



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 2: Review Outcomes of Related Meetings

RELATED MEETINGS OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper reviews the outcomes of ICAO Asia/Pacific Region meetings relevant to the Air Traffic Flow Management Steering Group.

1. INTRODUCTION

1.1 The Ninth Meeting of the South East Asia and Bay of Bengal Sub-Regional ADS-B Implementation Working Group (SEA/BOB ADS-B WG/9) was held in Beijing, China, from 30 October to 1 November 2013. Some outcomes of this group are relevant to ATFM/SG as they relate to airspace capacity increases resulting from increased ATS surveillance coverage, where supported by PANS/ATM surveillance-based separation standards.

1.2 The Third Meeting of the Regional ATM Contingency Plan Task Force (RACP/TF/3) was held in Bangkok, Thailand, from 12 to 15 November 2013. Outcomes from this group included those relating to ATFM capability to respond to contingency situations.

1.3 The Meteorology/Air Traffic Management (MET/ATM) Seminar and the Third Meeting of the Meteorological Requirements Task Force (MET/R TF/3) were held in Bangkok, Thailand, from 26 to 29 November 2013.

1.4 The Combined Fourth Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/4) and Twenty-First Meeting of the South-East Asia ATS Coordination Group (SEACG/21) was held in Hong Kong, China from 24 to 28 February 2014.

2. DISCUSSION

SEA/BOB ADS-B WG/9

2.1 The Working Group meeting was updated on ADS-B implementation progress, including:

- Australia's readiness for its Upper Airspace Program ADS-B mandate (12 December 2012), and ADS-B coverage;
- China's installation of 8 ADS-B ground stations with a further 200 planned, and the trial operation of ADS-B in the Sanya FIR;

- Singapore’s preparations for ADS-B implementation on ATS routes L642 and M771;
- Hong Kong China’s ADS-B preparations and proposed mandate, and current equipage rates of aircraft operating on L642 and M771 (about 80%);
- Viet Nam’s two-phased ADS-B implementation plan and ADS-B mandate for South China Sea ATS Routes;
- Malaysia’s implementation plan for ADS-B ground station installation, surveillance data sharing, equipment mandates and ADS-B services;
- Maldives’ completion of installation and commissioning of 4 ADS-B ground stations, and planning for integration of ADS-B data into the ATM automation system.
- India’s ADS-B implementation plan which included filling of surveillance gaps, seeking government approval for ADS-B data sharing with neighbouring States, and stakeholder engagement.

2.2 The Secretariat presented information on separation standards applicable in airspace served by ATS surveillance, and their contribution to improvements in airspace capacity and efficiency. The information included references to the Standards and Recommended Practices defined in ICAO Doc 4444 (PANS/ATM) and the Asia/Pacific Region’s expectations of the application of appropriate separation minima as agreed by APANPIRG/24 in its adoption of the Asia/Pacific Seamless ATM Plan. The expansion of ATS surveillance coverage in the South China Sea area as a result of ADS-B implementation would provide the opportunity for significant improvements in airspace capacity while simultaneously reducing ATC workload and task complexity. Airspace capacity and efficiency improvements would be achieved through the implementation or extension of ATS surveillance services where accompanied by implementation of surveillance based separation standards.

2.3 It was suggested at the meeting that minimum surveillance separation standards are not always used within surveillance airspace across FIR boundaries due to a range of issues including the incidence of pilot non-compliance with clearances in or approaching boundary areas, ATC coordination deficiencies, traffic demand and ATC system and display limitations. It was observed that there was a significant difference between minimum separation derived by ATM capability and that required to manage traffic for various reasons. Setting separation at conservative distances in all circumstances regardless of traffic demand penalized aircraft when there was no need.

RACP/TF/3

2.4 The meeting noted that, unlike the cases of North America and Europe, the Asia/Pacific Region did not have the benefit of a networked ATFM capability that would help to manage contingency events, and that while it may be easy to identify pre-determined contingency routes they would not always work. Flexibility was a key to managing Level 2 contingency arrangements, i.e. inter-State contingency plans and agreements.

2.5 The meeting was informed of relevant outcomes from the Combined Third Meeting of the South Asia/Indian Ocean ATM coordination Group (SAIOACG/3) and Twentieth Meeting of the South East Asia ATS Coordination Group (SEACG/20), held in Bangkok, Thailand, from 18 – 22 February 2013. That meeting had noted that, with respect to Large Scale Weather Deviations (LSWD), the tripartite agreement between Hong Kong China, Singapore and Thailand should include appropriate CDM/ATFM measures to ensure maximum utilization of airport and en-route capacity. The results were to be reported to SEACG/21.

2.6 This was in accordance with the outcomes from ATFM/SG/1, which considered that each of the Major Traffic Flows (MTF) should have ATFM planning regardless of traffic density, to cater for contingency operations in addition to traffic loading. The establishment of a linkage between the Regional ATM Contingency Plan and the Regional Framework for Collaborative ATFM should be further explored.

