



*International Civil Aviation Organization*

**The Third Meeting of the Air Traffic Flow Management Task Force  
(ATFM/TF/3)**

Bangkok, Thailand, 6 to 9 September 2005

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**Agenda Item 2: Review Outcomes of ATFM/TF/2 and SCM ATFM/TF PMT**

**HISTORY OF THE ATFM TASK FORCE**

(Presented by the Secretariat)

**SUMMARY**

This paper summarizes the history and activities to date of the Air Traffic Flow Management Task Force (ATFM/TF), which was established under the Bay of Bengal ATS Coordination Group (BBACG) to progress flow management strategies for the Bay of Bengal/South Asia area.

**1 INTRODUCTION**

1.1 The meeting will recall that the EMARSSH realignment of ATS routes was implemented across Asia and the Middle East regions on 28 November 2002. This was followed by the successful implementation of RVSM on the Bay of Bengal area on 27 November 2003.

1.2 In addition to these airspace capacity improvements, recent meetings of APANPIRG, the BBACG and the RVSM Task Force had all recognized a continuing need to improve the overall management of traffic flows across the Bay of Bengal and South Asia area. APANPIRG/15 (August 2004) noted the considerable efforts being made by States to collaborate together with IATA to improve the ATFM over the Bay of Bengal area and encouraged all parties to continue their efforts and to take into account the benefits to be derived from ATM automated systems.

**2 DISCUSSION**

2.1 The RVSM/TF/24 meeting (November 2004) considered the need for improvements to be made to the overall management of traffic in the Bay of Bengal and South Asia area and noted that an ATFM system tool, such as the FAA's DOTS+ or a similar system, could be used to streamline the flow of traffic, alleviate congestion, and consequently reduce ground delays at international airports.

2.2 Further, RVSM/TF/24 agreed that a Special Coordination Meeting (SCM) should be convened to study the matter in greater detail, taking into account current operational requirements and future increases in traffic flows. RVSM/TF/24 also considered that an operational trial should be conducted to enable the States concerned to assess the effectiveness of the system and to finalise the corresponding ATFM plan. To this end, the meeting agreed that the SCM should report its findings and recommendations to the next ATM/AIS/SAR Sub-Group meeting (ATM/AIS/SAR/SG/15, 25-29 July 2005) for endorsement by APANPIRG/16.

### Special Coordination Meeting – Bay of Bengal ATFM

2.3 The Special Coordination Meeting – Bay of Bengal (SCM-BOB) was subsequently held in conjunction with the BBACG/16 meeting which was convened at the ICAO Regional Office (Bangkok), during 31 January – 4 February 2005.

2.4 Thailand presented the SCM-BOB with a Working Paper entitled “Air Traffic Flow Management (ATFM) in the Bay of Bengal and Westwards” and informed the meeting that AEROTHAI had commenced work on developing an ATFM computer model for possible deployment in the Bay of Bengal and South Asia region. Thailand also informed the meeting that it was prepared to take a proactive role in the establishment of an effective ATFM system for the area under consideration. Thailand also expressed interest in working with partners to share ideas and workload for the purpose of putting in place a system or systems to meet present and future airspace management requirements and allow for a smooth flow of traffic for the foreseeable future.

2.5 The SCM-BOB agreed to support Thailand’s initiative to develop and operate an automated ATFM system to address the westbound traffic flow problems. The meeting also agreed that in the longer term, it would be necessary to put in place a more comprehensive ATFM system to cater for the increasing traffic.

2.6 A representative from the United States also provided the SCM-BOB meeting with an update on the FAA’s plans to develop an ATFM system tool for the Bay of Bengal, based on the DOTS+ system, utilising the Online Track Advisory function.

2.7 The SCM-BOB meeting concluded that a dedicated Air Traffic Flow Management Task Force should be established under BBACG to progress the establishment of an ATFM and implementation of ATFM automated systems for the Bay of Bengal and South Asia traffic flows, and drafted terms of reference accordingly.

### Informal Singapore ‘mini’ Meeting

2.8 In accordance with the request from the SCM-BOB that discussions continue “off-line” in preparation for the ATFM/TF/1 meeting, an informal ‘mini’ working group meeting of several South East Asia task force members and industry stakeholders was held at the Singapore Aviation Academy on 14 & 15 March 2005. The meeting commenced work on a draft framework for the proposed ATFM/TF activities to be considered by the full ATFM/TF/1 meeting in April 2005.

