International Civil Aviation Organization

Sixteenth Meeting of the Asia/Pacific Air Traffic Flow Management and Airport Collaborative Decision-Making Steering Group (ATFM & A-CDM/SG/16)

Bangkok, Thailand, 06 – 10 April 2026

Agenda Item 4a: Review of Current CDM/ATFM Operations and Problem Areas

PROGRESS UPDATE ON AIR TRAFFIC FLOW MANAGEMENT ACTIVITIES IN INDIA

(Presented by INDIA/AIRPORTS AUTHORITY OF INDIA)

SUMMARY

This paper presents progress update on various air traffic flow management (ATFM) related activities undertaken in India since last ATFM-SG-15 meeting. These activities include action on the outcome of ATFM-SG-15 meeting, such as sharing post ops report, calculation of fuel savings methodology during ATFM measures with Data Analytics Group (DAG) of ATM-SG, presenting working papers in ATM-SG and ATM OPS panel for inclusion of ATFM related phraseologies in ICAO DOC 4444 and reactivation of Bay of Bengal Cooperative Air Traffic Flow Management (BOBCAT) in India. This paper also includes details of other important progress updates e.g. amendment in Aeronautical Fixed Telecommunication Network (AFTN) address of ATFM unit of India, initiation for development of tailored meteorological information service for ATM, effect of harmonization of air traffic services (ATS) procedures with the provision of ATFM in terms of calculated take off time compliance (CTOT), ATFM measures data analysis, exploring possibility of using airlines movement messages (MVT) in ATFM system etc.

1. INTRODUCTION

1.1 During the ATFM-SG-15 meeting, the following activities related to India were included in the task list.

1.1.1 Action point 15/6: India was advised to provide inputs and share the process of data analysis carried out in post ops analysis in respect of calculating reduced air delay, fuel savings and reduction in CO_2 emissions during ATFM measures with the ad-hoc Data Analytics Group (DAG) of ATM-SG.

1.1.2 Action point 15/4: India was advised to present a working paper (WP) for inclusion of ATFM related phraseologies in DOC 4444 in the ATM-SG and ATMOPS panel meeting.

1.1.3 Action point 14/2: India was advised to participate in the re-activation of BOBCAT.

The details of action taken in respect of above points are elaborated in para 2 of the WP.

1.2 Since the last ATFM-SG-15 meeting Airports Authority of India (AAI) has also

undertaken various activities related to ATFM such as change of AFTN address of ATFM unit of India, initiation for development of tailored meteorological information service for ATM, continued improvement in CTOT compliance through implementation and reinforcement of harmonization of ATS procedures with the provision of ATFM, ATFM measures data analysis, optimization of standard taxi time (STT) in ATFM system, exploring possibility of using airlines movement messages (MVT) in ATFM system.

2. DISCUSSION

India provided inputs and shared process of data analysis carried out during post ops analysis with the ad-hoc Data Analytics Group (DAG)

2.1 India presented a WP 26 in ATFM-SG-15 on benefit of measuring reduced air delays, fuel savings and reduction in CO_2 emissions due to implementation of ATFM and sharing it with stakeholders in achieving operational efficiency. As per Action point 15/6 of ATFM-SG-15, India was advised to provide inputs and share process of data analysis carried out during post ops analysis measuring reduced air delays, fuel savings and reduction in CO_2 emissions due to implementation of ATFM with the DAG under the ATM-SG.

2.2 India was invited by the DAG group to present the details of cited working papers on 15th May 2025 through a virtual meeting. The discussion in the meeting covered in detail the objectives, data involved, procedure of data collection, methodologies, associated processes and benefits etc. India's presentation and work in the domain was widely appreciated and acknowledged by the participants.

Presentation of WP/IP on inclusion of ATFM related phraseologies in DOC 4444 to the ATM-SG and ATMOPS panel meeting

2.3 India presented a WP-25 in ATFM-SG-15 on harmonization of ATS Procedures with the provisions of ATFM to enhance efficiency and effectiveness of Air Traffic Management (ATM). As per action point 15/4 of ATFM-SG-15, India was advised to present a WP on inclusion of ATFM related phraseologies in ICAO procedure of air navigation, air traffic management (PANS ATM) DOC 4444 to the upcoming ATM SG and ATMOPS panel meeting.

