INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE EIGHTH MEETING OF THE ASIA/PACIFIC AIR TRAFFIC FLOW MANAGEMENT STEERING GROUP (ATFM/SG/8)

NEW DELHI, INDIA, 14 – 18 MAY 2018

The views expressed in this Report should be taken as those of the Meeting and not the Organization

Approved by the Meeting and
published by the ICAO Asia and Pacific Office, Bangkok

CONTENTS

APPENDICES

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INTRODUCTION

Meeting

1.1 The Eighth Meeting of Air Traffic Flow Management Steering Group (ATFM/SG/8) was held in New Delhi, India, from 14 to 18 May 2018.

Attendance

2.1 The ATFM/SG/8 meeting was attended by 51 participants from 15 Administrations and five International Organizations including Bangladesh, China, Hong Kong China, India, Indonesia, Japan, Republic of Korea, Mongolia, Myanmar, New Zealand, Philippines, Singapore, Thailand, USA, Viet Nam, CANSO, IATA, ICCAIA, IFALPA and ICAO. A list of participants is at **Appendix A** to this report.

Officers & Secretariat

3.1 Mr. Peter Chadwick, Senior Operations Officer, Hong Kong China Civil Aviation Department, chaired the ATFM/SG/8 meeting.

3.2 Mr. Shane Sumner, Regional Officer Air Traffic Management and Aeronautical Information Management (ATM/AIM), ICAO Asia and Pacific Regional Office, was Secretary for the meeting. He was assisted by Mr. Hiroyuki Takata, Regional Officer ATM (ATFM), ICAO Asia and Pacific Regional Sub-Office and Mr. Li Wenxin, Regional Officer ATM (ATFM), ICAO Asia and Pacific Regional Sub-Office.

Opening of the Meeting

Inauguration of the Meeting

4.1 The meeting was inaugurated by Mr. A.K. Dutta, Member (Air Navigation Services), Airports Authority of India.

Opening of the Meeting Plenary

4.2 On behalf of Mr. Arun Mishra, Regional Director of the ICAO Asia and Pacific Regions, Mr. Shane Sumner welcomed all the participants to the meeting.

4.3 Mr Peter Chadwick welcomed participants to the meeting.

Documentation and Working Language

5.1 The working language of the meeting and all documentation was English. There were 21 working papers, 10 information papers, three presentations and one flimsy considered by the meeting. A list of papers is included at **Appendix B** to this report.

Draft Conclusions, Draft Decisions and Decisions of ATFM/SG – Definition

6.1 ATFM/SG records its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

Draft Conclusions deal with matters that, according to APANPIRG terms of reference, require the attention of States, or action by the ICAO in accordance with established procedures;

Draft Decisions deal with the matters of concern only to APANPIRG and its contributory bodies; and

Decisions of ATFM/SG that relate solely to matters dealing with the internal working arrangements of ATFM/SG.

List of Draft Conclusions

7.1 List of Draft Conclusions

<table>
<tr><td colspan="3">Draft Conclusion ATFM/SG/8-1: Recommended Calculated Take-Off Time Compliance Window</td></tr>
<tr><td colspan="2">What: That,
1. Asia/Pacific Administrations implementing Ground Delay Programs (GDP) for flights to capacity-constrained destination airports use a recommended compliance window of -5 to +10 minutes to measure compliance with Calculated Take-Off Times (CTOT);
2. CTOT compliance windows for individual departure airports be subsequently refined on the basis of post-operations analysis, taking into account the requirements at constrained destination airports and subject to the agreement of the Administration responsible for the departure airport; and
3. CTOT compliance windows other than the recommended compliance window be reported to the Air Traffic Flow Management Steering Group.</td><td>Expected impact:
☐Political / Global
☐Inter-regional
☐Economic
☐Environmental
☒Ops/Technical</td></tr>
<tr><td>Why: To establish a regionally-recommended CTOT compliance window as an initial measure of compliance with GDP for constrained destination airports.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 3-Aug-18</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

7.2 List of Draft Decisions

Nil.

7.3 List of Decisions

Nil.

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REPORT ON AGENDA ITEMS

Agenda Item 1: Adoption of Agenda

1.1 The provisional agenda (WP/1) was adopted by the meeting.

Agenda Item 2: Review Outcomes of Related Meetings

Related Meeting Outcomes (WP/2)

2.1 The Secretariat presented the outcomes of the following ICAO meetings relevant to ATFM/SG:

- the Fifth Meeting of the Air Traffic Management Sub-Group of APANPIRG (ATM/SG/5, was held in Bangkok, Thailand, from 31 July to 04 August 2017;
- the 28th Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/28) was held in Bangkok, Thailand, from 11 to 14 September 2017;
- the ICAO ATFM Global Symposium 2017 (ATFM2017) was held in Singapore from 20 to 22 November 2017;
- the Airport Collaborative Decision-Making (A-CDM) Seminar and Second Meeting of the Asia/Pacific A-CDM Task Force (APA-CDM/TF/2) was held in Hong Kong, China, from 29 November to 01 December 2017; and
- the Second Meeting of the Asia/Pacific System Wide Information Management Task Force (SWIM TF/2) was held in Bangkok, Thailand, from 09 to 12 April 2018.

2.2 The information included *inter alia* an update on the progress of the Asia/Pacific Regional Guidance for Meteorological Information Supporting ATM. The guidance had not been agreed by the Meteorological Sub-Group (MET SG) of APANPIRG in time for the APANPIRG/28 meeting. It was expected that this would be further progressed at MET SG/22 in 2018.

Agenda Item 3: ATFM/CDM Global Update

IATA A-CDM Brochure (WP/3)

3.1 IATA presented a brochure developed by the IATA Airport Collaborative Decision-Making Group (AACG), containing recommendations on implementation of A-CDM, to encourage harmonization of processes, stakeholder consultation and collaborative implementation. The recommendations reflected the experience gained by airlines across multiple A-CDM implementations.

3.2 The brochure would also be presented in 2018 to the ATM/SG/6, Aerodrome Operations and Planning Sub-Group (AOP/SG) and APA-CDM/TF/3 meetings.

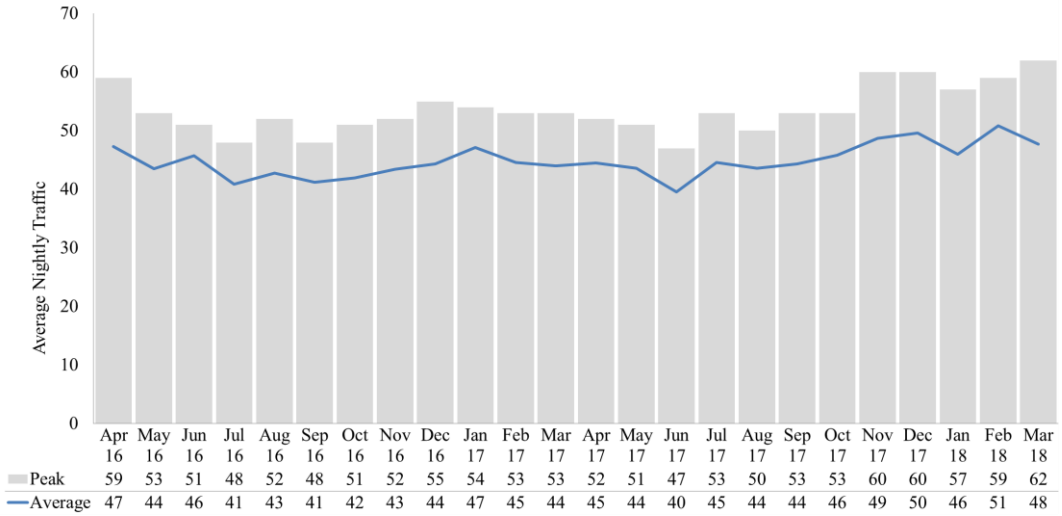
3.3 The Secretariat agreed to coordinate the possible use of the A-CDM brochure by the APA-CDM/TF in developing the Regional A-CDM implementation plan, and the uploading of the brochure to the ICAO Asia/Pacific Regional Office e-documents web-page.

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

BOBCAT Operational UPDATE (WP/4 and SP/1)

4.1 The meeting was presented with an operational analysis and overview of westbound flights through the Kabul FIR associated with the Bay of Bengal Cooperative Air Traffic Flow Management (BOBCAT) system for the two-year period between April 2016 to March 2018. In addition, the paper outlined changes to BOBCAT operation including Afghanistan entry waypoint renaming, accommodation of new Perth – London flight operations, as well as the impact of a recent radar outage in Uzbekistan.

4.2 **Figure 1** summarizes BOBCAT slot request volume from April 2016 to March 2018.



