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)

C-ATFM OPERATIONS IN INDIA

(Presented by India)

SUMMARY

This paper presents the implementation of C-ATFM process made in India in a phased manner. The paper also describes the operational challenges faced in day to day operations, further steps in the implementation process and India's plans towards facilitating the cross border ATFM process.

1. INTRODUCTION

1.1 Airport Authority of India (AAI) has implemented Central Air Traffic Flow Management (C- ATFM) system covering entire Indian airspace in April 2017.

1.2 The C-ATFM system network architecture consists of a Central Command Center (CCC) at Delhi and various Flow Management Positions (FMP) located at ATC units of 6 major airports across the country i.e. Delhi, Mumbai, Chennai, Kolkata, Bengaluru and Hyderabad. The C-ATFM system is now supported by additional 30 FMPs at various airports which also include eight defence airports.

1.3 The CCC is the nodal center for ATFM implementation in India and communicates with FMPs for ATFM measures implementation as and when necessary.

2. DISCUSSION

2.1 The C-ATFM implementation process can be divided broadly in three phases:

Phase-I implementation

2.2 Demand Capacity imbalance is analyzed for the six metro Airports. In case of any imbalance observed appropriate ATFM measures like "Ground Stop Program" and "Ground Delay Program" is used to regulate Air traffic flow to the constrained Airport. Each flight arriving at the constrained Airport is issued a calculated take off time (CTOT).

2.3 ATFM daily plan (ADP) highlighting the proposed tactical ATFM measures applicable for the next day is published the previous day at 1300 UTC and shared with all the stakeholders via email.

2.4 Flow Managers in the CCC consult the ATFM System 'SKYFLOW' for any active NOTAM affecting capacity and also coordinate with Local ATC and Airport operators for any change in predicted capacity. If demand is likely to substantially exceed the predicted capacity, appropriate ATFM measures are initiated. The proposed action is communicated to all the stakeholder's in advance and ATFM measures are applied after collaboration with all.

2.5 C-ATFM had developed Standard Operating Procedure for guidance to CCC specialist to predict, monitor and implement appropriate mitigation measures along with a well-defined communication process. This procedure is being refined constantly based on the constructive feedback received from stakeholders.

2.6 The CCC team also conducts regular post operation analysis of the ATFM operations and shares such reports with all the stakeholders on monthly basis.

2.7 ATFM managers of AAI working at CCC visited FAA command center for a familiarization training. The training consisted of exposure to the CDM process, the process of application of Traffic Management Initiatives (TMIs – an ATFM Measure) in National Airspace System (NAS), the weather impact analysis and a brief introduction to the analytical tools. AAI ATFM managers have greatly benefited from the training by an exposure to the global best practices.

Operational Challenges

2.8 Considerable Improvement is noticed in the accuracy level of Flight intent in ATFM "SKYFLOW" data base. CCC has graduated from bi annually updating flight data, based on summer and winter schedule, to fortnight updating of data base provided by Airline operators. However, actual flight intention on D-day is still in variance with SKYFLOW fortnightly data, as most airlines do not update the flight intent by sending appropriate AFTN messages. The issue of data integrity has already been raised with the Airline operator's in the recent stakeholder's meeting.

2.9 Some Non- Scheduled operators are not filing Flight Plan 3 hours prior to their EOBTs, as required. Such flights lead to over delivery at constrained Airport.

2.10 Current means of CTOT dissemination through e-mails has some accessibility issues at defence Airports. The ATFM web portal prototype is under testing and the same would be used for CTOT dissemination in future.

2.11 More proactive participation is required from Airline representative in Collaborative decision making.

2.12 Increase in Exemption requests due to operational constraints at the airport of departure like parking bay restrictions, watch hour restrictions, Military flying, Airline's requests due to FDTL and VVIP movements etc. lead to increased ground delay to other flights. Airlines are being encouraged to inter/intra swap flights instead of requesting for complete exemptions.

2.13 The experience gained so far indicates that ATFM measures throughout the day for resolving demand capacity imbalance of a constrained Airport should be avoided as they have an adverse effect on Airlines Network Planning. The problem for such imbalance arises usually due to an inefficient scheduling system. When delays are unavoidable, the objective should be to balance ground and airborne delays.

Phase II Implementation Plans

2.14 The focus in Phase I operations is towards airport demand-capacity analysis and taking ATFM measures such as GDP/GSP. In Phase II operations, the C-ATFM system will develop procedures for handling airspace capacity issues. ATFM measures such as Re- Routing, Fix balancing, Sector balancing, Miles-in-Trail, Minutes-in-Trail will be available for application as needed.

2.15 The C-ATFM system and ACDM systems integration operational trials are in progress. It is planned to gradually bring the various ACDM airports into the C-ATFM network over the next year.

2.16 AAI is planning to introduce a web-based On-Line-FPL (OFPL) system later this year to enable all airspace users to submit ATS FPL messages through web based applications. This measure is designed to eliminate the errors in the message formats, provide flexibility and scalability and a single window interface with ATC. C-ATFM system will greatly benefit due to timely access to accurate flight data.

Phase III Implementation Plans

2.17 Cross border ATFM operations involving ATFM information sharing with ATFM centers of adjacent countries. – This will be dependent on establishment and operation of ATFM centers in South Asia countries such as Singapore, Thailand, and Hong Kong and also in Mid East Asia.

2.18 The C-ATFM system has a flexible system interaction enabled through internet access provided to various categories of stakeholders. Thus the system becomes scalable across the Indian airspace and beyond. AAI foresees the need to provide access to the C-ATFM information to adjacent States in future and the system design is well equipped for the same.

2.19 The Indian C-ATFM system is future ready in terms of standard protocols for exchange of ATFM information, thus ensuring interoperability among various ATFM systems. As the cross border ATFM implementation between APAC and Mid-East States progresses satisfactorily, India will be able participate as a mature partner in furthering the objectives of seamless skies.

3. ACTION BY THE MEETING

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

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