2.9 The informal working group also agreed to recommend that ATFM/TF/1 be urged to fully consider the options available for the delivery of an ATFM system tool for use in the Bay of Bengal and South Asia and that a decision be taken as to which system tool is to be adopted by the ATFM TF. This would provide the nominated organization with sufficient time to develop the ATFM system and associated management arrangements for implementation by AIRAC date 29 September 2005 as well as finalization of funding arrangements for the provision of the ATFM service.

### First Meeting of the ATFM Task Force (ATFM/TF/1)

2.10 The first meeting of the Air Traffic Flow Management Task (ATFM/TF/1) was held at the ICAO Asia and Pacific Regional Office, Bangkok between 18 to 22 April 2005, in conjunction with the combined meetings of the Fifth FANS Implementation Team – Bay of Bengal (FITBOB/5) and the Second FANS Implementation Team – South East Asia (FIT-SEA/2).

2.11 The ATFM/TF/1 meeting reviewed and amended the initial Terms of Reference which had been drafted by the SCM-BOB, as per the following:

### **Terms of Reference for the Air Traffic Flow Management Task Force for the Bay of Bengal and South Asia region (ATFM/TF)**

The Air Traffic Flow Management Task Force (ATFM/TF) will report via the BBACG to the ATM/AIS/SAR Sub Group of APANPIRG.

#### Objectives:

The objectives of the ATFM/TF are to:

1. To enhance and facilitate the orderly and efficient flow of air traffic across the Bay of Bengal and South Asia;
2. To minimize ground and enroute delays;
3. To maximize capacity and optimize the flow of air traffic within the area;
4. To plan for and manage future ATS workload in the light of forecast increased traffic flow within the area; and
5. To assess the economic and environmental impact of the implementation of the ATFM system.

#### Implementation Programme

To meet these objectives the ATFM/TF shall adopt a phased implementation programme as per the following:

**Phase One:** Flights planning to transit the Kabul FIR

**Phase Two:** Other international flights crossing the Bay of Bengal and/or South and South East Asia areas

**Phase Three:** Future planning for increased traffic within the Bay of Bengal and South and South East Asia areas

(Note: For the purposes of the ATFM/TF, South Asia includes India, Nepal, Pakistan and Sri Lanka).

#### *ATFM System Tool*

2.12 Both AEROTHAI and the FAA gave presentations to the ATFM/TF/1 meeting on the development of their respective ATFM system tools. However, the meeting was unable to make a final decision on the selection of the ATFM system tool due to insufficient detail being made available to the meeting. Further, the meeting expressed concerns regarding the ability of all parties to effectively meet the proposed implementation target date of 29 September 2005. Accordingly, the meeting accepted that the selection of an ATFM system tool be deferred until ATFM/TF/2, at which time the AEROTHAI and FAA systems would be evaluated by way of “Proof of Concept” demonstrations.

2.13 The ATFM/TF/1 meeting also reviewed and updated the ATFM Task List.

Second Meeting of the ATFM Task Force (ATFM/TF/2)

2.14 The Second Meeting of the Air Traffic Flow Management Task Force (ATFM/TF/2) was held in New Delhi, India from 28 June to 1 July 2005.

*Thailand BOBCAT System*

2.15 During ATFM/TF/2 Thailand had presented an updated Concept of Operations for the Bay of Bengal Cooperative ATFM Advisory System (BOBCAT). In respect to the funding of BOBCAT, Thailand advised ATFM/TF/2 that it was their intention to absorb the initial development costs of the automated BOBCAT system. However, if the BOBCAT system was selected by States for implementation, cost-recovery funding arrangements may need to be considered for ongoing operations.

2.16 A demonstration of the BOBCAT system was presented to ATFM/TF/2, using several gateway points along major ATS routes through Bay of Bengal and Kabul FIR. For the purpose of the demonstration, only departures from Bangkok, Kuala Lumpur and Singapore were used. The longitudinal spacing parameter for routes over Bay of Bengal and Kabul FIR was assumed to be 10 minutes, while the parameter for routes over continental India was assumed to be 5 minutes. During the demonstration approximately 10 slot requests were inputted into the system, the cut-off time was introduced followed by the system generating the slot allocation and sending the information to dispatchers.

*Airservices Australia and the FAA DOTS+ System*

2.17 ATFM/TF/2 was informed that Airservices Australia had recently acquired the FAA Dynamic Ocean Track System Plus (DOTS+) automated system under a technical assistance agreement with the FAA. The DOTS+ platform had been installed at the Melbourne Centre and was being used to generate daily Flex Tracks for the Australian Organized Track Structure (AUSOTS). Under AUSOTS, and within the Australian FIR, aircraft are permitted to operate on daily Flex Tracks between Singapore, Brisbane, Melbourne and Sydney.