	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	Jan 17	Feb 17	Mar 17	Apr 17	May 17	Jun 17	Jul 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
Peak	59	53	51	48	52	48	51	52	55	54	53	53	52	51	47	53	50	53	53	60	60	57	59	62
Average	47	44	46	41	43	41	42	43	44	47	45	44	45	44	40	45	44	44	46	49	50	46	51	48

Figure 1: BOBCAT Traffic Demand from Slot Requests: April 2016 – March 2018

4.3 The meeting was provided with data on Departure (DEP) message compliance, the trial of a reduced taxi-out time at Kuala Lumpur International Airport, the percentage of flights operating at the requested (or better) flight level in the Kabul FIR, and an analysis of the major causes of aircraft being unable to enter the Kabul FIR at the slot-allocated flight level.

4.4 An analysis of the percentage of flights for which DEP messages were received by the Bangkok Air Traffic Flow Management Unit (ATFMU) was provided. Further analysis of Flight Plan (FPL) and DEP messages reported to be not received by participating States is discussed under WP/13.

4.5 The percentage of flights operating through the Kabul FIR at the planned or better flight levels was continuously in the range of 85 to 94 percent for the analysis period.

4.6 The analysis showed that the major cause of flights not operating at the planned or better flight level in the Kabul FIR was entry time compliance. The need for flights to, wherever possible and facilitated by en-route ATS units, cross the entry point within the 5-minute window after the Calculated Time Over (CTO+5) was emphasized.

4.7 The meeting noted the continuing need for improved capacity in the Kabul FIR (i.e. improved longitudinal separation minimum).

Review of Flow Control Restrictions on Airways M771 and M772 (IP/2)

4.8 Indonesia presented a review of the flow control restrictions on ATS routes in the South China Sea area that had been affecting flights from Jakarta FIR, and the expectation that operational improvement in ATFM should be made by the originating airport and sectors. Unpredictable take off times including substantial delays had been recorded, in the worst case being a flight from Jakarta to Shanghai/Pudong delayed by 5 hours. Examples of delays imposed was provided in **ATFM/SG/8 IP/02 Attachment A**.

4.9 The meeting was informed that M771 was one of several converging ATS routes, and that the method used to determine the minutes-in-trail (MINIT) promulgated in NOTAM from the miles-in-trail (MIT) flow restriction was not ideal. Consideration was being given to moving the convergence point further south, and to widening the scope of the current MIT/MINIT to CTOT conversion trial to include other routes, possibly including M772.

Development of Chronos Application (IP/3)

4.10 Indonesia provided an update on the development of the Chronos application, which managed the paring of tactical departure and arrival slot allocation between 35 major airports in Indonesia. An enhanced Chronos Version 2 was planned to be launched in mid-2018.

4.11 In response to a query Indonesia confirmed that the Chronos application was used to allocate slots to irregular flights.

C-ATFM Implementation in India – Update (WP/5)

4.12 India presented an update on the implementation of the Central ATFM (C-ATFM) covering the entire Indian airspace. The C-ATFM system consisted of a Central Command Centre (CCC) and various Flow Management Positions (FMPs) located at ATC units of major airports across the country.

4.13 Information was provided on Phase I implementation focused on six metro airports at Bengaluru, Chennai, Delhi, Hyderabad, Kolkata and Mumbai. Phase II implementation was planned for the introduction of procedures for handling airspace capacity issues. Phase III of the implementation plan would introduce cross-border ATFM information sharing with adjacent countries.

4.14 India planned to introduce a web-based On-Line-FPL (OFPL) system later in 2018 to enable all airspace users to submit ATS FPL messages through web-based applications.

4.15 In response to a query, India informed the meeting that the timing of implementation of Phase III of C-ATFM (Cross-Border ATFM) had not yet been determined. India was monitoring the progress of other cross-border ATFM implementation activities in the Region.

4.16 India advised that the C-ATFM specification, when written, included the use of Flight Information Exchange Model (FIXM) version 3.0, and noted the challenge of communicating system requirements to vendors during a period of continuing change in the model.

Update on the Progress of Northeast Asia Regional ATFM Harmonization Group – NARAHG (WP/20)

4.17 China, Japan and Republic of Korea presented the outcomes of the 6th meeting of the Northeast Asia Regional ATFM Harmonization Group (NARAHG), held in Seoul, Republic of Korea, from 12 to 14 March 2018. Information was provided on:

- ATFM/CDM development status in Northeast Asia;
- Cross Region ATFM Collaborative Platform (CRACP) implementation;
- ATFM Daily Plan (ADP) exchange; and
- Post-operations analysis.

4.18 The CRACP project was divided into three stages, the third being the connection of each NARAHG State's ATFM systems directly to the CRACP, in accordance with an Interface Control Document (ICD). Successful Stage 1 connection tests between Fukuoka (Japan) and Shanghai (China) had been conducted, and tests between Daegu (Republic of Korea) and Shanghai were being conducted from April 2018.

4.19 The meeting was informed that the timeframe for Stage 3 completion could possibly be 2020, but was not yet a firm decision.

4.20 In response to a query on how States not connected to CRACP would communicate with it, the meeting was informed that CRACP information exchange was comparable to FIXM. Referring to a query on whether CRACP would use SWIM-based technology, the meeting was informed that CRACP was essentially a 3-State system.

The Cross Border ATFM Operation in Northeast Asia (IP/4)

4.21 The meeting was provided with an update on the progress of the CRACP, jointly implemented by China, Japan and Republic of Korea. The information provided included a summary of the CRACP operating procedure, and the updated ICD for CRACP.

4.22 The meeting noted that terminology for ATFM had been agreed by ATFM/SG at ATFM/SG/5 (2015) when it finalized version 1.0 of the Regional Framework for Collaborative ATFM, subsequently adopted by APANPIRG/26. The 12 data attributes for an Asia/Pacific FIXM extension, based on the agreed terminology, had been discussed and agreed by the ATFM/SG at ATFM/SG/7.

4.23 In discussing the assignment of CTO, it was further observed by the meeting that ICAO Doc 9971 – *Manual on Collaborative ATFM* stated that the use of CTO, which also entailed the use of the aircraft Required Time of Arrival (RTA) function, was a gradual process that required education and collaboration to ensure that requirements were understood and met, and that such techniques should be considered as advanced, and require substantial experience for their implementation.

4.24 In response to a query the meeting was informed that the compliance window for CTO had not yet been determined.

4.25 The meeting noted that the CRACP was an information sharing platform, and that there was a need for clarification of the differences between the CRACP concept and the Regional ATFM Concept of Operations.

ATFM/CDM Activities in Japan (IP/8)

4.26 Information was presented on ATFM/CDM activities in Japan, including the ATM Operational Evaluation Report, the deployment of ATM Workstations (ATWs) in CDM airlines to facilitate CDM, and mitigation of airspace congestion by the use of congestion avoidance routes.

4.27 The meeting noted the value of congestion avoidance routes, and that other parts of the Asia/Pacific Region were too rigid on the use of published ATS routes.

4.28 ATFM Ground Delay Programs (GDPs) using Estimated Departure Clearance Times (EDCT, equivalent to CTOT) were implemented at least several times per day in Japan. It was noted that compliance with EDCT at congested airports was not always ideal, and that compliance rates were thought to be improved by introducing and developing A-CDM at airports.

Progress of the Distributed Multi-Nodal ATFM Project (WP/6 and SP/2)

4.29 The meeting was provided with an update on the Distributed Multi-Nodal ATFM Project, focusing on recent achievements in implementation of ATFM measures (GDPs), and the work plan for the development of ATFM measures for airspace congestion. The project was arranged in two phases (**Table 1**), with three levels of engagement by participating Administrations (**Table 2**).

Phase	Key Focus
Phase 1 (2015 – 2016+)	**Airport Program**: Distributed GDP / CTOT to regulate traffic into **arrival airports where demand is exceeding capacity**
Phase 2 (2017 onward)	**Airspace Program**: Distributed GDP / CTOT to regulate traffic into **airspace where demand is exceeding capacity**

Table 1: Distributed Multi-Nodal ATFM Project Phases

Tiered Level	Capabilities
Level 3	Capable of generating, distributing, receiving, and complying to ATFM measures
Level 2	Capable of receiving and complying to ATFM Measures
Level 1	Observe and participate in the trial progress
Project Advisor	Provide advice to the project (**Australia**)

Table 2: Distributed Multi Nodal ATFM Project Engagement Levels

4.30 Activation of ATFM measures under Phase 1 included responses to several planned and ad hoc (weather induced) events in Singapore, planned and emergency situations in Thailand, and tropical cyclone events in Hong Kong, China. Challenges were mostly related to cross-border coordination difficulties, highlighting the pressing need for more efficient communication protocols and information exchange. Lack of awareness of procedures and of the reach and limitations of ATFM services were also challenges. It was crucial that all stakeholders continued to ensure effective communication and sharing of ATFM knowledge among operational personnel.

