



International Civil Aviation Organization

**The Sixth Meeting of the APANPIRG ATM Sub-Group
(ATM/SG/6)**

Hong Kong, China, 30 July – 03 August 2018

Agenda Item 4: ATM Systems (Modernisation, Seamless ATM, CNS, ATFM)

IMPLEMENTATION OF A-CDM AT CHENNAI AIRPORT

(Presented by India)

SUMMARY

This paper presents the process of implementation of Airport Collaborative Decision Making at Chennai airport describing the various stages and tasks involved.

1. INTRODUCTION

1.1 Airports Authority of India, in accordance with ICAO ASBU Blocks B0/B1, undertook in 2013 the task of indigenous development of Airport Collaborative Decision Making (A-CDM) system to be implemented at various airports. The system was initially implemented at Delhi in 2013 and Mumbai in 2015. The operations were successful with visible benefits to all stakeholders in terms of enhanced efficiency of operations, reduced waiting period at holding points, reduced taxi times, improved predictability for airlines and airport operator along with environmental benefits owing to reduced fuel burn and carbon emissions.

1.2 An MoU was signed with the Ministry of Civil Aviation, Govt. of India, wherein AAI was entrusted with the task of rolling out A-CDM at various airports. As per APAC Seamless ATM Plan, Version 2.0, September 2016, all high density aerodromes should operate an A-CDM system serving the Major Traffic Flow (MTF), with priority implementation for the busiest Asia/Pacific aerodromes, wherein Chennai is also listed.

1.3 The implementation process for A-CDM Chennai was kick-started in line with various decisions taken during preceding APANPIRG meetings and terms of reference of the Asia Pacific ACDM task force. Implementation of ACDM was planned to be carried out for Chennai and Kolkata airports by 2018 and 2019 respectively. The implementation process at Chennai is complete with trial operations already underway from **01 June 2018** onwards, while the process is ongoing as per schedule in Kolkata.

2. DISCUSSION

Implementation Stages and Tasks

2.1 A-CDM at Chennai has been implemented as a three-pronged system where equal emphasis is placed on procedures, systems and people. The implementation process started off with the coming together of all stakeholders on a common platform to analyze and understand the need for ACDM at Chennai. It was agreed that lack of predictability for airlines, ATC and airport operators, parking stand management, queuing of aircraft at holding point, etc. were persistent problems which needed to be addressed at the earliest.

2.2 A kick-off meeting was conducted where ACDM concepts and advantages of implementation were discussed in detail among stakeholders such as Air Traffic Control, Airport operations, Airlines, Ground Handling Agents, Aviation Regulators and Meteorologists among others. The salient features of the indigenous ACDM system were explained to all along with a live demonstration of the system through web interface.

2.3 A core team comprising officials from ACDM development team, Air Traffic Management, Communication Navigation Surveillance, Information Technology, Airport Operations Control Centre, Airline operator's committee and Terminal management was constituted with one ATM officer serving as the nodal point of contact for all agencies throughout the project schedule.

2.4 Core team conducted meetings to design and develop the networking requirements for ACDM considering the data sources viz. AFTN data, Automation data and Airport Operational Database (AODB) data. The geographical location of the source origin, connectivity requirements, data sharing platforms, cyber and network security etc. were some of the parameters considered while finalizing the ACDM network and associated system requirements.

2.5 Procurement of equipment and installation of the same was completed subsequently. It was also realized that the ACDM application at Mumbai would need to be customized and adapted to requirements of Chennai especially in view of the aerodrome layout differences. The ACDM development team undertook the challenge of software modification to cater to Chennai ACDM while tapping the local database concerning parking stands, Variable Taxi Times (VTT), runways and taxiways and declared runway capacities.

2.6 Post establishment of network, the three data sources were tested for compatibility in the ACDM system and were found to be format compatible thereby enabling accurate processing and generation of Target Start up Approval Time (TSATs).

2.7 With strong emphasis on collaboration with all stakeholders in the ACDM process, meetings were conducted to update the project implementation status and for discussion on future modalities concerning operating procedures and responsibilities of each stakeholder. The series of meetings culminated with the conduct of a safety assessment for change management wherein all associated hazards and safety risks of implementation were assessed and mitigation measures finalized.

2.8 Local Standard Operating Procedures for ACDM Chennai were developed collaboratively with airport partners to ensure practicality and suitability to Chennai airport operations. Procedures described the roles and responsibilities of each stakeholder and also included user guide for system Graphical User Interface. SOP followed the milestone approach and terminologies adopted by EUROCONTROL as a guideline to ensure harmonization. It was decided that airlines would be responsible for Target Off Block Time (TOBT) submission. However, airlines were allowed to sensitize and train their ground handler to manage it.

2.9 Training programs were conducted for all ACDM partners, viz. ATM, CNS, Airline Operators and Airport Operations Control Centers. Training focused on procedures, compliance requirements, application features and user guide, system architecture and escalation matrix for troubleshooting. Workstations were provided in AOCC, Aerodrome Control Tower, Approach control and Watch Supervisor positions. All users were assigned individual password protectable accounts with user-IDs in order to access the system for relevant data input, modification or display.

2.10 Post training sessions, proposed commencement of trial operations was notified and the same commenced as per schedule on **01 June, 2018**. The trials will continue till 31 August 2018. Feedback is being regularly obtained from all users with a dedicated IT support team positioned for quick resolution of any issues. The system is also being monitored remotely by the ACDM development team from Mumbai and continuous improvements are being made based on user feedback. Work is ongoing for creation of web-interface for access to ACDM data.

Future Expansion

2.11 In Second Phase primary objective will be to generate Expected in Block Time (EIBT), the single most important Mile Stone for fine tuning TOBT information to be entered in the system by the Airline Operators. This is in line with the concept elements of A-CDM. Arrival Manager (AMAN) will be introduced in the same platform. In this phase, AAI will use actual movement data to generate reports and monitor TSAT adherence. It will be displayed in the website for performance monitoring and analysis.

2.12 In third phase, the system will be integrated with other ATC systems in a secured manner. The system will be able to generate Departure Plan Information (DPI) and accept/utilize Flight Update Message (FUM) from Air Traffic Flow Management Centre.

2.13 Chennai has also implemented simultaneous operations from diverging runways in Arrival-Departure and Departure mode for limited hours during day. Presently A-CDM system caters to departures from one Runway only. The A-CDM software will be upgraded to meet the requirements of diverging runway simultaneous runway operations.

2.14 AAI offers to collaborate with other states interested in implementing A-CDM.

3. ACTION BY THE MEETING

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

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