

INTERNATIONAL CIVIL AVIATION ORGANIZATION



REPORT OF THE ELEVENTH MEETING OF THE ASIA/PACIFIC AIR TRAFFIC FLOW MANAGEMENT STEERING GROUP (ATFM/SG/11)

Video Teleconference, 02 – 06 August 2021

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

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ATFM/SG/11
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INTRODUCTION

Meeting

1.1 The Eleventh Meeting of Air Traffic Flow Management Steering Group (ATFM/SG/11) was held by Video Teleconference (VTC) from 02 to 06 August 2021.

1.2 The ATFM/SG/11 meeting was generously sponsored by the China State Key Laboratory of Air Traffic Management System and Technology.

Attendance

2.1 The ATFM/SG/11 VTC was attended by 191 registered participants from 20 Administrations, seven International Organizations and two industry partners including Australia, Bangladesh, China, Hong Kong China, Fiji, India, Indonesia, Japan, Kiribati, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Republic of Korea, Singapore, Thailand, USA, Viet Nam, ACI, CANSO, IATA, IFAIMA, IFALPA, IFATCA, and ICAO. A list of registered participants is at **Appendix A** to this report.

Officers and Regional Office

3.1 Mr. Piyawut Tantimekabut, Air Traffic Management Network Manager, AEROTHAI, Thailand, chaired the ATFM/SG/11 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 ATFM/SG/11 meeting. He was assisted by Mr. Hiroyuki Takata, Regional Officer ATM, Mr. Chew Han Chee, ATM Officer and Ms. Prakayphet Chalayonnawin, Programme Analysis Associate (ATM), ICAO Asia and Pacific Regional Office.

Opening of the Meeting

4.1 On behalf of Dr. Manjit Singh, Acting Regional Director of the ICAO Asia and Pacific Regions, Mr. Shane Sumner welcomed all the participants to the meeting.

4.2 Mr. Piyawut Tantimekabut welcomed participants to the meeting.

Documentation and Working Language

5.1 The working language of the meeting and all documentation was English. There were 19 working papers, 11 information papers, and 12 presentations considered by the meeting. A list of papers is included at **Appendix B** to this report.

Draft Conclusions, 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;

Conclusions deal with matters of a technical nature relating to regional guidance material for publication on the ICAO Asia/Pacific Regional Office website.

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 Conclusions, Draft Conclusions, Decisions and Draft Decisions

7.1 List of Conclusions

Nil.

7.2 List of Draft Conclusions

Nil.

7.3 List of Decisions and Draft Decisions

Draft Decision ATFM/SG/11-1: Revised ATFM/SG Terms of Reference	
What: That, in the event that APANPIRG/32 adopts <i>Draft Decision AOP/SG/5-4: Dissolution of the APA-CDM/TF</i> and determines that ongoing APAC regional A-CDM work be conducted by ATFM/SG, the revised ATFM/SG Terms of Reference at Appendix C to the Report be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To ensure the continuity of regional A-CDM activity conducted under APANPIRG	Follow-up: <input type="checkbox"/> Required from States
When: 5-Nov-21	Status: Draft to be adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: XXXX	

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 Meetings Outcomes (WP/2)

2.1 ICAO provided information on the outcomes relevant to ATFM/SG from related Asia/Pacific Regional meetings:

- The Fifth Meeting of the Surveillance Implementation Coordination Group (SURICG/5) was held from 22 to 24 September 2020.
- The Fourth Meeting of the Asia/Pacific SWIM Task Force (SWIM TF/4) was held from 03 to 06 November 2020.
- The Eighth Meeting of the Air Traffic Management Sub-Group (ATM/SG/8) was held from 23 to 27 November 2020.
- The Twenty-Fourth Meeting of the Communications, Navigation and Surveillance Sub-Group (CNS SG/24) was held from 30 November to 04 December 2020.
- The MET/ATM Webinar and Tenth Meeting of the Meteorological Requirements Working Group (MET R/WG/10) were from 24 to 28 May 2021.

2.2 The meeting was informed of the following Conclusions adopting new or updated regional guidance documents developed by ATFM/SG:

Conclusion ATM/SG/8-1: ATFM Post-Operations Analysis Recommended Framework;
and

Conclusion CNS SG/24/3(ACSICG/7-2 (ATFM/SG/10-3)) - Amendment of the AFTN/AMHS-based Interface Control Document (ICD) for ATFM.

Outcomes from the Asia/Pacific Airport Collaborative Decision-Making Task Force (WP/3)

2.3 ICAO presented outcomes relevant to ATFM/SG from the Sixth Meeting of the Asia/Pacific Airport Collaborative Decision-Making Task Force (APA-CDM/TF/6, 28 to 30 April 2021), including relevant outcomes subsequently approved by the Aerodromes Operations and Planning Sub-Group of APANPIRG (AOP/SG).

2.4 APA-CDM/TF/6 had agreed to develop a regional model for the integration of ATFM and A-CDM. Noting the planned dissolution of the APA-CDM/TF, this activity had been recorded in the APA-CDM/TF Task List with a view to its subsequent inclusion in the ATFM/SG Task List, presuming ATFM/SG would undertake A-CDM-related activities following the dissolution of APA-CDM/TF.

2.5 The AOP/SG/5 meeting (29 June to 02 July 2021) had adopted the following Conclusions supporting the uploading of A-CDM information and guidance to the ICAO Asia/Pacific Regional Office eDocuments web-page (<https://www.icao.int/APAC/Pages/eDocs.aspx>):

Conclusion AOP/SG/5-1: A-CDM Frequently Asked Questions (FAQs)

Conclusion AOP/SG/5-2: Framework for Monitoring the Implementation of A-CDM

Conclusion AOP/SG/5-3: Amendment to APAC A-CDM Implementation Plan

2.6 AOP/SG/5 had agreed to ***Draft Decision AOP/SG/5-4: Dissolution of the APA-CDM/TF*** for consideration by the APANPIRG/32 meeting scheduled to be held in November 2021.

2.7 The ATFM/SG/11 meeting agreed to the following Draft Decision for consideration by the ATM/SG/9 meeting in November 2021:

Draft Decision ATFM/SG/11-1: Revised ATFM/SG Terms of Reference

That, in the event that APANPIRG/32 adopts ***Draft Decision AOP/SG/5-4: Dissolution of the APA-CDM/TF*** and determines that ongoing APAC regional A-CDM work be conducted by ATFM/SG, the revised ATFM/SG Terms of Reference at **Appendix C to the Report** be adopted.

2.8 The meeting agreed that action items 5/2 and 5/3 from the APA-CDM/TF Task List be included in the ATFM/SG Task List, pending APANPIRG consideration of the Draft Decisions.

Update on SWIM Regional Coordination (IP/2)

2.9 IATA submitted an IP to the meeting, for participants to read at their own convenience, on key System-Wide Information Management (SWIM) activities being undertaken in the Asia and Pacific (APAC) Region, including topics of discussion from the SWIM TF/4 meeting. SWIM-related information was provided on APAC regional SWIM implementation, SWIM Discovery Service (SDS), SWIM service category taxonomy, FF-ICE¹, Meteorology, surveillance data sharing, A-CDM, the Common Aeronautical Virtual Private Network (CRV), aeronautical information, cyber security, Aeronautical Communications Services (ACS), and SWIM education and training activities.

Agenda Item 3: ATFM/CDM Global Update

ATFM Outcomes from the ICAO ATM Operations Panel (WP/4)

3.1 The ATFM/SG Chair, being an advisor on the ICAO ATM Operations Panel (ATMOPSP) informed the meeting of the ATFM-related outcomes of the Sixth Meeting of the Panel, held from 19 to 30 April 2021.

3.2 Information was provided on ATMOPSP consideration of :

- Globally networked ATFM;
- Proposals for Amendment (PfAs) to Annex 11 *Air Traffic Services* and Doc 4444 *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM); and

¹ FF-ICE – Flight and Flow Information in a Collaborative Environment.

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- A joint session of ATMOPSP and the ATM Requirements and Performance Panel (ATMRPP).

3.3 In response to a query on the relationship between the ATM Information Reference Model (AIRM) and the Flight Information Exchange Model (FIXM), the meeting was informed that while FIXM was intended to support the exchange of flight information, the AIRM was a reference model that ensured that the data retained the same meaning when exchanged using different models such as FIXM, the Aeronautical Information Exchange Model, (AIXM), the ICAO Meteorological Information Exchange Model (IWXXM), etc.

CANSO ATFM Data Exchange Network for Cooperative Excellence – CADENCE (WP/6, SP/2)

3.4 The CANSO ATFM Data Exchange Network for Cooperative Excellence Task Force (CADENCE TF) Co-Chair informed the meeting of its work supporting the implementation of a regional Operational Information System (OIS) based on the CANSO ATFM Data Exchange Network for the Americas (CADENA) OIS. The CADENCE TF wished to work with other regions to share the success gained in the Latin Americas and Caribbean regions. CADENCE could contribute to regional ATFM/CDM a basic, regional OIS at no cost for 20 years to Air Navigation Service Providers (ANSPs) and other stakeholders. The new OIS would be made available in all regions, and would enable ANSPs and aircraft operators to share information on factors affecting airspace and airport demand and capacity, facilitate situational awareness, and engage all stakeholders in the development of collaborative approaches to optimize the flow of air traffic.

3.5 The meeting was invited to evaluate whether the regional OIS would be beneficial for ATFM/CDM enhancement in the ICAO APAC Region to support regional ATFM/CDM.

3.6 In response to a query the meeting was informed that while the CADENCE OIS could provide information about some tactical measures such as MINIT or MIT, it was focused on information exchange. While a document listing CTOT or other ATFM measures could be posted on the OIS, the platform was not designed to support their calculation and distribution.