4.31 Initial work on Phase 2 had begun with a focus on alleviating problems with compounding MINIT flow restrictions on major South China Sea ATS routes illustrated in the example in **Figure 2**.

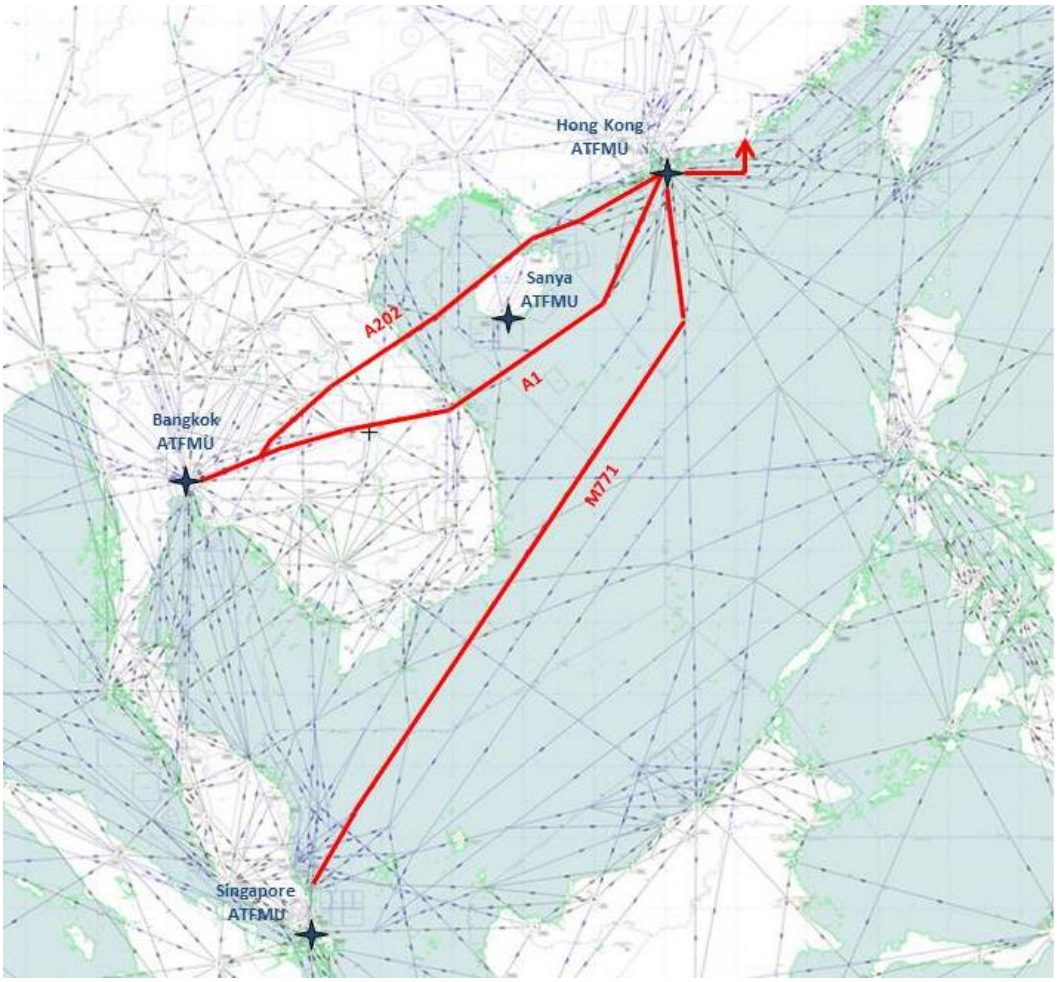


Figure 2: Example Major ATS Routes with Compounding MINIT Restrictions

4.32 Due to the current unavailability of a means of harmonized information exchange stakeholders had been asked to access information in various ATFM systems using different interfaces to obtain ATFM information. This had led to an increase in cross-border coordination workload, which became a major issue due to the number of ATFM programs activated. Information on developments in this area was provided in WP/7.

4.33 The development of local ATFM implementation plans and establishment of infrastructure had led to States upgrading their participation tier. Cambodia had upgraded their participation tier to Level 3, with their first GDP planned for May – October during the Phnom Penh International Airport runway maintenance project. Viet Nam had established the Ha Noi ATFM Centre, and a national ATFM Master Plan was being prepared.

4.34 The lack of support from some Level 2 participants was noted. **Figure 3** demonstrates CTOT compliance for flights departing aerodromes in participating States.

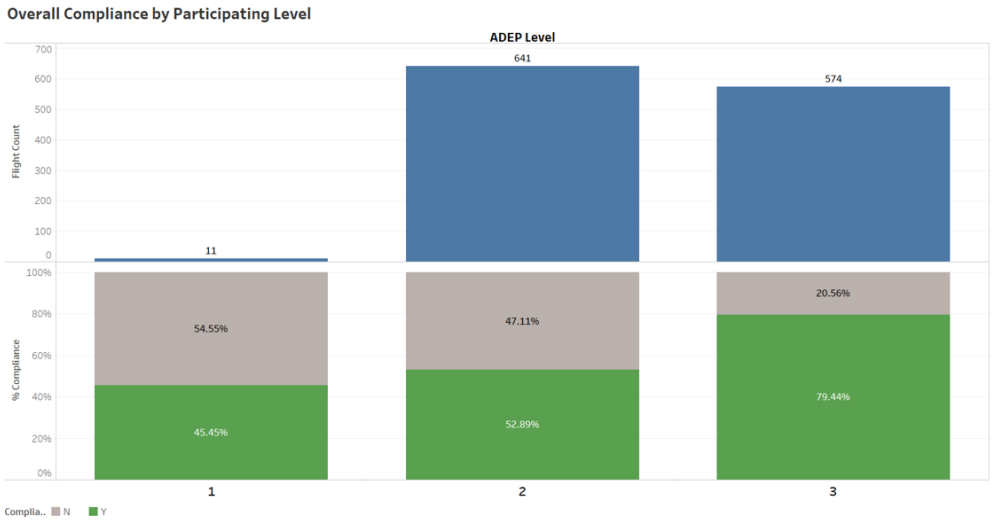


Figure 3: Overall CTOT Compliance per Participation Level

4.35 Low compliance with CTOT resulted in significant delay penalty for CTOT-compliant flights, illustrated in **Figure 4**.

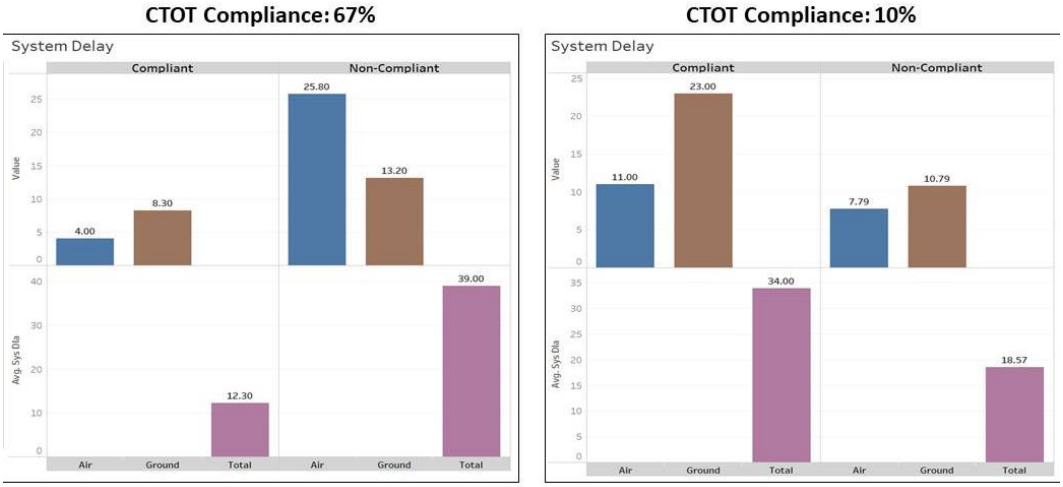


Figure 4: Delay Comparison

4.36 Compliance with ATFM measures was one of the key elements determining their success. The project core team would continue to raise awareness through engagement with and education of stakeholders and other Administrations. There was also a view to establishing an ASEAN ATFM Implementation Support Group. All Administrations were urged to ensure the establishment of local procedures for the facilitation of ATFM compliant departures.

Progress of the Technical Sub-Group of the Multi-Nodal ATFM Project (WP/7)

4.37 The main tasks of the Technical Sub-Group of the Multi-Nodal ATFM Network Operational Trial Project included development of common minimum user interface requirements, development of an information exchange framework based on the SWIM concept to support operational requirements, supporting the implementation of ATFM system-to-system connection and supporting relevant bodies in ensuring SWIM-format data provisions were appropriate for the distributed ATFM environment.