2.7 RACP/TF reconsidered its working arrangements, and agreed to target finalization of the Regional ATM Contingency Plan for APANPIRG/26, expected to be held in September 2015, to align with the expected finalization of the Asia/Pacific Regional Framework for Collaborative ATFM and the implementation date of the Seamless ATM Plan's Phase 1 Preferred ATM Service Levels (PASL).

2.8 While there was a clear need for each State's ATS contingency route structure to be understood and agreed by neighbouring States, the benefits and need for a harmonized contingency route structure needed to be clearly defined. The meeting discussed whether it was either practicable or desirable to develop a fully harmonized regional network of contingency routes and flight level allocation schemes (FLAS), which could reduce the flexibility that would be essential in tactical management of contingency situations.

2.9 The meeting considered the work being undertaken by the ATFM/SG, which was expected to lead to a networked ATFM solution for the Region, providing far more practicable, efficient, flexible and dynamic contingency routing solutions.

MET/ATM Seminar and MET/R TF/3

2.10 The Secretariat presented information on outcomes related to future requirements for meteorological information and products supporting ATM that had arisen from various ICAO APAC Region ATM meetings, including planning for implementation of seamless ATM operations, collaborative ATFM and ATM contingency operations. Potential MET/ATM work areas arising from the Asia/Pacific Seamless ATM Plan included identification of the meteorological data required to support airport capacity analysis and aircraft climb, descent and approach operations, ATFM/CDM processes, and the determination of nominal aircraft capacity for terminal ATC sectors as well as the integration of MET information in ATC air situation displays.

2.11 The meeting noted the re-convening of the ATFM/SG, and the outcomes from ATFM/SG/2, including the proposed revised Terms of Reference (ToR) that included the task of identifying, researching and recommending appropriate guidance in capacity assessment and adjustment mechanisms and data gathering, including factors affecting capacity such as weather information. The meeting also noted a number of early draft elements of the ATFM framework that would require supporting MET information.

2.12 The meeting discussed the ATFM/SG vision of a number of sub-Regional distributed or “virtual” ATFM networks requiring the definition of standardized ATFM message formats and communications protocols to ensure interoperability within and between sub-Regional networks. The MET/R TF meeting was of the view that current and future developments in the provisions for aeronautical meteorological information exchange should support interoperability and noted that any future exchange of meteorological information in addition to OPMET defined in Annex 3 and yet to be defined within the Regional ATFM framework would also need standardization to support interoperability.

2.13 The meeting agreed that there was considerable benefit in formalizing a link between MET/R TF and ATFM/SG. The possibility of joint meetings should be explored, although it was acknowledged that the 6-month meeting schedule of ATFM/SG would be unlikely to justify them.

2.14 The meeting agreed to **Draft Decision TF 3/1: Revised Terms of Reference** for further consideration by the Aviation Meteorology Sub-Group (MET SG). The proposed revision includes coordination with ATFM/SG to provide expertise on MET services to assist in the establishment of sub-regional ATFM.

2.15 The meeting also agreed to the following Draft Decision relating to the proposed linkage between MET/R TF and ATFM/SG:

Draft Decision 3/2: Revised ATFM/SG Terms of Reference

That, the Secretariat report the revised MET/R TF Terms of Reference and the rationale behind them to ATFM/SG/3 and propose a corresponding revision of ATFM/SG Terms of Reference for consideration by ATM/SG.

2.16 The MET/R TF ToR and corresponding changes to ATFM/SG ToR will be discussed later in the ATFM/SG/3 meeting.

2.17 The MET/ R TF meeting noted that a number of States were developing or had developed customized MET products to support terminal area and ATFM operations which were beyond the current scope of ICAO provisions. The 2010 regional survey of ATFM requirements for MET services/products was recalled, and the meeting agreed that a similar survey could be conducted to determine what MET products and tailored MET services are being provided to ANSPs, particularly those services/products not governed by ICAO provisions. To facilitate alignment of systems the survey would also seek information on product formats used.

2.18 Hong Kong, China presented information, previously presented to ATFM/SG/2 (WP/11), on tailor-made MET products and services including Aviation Thunderstorm Now-casting System, 1-hour convection now-cast for arrival/departure corridors, 9-hour performance based weather forecasts providing information in addition to that provided in TAF/TTF, and 12-hour and 6-hour forecasts of significant convection for key areas.