3.7 In discussing the development of CDM/ATFM websites by several APAC ANSPs, the meeting was reminded that IATA had informed previous ATFM/SG meetings that airspace users could not consult multiple ATFM information portals, and had urged the region to develop a one-stop-shop for the sharing of CDM information. It was noted that some of the current CDM/ATFM websites of more advanced ANSPs were able to, or were planned to be able to, read and display information from other advanced ANSPs that was exchanged using commonly formatted ATFM Daily Plans (ADPs), with access provided to relevant ANSPs and stakeholders. However, the meeting was informed that there was a need for a more universal regional or sub-regional information portal that provided information sharing capability to other ANSPs that had not yet developed the necessary capability. The meeting was further informed that the CADENCE OIS offered this capability at no cost.

3.8 During the discussion ICAO stressed the need for the current once-per-fortnight CDM information sharing process and document upload to the ICAO Regional Office website to be matured into a much more frequent (i.e. at least once per day) CDM process. CANSO supported this, and suggested that the CADENCE OIS would provide the opportunity to develop the CDM process.

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

BOBCAT Operational Updates (WP/7, SP/3)

4.1 The meeting was provided with an operational analysis and overview of westbound flights through the Kabul Flight Information Region (FIR) associated with the Bay of Bengal Cooperative ATFM (BOBCAT) system for the two-year period from July 2019 to June 2021.

4.2 **Figure 1** illustrated the BOBCAT Slot Request volume for the period.

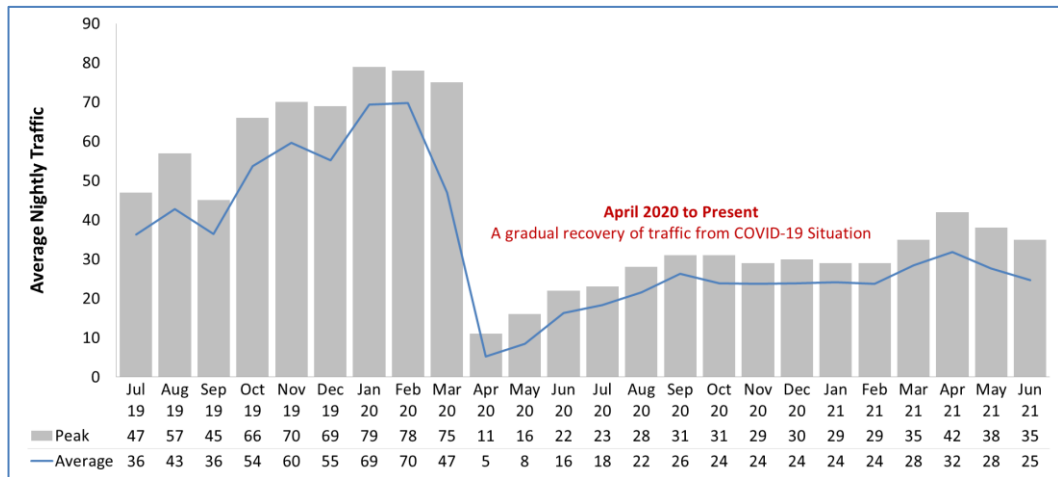


Figure 1: BOBCAT Traffic Demand from Slot Request: July 2019 – June 2021

4.3 Traffic through the Kabul Flight Information Region (FIR) had reduced significantly in April 2020 due to the initial COVID-19 pandemic surge. While there were signs of recovery between May 2020 and April 2021, the average BOBCAT traffic demand in May-June 2021 had declined.

4.4 The meeting was reminded of the BOBCAT process requiring that the one-week traffic sample data comprising flight plan (FPL) and movement messages for participating flights for the third week of the month, including Departure (DEP) messages, be sent to the Bangkok ATFM Unit (ATFMU) each month.

4.5 Post-Operations Analysis continued to indicate a high percentage of flights operated through the Kabul FIR at flight levels the same as or better than those requested. Overall, the percentage of flights with same or better flight levels were continuously in the range of 84 to 95 percent.

4.6 Major causes of flights not being able to enter the Kabul FIR at flight levels in accordance with those specified in BOBCAT slot allocation were non-compliance with Calculated Time Over (CTO, 39%), and Calculated Take Off Time (CTOT, 24%). Airlines and ANSPs were reminded of the importance of compliance with the allocated Kabul FIR entry-time (CTO) slot, i.e. within the five-minute window after the CTO specified by the BOBCAT slot allocation.

4.7 **Figure 2** illustrated CTOT compliance per aerodrome of departure.

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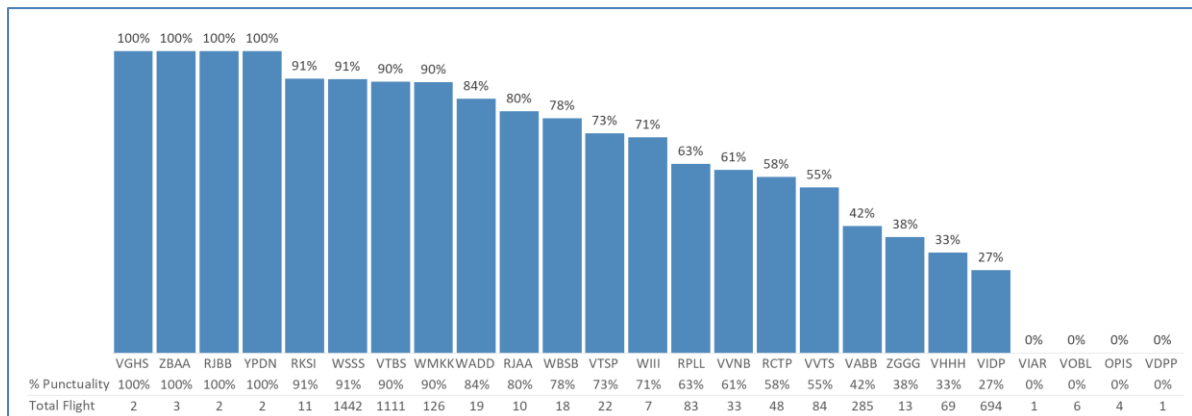


Figure 2: Average CTOT Compliance: July 2019 - June 2021

4.8 In response to a query on the distribution of Slot Allocation Messages (SAMs) to ANSPs at departure aerodromes to facilitate ANSP support for CTOT compliance, Thailand informed the meeting that, while CTOT for flights requesting BOBCAT slots were made available on the website, SAM messages could only be sent when the FPL had been received by the Bangkok ATFMU. Further technical enquiry would be made on this matter.

4.9 The meeting was informed that some flights that were required to obtain a BOBCAT slot did not do so. Thailand would consider further analysis of such flights, in coordination with Afghanistan.

4.10 Under a pandemic-related government requirement the Bangkok ATFMU had reduced the hours of physical staffing of the unit to 2330 – 1430 UTC. Outside these hours a contingency mobile phone contact was available, and the BOBCAT system continued to function H24 for airlines to lodge slot requests and receive and manage slots.

4.11 The meeting was informed that additional flight levels had become available in the Kabul FIR. (Figures 3 and 4). The BOBCAT system was configured to provide access to the additional flight levels from 25 March 2021.

Entry Waypoint (Route)	Pre-August 2020	August 2020 onwards
LAJAK (L509)	FL280 (1 FL)	FL280 – FL400 (7 FLs)
SITAX (M875)	FL300 – FL400 (6 FLs)	FL280 – FL400 (7 FLs)

Figure 3: Increase in Flight Level Availability for LAJAK (L509) and SITAX (M875)

Entry Waypoint (Route)	Pre-25 March 2021	25 March 2021 onwards
ASLUM (P628)	FL320 – FL400 (5 FLs)	FL300 – FL400 (6 FLs)
SERKA (N636-P628)	FL280 – FL300 (2 FLs)	FL280 – FL400 (7 FLs)

Figure 4: Increase in Flight Level Availability for ASLUM (P628) and SERKA (N636-P628)

4.12 From 15 July 2021 additional routes requiring BOBCAT ATFM slots, and the renaming of routes within the Kabul FIR, were published in the revised ATFM Users Handbook.

4.13 The meeting was also informed of changes to the use of BOBCAT including exemptions from BOBCAT slot allocation requirements for certain flights during the contingency operations in the Yangon FIR in February 2021. In this regard, ICAO noted that while Myanmar had developed and published an ATM contingency plan, it had not been formally agreed with all neighbouring States. ICAO reminded the meeting of the importance of States setting up robust contingency plans, supported by formal contingency arrangements with neighbouring States.

Progress Updates from Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC) (WP/8, SP/4)

4.14 The meeting was informed of progress in the Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC), including post-operations analysis results, the role of collaboration during the COVID-19 pandemic, technical progress on ATFM information exchange via Aeronautical Fixed Telecommunications Network/ATS Message Handling System (AFTN/AMHS), discussion on the progress of SWIM development for ATFM, and the development of a FIXM 4.2 APAC Extension.

4.15 The project had developed a network post-operations analysis portal, updated based on data submitted by AMNAC Level 3 ANSPs every three months. The portal was maintained by Thailand, and was accessible at <https://bit.ly/amnac-poa>. Key observations on operations included:

- The less frequent use of ATFM measures due to pandemic-related traffic downturn;
- Thailand had activated several Ground Delay Programmes (GDPs) between September and November 2020, primarily affecting domestic traffic. Compliance rates ranged between 70-80% over a three-month period;
- To retain ATFM staff and stakeholder proficiency during the traffic downturn, and to extend distributed multi-nodal ATFM to East Asia, Hong Kong China had initiated a monthly GDP trial using no-delay CTOTs. Compliance rates ranged between 65-90%.