4.38 Information was provided on key achievements, including the development of an operational scenario template and ATFM operational scenarios in coordination with the SWIM TF, development of a FIXM Extension, development of ATFM-related services description and an initial system connection test between Singapore and Thailand.

4.39 The Technical Sub-Group was updating the draft ICD that was presented to ATFM/SG/7, and would further develop and validate it as part of the SWIM in ASEAN Demonstration planned for mid-2019. Further refinement of the FIXM Extension would be conducted in coordination with the SWIM TF, and work would be done to identify the technical requirements for the exchange of ADPs.

4.40 The Technical Sub-Group and the Multi-Nodal ATFM Project Core Team had agreed to use the EUROCONTROL Slot Allocation Message (SAM[1]) for the exchange of ATFM data until the establishment of SWIM-based ATFM information exchange. The Technical Sub-Group would also support the effort to identify areas requiring interoperability with NARAHG, and regional ATFM interoperability.

4.41 The meeting noted that Doc 4444 included *flow control messages* in the *movement and control messages* (priority FF) category, but also included in paragraph 11.4.2.6.3 a note stating that the format and data conventions for automated interchange of flow control messages had not yet been developed. It could therefore be necessary to develop a proposal to include SAM in ICAO Doc 7030 *Regional Supplementary Procedures*.

Post-Operational Evaluation of Singapore ATFM Measures at Juanda (Surabaya) International Airport (IP/5)

4.42 Indonesia provided an evaluation of compliance with ATFM measures distributed by Singapore for aircraft departing Surabaya/Juanda International Airport during a period of reduced capacity due to an air show event in Singapore. Surabaya/Juanda was one of three airports in Indonesia that were participating at Level 2 of the Multi-Nodal ATFM Operational Trial, facilitating compliance with CTOTs. **Table 3** summarizes compliance per operator.

Airline	Total of Flight	Comply	(%)
GIA	3	3	100
TGW	5	2	40
SIA	6	4	67
JSA	1	1	100
TOT	15	10	**67**

Table 3: CTOT Compliance at Surabaya/Juanda International Airport

[1] The EUROCONTROL Slot Allocation Message (SAM) conforms with the EUROCONTROL ATS Data Exchange Presentation (ADEXP), included in the Asia/Pacific Regional Framework for Collaborative ATFM

4.43 The meeting was informed that the next meeting of the Multi-Nodal ATFM Project would discuss CTOT compliance, noting the low compliance levels of some aircraft operators.

4.44 It was also noted that information had been received suggesting that CTOT distributed to Jakarta were not actioned due to a regulatory directive that on-time departure performance must be facilitated. Indonesia advised that no representative from the regulatory body was present at the meeting, and that further enquiry would be made.

4.45 The meeting was also informed that the use of social media platforms for the exchange of operational communications, while possibly suitable for trials, was not likely to meet normal operational requirements for information security, and system availability and reliability.

C-ATFM Post-Operations Analysis (WP/9)

4.46 India presented the post-operations analysis process practiced and shared with all stakeholders since the commencement of C-ATFM in India in April 2017. The information provided included challenges in data collection, the need for analytical tools and the lessons learnt during the process.

4.47 Post operations review was conducted at the end of each day to analyse the effectiveness of ATFM measures. The standard operating procedures of the CCC and FMP were regularly revisited, taking into account the outcome of such post-operations review. The Post-Operations Analysis Report was shared with all stakeholders on a monthly basis.

4.48 Detailed information was provided on affected flight statistics, ATFM ground delays, ATFM compliance, air delay statistics, challenges in data collection, the need for and analytical tools.

4.49 Lessons learned included the demand-capacity imbalance caused by inflated block times filed by airlines to acquire required slots, the restrictive nature of GDPs and Ground Stop (GSt) Programs, the need for collaboration in managing planned airport or runway closures, the need for flexibility in allocation of new or revised CTOTs during tactical ATFM operations, the need for all stakeholders to engage proactively, and misunderstandings of terminologies that may result in either undersupply or oversupply of flights to a constrained airport.

4.50 The meeting noted that the performance measurements in use in India were largely the same or similar to those used in the Multi-Nodal ATFM Project, and that it would be beneficial were India to participate in the joint, collaborative development of the Regional post-operations analysis framework. The USA expressed willingness to also provide assistance in the development of post-operations analysis processes.

Long Range ATFM Concept Trials (IP/6)

4.51 New Zealand and Singapore presented information on Long Range ATFM (LRATFM), a concept devised to provide a basis for research into the application of ATFM measures beyond current system timeframes. The concept had been subject to practical trialling by New Zealand and Singapore during the second half of 2017. Information provided included problem identification, the LRATFM concept, operational trial results, joint conclusions, reference to ICAO guidance, and next steps under consideration.

4.52 It was noted that the results of the trials exemplified the advanced nature of any end-state solution requiring the use of Calculated Time Over (CTO)/Required Time of Arrival (RTA), as also discussed in ICAO Doc 9971 *Manual on Collaborative ATFM*. The meeting was informed that work done in the SWIM in ASEAN demonstration to develop operational ATFM scenarios had highlighted the challenges of information exchange with en-route ATS units. New Zealand advised that the issue of how to include multiple FIRs had been discussed at multiple meetings.

4.53 In response to a suggestion that this form of ATFM should be extended to ATS routes converging in the Bay of Bengal/Arabian Sea areas, the meeting was reminded of capacity constraints in that airspace including inefficient separation minima which should be addressed. However, India was willing to participate in this kind of initiative.

4.54 CANSO supported the trial, and encouraged all ANSPs in the region to participate.

4.55 In response to a query, New Zealand advised that the use of Target Time Over (TTO) in lieu of CTO was intended only for the purpose of distinguishing this trial activity from any operationalized use of CTO.

C-ATFM – A-CDM/AOCC Integration, Progress, Challenges (WP/10)

4.56 India presented the progress made in the integration of the Central Air Traffic Flow Management System (C-ATFM) with Airport Collaborative Decision-Making/Airport Operations Command Centre (A-CDM/AOCC) in India. The integration with A-CDM/AOCC was a feature of Phase II of the C-ATFM project. The information provided highlighted C-ATFM and A-CDM/AOCC functionality, the reasons for integration, the process of integration, major issues/challenges and benefits. Other States were encouraged to share their experiences in A-CDM-ATFM integration.

4.57 In response to a query, India advised that CTOT were distributed from the C-ATFM system to A-CDM using ADEXP[2] format. India was moving towards FIXM but had not yet specified a version due to the changing landscape in this area.

Training of ATFM Personnel (WP/11)

4.58 India presented information on ATFM training, including the challenges associated with training of ATFM personnel associated with joint user airports, the Flow Management Position (FMP) training program, activation and training at Defence airports, awareness programs, and consideration of personnel licensing of flow managers.

4.59 In discussing the proposal for a review of provisions for licensing of flow managers, the meeting noted there was considerable variation among ANSPs. In some cases, ATFM personnel retained current ATC licenses, in other cases recruitment criteria included the requirement to hold or have held an appropriate ATC license together with substantial ATC experience, and others did not require any ATC experience.

[2] The Asia/Pacific Regional Framework for Collaborative ATFM includes ADEXP version 3.1 as an agreed format for ATFM message exchange via the Aeronautical Fixed Service (AFS) where an ATFM network FIXM interface has not been established.

4.60 The CANSO position was that Flow Managers should have an operational ATC background, at least in the case of personnel with an ATFM supervisory role. While a licence may not be necessary, some form of certification should be in place.

4.61 It was noted that the management and oversight of licencing was onerous for the regulatory authority. It was further noted that it was unlikely that the relevant ICAO panel would countenance an amendment to Annex 1 to include standards for licencing ATFM personnel. The most important consideration was the establishment of robust competency criteria, competency assessment criteria and performance assessment processes.

4.62 The meeting agreed to conduct some further research into the implications of different qualification schemes for ATFM personnel.

Establishment of Airspace Management Cells (WP/12)

4.63 Information was presented on India's plans for the establishment of Airspace Management Cells (AMC) and the efforts to synchronize their activities with the ATFM system. India noted that Flexible Use of Airspace (FUA) was a key enabler of ATFM, and that timely and judicious allocation of flexible airspace structures was essential to achieve demand-capacity balancing in both terminal and en-route phases of flight. The information provided discussed the relevance and need for civil/military cooperation in ATFM, India's plan to establish Regional AMCs (R-AMCs) at the four major ATS centres at Chennai, Delhi, Kolkata and Mumbai, and the National AMC (N-AMC) which would be co-located with the CCC at Delhi.

4.64 AMCs would be responsible for pre-tactical allocation of temporary airspaces and conditional routes, and for the allocation of FUA structures within their FIR. In the near term the AMCs would also handle tactical allocation of ad hoc airspaces.

