



International Civil Aviation Organization

ICAO

Fourth Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG/4)

Video Teleconference, 6 – 8 December 2022

Agenda Item 2: Updates from States and IATA on ADS-C/CPDLC and PBCS Implementation Status

CNS/ATM INFRASTRUCTURE IN CHENNAI FIR FOR BOB TRAFFIC MANAGEMENT

(Presented by: **Airports Authority of India**)

SUMMARY

This paper presents the current status of the CNS/ATM infrastructure build-up to prepare for accommodating the anticipated growth in air-traffic in Chennai and adjoining FIRs of APAC region.

India has utilized the period of COVID-19 pandemic in building up the capabilities of its CNS/ATM infrastructure particularly for the Oceanic airspace through integration of Space-Based ADS-B sensor data for improved Surveillance and Performance Based Communication and Surveillance (PBCS) functionality to meet PBCS (RSP180/RCP240) into its ATM Automation System.

Efforts are ON to develop concept of operations in the new environment and engage with various stakeholders to try and realise the benefits of the improved capability of these systems for a seamless air traffic flow over BOB (to and from the adjoining FIRs) of other member states in APAC region, towards improved Capacity and Efficiency of operations.

1. INTRODUCTION

1.1 Airports Authority of India is the ANSP for Indian Airspace to provide CNS / ATM facilities for the Air Traffic in its jurisdiction. It has four FIRs namely Delhi, Mumbai, Chennai and Kolkata. Upper Airspace Harmonisation has been implemented in Chennai & Kolkata FIRs and in the process of implementation in Delhi & Mumbai FIRs. Chennai FIR has a large oceanic Airspace to its East over the Bay of Bengal. This paper provides an insight to the existing facilities to support the Air-traffic management in the oceanic region of Bay of Bengal in terms of Communication & Surveillance facilities and the futuristic plan to meet the demands of the growing air traffic for an enhanced capacity and improved efficiency.

2. DISCUSSION

CNS/ATM Infrastructure

2.1 **GROUND BASED ADS-B:** Ground based ADS-B receivers have been installed at Port Blair in the Andaman & Nicobar Islands and Campbell Bay islands. The data from these Port Blair and Campbell Bay sensors are integrated into the ATM Automation units at Chennai and from Port Blair sensor at Kolkata ACCs.

2.2 **Space-Based ADS-B (S-ADSB):** Space-Based ADSB data hired from AIREON are

integrated into the Automation Systems at Chennai, Mumbai and Kolkata ACCs, which has opened up new surveillance environment in entire Indian Airspace. This has greatly addressed the surveillance gap over the oceanic regions of Indian airspace wherein Non-surveillance area has come down almost to zero.

2.3 Space-Based ADS B data integration has resulted in enhanced situational awareness of the air traffic in the oceanic region and generation of more accurate estimates and ABI for AIDC between ATSU's. With the weather information from Indian Meteorological Department (IMD) as GRIB data along with S-ADSB reports, the extrapolation becomes simpler and more accurate, which is expected to significantly reduce incidents of LHDs over the BoB airspace. This would comply with RSP180 requirement as well.

2.4 **PBCS (RSP 180 / RCP 240):** Chennai FIR has been working with FANS 1/A for both ADS-C and CPDLC facilities for quite some time now. Recently, Chennai Automation system has been upgraded to comply with PBCS (RSP 180/RCP 240). AAI is considering implementation of PBCS designated routes for reduced separation standards over the oceanic region to enhance air traffic capacity in the region. However, this would require collaboration among various stakeholders including the member states of adjoining FIRs so that seamless traffic flow can be realised. In this regard, AAI is considering to organize a meeting of all stakeholders to discuss various possibilities and implement a collaborative air traffic management in this region for enhanced capacity of air traffic flow by leveraging the infrastructure augmentation in India.

2.5 **VHF RCAG SYSTEM:** Offset carrier VHF system has been installed at (Chennai-Vizag-Port Blair) and (Kolkata-Vizag-Port Blair) sectors to enhance the VHF coverage over Bay of Bengal. At Port-Blair an independent offset carrier system with one Omni directional Antenna and two Directive Antenna beaming towards two important Air-routes is installed to enhance the VHF coverage.

2.6 **AIDC:** Air-traffic Services Inter Facility Data Communication has already been established with Chennai- Kuala Lumpur & Chennai- Maldives in this oceanic region. Chennai -Yangon and Chennai – Colombo are in various stages of testing due to compatibility issues.

2.7 **HF Radio:** Recently HF receivers have been networked to eliminate unserviceability due to the fading effect by achieving greater space and frequency diversity.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

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