4.16 The meeting was informed of the bi-weekly ATFM planning web-conference held among AMNAC members and the associated ATM/ATFM status update document, especially intended to exchange information during the COVID-19 pandemic.

4.17 The meeting was further informed that ANSPs wishing to receive SAM and related messages through AFTN/AMHS could approach the AMNAC Technical Sub-Group to arrange technical trials based on the Asia/Pacific AFTN/AMHS-based Interface Control Document (ICD) for ATFM.

4.18 A technical trial of ATFM information exchange based on the SWIM concept over the CRV was planned to be conducted in Q1 2022, using the Advance Message Queuing Protocol (AMQP) version 1.0 and the Asia/Pacific FIXM 4.1 Extension.

4.19 The APAC FIXM Extension was being updated following the release of FIXM version 4.2 in February 2021. The update would include data attributes from FF-ICE/Trajectory Based Operations (TBO)-based operational requirements in addition to those required to support ATFM information exchange in the Asia/Pacific Region.

ATFM Collaboration among EATMCG Members using Multi-Nodal ATFM Concept of Operations (WP/9, SP/5)

4.20 The meeting was informed of latest developments in ATFM collaboration among members of the East-Asia Air Traffic Management Coordination Group (EATMCG) using the multi-nodal ATFM Concept of Operations (CONOPS).

4.21 Information was provided on ATFM collaboration between Hong Kong China and Japan, with GDP being initiated by Hong Kong China instead of the application of Minutes-in-Trail (MINIT) at FIR boundary points. While there had been no need for operational GDPs due to low traffic levels, GDP trials had been conducted twice per month using no-delay CTOTs.

4.22 Hong Kong China and Republic of Korea had also conducted a series of pilot trials of GDPs for Hong Kong International Airport (HKIA) and Incheon International Airport. The feasibility of an operational agreement for implementing GDP at HKIA or any international airports within the Incheon FIR was being studied.

4.23 A further series of GDP pilot trials had been conducted between Hong Kong China and Taipei ACC for flights from HKIA and Taipei/Taoyuan Airport. The feasibility of exchanging CTOT between the two parties, including other international airports within the Taipei FIR, was also being studied.

4.24 In response to a query from Singapore on the potential for the EATMCG ATFM collaboration to utilize CTOTs instead of MINIT to be extended to the AMNAC group, noting that the current reduced traffic conditions might offer a good trial opportunity, Hong Kong China indicated it was possible to conduct trials when presented with opportunities. Singapore expressed interest in supporting trials by receiving CTOTs/CTOs converted from MINIT requirements at DOTMI. Hong Kong China would further discuss with AMNAC members the scope and refinements needed to the established procedures for such trial.

4.25 ICAO commended EATMCG, and particularly Hong Kong China, for their efforts and leadership in this work. Geographically Hong Kong China was ideally located between the AMNAC and EATMCG areas of interest, and was therefore well-positioned to bridge the gap between sub-regional ATFM projects.

4.26 CANSO complimented Hong Kong China and the other participating ANSPs for driving ATFM trials during the low traffic period, and offered to support and facilitate continuation of the trial.

Ground Delay Programme Operational Trials at Hong Kong International Airport (WP/12, SP/6)

4.27 Hong Kong China informed the meeting of nine GDP operational trials conducted to provide continuous training and familiarization to Hong Kong ATFM personnel and regional partners. The trials were conducted once or twice per month since January 2021, distributing CTOTs to AMNAC and EATMCG ANSPs. As there was currently no genuine demand/capacity imbalance at HKIA, only no-delay CTOTs were distributed.

4.28 Utilizing the Asia/Pacific ATFM Post Operations Analysis (POA) Recommended Framework, POA results were issued to trial participants including ATFMUs and aircraft operators (AOs). The objectives of the POAs were to analyse CTOT compliance, follow up with AO on reasons for non-compliance, share lessons learnt, and develop best practices for further streamlining operations.

4.29 Information was provided on POA metrics including demand look-ahead, demand accuracy, CTOT delivery lead time, and CTOT compliance assessment and trend (Figures 5 and 6).

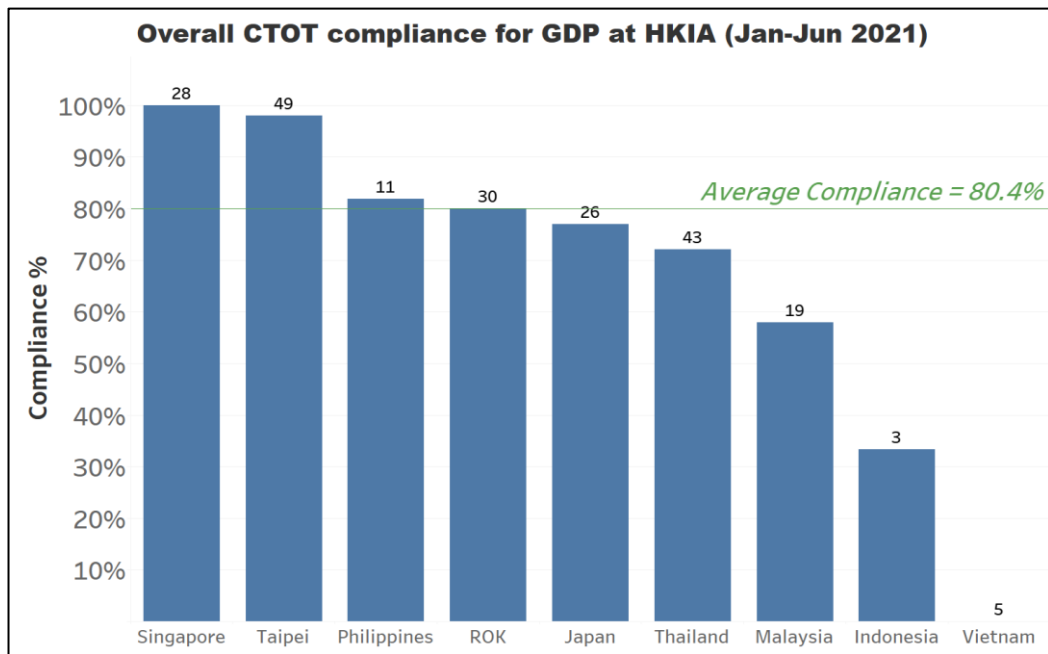


Figure 5: CTOT Compliance for GDP at HKIA per State of Departure

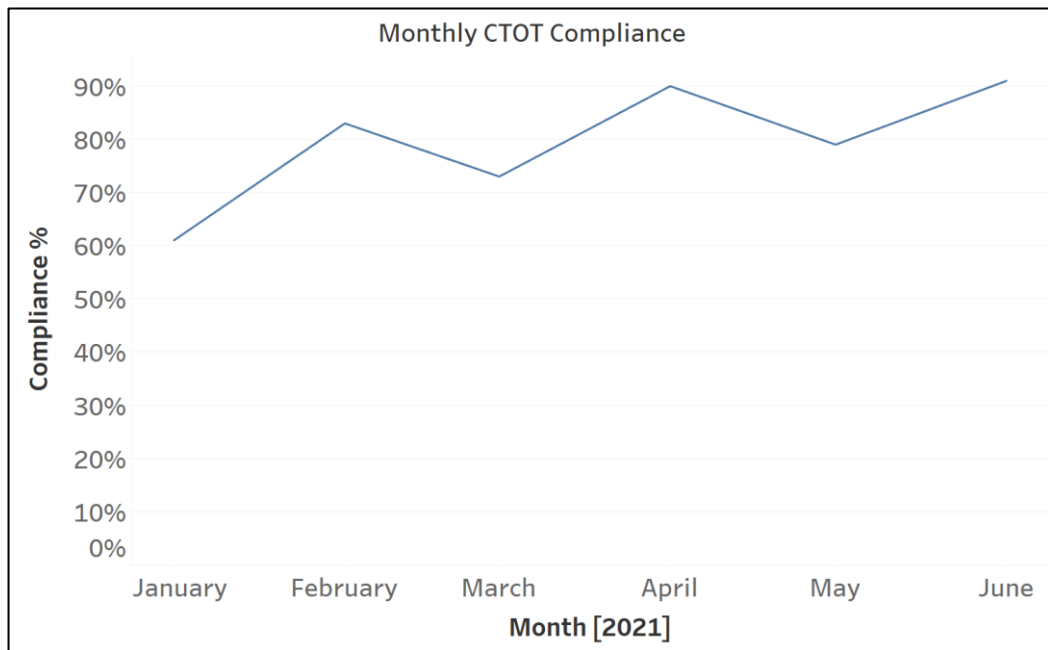


Figure 6: Monthly CTOT Compliance

4.30 The operational trials had proven to be an important activity validating the ATFM concept and procedures, facilitating ATFM personnel's maintenance of currency in common operating procedures and providing training opportunities.

4.31 Hong Kong China emphasized that the higher the compliance rate the greater the benefits to the whole network, and that it was therefore of paramount importance to treat every CTOT as genuine, and comply accordingly. The success of any GDP, and hence the efficiency of the APAC ATFM network, relied on the effort of every participating State and AO.

4.32 The monthly GDP operational trial was expected to continue until the end of 2021, with its frequency subject to adjustment depending on the air traffic recovery situation.

4.33 Hong Kong China also informed the meeting that a GDP trial for flights inbound via a waypoint on the Taipei FIR boundary had revealed that some operators were filing FPL late. FPL were needed quite early to support ATFM, especially airspace flow programs. In some cases FPL were filed only 50 minutes before the Estimated Off Blocks Time (EOBT). It was noted that AIP Hong Kong stipulated that FPL be filed not less than 180 minutes before EOBT.