4.65 A trial operation of the Delhi R-AMC was conducted in early 2017, highlighting important issues that needed to be addressed before AMCs could be established on a permanent basis.

4.66 The need to synchronize the activities of both C-ATFM and FUA had been identified. Information was provided on issues that needed to be addressed, personnel and equipment requirements, coordination roles of military and civilian personnel, and planned modifications to the ATFM system to incorporate requirements for FUA. It was expected that the combined N-AMC and R-AMC, collocated in the ATFM CCC at Delhi, would be established before the end of 2018.

4.67 In response to a comment, the meeting noted that ATM/SG/5 had assigned a task related to the harmonization of the format of airspace use plan NOTAM to India, Japan and Thailand, to be reported to the AIS-AIM Implementation Task Force (AAITF) meeting being held in June 2018.

4.68 Japan provided the meeting with information on the use of conditional routes (CDRs). There were 25 CDR in the Fukuoka FIR, either fixed CDR published in AIP (CDR 1) or promulgated by NOTAM published each day by the airspace management (ASM) system, in coordination with the Japan Air Self Defence Force (CDR 2). About 35,000 flights had used CDR in the Fukuoka FIR in the last year.

Collaborative Decision-Making for ATFM (IP/9)

4.69 USA presented information on CDM as used in the United States for ATFM planning and decision-making, noting that CDM shared processes, procedures and information support tools to optimize decision-making that led to improved efficiency, optimized system capacity, improved flows of aircraft, reduced delays and enhanced predictability and reliability of operator schedules. Information was provided on the identification and engagement of CDM participants, the benefits of CDM, application of CDM, and CDM data exchange and information distribution.

4.70 Included in the information was the schedule of collaborative information analysis sharing and conferencing, including strategic planning teleconferences every two hours, collaborative advanced planning each afternoon, a national system review each week-day (with weekend performance data reviewed in the Monday review), and a monthly customer forum. The meeting noted the benefits to the whole network arising from the inclusion of all stakeholders in the collaborative process.

4.71 It was noted that the Multi-Nodal ATFM Project was working towards a once-per-week post-operations analysis.

Flight Plan and Departure Message Analysis (WP/13)

4.72 The Secretariat presented the results of an analysis of missing FPL and DEP messages requiring corrective action to be taken by States and/or airspace users. The data-gathering and analysis activities were conducted in response to ***Conclusion APANPIRG/27/12: Origination and Distribution of Departure (DEP) Messages***, and the discussion outcomes of ATM/SG/5 which requested the scope of the analysis of missing DEP messages be broadened to include missing FPL messages.

4.73 Summaries of data gathered by Australia, China, Japan, Singapore and Thailand were provided in **ATFM/SG/8 WP/13 Attachments A and B**.

4.74 **Table 4** summarizes FPL and DEP messages reported as not received by one or more FIRs administered by States participating in the survey.

FPL and DEP messages reported as not received by States participating in the survey		
Reporting State	**Missing FPL**	**Missing DEP**
Australia	5	1
China	23/3*	268
Japan	-	62
Singapore	28	104
Thailand	2	147
Total	**58**	**582**

Table 4: Missing FPL and DEP messages – APAC States.
* *DEP message received but no corresponding FPL held.*

4.75 **Table 5** further details the information provided in Table 4, according to the APAC State responsible for the departure aerodrome.

FPL and DEP Messages Not Received by One or More FIRs in Reporting States **(Departure aerodrome located in APAC States)**		
State of Departure Aerodrome	**Missing FPL**	**Missing DEP**
Australia	-	9
Bangladesh	-	27
Bhutan	-	-
Cambodia	1	3
China	1	3
India	6	34
Indonesia	-	47
Republic of Korea	2	22
Lao PDR	4	9
Malaysia	33	62
Maldives	-	-
Myanmar	3	43
New Caledonia	-	1
New Zealand	-	3
Pakistan	-	2
Philippines	-	23
Singapore	-	1
Thailand	-	1
USA	-	44
Viet Nam	1	3
Total	**50**	**337**

Table 5: Missing FPL and DEP Messages – Departure Aerodrome in APAC States

4.76 The meeting was informed that the apparent non-receipt of messages did not necessarily reflect failures at the aircraft operator or departure aerodrome ANSP. A number of issues including non-compliant addressing, communication network failures, failure to correctly action rejected message queues, failure of the Centre in charge of the FIR to correctly redistribute messages, and non-inclusion in FPL of Estimated Elapsed Times (EETs) for all FIR boundaries crossed by the flight. There were also some anomalies in the data provided by participating States that required attention.

4.77 However, the data clearly indicated systemic issues in a significant number of APAC and other States that must be addressed.

4.78 The meeting noted that ICAO Doc 4444 – *Procedures for Air Navigation Services* (PANS-ATM) required that accumulated EET to such points as FIR boundaries be included in FPL item 18 when so prescribed by Regional Air Navigation Agreements. Noting that such agreements must be reflected in ICAO Doc 7030 – *Regional Supplementary Procedures*, the meeting was informed that no such agreements currently existed in the APAC Region.

4.79 Several States, and CANSO, informed the meeting that the unreliability of DEP messages distribution had been a global problem for a considerable time. Some States and system vendors were exploring alternate avenues of obtaining departure information.

4.80 A number of follow-up actions were proposed in the working paper, agreed by the meeting, and included in the ATFM/SG Task List at **Appendix C**. The Secretariat would develop a Draft Conclusion on this matter for consideration by ATM/SG. The meeting noted that APANPIRG Air Navigation Deficiencies would be recorded against non-respondent or non-compliant APAC States.

4.81 The meeting generally did not support further data-gathering activities. Thailand, recognizing the importance of this issue, agreed to participate in further analysis in coordination with the Secretariat.

Regional ATFM Implementation Status Monitoring (WP/14)

4.82 The Secretariat provided an update on Regional ATFM implementation status monitoring.

4.83 In accordance with ***Conclusion ATM/SG/5-3: Asia/Pacific Regional Framework for Collaborative ATFM Amendment***, the ATFM Implementation Status Report form had been appended to the Framework document and made available on the ICAO Asia/Pacific Regional Office website. The form (**ATFM/SG/8 WP/14 Attachment A**) had been updated to remove a numbering error, and to provide in a drop-down menu for each item the input values 0, 0.5 and 1, respectively representing *not implemented, partial implementation* or *full implementation*.

4.84 The meeting was informed that only one report had been received before the due date (end of April each year). States were reminded that the reporting form provided evidence of implementation of ATFM, which States had for some time been obliged to implement in accordance with the standards of Annex 11. Non-reporting would be treated in the same way as non-implementation for the purpose of ICAO reporting to ATM/SG and APANIRG.

4.85 The meeting proposed that an ATFM points of contact list should be created, and that the designated point of contact should ensure the completion of the reporting form before the due date.

Interoperability Among ATFM Developments (WP/8)

4.86 An ATFM interoperability matrix to aid the necessary coordination meetings and discussion between the Multi-Nodal ATFM Project and the NARAHG project to achieve interoperability was proposed by China, Hong Kong China, Singapore, Thailand, CANSO and IATA.

4.87 The proposal noted that the diversity in operating environments in various states would result in variation in operating procedures and processes, and the need to ensure interoperability for an effective and satisfactory level of ATFM services, especially for flights transiting multiple active ATFM operation areas. To aid future discussions between the various projects an interoperability matrix was proposed (**ATFM/SG/8 WP/08 Annex A**). The matrix included categorization of areas of interoperability; infrastructure, information exchange, ATFM information, ATFM solutions and operating procedures. The purpose of the matrix was to identify similarities and differences in processes, and to serve as a tool to streamline discussions.

4.88 The meeting supported this important work. CANSO noted that the ICAO Middle East (MID) Region was using the Asia/Pacific Regional ATFM Concept of Operations and Framework for Collaborative ATFM as the basis of their ATFM planning.

4.89 Further activities targeting the harmonization of ATFM in the Asia/Pacific Region were discussed under Agenda Item 5 (WP/18).

Agenda Item 5: Development of Regional ATFM Framework

Proposal to Establish an ATFM Implementation Harmonization Small Working Group (WP/18)

5.1 The Secretariat presented a proposal to establish a Small Working Group (SWG) to manage the harmonized implementation of various ATFM projects in the Asia/Pacific Region to ensure regional network interoperability.

5.2 While the distributed multi-nodal ATFM network was the core concept in the Region, it was noted that there would be the tendency towards discrepancies between individual nodes of the network that could jeopardize interoperability. It was therefore proposed that the work of the ATFM Information Requirements SWG (ATFM/IR/SWG) be merged into the new ATFM Implementation Harmonization SWG (ATFM/IH/SWG), under the Terms of Reference (TOR) provided in **ATFM/SG/8 WP/18 Attachment A**. The work of the ATFM/IH/SWG would be facilitated by the ICAO Asia/Pacific Regional Sub-Office (APAC RSO), which had recently been provided with increased staff resources to support ATFM activities.