2.18 Australia informed the ATFM/TF/2 meeting that the FAA was willing to work with Airservices Australia and others to provide a web-based automated ATFM system tool for deployment in the Bay of Bengal, using the Melbourne DOTS+ platform. However there were a number of arrangements that would need to be made, including the drafting of a suitable technical services agreement, approval by the FAA to use the Melbourne installation for applications in the Bay of Bengal as well as other operational and administrative matters for consideration within Airservices Australia. Consequently, it was unlikely that Airservices Australia could arrange an operational trial prior to the beginning of 2006.

*The FAA DOTS+ System*

2.19 As the FAA was not represented at ATFM/TF/2, attention had been drawn to the two previous DOTS+ presentations that had been delivered by the FAA at the RVSM/TF/24 meeting (November 2004) and the ATFM/TF/1 meeting (April 2005). In both instances, the FAA had proposed that the web based “Online Track Advisory” function would be utilised in a DOTS+ ATFM system for the Bay of Bengal, however it was emphasised that the “Online Track Advisory” function existed in prototype only at this stage. DOTS+ could be readily adapted to provide flow management in the Bay of Bengal area, with an implementation time frame in the order of three months.

2.20 The FAA had highlighted the willingness of the FAA to work with the States of the Bay of Bengal in regard to improving the flow of traffic in the area, and advised that the FAA was ready to answer any questions and enter into further discussions at any time. In respect to funding of

DOTS+, during ATFM/TF/1 both Singapore and India had offered, if DOTS+ was selected by the States concerned, that they expected to be able to assist with some of the establishment costs. Singapore would consider funding of up to half the set up costs and India informed that they would consider funding the entire set up costs.

*ATFM Operational Trial for the Bay of Bengal and South Asia - BOBCAT*

2.21 In light of the above ATFM/TF/2, in noting that the proposed implementation date of 29 September 2005 was no longer realistic, considered available options for the conduct of an ATFM operational trial in accordance with Phase One of ATFM across the Bay of Bengal and South Asia. In this regard, ATFM/TF/2 noted Thailand's readiness to proceed to an operational trial and requested Thailand to continue to develop BOBCAT to the stage of an operational trial, in close cooperation with concerned States and IATA.

2.22 Thailand advised ATFM/TF/2 that their target date to be ready for this operational trial would be the end of 2005. Accordingly ATFM/TF/2 agreed to commence an operational trial of the BOBCAT system on AIRAC date 22 December. Arrangements for the operational trial would be confirmed during the ATFM/TF/3 meeting scheduled in September 2005, and the results of the trial would be analysed by the ATFM/TF during, and on completion of the trial.

*India and Afghanistan*

2.23 The ATFM/TF/2 meeting also reviewed information from India in respect of existing constraints and limitations in traffic flows across the Bay of Bengal and was updated by a representative from Afghanistan in regard to Afghanistan operations under arrangements between the Afghan Ministry of Communications and Tourism (MOCAT) and the United States Military CENTAF forces. The meeting was informed of the transition of the Kabul FIC to the Kabul ACC in May 2005 for high level operations and ACC arrangements for low level operations were expected to commence in July 2005.

Special Coordination Meeting of the ATFM/TF in respect of establishing a project Management Team (SCM ATFM/TF PMT)

2.24 The Special Coordination Meeting of the Air Traffic Flow Management Task Force in respect of Establishing a Project Management Team (SCM ATFM/TF PMT) was held at the Singapore Aviation Academy, Singapore from 10 to 11 August 2005. The meeting reviewed the outcomes and ATFM/TF/2 and noted that ATFM/TF/2 had requested Thailand to continue to develop BOBCAT to the stage of an operational trial.

2.25 In considering the terminology "Project Management Team", the meeting considered that the terminology "Core Team" or "Core Team with Invited Specialists" was suitable in this context and agreed to abandon the use of the wording "Project Management Team". Members of the Core Team, as identified during ATFM/TF/1, were urged to work "off-line" towards implementing the operational trial in December 2005 and to provide update reporting to ATFM/TF/3 in September 2005.