Note: in this regard the Hong Kong AIP requirement for filing FPL not less than 180 minutes in-advance of EOBT complied with the APAC regional performance expectation specified in the Regional Framework for Collaborative ATFM paragraph 7.13.

4.34 In response to a query, Hong Kong China informed the meeting that reviewing the advance notification of CTOT down to a minimum of 60 minutes before EOBT was intended to strike a balance between the predictability of longer lead times which could then be affected by a number of other factors, and the accuracy of CTOT generated at shorter lead times. The right balance was struck through consultation with the CDM community.

C-ATFM System – Future Plans (WP/10, SP/7)

4.35 India provided a brief update on planned future upgrades of the Central Air Traffic Flow Management System (C-ATFM). The C-ATFM network architecture consisted of a Central Command and Control Centre (CCC), six Flow Management Positions (FMPs) at major Air Traffic Control (ATC) centres and 30 FMPs at various airports across the country including eight defence airports.

4.36 ATFM was planned to be implemented in three phases. Phase I implementation included activation of the 36 FMPs, and application of GDPs and Ground Stop (GSt) programs at constrained airports. Phase II included the integration of ATFM and A-CDM at four major and four satellite airports, and airspace flow programs such as MIT, MINIT, sequencing, fix balancing and re-routing. Phase III was planned to include capability for cross-border ATFM, enhanced post-operations analysis and closer integration with airspace management.

4.37 The C-ATFM system would be provided with cross-border multi-nodal ATFM information exchange capability in accordance with the APAC AFTN/AMH-based ICD for ATFM. The C-ATFM system would interpret SAM, Slot Revision Messages (SRM) and Slot Cancellation Messages (SLC) from the EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP²) format and disseminate the information to stakeholders within India. It was also planned to include ATFM information exchange and processing capability in all ATM automation systems in the future, in a phased manner.

4.38 C-ATFM was receiving Space-Based ADS-B surveillance data for oceanic airspace through the ATM automation system. Extended coverage would be considered to facilitate future long range ATFM.

4.39 India was in the process of implementing an Integrated Initial Flight Plan Processing System (IFPS) and pan-India AMHS for filing the flight plan and disseminating and processing ATS messages. The network architecture would form the basis for future SWIM services. FF-ICE services in accordance with the initial ICAO standards for FF-ICE that were currently planned for publication in 2024 with applicability from 2027 would be offered in the future as part of the C-ATFM IFPS system.

4.40 Information was also provided on ATFM/A-CDM integration, and integration of airspace management with ATFM.

4.41 In response to Thailand's invitation to India to engage in a trial of ATFM measure exchange, India informed the meeting that further work would need to be done to transition from the current CTOT message format to ADEXP SAM messages.

4.42 In response to a further query, India informed the meeting that distribution of ATFM measures for cross-border ATFM would commence in C-ATFM Phase III. Noting that India's geographical location would result in it playing a significant role in linking ATFM networks in APAC and the Middle East (MID) Region, India informed the meeting that while joining AMNAC was intended there was currently no firm timeline.

Impact of COVID on C-ATFM Operations (WP/11, SP/8)

4.43 India presented the status of ATFM operations in India in light of the COVID-19 pandemic. The impact had been significant, with aviation authorities responsible for essential services grappling with significant numbers of ill employees without jeopardizing safety. Contingency measures had been invoked to continue functions with skeleton staff at the facility and maximum staff operating from their homes.

4.44 **Figure 7** tracked the impact of the pandemic on air traffic movements three major airports under the first wave of infection in 2020, during which air traffic movements dropped by up to 98% below 2019 levels. **Figure 8** illustrates the effect on traffic movements of the second wave in 2021.

² The Asia/Pacific Regional Framework for Collaborative ATFM specified that ADEXP version 3.1 was the agreed format for ATFM message exchange in the Asia/Pacific Region in cases where an ATFM network interface had not yet been established, and ATFM information was distributed by the Aeronautical Fixed Service (AFS)

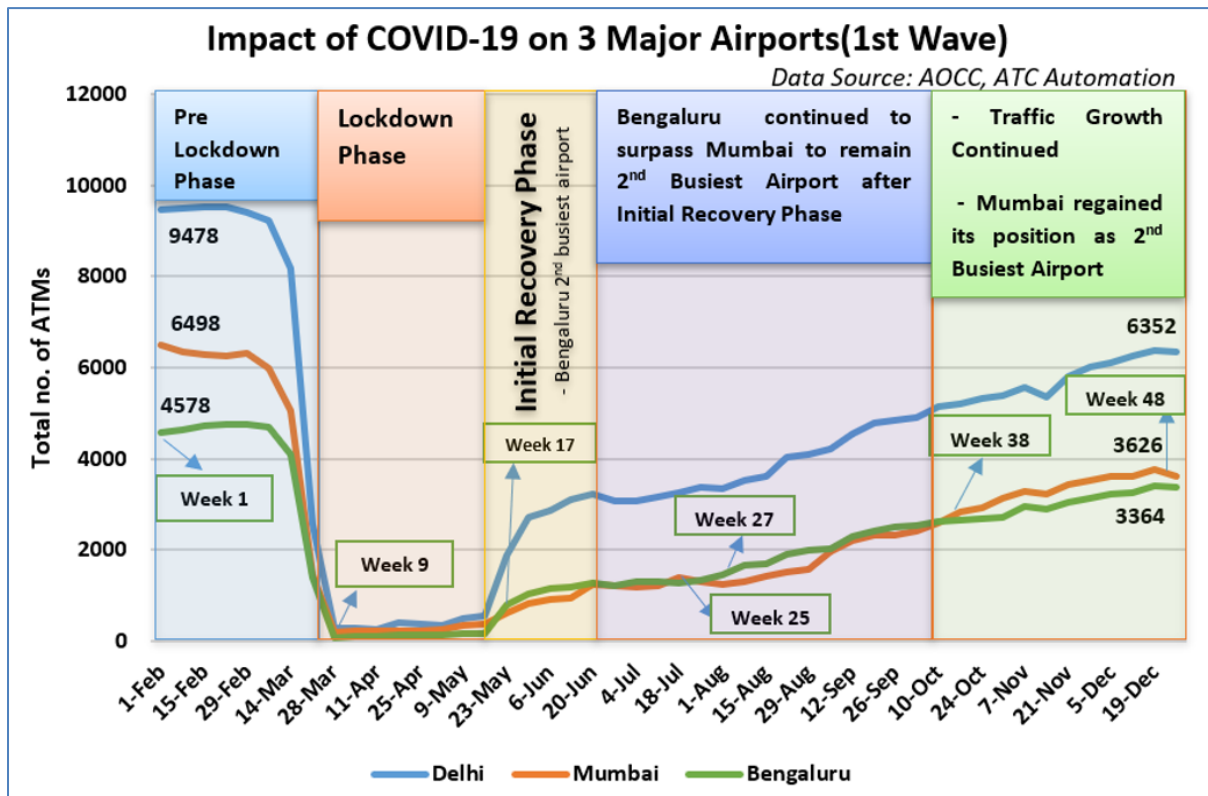


Figure 7: Impact of COVID-19 First Wave (2020) on Movements at Three Major Airports in India

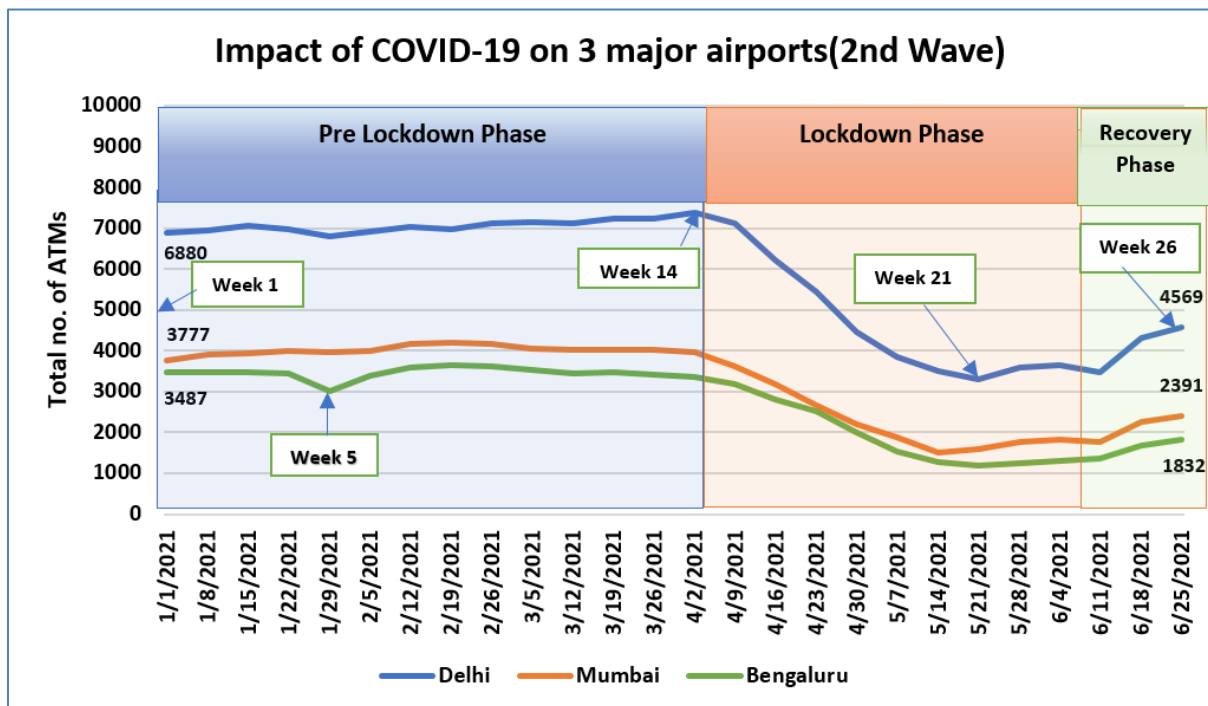


Figure 8: Impact of COVID-19 Second Wave (2021) on Movements at Three Major Airports in India

4.45 Based on the data available in the ATFM system an optimistic estimate of traffic recovery was that air traffic would reach 70% of December 2019 levels by the end of 2021.