5.3 A Draft Decision was proposed, recognizing the direction provided in the Asia/Pacific Regional Framework for Collaborative ATFM and Regional Concept of Operations. All Administrations and International Organizations participating at the meeting supported the proposal, except China. Japan proposed that a meeting of the SWG in conjunction with the next NARAHG meeting may be considered, and Thailand further proposed a similar meeting in conjunction with the next meeting of the Multi-Nodal ATFM Project.

5.4 The meeting noted that the proposed amended TOR could be further refined at the first meeting of the SWG, and a recommendation made to ATFM/SG accordingly.

5.5 China's representative at the meeting relayed information from his Administration, informing the meeting that China did not support the proposal.

5.6 The meeting noted that this position was not aligned with the position reflected in WP/15, jointly presented by China, Japan and Republic of Korea, which in paragraph 2.2 stated:

1. *NARAHG members hasn't have enough discussion of the framework because it hasn't been so long since the CRACP concepts of NARAHG was established. Besides, NARAHG hasn't shared enough information with the other ATFM groups. Therefore, in order to actualize more global ATFM, NARAHG would like to propose as follows.*
2. *NARAHG would like to suggest that it would be better to have a face-to-face meeting organized by the ICAO APAC Regional Sub-Office (RSO) between NARAHG, Multi-Nodal Project group and other groups to discuss on areas of harmonization and interoperability. A full 2 or 3 days meeting would be useful where we can discuss several key items;*
   a) *Understanding of Concept of Operations*
   b) *Operational Procedures at the interface between two sub-regions*

c) Jointly work on technical development and SWIM.

5.7 Noting that the ICAO APAC RSO now had the staff resources in place to actively support SWG activities, the meeting agreed that the RSO would coordinate and facilitate the ongoing work of the ATFM/IR/SWG, and that the next or subsequent meetings of the SWG may consider recommending an expansion of the scope of work and TOR to include the proposed harmonization support role.

Amendment of Asia/Pacific Framework for Collaborative ATFM (WP/15)

5.8 China, Japan and the Republic of Korea provided discussion of a necessity to modify the Asia/Pacific Framework for Collaborative ATFM. The information provided noted the work undertaken by NARAHG in the last three years, based on the CRACP concept, and that there were differences between the CRACP concept and the Framework.

5.9 Noting the essential need for collaboration between sub-Regional ATFM projects and the current efforts to establish common understanding, the NARAHG States proposed a two to three-day face-to-face meeting between NARAHG and the Multi-Nodal ATFM Project, organized by the ICAO APAC RSO to discuss areas of harmonization and interoperability, including the key areas of understanding of Concepts of Operations, operational procedures at the interface between the two sub-regions, and joint efforts to work on technical development and SWIM.

5.10 ICAO informed the meeting of the process to amend the Regional ATFM Concept of Operations and/or Regional Framework for Collaborative ATFM, including the following points:

1. Any proposal for amendment must be presented in a suitable format. ICAO could assist with the preparation of the proposal. Examples of such amendment proposals were available in the working papers and meeting reports of ATFM/SG/6 and ATFM/SG/7;

2. Any proposed amendment agreed by ATFM/SG must be supported by a Draft Conclusion for consideration by ATM/SG; and

3. Any amendment to Regional ATFM documents would need the unanimous support of ATFM/SG and ATM/SG. It was strongly recommended that the proponent/s therefore engaged fully with and gain the agreement of all relevant Administrations during the preparation of the proposal.

Basic Phrases for Cross-Border GDP Facilitation (WP/19)

5.11 The meeting was presented with information highlighting the need for harmonized phrases to support verbal coordination in cross-border ATFM programs in the APAC Region, including a proposed basic list of phrases that could be used in frequent GDP scenarios.

5.12 Several rounds of ATFM measures, particularly GDP, had been activated by various Administrations including China (Sanya FIR), Hong Kong China, Thailand and Singapore since 2016. During these GDP scenarios communications between stakeholders had included requests for slot changes and swaps, and cancellation notifications. In the absence of automated SWIM-based information exchange verbal communication via phone or web-conference facility became a primary means of coordinating changes.

5.13 The guidance on ATFM phraseologies in Doc 9971 provided a high level recommendation for ATFM coordination exchange but did not provide a comprehensive list of terminologies and phrases. The Regional Framework for Collaborative ATFM provided guidance for ATFM-related radiotelephony communication between ATC and pilots, but not for coordination between ATFM units and other ATFM units or airspace users. In the Distributed Multi-Nodal ATFM Network environment the use of plan-language English could, and did, result in misunderstandings.

5.14 Noting that plain-language coordination would remain necessary to a certain extent, as ATFM coordination exchanges were rarely straightforward, a proposed list of phrases for the coordination of GDP was provided in **ATFM/SG/8 WP/19 Attachment 1**, to be considered for inclusion in the Regional Framework for Collaborative ATFM.

5.15 The meeting was informed that CANSO had requested relevant information from ANSPs that had already implemented ATFM, and was awaiting responses.

5.16 It was agreed that the list provided would be further developed, and when finalized would be proposed for inclusion in the Framework.

Update on FIXM Extension (WP/17)

5.17 Singapore and Thailand presented an update on the FIXM Extension being developed to support the ATFM information exchange required for cross-border ATFM operations in the Asia/Pacific Region, together with an overview of the effort to include ATFM data attributes to be exchanged between ATFM systems and processes in the next version of FIXM.

5.18 It was noted that the Regional Framework for Collaborative ATFM specified that FIXM version 3.0 (or later) was the agreed ATFM information exchange model for the Asia/Pacific Region. The data attribute s that ATFM systems and processes should share were identified in **Table 6**.

Estimated	Calculated	Actual	Applicable
EOBT		AOBT	Terminal Gate
	CTOT	ATOT	Departure Gate
ETO	CTO	ATO	RFIX or AFIX
ELDT	CLDT	ALDT	Arrival Runway
Other			
ADP			

Table 6: Minimum Data Attributes Required to be Exchanged between ATFM Systems.

5.19 In accordance with its Terms of Reference requirement to support APANPIRG groups regarding data exchange models, the SWIM TF in cooperation with the ATFM/SG and its ATFM/IR/SWG developed an operational scenario template. The template, following input from ATFM/SG, was provided in **ATFM/SG/8 WP/17 Appendix A**.

5.20 It was found that the CTOT and Calculated Landing Time (CLDT) considered necessary to support cross-border ATFM operations were not included in core FIXM version 4.0 or version 4.1. Therefore, a FIXM version 4.1 Extension with CTOT and CLDT included was developed. Due to a change in the structure of FIXM version 4.1 Extension Type a specific software module, additional to the software typically required to process FIXM messages, was needed. With the necessary software module in place, validation of the developed FIXM version 4.1 Extension was completed by the end of April 2018. Further testing on this version and engagement with the FIXM Change Control Board (CCB) would be conducted during 2018.

5.21 Following the coordinated efforts of SWIM TF, ATFM/SG and ATFM/IR/SWG it was intended to include the calculated event times such as CTOT and CLDT, and other necessary ATFM data attributes in the next version of FIXM, probably version 4.3 or 5.0. The meeting was informed that the operational scenario document developed by ATFM/SG was used as the baseline for further development of the ATFM Sub-Group of the ICAO ATM Operations Panel (ATMOPSP) to prepare the operational requirements for ATFM data exchange, to be submitted to the ICAO ATM Requirements and Performance Panel (ATMRPP) for consideration.

5.22 The meeting was further informed that the SWIM in ASEAN Demonstration had identified a number of data attributes for A-CDM that were also not in FIXM core. SWIM TF would also develop an FIXM extension to support ATFM, but noted that the next meeting of APA-CDM/TF, scheduled for August 2018, may not finalize the suite of recommended milestones in the A-CDM process.

5.23 The meeting discussed the absence of CTO from the FIXM Operational Scenarios, and was informed that the SWIM TF had been unable to develop a valid operational scenario for this attribute as its use was not clearly defined. There was however the possibility that an operational scenario could be constructed for the application of CTO, to support the development of FIXM version 4.1 Extension.

5.24 APAC Administrations were invited to review and provide comment to the SWIM TF on the scenarios provided under this paper by not later than 31 May 2018.

5.25 Any Administrations or group of Administrations wishing to propose additional attributes for inclusion in the APAC FIXM Extension must provide a suitable operational scenario to the SWIM TF by not later than 31 July 2018. Any such operational scenario must be of sufficient quality as determined by SWIM TF to be presented to the FIXM CCB on behalf of the Asia/Pacific Region.

