



## INTERNATIONAL CIVIL AVIATION ORGANIZATION

**TWENTY FIFTH MEETING OF THE  
ASIA/PACIFIC AIR NAVIGATION PLANNING AND  
IMPLEMENTATION REGIONAL GROUP (APANPIRG/25)**

Kuala Lumpur, Malaysia, 8 – 11 September 2014

**Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation**
**3.6: Other Air Navigation Matters**
**PROGRESS OF THE AIR TRAFFIC FLOW MANAGEMENT (ATFM)  
OPERATIONAL TRIAL**

(Presented by Australia, China, Hong Kong China, Indonesia, Malaysia, Singapore, Thailand, Viet Nam, CANSO, IATA and IFATCA)

**SUMMARY**

This paper provides the progress on the collaborative efforts for the ATFM Operational Trial between Australia, China, Hong Kong China, Indonesia, Malaysia, Singapore, Thailand and Viet Nam using the concept of distributed multi-nodal ATFM network to enhance operational efficiency and optimisation of available capacity through increased predictability and effective demand capacity balancing.

The initiative aims to enhance safety and system efficiency to cope with the robust growth of air traffic in this region.

*Strategic Objectives:*

- A: **Safety** – Enhance global civil aviation safety
- B: **Air Navigation Capacity and Efficiency**—Increase the capacity and improve the efficiency of the global aviation system
- E: **Environmental Protection** — minimizes the adverse environment effects of civil aviation activities.

**1 INTRODUCTION**

1.1 States, ANSPs and Airspace users have acknowledged the robust growth in air traffic demand experienced globally in the recent years. The traffic growth in the Asia Pacific Region has shown a sustained annual growth between 5-6% and the capacity to match the growing demand is fast approaching the limit. Air Traffic Flow Management has been identified as an effective means to achieve efficient demand capacity balancing while continuous capacity enhancement initiatives are ongoing to address broad ATM solutions. However, ATFM concepts that are established and practised globally essentially address the needs of domestic traffic flow or traffic flow managed by a single control authority. An ATFM solution for cross border application was necessary to address the needs of air traffic flow in the Asia Pacific Region which comprises multiple FIRs. Several ANSPs and industry stakeholders have therefore embarked on a journey to seek and validate a viable solution that could be considered for adoption in this region.

1.2 The concept of a distributed multi-nodal ATFM network was conceived through a collaborative research project and presented at the third meeting of the ATFM Steering Group (ATFM/SG/3) in March 2014, for consideration. It was also presented at the CANSO Asia Pacific Conference in May 2014. The concept was hailed as ground breaking and one that provides a viable air traffic flow solution for the region that could be considered for inclusion in the ICAO Regional Framework for Collaborative ATFM.

1.3 The collaborative efforts have since progressed towards an ATFM Operational Trial among participating States using the multi-nodal concept. The ATFM Operational Trial initiative has received robust support and encouragement from several ANSPs, ICAO as well as IATA, ACI, CANSO, EU/AATIP and IFATCA.

## 2 DISCUSSION

### The ATFM Operational Trial Project Meetings

2.1 Thus far two ATFM Operational Trial project meetings have been held. The first ATFM Operational Trial Project Kick-Off Meeting was held from 2 June to 3 June 2014 in Singapore and the second ATFM Operational Trial meeting was held from 28 to 29 August 2014 in Bangkok. The meetings saw continued strong support and participation from States and their ANSPs as well as ICAO and industry partners such as IATA, CANSO and IFATCA.

2.2 The first ATFM Operational Trial meeting provided a structured plan and milestones to address capability development in areas such as Demand Capacity management, ATFM system requirement, and common business rules for stakeholders and ATFM personnel management to assist members of the project to reach the level of readiness for active participation in the operational trial.

2.3 Members agreed that the Distributed Multi-Nodal ATFM Network concept form the foundation for the ATFM Operational Trial. The ATFM Operational Trial would commence in June 2015 and a two part phased approach with a mid trial review which adopts selected elements of the multi-nodal concept would be considered for timely commencement of the trial. This approach would provide room for further development and expansion of participation as the trial progresses into subsequent phases.

2.4 Phase 1 of the ATFM Operational Trial as planned would be conducted for a period of 3 months and would focus on addressing Demand/Capacity Balancing by imposing ATFM Measures such as Ground Delay Program (GDP) through the provision of Calculated Take-Off Time (CTOT) information back engineered from Required Time of Arrival (RTA) to regulate flights in the event that temporary adverse conditions such as weather, runway/taxiway availability resulted in capacity reduction below expected traffic demand. Phase 2 would focus on addressing Demand/Capacity Balancing within sectors and airspace managed by participating ANSPs in addition to elements from Phase 1. Members agreed to review their level of preparedness at a Go/No-Go decision point in May 2015 prior to the commencement of the ATFM Operational Trial

2.5 Dedicated Point of Contacts (POCs) from each stakeholder formed the working group that would persevere to work off-line and concentrate on the details of ATFM Operational Trial preparation efforts in between meetings.