4.46 ICAO took the opportunity of this discussion to remind the meeting of the ICAO COVID Response and Recovery Implementation Centre (CRRIC, <https://www.icao.int/covid/Pages/crric.aspx>), intended to assist implementation support, coordination, monitoring and reporting activities, and the Council Aviation Recovery Task Force (CART, <https://www.icao.int/covid/cart/Pages/default.aspx>), which aimed to provide practical, aligned guidance to governments and industry operators in order to restart the international air transport sector and recover from the impacts of COVID-19 on a coordinated global basis.

Supporting Operators under COVID-19 Pandemic (IP/10)

4.47 Japan informed of the meeting of support provided to aircraft operators facing massive financial difficulties due to the COVID-19 pandemic. Temporary measures implemented to assist airlines and others to increase profitability and reduce costs included shortening of flight plan routes, flexibility in the use of conditional routes (CDRs), relaxation of User Preferred Route (UPR) restrictions and facilitation of sight-seeing flights through flexible flight routes.

ATFM after Normalization of the AKARA Corridor (IP/3)

ATFM after Normalization of the AKARA – FUKUE Corridor (IP/4)

4.48 Japan (IP/3) and Republic of Korea (IP/4) informed the meeting of flow management changes made to the ‘AKARA Corridor’, being airspace in the Incheon FIR including ATS route A593 which connected Fukue, Japan and Shanghai, China, and the crossing north/south route B576. The overlapping sectorization of the airspace, wherein Japan handled traffic on A593 and Republic of Korea on B576 had been established under a 1983 Memorandum of Understanding (MoU). Flow management of traffic on A593 was provided by China and Japan.

4.49 On 25 March 2021 the ATS provided by Japan in the Incheon FIR had been withdrawn, in accordance with a compromise arrangement presented to the 218th session of the ICAO Council in November 2019. Accordingly, ATFM Letters of Agreement had been abolished (China/Japan), revised (Japan/Republic of Korea), and a new agreement established (China/Republic of Korea). **Table 1** described the changes in coordination and communications between the parties concerned:

ATFM in the Corridor	Before	After (as of March 25 2021)
Coordination	China ↔ Japan ↔ ROK	China ↔ ROK ↔ Japan
Communication Network	Commercial line between Fukuoka ATMC and Shanghai ATCC	Commercial line between Shanghai ATCC and Daegu ATCC, between Daegu ATCC and Fukuoka ATMC

Table 1: Coordination and Communication in the AKARA Corridor (Incheon FIR)

4.50 IATA acknowledged the resolution of the long-standing issue of overlapping sectorization, and informed the meeting that airspace users operating on A593 were very much expecting increased capacity and flexibility of operations on the route in the future.

4.51 In response to a query from IFALPA the meeting was informed that Republic of Korea could handle abnormal situations such as rapid decompression or weather deviations across FIR boundaries under the new ATS arrangement. Republic of Korea also mentioned that new ATS arrangements including Letters of Agreement (LOAs) and direct speech circuits supported inter-FIR coordination in accordance with Annex 11.

NARAHG Update (SP/9)

4.52 The meeting was provided with an update on progress of the Northeast Asia Regional ATFM Harmonization Group (NARAHG), formed by China, Japan, and Republic of Korea. Information was provided on normal traffic volumes (2019), information exchange, data connection testing and ICD, the NARAHG CONOPS, the planned ATFM connection utilizing the CRV, the establishment of a task force for severe weather reroute coordination, and recent major activities.

4.53 In discussion the meeting noted the information exchange model used in NARAHG ATFM exchanges was not FIXM. The meeting was reminded that performance expectations of the Regional Framework for Collaborative ATFM specified the use of FIXM.

4.54 In response to a query the meeting was informed that NARAHG welcomed cooperation and data exchange with AMNAC.

Handling of Non-Scheduled General Aviation Flights (IP/5)

4.55 Philippines provided information on the handling of non-scheduled and general aviation flights during the current pandemic. The meeting was informed of the relaxation of the previous prohibition on such flights, the procedures for assigning arrival slots, the total numbers of movements at Manila airport, and the numbers of arrival slots assigned.

Cross-Border ATFM Procedure Research in China (IP/6)

4.56 China informed the meeting of research of cross-border ATFM procedures, including the trial of cross-border Extended Arrival Management (XMAN) in the Shanghai FIR from October 2020. Information was provided on traffic flows, the procedures for using aircraft Required Time of Arrival (RTA) function to sequence arrivals, outcomes of the trial and positive feedback from airspace users.

4.57 There was some discussion of the concepts in this information paper, mainly centred on the agreed regional use of GDP as expected in the Regional Framework for Collaborative ATFM, the meaning and application of Estimated Time Over (ETO), CTO and Target Time Over (TTO), and the difference between demand and capacity balancing using ATFM and the more stringent tactical ATC purposes of Arrival Manager (AMAN) and XMAN which were used for traffic synchronization.

4.58 The meeting was informed that CANSO had identified the need for clarification of the various terms and concepts in ATFM, XMAN, Long-Range ATFM and Time-Based Flow Management (TBFM) processes and their interaction, which were being developed in many parts of the world, and was preparing a white paper on the topic. Contributions to the white paper, which was intended to educate the ATM community, were welcome.

4.59 CANSO further strongly recommended that States that were still developing their knowledge of ATFM processes should not be confused by advanced projects being conducted by leading States, and should instead focus on the ATFM information and guidance provided in the Regional Framework for Collaborative ATFM.

Air Traffic Flow Management Development in China (IP/8, SP/10)

4.60 China provided an overview of the construction of the Three Centre Project and National Traffic Flow Management (NTFM) system, which would be officially launched in 2021. The Centralized Multi-Participant Collaborative ATFM Network (CMC) had been introduced as the operational concept to respond to the rapid growth of civil aviation development and the performance requirements of ATFM. The NTFM had been deployed in the Operation Management Centre (OMC) eight domestic regional ATFM units and 36 ATM sub-bureaus and stations, forming a two-level decision-making, one-level execution ATFM system.

4.61 The meeting was informed that China would also strengthen cross-border ATFM cooperation and boost ties with airspace users, aircraft operators and other stakeholders to build a better collaborative environment.

4.62 In response to a query on distribution of GDP, the meeting was informed that CTOT were distributed on a system-to-system basis within China, as over 90% of domestic airlines' systems were capable of receiving the information. China was aiming to develop system-to-system connectivity with external systems for distribution of ATFM measures for international flights. The meeting was further informed that Sanya FIR was currently capable of distribution of SAMs.

4.63 In response to a further query on potential roadblocks due to airline non-compliance, China informed the meeting that collaborative decisions made among all stakeholders during the development of the NTFM were supported by the analysis of large volumes of data demonstrating the benefits of ATFM to airlines.

4.64 CANSO congratulated China on the IP and the establishment of the OMC. CANSO again reminded ANSPs that while ANSPs like China's ATMB of CAAC, FAA and EUROCONTROL had the requirement for mature technologically capable ATFM functions it was not always necessary to have these systems to commence basic ATFM implementation. Most ANSPs started ATFM with a clip board, pencil and telephone and as the needs arose more sophisticated and technical solutions were developed or acquired. ANSPs could start simple and develop ATFM capability as demand started to exceed capacity.

Application of PMS and AMAN in Shanghai TMA (IP/7)

4.65 The meeting was informed of the application of Point Merge System (PMS) and AMAN in the Shanghai terminal control area (TMA), to improve capacity and efficiency and reduce ATFM delays.

4.66 Following the second phase of introduction of PMS for flights inbound to Shanghai/Pudong International Airport (ZSPD) from the east via DUMET, MATNU and Andong VOR (AND), ATC instructions had been reduced by 50%.

4.67 Prior to the COVID-19 pandemic an average of 2,600 scheduled flights per day operated in the Shanghai TMA. Following implementation of AMAN in May 2019 at Shanghai Airport (ZSSS – domestic operations), the average delay in the second half of 2019 during the 1400 – 1600 UTC peak traffic period had reduced by 20 minutes per day, with a total reduction of more than 3,600 minutes.

Developments in the Long Range ATFM Initiative in Singapore (IP/9)

4.68 Singapore shared information on their Long-Range ATFM (LR-ATFM) initiative, which was part of the long-term plans in the Network Operations (NOPS) thread of the Aviation System Block Upgrade (ASBU) scheme of the ICAO Global Air Navigation Plan. NOPS Block 1 aimed to introduce enhanced processes to manage flows, and included the development of the management of arrival/overfly times through Targeted Time of Arrival (TTA)/Targeted Time Over (TTO). Singapore had initiated LR-ATFM trials in November 2019 with the aim of regulating the flow of arrivals through the issuance of TTOs. The trial was currently in its third phase.