2.26 The SCM ATFM/TF PMT meeting agreed that the work of the ATFM/TF should focus very clearly on addressing the Phase One issues only and that consideration of Phase 2 & 3 issues would be dealt with in due course. Accordingly, the meeting stressed the need to develop ATFM Rules and procedures that simply and clearly enabled the Phase One implementation only.

*Paper Trial of BOBCAT*

2.27 The meeting agreed that the capabilities of BOBCAT should be demonstrated via a series of desktop or paper trial simulations, similar to the FAA DOTS+ paper trial that IATA had coordinated and conducted through the IATA Singapore office in 2003, using a sample of a typical one night's traffic. The meeting suggested, in respect of the limited time remaining prior to the commencement of the operational trial in December 2005 that Thailand should conduct these simulations prior to ATFM/TF/3, in order to provide the results of the trials to ATFM/TF/3.

2.28 Thailand advised that they would do their best to comply, but due to the short time available to implement the agreements on operating rules that had been reached during the SCM ATFM/TF PMT meeting, they had some concerns in respect of what could be achieved in this timeframe.

2.29 The meeting addressed a number of Key Issues in regard to the development of ATFM rules for consideration by the meeting. Thailand highlighted that a consensus and clear direction from the meeting would better enable the ongoing development of the computer model for ATFM using BOBCAT.

2.30 In relation to Thailand's continued development of BOBCAT, the SCM ATFM/TF PMT meeting recognized that it was not feasible for the Task Force to meet to address each and every question and difficulty that would arise during the development process. The meeting was therefore of the opinion that Thailand should use initiative and judgment in developing BOBCAT and to subsequently demonstrate the capabilities of BOBCAT via paper trials. This would allow Thailand to make decisions and select parameters that would allow it to move forward in development, and would also allow the Task Force to assess the suitability of the decisions/parameters so selected via the paper trial process and initiate changes to the parameters if warranted. Accordingly, the meeting requested Thailand to continue with the development of BOBCAT on this basis, noting that the outcomes of the December operational trial would also be formally assessed by the Task Force.

*AIC and AIP Supplement*

2.31 The SCM ATFM/TF PMT meeting agreed that an AIC should be issued as soon as possible in order to provide the maximum notice of the commencement of the operational trial on 22 December 2005. The meeting requested that, subsequent to necessary coordination with Pakistan, the Regional Office notify India, Malaysia, Pakistan, Singapore and Thailand on behalf of the ATFM/TF to issue an AIC using sample text as agreed by the meeting.

2.32 In respect of the drafting of a suitable AIP Supplement to support the operational trial, the meeting agreed that this work would be more usefully completed during ATFM/TF/3, at which point it was expected that the development of BOBCAT would be at a stage where interface and operational requirements could be appropriately defined. In accordance with Annex 15 provisions for 2 AIRAC cycle notification, AIP Supplements would need to be published on AIRAC date 27 October 2005 in order to commence the operational trial on 22 December 2005.

*Summary*

2.33 It is evident that significant effort had been invested by States, ICAO and International Organisations in respect of addressing the issues of ATFM over the Bay of Bengal. Difficulties in respect of traffic flows had been identified by the BBACG and RVSM/TF during 2003 and reported to APANPIRG/15 (August 2004). The matters were further addressed during RVSM/TF/24 in November 2004 and since that time, in addition to the ongoing work of the core team, the following meetings had been held:

- a) Special Coordination Meeting – Bay of Bengal (SCM-BOB), in conjunction with BBACG/16 during 31 January – 4 February 2005;
- b) Informal Singapore ‘Mini’ Meeting of ATFM/TF, 14 & 15 March 2005;
- c) First meeting of the Air Traffic Flow Management Task (ATFM/TF/1), in conjunction with Combined FIT – BOB & FIT SEA during 18 to 22 April 2005;
- d) Second Meeting of the Air Traffic Flow Management Task Force (ATFM/TF/2), 28 June to 1 July 2005.
- e) Special Coordination Meeting of the Air Traffic Flow Management Task Force in respect of Establishing a Project Management Team (SCM ATFM/TF PMT), 10 & 11 August 2005.

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

#### **3.1 The meeting is invited to:**

- a) note the summary of activities undertaken to date in relation to the development of an ATFM service for the Bay of Bengal and South Asia; and
  - b) note the amendment to the implementation date for the ATFM Operational trial from 29 September to 22 December 2005;
  - c) note the need to publish AIP Supplement in support of the operational trial by AIRAC date 27 October 2005; and
  - d) identify, discuss and undertake all actions necessary to ensure implementation of the operational trial on 22 December 2005.
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