2.6 The second ATFM Operational Trial meeting provided members the opportunity to review and discuss the working group's offline work which focused on details such as the need for individual capability building in demand/capacity assessment, selecting accurate flight data source that would support accurate demand prediction, CTOT management and participation level for the ATFM Operational Trial.

2.7 The approach of imposing ATFM measures as required was recommended for ATFM implementation, and the meeting agreed that during the ATFM Operational Trial, ATFM measures should be implemented in a structured fashion which would allow for a comprehensive trial covering the full spectrum of ATFM to be conducted and studied. Through a comprehensive trial and study, best practices could then be formulated to provide quality ATFM service during implementation.

2.8 The requirement for a high level of participation by airspace users to provide for equitable delay absorption during the ATFM Operational Trial was re-emphasized. The meeting considered the inclusion of all flights operating into an airport participating in the Operational Trial during the period when ATFM Measure implementation is required. ATFM Measure implemented for arrivals into an airport may exempt flights such as Humanitarian, Emergency, Medical Evacuation and Head-of-State flights.

2.9 The importance of timely dissemination and follow up submission of accurate, timely revised Flight Plans and ATS messages was emphasized as it had significant impact to predictability of traffic flow. Thus the meeting agreed that the ATFM Operational Trial initiative would urge trial participants and airspace users to exercise greater discipline in managing FPLs and ICAO message handling. Furthermore, it is also highlighted that disciplined FPL and ATS message handling may be included in the Regional Framework for Collaborative ATFM.

2.10 The meeting agreed compliance management would be viewed comprehensively with departure compliance to be measured against CTOT and arrival compliance to be measured against RTA. In addition all flights subjected to ATFM measures will be monitored at RTA for compliance to gain better understanding of delay management by Airspace users. The trial would consider adopting a strict compliance window (such as +5/-5 minutes) and subsequently review the outcomes to determine the need to widen the window for practical compliance management. In addition the meeting also agreed that compliance enforcement would be managed during post operational analysis enabling Air Traffic Control to concentrate on tactical management of air traffic flow. The working group would work to provide metrics to guide post operational compliance handling for Trial members.

2.11 The meeting agreed on a tiered Participation Level approach to the ATFM Operational Trial for all stakeholder groups: ANSPs, Airport Operators and Airspace Users. It is recognized that there are various ATFM Measures to balance demand-capacity such as Ground Delay Program, Miles-in-Trial, Minutes-in-Trial and Minimum Departure Interval. Therefore, in the context of the ATFM Operational Trial, ANSP Participation Level discussed at the meeting includes:

- a) **Level 0 : Current Operations**
  - ANSPs may be asked to support ATFM Operations through Minimum Departure Intervals or Miles-in-Trial or Minutes-in-Trial
- b) **Level 1 : Observe Trial (includes Level 0)**
  - Participate in CDM/ATFM Meetings
  - Participate in Operational Trial Planning process
- c) **Level 2 : Facilitate CTOT for Departures (includes Level 1)**
  - Receive CTOT for departure to other Demand-Capacity imbalance airports
  - Facilitate airline operator CTOT compliance for departure towards destination airport imposing CTOT
- d) **Level 3 : Demand-Capacity Balancing Capability (includes Level 1 and 2)**
  - Capability to evaluate Traffic Demand
  - Evaluate and update Airport Acceptance Rate (AAR)
  - Distribute CTOT to airline operators and ANSPs

2.12 It was agreed that further details of requirements for each participation level will be developed along with participation level for airport operators and aircraft operators. Airport Operator Participation Level would be related to airport operations planned during the ATFM Operational Trial including Airport Collaborative Decision Making (Airport-CDM).

2.13 Focus group meeting with aircraft operator will be organized to develop further details to support aircraft operator role in the Operational Trial. In addition, airport operator focus group meeting maybe coordinated prior to Operational Trial.

2.14 The ATFM Operational Trial preparations are currently progressing well with series of meetings planned in the upcoming months. These will provide the group with the opportunity to further refine the process and procedures in time for the Operational Trial in June 2015. It is expected that the next ATFM Operational Trial will be held prior to the ICAO ATFM Steering Group (ATFM/SG) meeting scheduled in December 2014. Progress of ATFM Operational Trial will be shared at all relevant forums to provide an update and create greater ATFM awareness within the aviation community in the region.

2.15 While the on-going effort to conduct ATFM operational Trial endeavor to launch cross-border ATFM collaboration, it is essential for the Asia Pacific Region to persevere towards convergence and harmonization of ATFM implementation. The ATFM Operational Trial could set the stage for cross border ATFM/CDM processes, operational procedures and business rules to be harmonized taking guidance from ICAO Doc 9971 and the leadership role of the ICAO ATFM Steering Group. Moving forward in this collaborative direction is an important step towards implementation of the Asia Pacific Seamless ATM Plan.

### **3 ACTION BY THE MEETING**

3.1 The Meeting is invited to:

- a) note the information contained in this paper;
- b) encourage States to persevere towards ATFM convergence and harmonization; and
- c) discuss any relevant matters as appropriate.

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