INSPIRE INDIAN OCEAN STRATEGIC PARTNERSHIP TO REDUCE EMISSIONS	**ARABIAN SEA INDIAN OCEAN ATS COORDINATION GROUP AND INDIAN OCEAN STRATEGIC PARTNERSHIP TO REDUCE EMISSIONS ANNUAL MEETING**

Combined ASIOACG/10 and INSPIRE/6 Meeting, 2015

Madagascar, 17th to 19th November 2015

Agenda Item 3: [ATM issues - including: Reduced Horizontal Separation; Air Traffic Flow Management]

India's C-ATFM Project Implementation Progress

(Presented by Airports Authority of India)

SUMMARY

This paper presents a brief overview of the progress of the implementation of Central Air Traffic Flow Management (C-ATFM) System in India. The C-ATFM system will facilitate strategic air traffic flow management to effectively balance demand and capacity in the tactical time frame. It will also enable the ANSP to respond to contingencies caused by severe weather in a systematic manner. India is implementing a comprehensive ATFM system in phases which will provide a platform to participate in the regional ATFM effort.

1.   **INTRODUCTION**

1.1.   India has witnessed a sustained growth of air traffic during the last decade and this trend is likely to continue in the coming decade. Aggressive demand for access to major airports is expected to continue in the near future. This increase in demand requires a corresponding effort to augment and utilize the available system capacity efficiently.

1.2.   The augmentation of capacity both at airports and in airspace will require long term investments and efforts. Airports Authority of India (AAI) as both the largest airport operator in the country and as well as Air Navigation Service Provider (ANSP) has made significant efforts to augment ground and airspace capacity over the last fifteen years. However, the pace of increasing demand is likely to cause demand and capacity imbalance at certain airports and airspace sectors in the coming days.

1.3.   Therefore optimum and efficient utilization of available capacity is accorded the top priority by AAI.

1.4.   Globally, the ANSPs have developed a network wide solution for effective Air management of Demand and Capacity Balancing (DCB) across the national airspace system.   The system wide view provides proven Air Traffic Flow Management (ATFM) tools that will enable all the stakeholders to collaboratively deal with the increased complexity of the nation's air routes.

1.5.   India has accordingly decided to implement Central ATFM (C-ATFM) system covering entire Indian airspace which will integrate various subsystems for collaborative decision making and to ensure regulated flow of traffic to minimize delays and congestion.

1.6.   While ATFM is proven to enhance safety and provide measurable efficiency gains, it is also viewed as a transformational concept that introduces new levels of collaborative decision making and offers potential for harmonizing seamless airspace operations.

1.7.   Effective implementation of ATFM requires the active participation of all affected stakeholders. ATFM should be performed as a collaborative decision making process, where airports, ANSPs and airspace users work together to improve the performance of the network.

2.   **DISCUSSION**

2.1.   Indian C-ATFM (Central –ATFM) Concept

2.1.1.   The C-ATFM System would provide ANSP and Aircraft Operators with a decision support capability to safely, efficiently, and predictably manage demand when it exceeds capacity at constrained resources such as airports, airspace sectors etc., within the Indian airspace. Capacity/Demand imbalances can be identified and addressed in the Strategic, Pre-Tactical, and Tactical phases of ATFM. The C-ATFM system will be progressively implemented in three stages as follows.

2.1.2.   **Phase 1**: The C-ATFM baseline system would be in place by end of 2015. This would provide AAI and Aircraft Operator users with significant capabilities to perform strategic, pre-tactical, and tactical ATFM and CDM. The C-ATFM system will consist of a Central Command and Control Center (CCC) at Delhi networked with Flow Management Positions (FMP) at six major airports. The six airports are Delhi, Mumbai, Bengaluru, Chennai, Kolkata and Hyderabad. The CCC will be the nodal center for ATFM implementation in India and will be provided with strategic and tactical flight plan data, weather data, airport and airspace capacity data and other relevant environmental data necessary for monitoring demand and capacity across Indian airspace. The CCC will in turn communicate with FMP for ATFM measures implementation as and when necessary.

2.1.3.   **Phase 2:** Nationwide ATFM system covering all major airports throughout India will be made gradually operational by end of 2016. The future functionality of the ATFM system would depend on needs of Indian airspace users and

advances in ATFM technology and system. The evolution of the system will complement the basic ATFM system from Phase 1.

2.1.4.   **Phase 3**: The Indian C-ATFM system will have capabilities for interfaces for seamless data exchange with other ATFM systems in the sub-region and region, thus supporting evolution of an international ATFM system. The specific functionality will be developed in collaboration with the States/ANSPs coming together for international ATFM integration.

2.2.   **Progress of C-ATFM Project Implementation**

2.2.1.   The C-ATFM System project began in July 2014. The system provider and AAI collaborated to develop the system design to be implemented in phases.

2.2.2.   AAI has also undertaken Safety Assessment process simultaneously to assess the Safety impact of the ATFM implementation. The Safety Management process will be followed throughout the implementation process and operational procedures will be refined to minimise the impact on safety.

2.2.3.   AAI has conducted a series of interactive meetings, seminars and briefing sessions with stakeholders across the country to familiarize the participants of the concept of C-ATFM.

2.2.4.   The C-ATFM System installation has been completed at Delhi Command and Control Centre (CCC). Installation of FMPs at Delhi ACC, Mumbai ACC, Bengaluru ACC, Chennai ACC, Hyderabad ACC and Kolkata ACC is also progressing simultaneously.

2.2.5.   The ATS Automation systems data from Chennai, Delhi and Kolkata ATS Automation systems has been integrated with the ATFM system. Other ATS Automation systems will be integrated into the ATFM systems over a period of time.

2.2.6.   Training of AAI officers, who will operate as ATFM Managers, are being conducted. Representatives from Airlines, Airport Operators, and Military have been trained in the use of ATFM Platform during October 2015.

2.2.7.   The Operational Trails for Phase I of the C-ATFM system are expected to begin in January 2016.

2.2.8.   India hosted the first Asia Pacific workshop on "Cross Border ATFM "jointly organized by ICAO and IATA in September 2015. The objective was to introduce the participants the concept of cross border ATFM and how such a system will help during contingencies caused by weather, airspace closures etc. The workshop was attended by representatives from 10 countries.

3.   **ACTION BY THE MEETING**

3.1. The meeting is invited to note the information contained in this paper.

3.2. ASIOACG should start discussing cross border ATFM.