ATFM Post-Operations Analysis Recommended Framework Development (WP/16)

5.26 An update on the progress of development of an ATFM Post-Operations Analysis Framework was provided to the meeting by the Multi-Nodal ATFM Project States. The update included the envisaged structure of the document, and some key areas that were planned to be covered. The objective of the work was to develop guidance that was comprehensive and applicable region-wide.

5.27 The guidance document would include six sections: *Introduction, Post-Ops Analysis in the Regional and Global Guidance, Traffic Demand Accuracy and Reliability, Resource Capacity Accuracy, ATFM Measure Metrics and Analyses*, and *Collaborative Post-Ops Analysis Workflow*. It was also intended that sample data analysis techniques and visualizations for reach recommended indicator would be included in an appendix to the document.

5.28 Asia/Pacific States and Administrations were urged to consider supporting the work and providing inputs to develop a comprehensive framework for Region-wide use.

5.29 The meeting supported this work, and requested that a first draft of the document be provided to ATFM/SG/9 in 2019. In addition to the Multi-Nodal ATFM Project States, India, USA and Japan agreed to contribute to the task.

5.30 The meeting discussed the matter of compliance windows at length, noting that no regionally recommended compliance measurement had been established. Noting the CANSO recommendation of a general CTOT compliance window of -5 to +10 minutes, the meeting agreed that this should be used as an initial measure of compliance for GDP run for constrained destination airports. Further regional and local refinement could then be undertaken, based on post-ops analysis results.

5.31 The meeting agreed to the following Draft Conclusion:

Draft Conclusion ATFM/SG/8-1: Recommended Calculated Take-Off Time Compliance Window

That,

1. Asia/Pacific Administrations implementing Ground Delay Programs (GDP) for flights to capacity-constrained destination airports use a recommended compliance window of -5 to +10 minutes to measure compliance with Calculated Take-Off Times (CTOT);

2. CTOT compliance windows for individual departure airports be subsequently refined on the basis of post-operations analysis, taking into account the requirements at constrained destination airports and subject to the agreement of the Administration responsible for the departure airport; and

3. CTOT compliance windows other than the recommended compliance window be reported to the Air Traffic Flow Management Steering Group.

5.32 Noting that no APAC Administration had defined a compliance window for CTO or other ATFM measures, the formulation of such compliance windows was a matter for future consideration.

Alignment of Regional Framework for Collaborative ATFM and Doc 9971 (Flimsy 1)

5.33 The Secretariat presented a summary of differences between the Framework and Doc 9971, which had been provided by Thailand in response to a joint task to ensure the documents were aligned following the publication of the Third Edition of Doc 9971.

5.34 The differences identified would be included in a proposed amendment to the Framework document for consideration by ATFM/SG.

Agenda Item 6: Any Other Business

The Activity of the ICAO APAC Regional Sub-Office (IP/7)

6.1 The Secretariat presented information on the ICAO Asia/Pacific Regional Sub-Office (APAC RSO), its history, strategic framework and activities. The RSO conducted various levels of workshops and technical assistance to Asia/Pacific States in their implementation of ATFM/CDM and or A-CDM. States could request the APAC RSO to conduct any level of workshop or technical assistance in these areas. Examples of activities that could be conducted by the RSO were provided in **ATFM/SG/8 IP/7 Attachment A**.

ASEAN ATM Master Plan (IP/10)

6.2 An overview of the ASEAN ATM Master Plan was provided by Singapore and Thailand, on behalf of the ASEAN Secretariat. The Master Plan provided the technical roadmap to support ASEAN's efforts to achieve the Seamless ASEAN Sky. It was a collaborative effort of the ten ASEAN Member States in support of the ICAO Asia/Pacific Seamless ATM Plan. Information provided included the scope of the plan, phases of implementation, initiatives identified for urgent and/or high priority implementation, progress monitoring and ATFM implementation.

6.3 ATFM had been identified in the Master Plan as one of the five initiatives that urgently required ASEAN-wide harmonized implementation.

6.4 The ASEAN ATM Master Plan was provided in **ATFM/SG/8 IP/10 Attachment 1**.

Agenda Item 7: Review of the Task List

Review of ATFM/SG Terms of Reference and Task List

7.1 The meeting reviewed the ATFM/SG Terms of Reference (TOR – **ATFM/SG/8 WP/22 Attachment A**) and Task List.

7.1 The ATFM/SG Task list as reviewed by the meeting is provided at **Appendix C** to the Report.

Agenda Item 8: Date and Venue of the Next Meeting

8.1 The next meeting of the ATFM/SG will be tentatively held in May or June 2019, at a location to be advised.

Closing of the Meeting

9.1 The Chair thanked the meeting participants for their contributions, and expressed the gratitude of ATFM/SG for the generosity and hospitality of Airports Authority of India in hosting the meeting.

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International Civil Aviation Organization

The Eighth Meeting of the ICAO Asia/Pacific Air Traffic Flow Management Steering Group (ATFMSG/8)

New Delhi, India, 14 – 18 May 2018

LIST OF WORKING PAPERS (WPs) and INFORMATION PAPERS (IPs)

(Presented by the Secretariat)

WORKING PAPERS

NUMBER	AGENDA	WORKING PAPERS	PRESENTED BY
WP/1	1	Provisional Agenda/Order of Discussion	Chairman
WP/2	2	Related Meetings Outcomes	Secretariat
WP/3	3	IATA A-CDM Brochure	IATA
WP/4	4	BOBCAT Operational Updates (SP/1)	Thailand
WP/5	4	C-ATFM Implementation in India – Update	India
WP/6	4	Progress of the Distributed Multi-Nodal ATFM Project SP/2)	China, Hong Kong China, Singapore, Thailand, CANSO and IATA
WP/7	4	Progress of the Technical Sub-Group of the Distributed Multi-Nodal Project	Australia, China, Hong Kong China, Singapore, Thailand, CANSO and IATA
WP/8	4	Interoperability Among ATFM Developments	China, Hong Kong China, Singapore, Thailand, CANSO and IATA
WP/9	4	C-ATFM Post-Operations Analysis	India
WP/10	4	C-ATFM – A-CDM/AOCC Integration, Progress, Challenges	India
WP/11	4	Training of ATFM Personnel	India
WP/12	4	Establishment of Airspace Management Cells	India
WP/13	4	Flight Plan and Departure Message Analysis	Secretariat
WP/14	4	Regional ATFM Implementation Status Monitoring	Secretariat
WP/15	5	Amendment of Asia/Pacific Framework for Collaborative ATFM	China, Japan, Republic of Korea
WP/16	5	ATFM Post-Operations Analysis Recommended Framework Development	China, Hong Kong China, Singapore, Thailand, CANSO and IATA
WP/17	5	Update on FIXM Extension	Singapore and Thailand
WP/18	5	Proposal to Establish an ATFM Implementation Harmonization Small Working Group	Secretariat
WP/19	5	Basic Phrases for Cross-Border GDP Facilitation	China, Hong Kong China, Singapore, Thailand, CANSO and IATA

NUMBER	AGENDA	WORKING PAPERS	PRESENTED BY
WP/20	4	Update on the Progress of Northeast Asia Regional ATFM Harmonization Group (NARAHG)	China, Japan, Republic of Korea
WP/21	-	*Not presented*	-
WP/22	7	Review Terms of Reference and Task List	Secretariat

INFORMATION PAPERS

NUMBER	AGENDA	INFORMATION PAPERS	PRESENTED BY
IP/1	-	List of Papers	Secretariat
IP/2	4	Flow control Restriction on M771 and M772	Indonesia
IP/3	4	Development of Chronos Application	Indonesia
IP/4	4	Cross Border ATFM Operation in Northeast Asia	China, Japan, Republic of Korea
IP/5	4	Post-Operational Evaluation of Singapore ATFM Measures at Juanda (Surabaya) International Airport	Indonesia
IP/6	4	Long Range ATFM Concept Trials	New Zealand and Singapore
IP/7	6	The Activity of the ICAO APAC Regional Sub-Office (RSO)	ICAO
IP/8	4	ATFM/CDM Activities in Japan	Japan
IP/9	4	Collaborative Decision-Making for ATFM	USA
IP/10	6	ASEAN ATM Master Plan	Singapore and Thailand on behalf of ASEAN

PRESENTATIONS

NUMBER	AGENDA	PRESENTATIONS	PRESENTED BY
SP/1	4	BOBCAT Operational Updates (WP/4)	Thailand
SP/2	4	Progress of the Distributed Multi-Nodal ATFM Project (WP/6)	China, Hong Kong China, Singapore, Thailand, CANSO and IATA
SP/3	5	Basic Phrases for Cross Border GDP Facilitation (WP/19)	China, Hong Kong China, Singapore, Thailand, CANSO and IATA

FLIMSIES

NUMBER	AGENDA	FLIMSIES	PRESENTED BY
1	5	Alignment of Regional Framework for Collaborative ATFM and ICAO Doc 9971	Thailand/Secretariat