4.69 Information was provided on trial phases, the information exchange mechanism, lessons learnt, and next steps.

4.70 The meeting noted that the TTO compliance window of +/- 1 minute, as proposed by Singapore from lessons learnt, appeared to be more closely aligned with ATC tactical requirements in AMAN/XMAN systems rather than ATFM (nominally, CTO compliance window of +/- five minutes). In response to a query on how the ATC currently controlling the aircraft was informed of the TTO and therefore of intended speed changes, the meeting was informed that the TTO was currently distributed to the aircraft through its company flight operations system, and that the Pilot in Command (PIC) remained responsible for taking any action to facilitate compliance, including requesting any necessary authorization from ATC.

4.71 CANSO requested that Singapore contribute their knowledge and experience gained from this project to the white paper mentioned in paragraph 4.56 of this report.

4.72 India and Pakistan expressed their interest in participating in the trial.

Experience on Integration of A-CDM with ATFM in Hong Kong International Airport (WP/13, SP/11)

4.73 Hong Kong China provided an update on the progress of integrating A-CDM operations in the HKIA Control Tower with ATFM operations in the Air Traffic Control Centre.

4.74 Information was provided on the adoption of 15 of the 16 milestones in the EUROCONTROL A-CDM approach (**Figure 9**), the departure release mechanism at HKIA, and a comparison of Actual Start-up Approval Times (ASATs) versus Target Start-up Approval Times (TSATs).

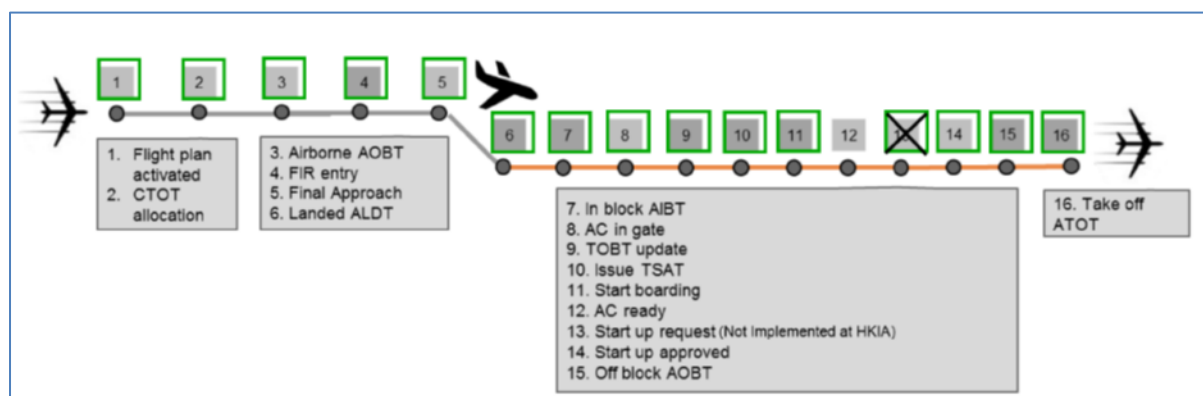


Figure 9: A-CDM Milestones for Hong Kong International Airport (HKIA)

4.75 Due to the requirement for departing traffic to be integrated with overflying traffic to meet cross-border traffic constraints, pilots were required to contact the Control Tower five minutes prior to their readiness for gate departure in order for ATC to coordinate a departure release. ATC then entered an internal CTOT in the A-CDM system. At times this resulted in a substantial additional delay for flights which already had all passengers, luggage and cargo fully loaded.

4.76 Investigation revealed that milestones #10 (issue TSAT) and #11 (start boarding) were not occurring in the correct sequence, thus not permitting the PIC to make an executive decision on when to start boarding passengers. TSATs of other flights were also revised when the internal CTOT was input into the system, resulting in unstable TSATs.

4.77 A gradual change of the departure release was adopted, involving the education of aircraft operator/ground handling staff to strictly follow the requirements of updating the Target Off-Block Time (TOBT), to enhance confidence in the TTOT subsequently calculated by the A-CDM system.

4.78 Hong Kong China invited other ANSPs to join their efforts, with a view to further reducing longitudinal spacing at FIR boundaries and hence increasing route capacity, and encouraged the sharing of experience and lessons learnt from similar integration activities.

Missing Departure (DEP) Messages (WP/14)

4.79 ICAO provided an update on the issue of missing Departure (DEP) messages, as discussed at ATFM/SG/8 (2018), ATFM/SG/9 (2019) and ATFM/SG/10 (2020), and presented to ATM/SG/7 in August 2019.

4.80 The meeting was reminded of PANS-ATM procedures for the addressing of ATS messages, noting that there were multiple examples of APAC Administrations specifying non-compliant Flight Plan (FPL) addressing requirements in Aeronautical Information Publication (AIP) Section ENR 1.11, together with the use in AFTN addresses of three-letter designators that were not registered for their use in ICAO Doc 8585 *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services*. It was noted that specification of non-compliant addresses was a key factor in missing FPL and associated ATS messages (including DEP messages).

4.81 The meeting was informed of ***Conclusion ATM/SG/7-5: ATS Message Reception and Handling***, which *inter alia* urged States to ensure that all FPL and ATS messages were addressed in accordance with PANS-ATM and remove non-compliant addressing requirements from AIP. The latest analysis of APAC Administrations' AIP ENR 1.11 conducted in March 2021 was provided in **ATFM/SG/11 WP/14 Attachment A**. Participants were invited to inform ICAO if any recent changes had been made.

4.82 The meeting was informed of the APAC Administrations for which APANPIRG ANS Deficiencies were recorded, where the most recent APAC regional analysis indicated 5% or more of the required DEP messages were not received by en-route and/or destination ATS units, as agreed by APANPIRG/31 (December 2020):

- Deficiency remained in place: Bangladesh, India, Malaysia, Maldives, Nepal, USA.

4.83 Due to the impact of the COVID-19 pandemic on traffic volumes the regional data gathering activity had not been conducted in 2020, but was tentatively planned to be conducted in Q3 2021. Analysis of incorrect FPL addressing requirements in AIP would continue, with a view to raising APANPIRG Air Navigation Deficiencies against non-compliance with ICAO Annexes and PANS where necessary.

4.84 The meeting was provided with an analysis of missing DEP messages for flights entering the Bangkok FIR. Referring to the previous very poor performance of several non-APAC States mentioned by ICAO, Thailand informed the meeting that there had been recent improvements in the numbers of DEP messages received from France, the United Kingdom and Saudi Arabia (previously zero).

4.85 Republic of Korea, the United States and Viet Nam requested specific data on the flights for which DEP messages were missing, in order that they could take action to rectify the problem. The meeting was also informed that Pakistan AIP ENR 1.11 had been updated to conform with PANS-ATM procedure.

Regional ATFM Implementation Status (WP/15)

4.86 ICAO provided a summary of the ATFM implementation status of APAC Administrations, reported against the performance objectives of the Regional Framework for Collaborative ATFM. Annual implementation status reports, due by 30 April 2021, were received from 14 APAC Administrations:

Australia, Bangladesh, Hong Kong China, India, Indonesia, Japan, Mongolia, Pakistan, Philippines, Republic of Korea, Singapore, Thailand, United States, Viet Nam.

4.87 It was noted that COVID-19-pandemic-related disruption to ICAO meeting planning and associated APAC ANSP activities may have contributed to the lack of reporting in 2020 and 2021.

4.88 Based on reports received States were assessed as having *Robust* (90-100%), *Marginal* (70-89%) or *Incomplete* (0-69%) implementation. 18 APAC States were recorded as *Did Not Report*.

4.89 India, Singapore, Thailand and USA were assessed as having *Robust* implementation.

4.90 Within the *Marginal* band but falling just short of *Robust* implementation were Australia (87%), China (87%), Hong Kong China (89%) and Japan (89%). *Marginal* implementation was also recorded for Indonesia (71%) Pakistan (73%) and Republic of Korea (82%).

4.91 Implementation by Bangladesh, Cambodia, Macao China, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Caledonia, New Zealand, Papua New Guinea, Philippines and Viet Nam was assessed as *Incomplete*.

4.92 The following APAC States had never provided an implementation status report:

Afghanistan, Bhutan, Brunei Darussalam, Cook Islands, Fiji, France (French Polynesia), DPR Korea, Kiribati, Lao PDR, Marshall Islands, Micronesia, Nauru, Palau, Samoa, Solomon Islands, Sri Lanka, Timor Leste, Tonga, Tuvalu, Vanuatu.

4.93 ICAO informed the meeting that a common reporting date of 28 February was being considered for implementation status reports provided against regional plans including the Regional Framework for Collaborative ATFM, Regional Plan for Collaborative AIM, Regional SAR Plan and Regional ATM Contingency Plan. Many Administrations already bundled their status reports into a single email prior to the earliest reporting date, and a common earlier date at end of February each year would ensure that the reported data was received sufficiently early to facilitate implementation reporting to the relevant technical group while allowing flexibility in the scheduling of technical group meetings. Thailand and USA indicated their support for a common reporting date.

4.94 The meeting was also asked whether the marginal implementation status should be considered for re-naming, to help to clarify performance when reporting to senior management. It was noted by ICAO that any change would need to be not only proposed to ATM/SG, but would need to be applied to implementation status reporting in other technical fields and would also require a Proposal for Amendment (PfA) to the Asia/Pacific Regional Air Navigation Plan Vol. II.

Agenda Item 5: Regional ATFM Framework and Guidance Material

APAC User Requirements for SWIM-Based MET Information Services Supporting ATFM (WP/16, SP/12)

5.1 The Meteorological Requirements Working Group (MET/R WG) Ad-hoc Group presented a way forward to identify and document use cases and user requirements for SWIM-based MET information services supporting ATFM in the APAC Region, in coordination with other working groups. The scope and objectives of the ad hoc group work in this regard had been agreed by the 24th Meeting of the Meteorology Sub-Group of APANPIRG (16 – 20 November 2020), under ***Decision MET SG/24-13: Development of APAC User Requirements for SWIM-based MET Information Services Supporting ATFM.***

5.2 A draft reference document was provided in **ATFM/SG/11 WP/16 Attachment B**. The draft document had been updated based on comments received from MET R WG/10 and ad-hoc group members, which were highlighted in WP16 Attachment B. The meeting was invited to review the proposed reference document, and to provide suggestions on additional use cases, if any, for further analysis.

