



ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

**INDIA'S PLAN AND PROGRESS ON IMPLEMENTATION OF ADS-B SURVEILLANCE
DATA SHARING WITH NEIGHBORING STATES FOR SEAMLESS ATM**

(Presented by India)

EXECUTIVE SUMMARY

This paper presents information regarding automatic dependent surveillance — broadcast (ADS-B) surveillance data sharing with neighboring states and its potential benefits for seamless air traffic management (ATM).

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objectives: Air Navigation Capacity and Efficiency.
<i>Financial implications:</i>	NIL
<i>References:</i>	Asia Pacific Seamless ATM Plan

1. INTRODUCTION

1.1 In keeping with ICAO Global Plan initiatives, India is shifting from ground based navigation systems to global navigation satellite system (GNSS) based systems. The implementation of ADS-B is one of the major initiatives launched by India in this direction.

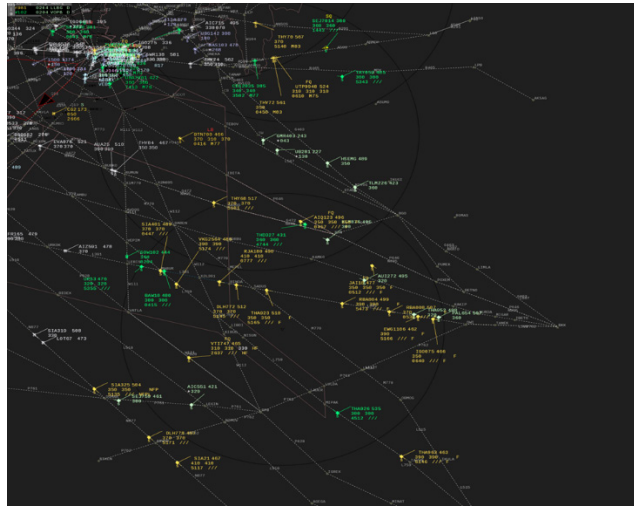
1.2 India has installed 31 ADS-B sensors out of which 29 are installed in the mainland and one each in Port Blair Island and Campbell Bay Island in Bay of Bengal Sea. ADS-B ground receivers have been installed for enroute surveillance services and for approach control surveillance services at major and minor city airports.

2. ADS-B DATA SHARING

2.1 ADS-B data sharing between Myanmar and India has been commissioned in 2018. Letter of Agreement (LOA) on ADS-B data sharing was signed between Department of Civil Aviation Myanmar and Airports Authority of India on 5 May 2015. As per the agreement, data from Agartala and Port Blair

ADS-B station is being shared with Yangon and in turn Myanmar is sharing Sittwe and Coco Islands ADS-B data with India.

2.2 Data Integration: The media for data transfer between Yangon and India is through 2 Mbps undersea cable. The media for data transfer from the ADS-B ground stations to routers are through MPLS lines or DSCN. There are various interfaces to integrate the data in to the automation system. Initially the data was integrated in the back up automation system at Kolkata for test purposes.



2.3 The coordination between Kolkata and Yangon were mainly done through a social media application which is still active. Later Kolkata integrated the ADS-B feed from Sittwe and Coco Islands in its main automation system. ADS-B equipped aircraft are tracked from as far as 250 nm west of Bangkok. The whole flight information region (FIR) boundary has come under RADAR and ADS-B coverage.

2.4 Benefits

2.4.1 Immediate Benefits

- a) Managing large scale deviations during monsoon which otherwise create unwanted traffic situations.
- b) The LHDs have come down as the situational awareness of the controllers improved significantly. As the controllers can see the aircraft at least 20 minutes before FIR boundary, the time spent at wrong level will be zero, thus bringing down the risk factor.

2.4.2 Future benefits

- a) Depending on the quality of data and its availability, integrity and continuity in future both countries can agree upon reduced LOA separations at conflict points.
- b) Both countries can consider reduced horizontal separation.
- c) Both countries can consider area navigation (RNAV) 5 or RNAV 2 routes or even city pair routes.

2.5 India has installed an ADS-B at Campbell Bay in the South Andaman Sea for data sharing purpose. LOA has been prepared and shared with Indonesia and Malaysia for scrutiny. Indonesia had scrutinized the draft LOA and replied to AAI with few changes for further action. The feedback from Malaysia is awaited. ADS-B data from ADS-B stations at Langkawi in Malaysia and Aceh in Indonesia are planned to be shared with India. ADS-B data sharing with Malaysia and Indonesia will help to reduce the LHDs and LLDs in the FIR boundary.

2.6 India is keen to start ADS-B data sharing with Sri Lanka, Maldives and Bangladesh as and when they are ready. India can share the following ADS-Bs:

- a) With Sri Lanka- Trivandrum and Trichy
- b) With Maldives- Trivandrum and Agatti
- c) With Bangladesh- Kolkata, Guwahati and Agartala

2.7 Since India is committed to the timely implementation of Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) and Directors General of Civil Aviation (DGCA) Conference conclusions, an AIP Supplement was promulgated for mandating the carriage of ADS-B OUT equipage on all aircraft to fly between flight level (FL) 290 to FL 460 in Indian continental airspace. This will be effective from 1 January 2020.

3. CONCLUSION

3.1 The meeting is invited to: note the information contained in this paper; and appreciate the benefits of data sharing between States.

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