



International Civil Aviation Organization

The Third Meeting of ICAO Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/3)

Singapore, 10 – 14 March 2014

Agenda Item 3: ATFM/CDM Global Update

DISTRIBUTED SUB-REGIONAL ATFM NETWORK OPERATIONAL TRIAL

(Presented by Hong Kong China, Indonesia, Malaysia, Singapore, Thailand and Viet Nam)

SUMMARY

This paper presents the collaborative approach adopted for the implementation of Air Traffic Flow Management (ATFM) leading to an Operational Trial between Hong Kong China, Indonesia, Malaysia, Singapore, Thailand and Viet Nam using the concept of distributed multi-nodal ATFM network.

The initiatives aim to enhance safety and efficiency to cope with the future growth of air traffic in this region.

1. INTRODUCTION

1.1 At the second meeting of ATFM/SG, the concept of sub-regional distributed multi-nodal ATFM networks for the Asia Pacific Region was presented. This resulted from the collaboration between Hong Kong China, Singapore and Thailand through the tripartite initiative which had embarked on a two part approach leading to establishing information sharing framework to support sub-regional ATFM and the development of a viable distributed multi-nodal ATFM concept for the region.

1.2 The concept involved each ANSP operating an independent, virtual ATFM node supported by an interconnected information sharing framework. Airport-Collaborative Decision Making (CDM) mechanisms, especially at busy airports could aid the CDM process between the ANSPs, and flows of air traffic would be managed effectively based on a common set of agreed principles among the participating airspace users, ANSPs and airports. ATFM/SG/2 agreed that distributed multi-nodal sub-regional networks were perhaps the only viable solution to the ATFM needs of the region.

2. DISCUSSION

2.1 The first part of the approach was the information sharing trial that involved twice daily exchange of CDM information sharing template and daily teleconference between Hong Kong China, Singapore and Thailand. This was conducted in late 2013 with the aim to bring common situational awareness. The trial has since concluded and the outcomes of the trial revealed the need for capability building within each ANSP to bring robustness to the information sharing framework to effectively support the collaborative decision making process for ATFM between participating ANSPs.

2.2 The second part of the approach was the CAAS ATFM/CDM proof of concept research project based on the concept engineering process of concept analysis, exploration and development which was conducted over 10 month period from March 2013. Key stakeholders such as ANSPs represented by tripartite member states and Malaysia, airspace users represented by Singapore Airlines, Silk Air, Tiger Airways, airport operators represented by Changi Airport Group and Airport Operator of Thailand and international organisations such as IATA and AATIP participated in the stakeholder sessions, Fast time simulation and Human in the Loop simulation providing operational inputs to shape the concept to suit the region. The research project has since concluded in January 2014 with the delivery of a benefit analysis and ConOp document.

2.3 The conclusion of information sharing trial and the concept development has led us to the next stage of capability building in essential areas to effectively support ATFM implementation using the concept of a distributed multi-nodal framework. With efforts to build adequate capability, level of readiness and common set of business rules each ANSP could potentially interconnect their ATFM nodes forming the larger distributed multi-nodal virtual ATFM framework for the region.

2.4 The tripartite collaborative endeavor has received wider interest with the participation of Malaysia, and more recently Indonesia and Viet Nam. Discussion between Hong Kong China, Indonesia, Malaysia, Singapore, Thailand and Viet Nam had already taken place to review the plans to subsequently conduct the ATFM operational trials in June 2015. The trial will also involve airspace users and IATA has also supported this initiative. Proposed capability development timeline

Period	Individual Capability Development Objectives
March-June 2014	<ul style="list-style-type: none"> • Agree on proposed capability development timeline • Agree to ATFM Concept of Operation • Plan and agree capability development methodology • Identify and initiate stakeholder engagement • Initiate development of common business rules • Development of Demand Capacity Management Capabilities • Agree on timeline to mandate ATFM procedures • June 2014 Collaborative review of progress
July-September 2014	<ul style="list-style-type: none"> • Continued stakeholder engagements • Collaborative development of stakeholder business rules • Initiate procedure development for ATFM • Draw common system requirements for interoperability • Initiate System development or acquisition • Active engagement of MET support to ATFM • Refine Demand Capacity management process • Initiate Training curriculum development for FMC • Safety assessment of ATFM procedures and ATFM system • September 2014 Collaborative review of progress
October-December 2014	<ul style="list-style-type: none"> • Continued stakeholder engagements • System development or acquisition • Procedure development for ATFM • Safety assessment of ATFM procedures and ATFM system • Enhance MET capability to support ATFM • Training curriculum development for FMC • Develop Compliance Management procedures • December 2014 Collaborative review of progress

Period	Individual Capability Development Objectives
January-March 2015	<ul style="list-style-type: none"> • Continued stakeholder engagements • System development or acquisition • Procedure refinement for ATFM • Operational procedure training • Enhance MET capability to support • Refine Compliance Management procedures • System training for FMCs • Safety assessment of ATFM procedures and ATFM system • March 2015 Collaborative review of progress
April-June 2015	<ul style="list-style-type: none"> • Continued stakeholder engagements • ATFM equipment acceptance and relevant testing • MET support to ATFM • System Interoperability testing • System training for FMCs • May 2015 Collaborative review of progress • May 2015 Go/No-Go decision for Ops trial
July-September 2015	<ul style="list-style-type: none"> • Continued stakeholder engagements • Collaborative ATFM operational trial
October-December 2015	<ul style="list-style-type: none"> • Continued stakeholder engagements • Post trial evaluation • Refine regional ATFM operations

2.5 States will adopt a structured capability development plan with quarterly progression that address capability development in areas such as Demand Capacity management, ATFM system requirement, common business rules, ATFM personnel management etc, through stakeholder interaction and inputs over the coming months enabling them to reach the level of readiness to actively participate in the collaborative ATFM operational trial in June 2015.

2.6 The proposal for the collaborative ATFM operational trial has been updated at the recent SAIOACG/4 and the SEACG/21 meeting which was held in February 2014 in Hong Kong, China. The focus of the proposal is to concentrate on the South East Asia, up to Hong Kong China before expanding to other parts of Asia Pacific. States and airspace users that are keen to observe the trial are also welcome and information will be provided at a later stage. This will allow for comments to be taken into consideration during the trial for the harmonization / convergence that are sought for ATFM implementation in the Asia Pacific Region. Details of the plan and progress will be shared periodically at various forms to bring awareness to the APAC community.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the information contained in this paper; and
- b) Encourage the collaborative effort by states to conduct ATFM operational trial
- c) Discuss any relevant matters as appropriate.

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