5.3 In this regard, the Co-Chair of the SWIM TF stressed the need to set detailed operational requirements to support the development of SWIM-based information services and a regional information exchange model extension, if required. It was recommended that States refer to the Operational Scenario Template prepared by SWIM TF as a supplement to the *Philosophy and Roadmap for APAC SWIM Implementation* adopted by the CNS Sub-Group of APANPIRG under ***Conclusion CNS SG/23/4 (SWIMTF/3/1).***

5.4 Section 3 of the draft reference document in WP/16 Attachment B provided a draft example of an operational use case, and the further development of the data catalogue in Section 4, would both assist in developing information services and exchange model extensions to meet operational needs.

Survey of State Meteorological Information Supporting Air Traffic Management (WP/17)

5.5 The Chair of the MET R/WG presented an update on the survey on the provision of current and future MET information services by States to support ATM, in particular ATFM.

5.6 An updated survey, previously introduced to ATFM/SG at the ATFM/SG/10 meeting in 2020, had undergone a short trial run with some representatives from the MET and ATM communities and selected airspace users. Final adjustments were then made to the survey questionnaire, which was endorsed by the MET Sub-Group of APANPIRG under ***Conclusion MET SG/24-03: Survey of State Meteorological Information Supporting Air Traffic Management.***

5.7 The final version of the survey was provided in **ATFM/SG/11 WP/17 Attachment A**. All APAC Administrations were invited to participate in the Survey, which would be circulated in August 2021.

Updating the Regional Framework for Collaborative ATFM (WP/18)

5.8 ICAO presented an initial draft plan for the update of the Regional Framework for Collaborative ATFM, as discussed at ATFM/SG meetings in 2018, 2019 and 2020. The information provided included a summary of previous ATFM/SG discussion, and listed associated action items from the ATFM/SG Task List.

5.9 It was stressed that amendments to the Framework must remain aligned with the APANPIRG-approved Asia/Pacific ATFM Concept of Operations.

5.10 In response to a proposed change to the document review cycle, to conduct the review in the year immediately following the review of the Asia/Pacific Seamless ANS Plan, the meeting expressed a preference to conduct the Framework review in the same year as the Seamless Plan. ICAO noted this preference, but requested that the meeting keep in mind the significant resource demand this would place on participating administrations and the ICAO Regional Office in years when the Seamless ANS Plan was undergoing major review to align with changes to the Global Air Navigation Plan and its ASBUs (each six years).

5.11 The information provided also listed the revision planning that should be taken into account for each of the Framework sections 5 – *Background Information*, 6 – *Current Situation*, 7 – *Performance Improvement Plan* and 8 – *Research and Future Development Possibilities*. Several appendices to the framework were also flagged for removal and, where relevant, establishment as separate regional guidance documents.

5.12 The meeting was informed that a final draft of the reviewed Framework document should be provided to the ATFM/SG/12 meeting in 2022. It was noted that the Seamless ANS Plan was also scheduled for a ‘mid-term’ review in 2022, and that this review was expected to be mainly editorial in nature.

5.13 It was proposed that the review should be conducted by the ATFM Information Requirements Small Working Group (ATFM/IR/SWG), and be led by a rapporteur provided by a State that had a well-developed implementation of ATFM that complied with the Regional ATFM Concept of Operations and the Framework. It was proposed that the ICAO Secretariat provide the rapporteur for the initial meetings of the SWG.

5.14 The meeting was reminded that ATFM/IR/SWG had initially been formed to develop an Operational Requirements Document and relevant ICD for the exchange of ATFM information. However, noting that the SWG had in recent years also worked on other ATFM initiatives not limited to ORD and ICD work, it was considered appropriate that it undertake this work. The matter of the naming of the group was not a significant barrier to commencement of the work, but, if necessary, could be changed to ATFM/SG SWG, or similar.

5.15 The meeting agreed that the items listed in WP/18 should define the scope of work on the amendment of the Framework.

Update on Information Exchange Model Development to support ATFM Operations, ATFM/A-CDM Integration and FF-ICE/TBO in Asia/Pacific Region (IP/11)

5.16 Thailand presented an update on FIXM version 4.2 Extension development to support the ATFM information exchange required for cross-border ATFM operations, ATFM/A-CDM integration, and FF-ICE/TBO in the Asia/Pacific Region.

5.17 With the release of FIXM version 4.2 in February 2021 the Asia/Pacific FIXM version 4.1 Extension was being updated to version 4.2. Based on the operational scenarios developed for the Multi-Regional TBO (Trajectory Based Operation) Demonstration, additional data attributes required to support A-CDM, traffic synchronization, FF-ICE (Flight and Flow Information for a Collaborative Environment), and TBO were identified. It was therefore necessary that the FIXM version 4.2 Extension being developed would include these data attributes in addition to the data attributes included in the Asia/Pacific FIXM version 4.1 Extension.

5.18 However, after thorough examination of FIXM version 4.2 Core it was found that FIXM version 4.2 Core can support the exchange of some data attributes originally included in the Asia/Pacific FIXM version 4.1 Extension. The list of data attributes planned to be included in FIXM version 4.2 Extension, compared to the Asia/Pacific FIXM version 4.1 Extension, was presented in **ATFM/SG/11 IP/11 Appendix**.

5.19 The meeting was invited to encourage APANPIRG working groups and task forces that were likely to have operational requirements for FIXM to support operations to submit their needs to the SWIM TF, for development of a FIXM extension if necessary.

Agenda Item 6: Any Other Business

ATM Points of Contact (WP/19)

6.1 In accordance with usual practice at meetings of ICAO APAC technical groups in the ATM, AIM and Search and Rescue (SAR) fields, the consolidated ATM Points of Contact List was provided for any update by ATFM/SG participants. Any changes could be provided to the ICAO APAC Regional Office by email.

Agenda Item 7: Review of Task List

Review of ATFM/SG Terms of Reference and Task List (WP/20)

7.1 The proposed revision to the ATFM/SG Terms of Reference as discussed under Agenda Item 2 and the associated agreed by the meeting are provided in Appendix C to the Report.

7.2 The ATFM/SG Task List, as reviewed and updated by the meeting, is provided at **Appendix D to the Report**.

7.3 In relation to the proposed scope of work discussed under ATFM/SG/11 WP/18 to address Action Item 9/2 of the Task List, the meeting considered that this action item should be consolidated with several others that related to or impacted upon the review of the Regional Framework for Collaborative ATFM.

7.4 Consequently, relevant action items were consolidated into new action item 11/8 – *Review Regional Framework for Collaborative ATFM*. A consolidated scope of work for the review of the framework document is provided in **Appendix E to the Report**.

Agenda Item 8: Date and Venue of the Next Meeting

8.1 The next meeting of ATFM/SG was planned to be held by VTC in the Q2 or Q3 2022. While the effect of the COVID-19 pandemic on the modes of future ICAO meetings was not yet clear, any Administration considering hosting ATFM/SG/12 or later meetings was invited to contact ICAO. In this regard, potential host Administrations were informed that hybrid face-to-face and online meeting capability was likely to be necessary.

Agenda Item 9: Closing of the Meeting.

9.1 The Chair thanked all participants for their contributions to the ATFM/SG/11 meeting.

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List of Participants

	STATE/NAME		TITLE/ORGANIZATION
1.	AUSTRALIA (3)		
	1.	Mr. Michael Jaeschke	Team Leader ANS Operations Civil Aviation Safety Authority <u>AUSTRALIA</u>
	2.	Mr. Ashwin Naidu	Aviation Customer Lead Australia Bureau of Meteorology <u>AUSTRALIA</u>
	3.	Dr. Jesper Bronsvort	ATM Network Strategy & Development Manager Airservices Australia <u>AUSTRALIA</u>
2.	BANGLADESH (4)		
	4.	Mr. Md. Masud Rana	Deputy Director, ATM Division Civil Aviation Authority of Bangladesh <u>BANGLADESH</u>
	5.	Mr. Md. Abdun Noor Khan	Assistant Director Civil Aviation Authority of Bangladesh <u>BANGLADESH</u>

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	STATE/NAME		TITLE/ORGANIZATION
	6.	Mr. Kazi Khirul Kabir	Assistant Director Civil Aviation Authority of Bangladesh <u>BANGLADESH</u>
	7.	Mr. Sushanta Datta	Assistant Director Civil Aviation Authority of Bangladesh <u>BANGLADESH</u>
3.	CHINA (7)		
	8.	Mr. Fu Yongqiang	Director, Sanya Area Control Office ATMB, CAAC <u>CHINA</u>
	9.	Mr. Zhu Feng	Supervisor, National Operation Management Center, ATMB CAAC <u>CHINA</u>
	10.	Mr. Su Hang	Deputy Director of ATC Division, ATMB CAAC <u>CHINA</u>
	11.	Mr. Ding Lei	Assistant of ATC Division, ATMB CAAC <u>CHINA</u>
	12.	Mr. Tan Wei	Assistant of ATC Division, Middle South Regional ATMB, ATMB CAAC <u>CHINA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	13.	Mr. Lin Guang	Assistant of ATC Division, East China Regional ATMB, ATMB CAAC <u>CHINA</u>
	14.	Mr. Sun Yi	Secretary of ATFM Office of Air Traffic Control Center, East China Regional ATMB, ATMB CAAC <u>CHINA</u>
4.	HONG KONG, CHINA (4)		
	15.	Mr. Alexander Ben Honig	Senior Operations Officer (Strategic Planning) Hong Kong Civil Aviation Department <u>HONG KONG, CHINA</u>
	16.	Mr. Anfernee Poon	Project Officer Hong Kong Civil Aviation Department <u>HONG KONG, CHINA</u>
	17.	Mr. Gene KWOK	Electronics Engineer Hong Kong Civil Aviation Department <u>HONG KONG, CHINA</u>
	18.	Mr. Marco Kok	Scientific Officer Hong Kong Observatory <u>HONG KONG, CHINA</u>
5.	FIJI (2)		
	19.	Mr. Makiti Raratabu	Air Navigation Services Inspector - ATM/MET CAA Fiji <u>FIJI</u>