2.4 In compliance with the above, India has presented a WP in the ATM/SG/13 and IP in the ATMOPSP-WG/16 panel meeting scheduled from 25th to 29th August 2025 & from 20th to 24th October 2025 respectively. In these meetings, India submitted that ATFM phraseologies contained in the ICAO DOC 9971 manual on collaborative air traffic flow management may be included in the ICAO PANS ATM DOC 4444 citing its benefits.

2.5 The ATMOPSP-WG/16 panel meeting concluded that its ATFM WG should consider the information and determine whether the ATFM phraseology should be proposed for inclusion in the PANS ATM ICAO DOC 4444 and the same has also been recorded as action WG/11.

Re-activation of Bay of Bengal Cooperative Air Traffic Flow Management (BOBCAT)

2.6 In the ATFM-SG-15, through WP-8, IATA shared information about the series of outcomes and way forward regarding, commencement of reactivation of BOBCAT and communication between all the related stakeholders. Thailand provided a flimsy on the potential resumption of BOBCAT service, focusing on the configurations, challenges, and steps involved in the reactivation process. AAI through WP 27 shared the challenges in management of Air Traffic Flow in Delhi FIR due to restrictions in Kabul FIR.

2.7 Based on the discussion carried out above and information shared by M/s Aero Thai from time to time, India actively participated in the re-activation of BOBCAT. In the reactivation process, AAI prepared a draft AIP supplement based on the standard template provided by Aero Thai and feedback received from stakeholders. AAI also customized the AIP SUPP to the operational requirement of India. A process of safety risk assessment was carried out as per change management procedure. Based on the outcomes of safety risk assessment the AIP supplement was duly updated and processed with date of publication 24th July 2025 and date of implementation as 04th September 2025.

2.8 All-important stakeholders were provided with the revised login ID and passwords in collaboration with Aero Thai. A detailed training program of the stakeholders was also convened. The BOBCAT was successfully reactivated as planned with effect from 04th September 2025. India also participated in the post ops analysis undertaken by the Aero Thai and has also been sharing requisite data with it regularly. India is also monitoring, recording the CTOT compliance of BOBCAT participating aircraft departing from India in its monthly post ops report and publishing it for continual improvement.

Impact of harmonization of ATS procedures with the provision of ATFM to improve efficiency of ATM, ATFM measures data analysis

2.9 In the ATFM-SG-15, through WP-25, India shared the benefits of harmonization of ATS procedures with the provision of ATFM to enhance the efficiency of ATM.

2.10 After the cited harmonization, AAI has experienced substantial improvement in the CTOT compliance. In India, during calendar year 2023 average yearly CTOT compliance was **77%**. After implementation of cited harmonization and active engagement with stakeholders, during year 2024 average yearly CTOT compliance improved to **85%** and during year 2025 average yearly CTOT compliance, further improved to **97%.**

2.11 ATFM played an important role in management of air traffic flow during the year 2025 also and applied 513 ATFM measures to ease out congestion at busy airports.

2.11.1 Details of reduction in air delay during flow measures in year 2025:

Total Air Delay (with ATFM Measures) in year 2025 = 392603 mins
Total Air Delay (with no ATFM measures) in year 2025 = 641073 mins
Reduction in Air delay due to ATFM measures in year 2025 =
641073 - 392603 = 248470 Min~ **4141 Hours**.

2.11.2 Fuel saving due to flow measures in year 2025:**15,650.288 Tons**.

2.11.3 Reduction in CO_2 emissions due to flow measures in year 2025:**49,454.911 Tons**.

Amendment in AFTN address of air traffic flow management unit

2.12 While addressing India's query on WP-3 ATFM-SG-15, addressing of flight plan and missing departure message, vide para 4.5 of ATFM- SG-15 report, the Secretariat clarified that the AFTN address of the ATFM unit shall be as per globally standardized three-letter designator ZDZ in conformance with ICAO Doc 8585.