Air Traffic Flow Management Steering Group

Task List

(last updated ATFM/SG/8, 18 May 2018)

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
2/2	Research guidance material on ATFM compliance analysis and improvement	~~ATFM/SG/8~~ ATFM/SG/9	~~Australia/~~Secretariat Participating States to be confirmed by Secretariat coordination (ATFM/SG/8)	Open	Can be sourced from EUROCONTROL
2/5	Align Asia/Pacific BANP Volume 1 ATFM provisions with the ATFM framework and Doc 9971	ATFM/SG/8	Secretariat	~~Open~~ Closed	In consultation with ATFM/SG May require longer time frame due to transition to EANP. Regional requirements for ATFM are included in ANP Volume III, which references the elements of the Asia/Pacific Seamless ATM Plan including ATFM elements.
3/5	Coordinate with MET/R WG to invite appropriate Aviation Meteorology experts to participate in ATFM Specialist Team activities.	Ongoing	Secretariat	Closed	

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
5/1	Poor on time performance of BOBCAT aircraft subject to ATFM procedures has direct impact on efficiency of ATFM procedures. All parties to undertake investigation as to reason for poor on-time performance including: a) Non compliance with BOBCAT CTOT– early and late departures b) Non compliance with BOBCAT Kabul FIR CTO– early and late at Kabul entry fix.	Ongoing	Affected States, IATA	Open	Transferred to ATFM/SG by SAIOACG/5 Poor punctuality performance is actively being monitored and rectified where possible by IATA/States. SAIOACG/5: this is still problematic.
5/2	More information from BOBCAT to be made available for tactical decisions in addition to the Kabul FIR entry	ATFM/SG/7	Thailand, India	Closed	Transferred to ATFM/SG by SAIOACG/5 Thailand will communicate with stakeholders about an upgrade in terms of sharing information more like a CDM system. It needs to be clear that the extra information was not a ‘controlling’ tool.

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
5/3	BOBCAT slot allocation may be considered beyond 2000 – 2359UTC ATFM/SG/5: Need information on what the problems are: e.g. incomplete implementation of 50NM separation, concentration of flights on too few routes. Capacity constraints.	ATM/SG/4	India/Thailand	Closed	Transferred to ATFM/SG by SAIOACG/5 India to provide data to support an extension. All involved to consider operational impact. Thailand to consider operational impact of the extension – need to share data and airlines to look at impact. Such change will require a 90-day notice.
5/4	Cross-boundary restrictions on flights through the Sanya FIR (several States)	Ongoing	China/Hong Kong China/Singapore/Thailand/RSO	Open	Transferred to ATFM/SG by SEACG/22 The SEACG/21 meeting was apprised of concerns that the Sanya FIR was occasionally imposing increased longitudinal spacing requirements. The parties to meet and discuss a resolution plan.
5/8	FIXM extension as identified at ATFM/SG/7	30 November 2018	ATFM/IR/SWG	~~Open~~ Closed	Updated in discussion at ATFM/SG. Tasks 7/6, 7/7, 7/8.

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
5/10	Develop First Draft Operational Requirements Document	~~ATFM/SG/8~~ ATFM/SG/9	ATFM/IR/SWG	Open	Dependent on meeting schedule cycle
5/11	In cooperation with the SWIM/TF, develop a first draft interface control document (ICD) for cross border ATFM described in the Regional Framework for Collaborative ATFM	~~ATFM/SG/8~~ ATFM/SG/9	ATFM/IR/SWG	Open	Dependent on meeting schedule cycle
5/12	Research and Development (from Framework)	ATFM/SG/9	~~ATFM/SG/9~~Secretariat to coordinate	Open	Dependent on meeting schedule cycle
5/13	Research ATFM for long range flights	~~ATFM/SG/8~~ Ongoing	ATFM/SG India/New Zealand /Singapore/Thailand/CANSO/IATA	Open	
5/14	Review of Regional Collaborative Framework for ATFM	Ongoing	ATFM/SG	Open	
6/1	Analysis of non-receipt of FPL and DEP messages, and State Letter/follow-up	~~ATFM/SG/8~~ ATM/SG/6	ICAO, States, IATA	Open	Subject to Agreement of APANPIRG to DC ATFM/SG/6-2 States to provide data, ICAO to conduct analysis and follow-up. Analysis conducted. Follow up actions and outcomes to be reported to ATM/SG/6
6/2	Detailed list of non-compliance with BOBCAT entry times	~~ATFM/SG/8~~ Ongoing	Thailand	Open	To be provided in conjunction with BOBCAT update papers, with a link to where the list is available.
6/3	Update BOBCAT system and procedures to use CTOT instead of AWUT	ATFM/SG/7	Thailand	Completed	

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
6/4	States to ensure ATC Tower local operating procedures include reference to ATC active participation in the achievement of CTOT compliance	ATFM/SG/7	States	Closed	ATFM/SG/7 - Addressed by updated Framework performance objectives and new Implementation Status reporting regime.
6/5	Proposal for Framework amendment to include further development of existing MIT and MINIT in performance improvement plan	ATFM/SG/7	IATA/Thailand	Closed	Doc 9971 Edition 3 includes combined ATFM measures.
6/6	ICD template to SWG and Multi-Nodal Trial Tech Sub-Group	30 June 2016	ICAO	Closed	
7/1	Investigate and Develop a draft PfA for Doc 7030 Regional Supplementary Procedures for Cross-border ATFM	~~ATFM/SG/8~~ ATFM/SG/9	Singapore/Thailand/Secretariat	Open	Final Decision on this yet to be made. Update ref ATFM/SG/9 report ADEXP and EET in FPL
7/2	Review Doc 9971 – Manual on Collaborative ATFM and propose changes to Regional Framework for Collaborative ATFM to ensure alignment or identify acceptable differences and develop a proposal for amendment of the Framework	~~ATFM/SG/8~~ ATFM/SG/9	China/Hong Kong China/~~Thailand~~/Secretariat	Open	Thailand provided an analysis of differences.
7/3	Get information on planned implementation of surveillance-based separation, current capacity limitations and any planned capacity improvements in Kabul FIR and examine any outcomes for BOBCAT	~~ATFM/SG/8~~ ATFM/SG/9	IATA/Secretariat/Thailand	Open	
7/4	Follow up on non-receipt of DEP messages		Secretariat/Australia, Hong Kong China, India, Japan, Singapore, Thailand.	~~Open~~ Completed	ATFM/SG/7 Meeting Report paragraph 4.33 See new tasks assigned by ATFM/SG/8
7/5	Analysis of MET requirements to support Non-ASBU elements of Seamless ATM Plan	ATM/SG/5	Secretariat	~~Open~~ Completed	ASBU Elements addressed at global level

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
7/6	Provide template and example for operational scenarios for FIXM data attributes	31 August 2017	Singapore/Thailand	~~Open~~ Completed	For use in developing operational scenarios supporting FIXM extension
7/7	Develop operational scenarios for FIXM Extension	~~15 October 2017~~ 31 July 2018	China/Hong Kong China/Japan/Singapore/Thailand/Secretariat	Open	Subject to further scenario development as Regional ATFM matures.
7/8	~~Draft FIXM Extension~~ Finalize APAC FIXM Extension Version 1	~~ATFM/SG/8~~ 30 September 2018	~~ATM/IR/SWG~~ SWIM TF	Open	~~In consultation with SWIM/TF~~ Changed to reflect the responsibility for development of exchange models, as assigned by APANPIRG, and the likely need for future Regional ATFM and A-CDM FIXM attributes To be submitted to FIXM CCB
8/1	Follow-up with MET R WG on Asia/Pacific Regional Guidance for Meteorological Information Supporting ATM.	21 May 2018	Secretariat	Open	
8/2	Coordinate use of IATA A-CDM Brochure in development of Regional A-CDM implementation plan, and uploading to Regional Office web-page	APA-CDM/TF/3	Secretariat	Open	
8/3	Investigate instances and reasons for non-compliance with CTOT at Jakarta and inform Multi-Nodal ATFM Project at next meeting	31 August 2018	Indonesia	Open	
8/4	Research State requirements for and implications of different qualification schemes for ATFM personnel	ATFM/SG.9	India, Japan, Secretariat	Open	

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
8/5	ATFM Points of Contact for Implementation Status Reporting	31/12/2018	States	Open	Reports to be submitted by end of April each year
8/6	Refinement of suite of ATFM coordination phrases	25 May 2018	CANSO Secretariat	Open	Clarify call/reply communication procedure-related items only.
8/7	Review and provide comment to SWIM TF on FIXM scenarios	31 May 2018	States	Open	ATFM/SG/8 Meeting Report 5.19
8/8	First Draft of ATFM Post-Operations Analysis Framework	ATFM/SG/9	Australia, Hong Kong China, India, Japan, Singapore, Thailand, USA	Open	