its willingness for resource sharing at ICAO meetings. In the SITF/11 and BOBASIO/2 meetings as well as APANPIRG/22 and APANPIRG /23 India expressed its willingness to share ADS-B data with Myanmar, Maldives, Sri Lanka, Malaysia and Indonesia.
- 2.1.2** The site acceptance test (SAT) has been successfully carried out at all the fourteen stations, including Agartala, Amritsar, Jaipur, Lucknow, Varanasi, Ahmedabad, Nagpur, Guwahati, Calicut, Cochin, Coimbatore, Mangalore, Port Blair and Trivandrum.
- 2.1.3** In addition to the fourteen stations, India plans to install 7 ADS-B ground stations, by mid 2013, at Patna, Bhubaneswar, Jaisalmer, Srinagar, Trichy, Vijayawada and Dibrugarh1 (ADS Coverage diagram attached as **Appendix 1**). This plan is consistent with the Upper Airspace Harmonization plan of Kolkata and Delhi FIRs, and to supplement surveillance coverage in the Kolkata and Chennai FIRs.
- 2.1.4** The ATS Automations systems at major ATC Centers, viz., the 12 ACCs are capable of processing ADS-B data and providing the information on Situation Data Displays either as standalone ADS-B tracks or reinforced position symbols (fused with radar tracks).
- 2.1.5** The Indian ANSP is monitoring the airframes (ADS-B tracks) on stand-alone monitors as well as Situation Data Displays and studying the integrity of the ADS-B information and evaluating the use of ADS-B in both Non-Radar and Radar environment for Air Traffic Control purposes.
- 2.1.6** The process to obtain regulatory approval has commenced and Stake holder meetings have been conducted in Dec, 2012 and Jan, 2013 to detail the business case and to spread the awareness about the mutual benefits that will accrue to both the ANSP and the Airline Operators by their participation. Also AAI is organizing an ADS-B Seminar on 25<sup>th</sup> October 2013 immediately after BOBASIO meeting with the support of IATA through their member airlines for the benefit of all stake holders to facilitate early implementation of ADS-B in India.

### 2.2 ADS-B Data sharing with neighbouring States by India

- 2.2.1** The successful ADS-B data sharing programs between some of the APAC States and the development of a template for a “Letter of agreement” between the sharing nations has inspired India to make progress in similar lines with its neighbouring States.
- 2.2.2** India and Myanmar intend to share ADS-B data and VHF communications to significantly improve efficiency and safety over a number of airways over the Bay of Bengal, leading to seamless ATM operations using ADS-B as a key component of the ICAO Aviation System Block Upgrades (ASBU).

- 2.2.3** A CANSO ADS-B Focus Group comprising representatives from AAI, DCA Myanmar, CAAS, IATA and CANSO met in Singapore on 3-4 July 12, where AAI and DCA Myanmar agreed in-principle to share data from the following sites: India: Agartala and Port Blair (ADS-B stations commissioned in Oct 2012) Myanmar: Sittwe and Coco Island (ADS-B stations likely to be commissioned by 1 H2013). Under this ADS-B data sharing arrangement, India and Myanmar would have seamless surveillance coverage for many of the RNP-10 routes in the northern BOB region thus significantly improving safety, capacity and efficiency of flights in the airspace concerned.
- 2.2.4** The Indian ANSP has already commenced the process of acquiring approval from the Government and Regulatory agencies for ADS-B data sharing with neighbours. States such as Australia, Singapore and Indonesia which have already entered into a contract on ADS-B data sharing have been providing inputs in several meetings in the recent past based on their experience.

### **3. ACTUION BY MEETING**

- 3.1** The meeting is invited to:
- a) note the information on ADS-B implementation status in India;
  - b) take note of India's readiness and the progress made to share ADS-B data with its neighbouring States, especially with Myanmar;
  - c) discuss any relevant matters as appropriate.)

-----