2.19 The meeting agreed to a work programme including *inter alia* the following tasks and activities:

- Conduct a survey on regional ATM requirements for MET information;
- Investigate sub-regional exchange of MET information and associated agreements that facilitate ATM operations, particularly over busy routes that overlap different FIRs;

- Assess aviation meteorological services, systems and architecture in the region and how they can integrate weather information into ATS/aircraft operator decision support tools;
- Facilitate implementation of Meteorological Services for the Terminal Area (MSTA, under development by the World Meteorological Office -WMO);
- Develop a list to guide States on the MET information or services necessary to support implementation of each element of the APAC Seamless ATM Plan;
- Monitor developments of MSTA pending approval at conjoint ICAO/WMO Divisional meeting 2014;
- States to develop agreements on the exchange of MET information that provides benefit to ATM operations on sub-regional level;
- Monitor developments of MSTA and related Annex 3 developments;
- Develop regional implementation plan for MSTA.

2.20 The ICAO Meteorology Divisional Meeting will be held in Montreal, Canada from 7 to 18 July 2014, in part conjointly with the 15th Session of the WMO Commission for Aeronautical Meteorology (CAeM-XV).

SAIOACG/4&SEACG/21

2.21 The combined SAIOCG/4&SEACG/21 meeting was informed of the Group of Five ANSPs Informal Coordination Meeting (Indonesia, Malaysia, Philippines, Singapore and Thailand), where discussions focused on concept development of ATFM on a sub-regional scale, consistent with the Asia/Pacific Seamless ATM Plan and ICAO's Aviation System Block Upgrade (ASBU) concept.

2.22 The meeting was updated on progress of key SAIOACG/SEACG Small Working Group (SWG) actions. **Table 1** provides progress update of the ATFM SWG.

ATFM SWG	Summary of Actions
City Pair CDM trials Bangkok, Singapore, and Hong Kong	Support the tests and plan for future expansion and development; trial results reported to SEACG/21 (SAIOACG4/SEACG21/IP11).
Large Scale Weather Deviations (LSWD)	Tripartite agreement should include ATFM measures distributed via A-CDM ensuring maximum utilization during LSWD affecting L642 and M771; results reported to SEACG/21 (SAIOACG4/SEACG21/IP11).
Pakistan-India-Afghanistan Special Coordination Meeting	BOBCAT Prioritisation; acceptance of 50NM separation; removal of unnecessary ATS route/altitude restrictions; status of COM and SUR; transition from BOBCAT to ATFM system. India and Pakistan had conducted a coordination meeting. 50 NM spacing was now accepted on ATS route P628. Lahore requires acceptance by Kabul before accepting from India, and FL280 was still not available (SAIOACG Task List).
States with traffic	States to commence aerodrome and airspace capacity

ATFM SWG	Summary of Actions
capacity issues	analysis at the earliest opportunity (now managed by the ATFM/SG).
Sub-regional ATFM (Conclusion ATFM Steering Group)	Start with sharing information, then evolving into collaborative ATFM implementation among the virtual ATFMUs (now managed by the ATFM/SG).

Table 1: ATFM SWG Progress Update

2.23 The meeting discussed ATM solutions to enhance en-route capacity over the Bay of Bengal, given the continued growth of air traffic between South East, South Asia and beyond. Issues relating to the Bay of Bengal Cooperative ATFM System (BOBCAT), non-availability of flight levels, 10 minute longitudinal separation and imposition of en-route holding to achieve the separation during large scale weather deviations. The meeting noted that the proposed 2014 ADS-B installation at Port Blair would resolve the majority of issues over the Bay of Bengal.

2.24 India reported progress in its development of an Airport Collaborative Decision Making (A-CDM) to manage departure and arrival traffic during adverse weather conditions at New Delhi, which had resulted in reduced radiotelephony congestion, improved situational awareness for airspace users, less holding and earlier diversion decisions, improved recovery from adverse conditions and improved capacity.

2.25 An A-CDM platform had also been developed as a pilot project at Mumbai, involving automatic calculation of Target Start-up Approval Time (TSAT), flight data processing independent of the ATC automation system, and real-time information sharing among stakeholders through the A-CDM website. The next stage of the project would be the generation of Expected In Block Time (EIBT)

2.26 The meeting was updated on Seamless ATM Planning and reporting, which was crucial for airspace users, neighbouring FIRs, Regional Office and ICAO HQ. The Asia/Pacific Regional Performance Dashboard on safety (based on ICAO Doc 10004 - *Global Aviation Safety Plan – GASP*) would become active on the ICAO HQ website during 2014. The initial ATFM performance indicator would be the percentage of FIRs within which all Area Control Centres (ACCs) utilize ATFM measures.

2.27 Hong Kong China, Indonesia, Malaysia, Singapore and Thailand presented a plan to conduct an operational ATFM trial using the concept of a distributed regional network. The first step was a CDM information sharing trial focusing on the objective of a communication framework for effective exchange of information between Hong Kong China, Singapore and Thailand. The second phase focused on concept development and exploring potential implementation on a sub-regional scale. A trial was planned for June 2015, also involving airspace users.

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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