2.13 Accordingly, India has amended AFTN address of its air traffic flow management unit to VIDPZDZX with effect from 30th October 2025 following change management process and in collaboration with stakeholders.

Development of tailored meteorological information and service to support ATM

2.14 Asia Pacific regional guidance material 2023 on tailored meteorological information and service to support ATM, contains the purpose and necessary processes from preparatory to operational phases on the subject matter.

2.15 The Airports Authority of India (AAI) has initiated the development of tailored meteorological information and services in collaboration with the State Meteorological Service Provider, the Indian Meteorological Department (IMD) and other relevant stakeholders. As part of this initiative, AAI has established an effective communication framework for all stakeholders. A daily meteorological briefing is conducted at 11:30 hours to review prevailing weather conditions, assess forecasts, and evaluate their potential impact on air traffic flow across India.

In the event of forecasts indicating adverse weather phenomena affecting aircraft operations, enhanced coordination among stakeholders is undertaken to analyze the anticipated evolution of weather systems in critical areas and to assess their operational impact on air traffic flow management. The objectives of such meetings with stakeholders are to develop understanding of each other's domain and recognize the requirement of the project.

Based on operational insights related to Air Traffic Management (ATM), aircraft operations, historical weather events, and stakeholder inputs, IMD is developing a prototype for the provision of tailored meteorological information and services to support ATM operations. A dedicated working group comprising key stakeholders has been constituted to validate the prototype and to facilitate the development and implementation of tailored meteorological information and services for ATM in India, in accordance with the provisions contained in the referenced regional guidance.

2.16 It is planned to first develop and implement tailored meteorological information and service at one airport i.e. IGI airport Delhi. Thereafter, the model will be suitably adapted for other airports.

Review of standard taxi time for air traffic flow management automation system

2.17 AAI has undertaken the process of review of standard taxi time (STT-Out and STT-In) for air traffic flow management automation system in collaboration with stakeholders. In this process, the data was sought from airlines, airport operators and ATS units. The reviewed standard taxi time has been adapted in the ATFM system from 09th March 2026.

2.18 It is anticipated that such reviewed taxi time will enable ATFM system to generate improved trajectories providing accurate demand projection at regulated element leading to efficient ATFM services.

Exploring possibility of using airlines movement messages (MVT or MVA) in ATFM system

2.19 Airlines use ACARS (Aircraft Communications Addressing and Reporting System) to send automatic, real-time OOOI (Out, Off, On, In) data from aircraft to the ground. These messages are converted into MVT (Aircraft Movement Messages) compliant with AHM (Airport Handling Manual) standards. Airlines Operation Control Center (AOCC) receive such MVT messages for planning of arrival and departures movements. Official Aviation Guide (OAG Aviation) also aggregates these MVT messages from various airlines to provide accurate, live flight status data.

2.20 AAI is collaborating with stakeholders to explore the possibility of capturing airlines movement messages (MVT or MVA) from airline AOCCs through appropriate media in ATFM system. These messages may include MVT ED (estimated time of departure), MVT AD (actual off block but

not yet airborne), MVT AD (Actual airborne), MVT AA (Actual touch down but not yet chocks on) MVT AA (chocks on) etc.

2.21 AAI has requested major airlines to consider granting in principle agreement to the project. The modalities of the connecting media between AOCCs and ATFM center can be decided later in collaboration with respective OEMs. With such agreements, it is anticipated that the data pertaining to about 90 % of the domestic movements can be captured.

2.22 These messages can provide redundancy to air traffic management, Departure (DEP) and Arrival (ARR) messages. The information contained in such messages can help in generating improved trajectories, developing better demand projection capability leading to enhanced situational awareness among stakeholders to take suitable decisions. The availability of data set including actual off block time (AOBT) and actual in block time (AIBT) for large number of aircraft even from non ACDM/AOCC airports can help in providing more representative data set used in various performance benchmarking KPIs of air navigation service providers as per global air navigation plan.

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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