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	STATE/NAME		TITLE/ORGANIZATION
	20.	Mr. Ilimeleki Navula	Controller Standards/SAR – ATM Fiji Airports <u>FIJI</u>
6.	INDIA (9)		
	21.	Mr. Sunil Rathee	Deputy Director DGCA India <u>INDIA</u>
	22.	Mr. Jamwal Ravinder	Deputy Director of Operations (ANSS) DGCA India <u>INDIA</u>
	23.	Mrs. Archana Sunil Jadoo	Assistant Director DGCA India <u>INDIA</u>
	24.	Mr. Manjunath Nelli	Joint General Manager Airports Authority of India <u>INDIA</u>
	25.	Mr. Anup Kumar	Jt. GM (ATM-ATFM) Airports Authority of India <u>INDIA</u>
	26.	Mr. Amod Kumar Soni	Joint General Manager (ATM-ATFM) Airports Authority of India <u>INDIA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	27.	Ms. Vineeta Upadhyay	Joint General Manager (ATM-ATFM) Airports Authority of India <u>INDIA</u>
	28.	Mr. Barun Kumar Sarkar	Executive Director(ATM), Air Traffic Flow Management Airports Authority of India <u>INDIA</u>
	29.	Mr. Abhishek Raj	Manager ATC Airports Authority of India <u>INDIA</u>
7.	INDONESIA (19)		
	30.	Mr. Nur Sa'id Eko Nugroho	Air Navigation Inspector DGCA Indonesia <u>INDONESIA</u>
	31.	Mr. Novi Julpah	Air Navigation Inspector DGCA Indonesia <u>INDONESIA</u>
	32.	Ms. Henna Nurdiansari	CNS Inspector DGCA Indonesia <u>INDONESIA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	33.	Mr. Ahmad Budi Fathoni	CNS Officer and Air Navigation Inspector on CNS, DGCA Indonesia <u>INDONESIA</u>
	34.	Mrs. Mardiana	CNS Officer / Air Navigation Inspector on CNS matter, DGCA Indonesia <u>INDONESIA</u>
	35.	Mr. Rachmat Widiyana	ATFM and CDM Planning Manager AirNav Indonesia <u>INDONESIA</u>
	36.	Mr. Dedy Indarko	ATFM Junior Manager AirNav Indonesia <u>INDONESIA</u>
	37.	Mr. Didin Fakhruddin	Junior Manager ATFM & ATSS AirNav Indonesia <u>INDONESIA</u>
	38.	Mr. Ferry Iriansya	Specialist ATFM AirNav Indonesia <u>INDONESIA</u>
	39.	Mr. Mortis Sony	Junior Manager ATFM Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	40.	Mr. Dedy Syahputra	Junior Manager ATFM & ATS System Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>
	41.	Mr. Adie Setiawan	Junior Manager ATFM & ATS System Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>
	42.	Mr. Hari Purwanto	Junior Manager ATFM Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>
	43.	Mr. Didin Fakhruddin	Junior Manager ATFM & ATSS Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>
	44.	Mr. Faisal Riza	Junior Manager ATFM & ATS System Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>
	45.	Mr. Benedictus Dicky Bimo Yunanto	ATFM & ATS System Junior Manager Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>
	46.	Mr. Wahyu Heri Wibawa	ATFM Specialist Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	47.	Ms. Zakiah Agus	ATFM Staff Perum LPPNPI (AirNav Indonesia) <u>INDONESIA</u>
	48.	Mr. Rajasain Edralin,	Weather Forecaster Indonesian Agency for Meteorology, Climatology and Geophysics <u>INDONESIA</u>
8.	JAPAN (8)		
	49.	Ms. Kyoko Sato	Special Assistant of the Director Ministry of Land, Infrastructure, Transport and Tourism, Government of Japan <u>JAPAN</u>
	50.	Mr. Kyotaro Harano	Director, Air Traffic International Affairs Office Japan Civil Aviation Bureau (JCAB) <u>JAPAN</u>
	51.	Mr. Yukio Imada	Special assistant to the Director Japan Civil Aviation Bureau (JCAB) <u>JAPAN</u>
	52.	Ms. Miho Itou	Special assistant to the Director Japan Civil Aviation Bureau (JCAB) <u>JAPAN</u>

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	STATE/NAME		TITLE/ORGANIZATION
	53.	Mr. Tsukasa SAWAHARA	Senior Air Traffic Management Officer Japan Civil Aviation Bureau (JCAB) <u>JAPAN</u>
	54.	Ms. Naoko Komatsu	Senior Coordinator for International Aeronautical Meteorology Japan Meteorological Agency <u>JAPAN</u>
	55.	Mr. Yuki Kato	Senior Forecaster Japan Meteorological Agency <u>JAPAN</u>
	56.	Ms. Michiko Ikeda	Scientific Officer Japan Meteorological Agency <u>JAPAN</u>
9.	KIRIBATI (1)		
	57.	Mr. Tiamwa Teaiwa	Air Navigation and Aerodrome Inspector Civil Aviation Authority of Kiribati <u>KIRIBATI</u>
10.	LAO PDR (5)		
	58.	Mr. Thanongdeth Nalisak	Deputy Director of Air Navigation Standards Division Department of Civil Aviation of Lao PDR <u>LAO PDR</u>

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	STATE/NAME		TITLE/ORGANIZATION
	59.	Mr. Vixay Vorlachit	Air Navigation Standards Office Department of Civil Aviation of Lao PDR <u>LAO PDR</u>
	60.	Mr. Amphone THANASIN	Deputy Chief of Vientiane ACC Lao Air Traffic Services (LANS) <u>LAO PDR</u>
	61.	Mr. Maity Sylithammavong	Director of ATS Division Lao Air Traffic Services (LANS) <u>LAO PDR</u>
	62.	Mr. Khamsing Boualaphanh	ATFM Lao Air Traffic Services (LANS) <u>LAO PDR</u>
11.	MALAYSIA (12)		
	63.	Mr. Amiruddin Bin Mustapha	Principal Assistant Director Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	64.	Mr. Ahmad Syahidan Abu Bakar	Senior Assistant Director Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	65.	Ms. Nur A'fifah Mansor	Senior Assistant Director Civil Aviation Authority of Malaysia <u>MALAYSIA</u>

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	66.	Mr. Mohd Khairil Johari Pa'Wan	Senior Assistant Director Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	67.	Mr. Gillian Masudal	Air Traffic Controller Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	68.	Mr. Hairul Anuar	Senior Assistant Director Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	69.	Mr. Adriano D'Stefano Joseph	Air Traffic Controller Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	70.	Ms. Nor Kamilia Nordin	Air Traffic Controller Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	71.	Mr. Thomas Luther Albert Jimoni	Air Traffic Controller Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	72.	Mr. Harinathan Lachmanan	Air Traffic Controller Civil Aviation Authority of Malaysia <u>MALAYSIA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	73.	Mr. Ahmad Hazwan Hidzir	Senior Assistant Director Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	74.	Mr. Muhammad Nazreen Bin Abdul Ghani	Air Traffic Controller Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
12.	MONGOLIA (2)		
	75.	Mr. Odgerel Chagnaadorj	Director ATFM Division Civil Aviation Authority of Mongolia <u>MONGOLIA</u>
	76.	Mr. Batbayar Turbat	Manager ATFM Division Civil Aviation Authority of Mongolia <u>MONGOLIA</u>
13.	NEPAL (7)		
	77.	Mr. Rinji Sherpa	Flight Operation Department Chief Civil Aviation Authority of Nepal <u>NEPAL</u>
	78.	Mr. Sitaram Bhandari	Deputy Director Civil Aviation Authority of Nepal, <u>NEPAL</u>

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	STATE/NAME		TITLE/ORGANIZATION
	79.	Mr. Dipak Kumar Bajracharya	Deputy Director Civil Aviation Authority of Nepal <u>NEPAL</u>
	80.	Mr. Nabin Prasad Acharya	Deputy Director, ATM Department Civil Aviation Authority of Nepal, <u>NEPAL</u>
	81.	Ms. Reenu Mool	Deputy Director Civil Aviation Authority of Nepal <u>NEPAL</u>
	82.	Mr. Dinesh Raj Ghimire	Manager Civil Aviation Authority of Nepal <u>NEPAL</u>
	83.	Ms. Rita Shrestha	Manager Civil Aviation Authority of Nepal <u>NEPAL</u>
14.	PAKISTAN (8)		
	84.	Mr. Muhammad Sarfraz Gohar	Senior Joint Director ATS Pakistan Civil Aviation Authority – Ops. Directorate <u>PAKISTAN</u>
	85.	Engr Muhammad Irfan Khan	Sr Joint Director (CNS) Pakistan Civil Aviation Authority <u>PAKISTAN</u>

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	STATE/NAME		TITLE/ORGANIZATION
	86.	Mr. Zulfiqar Alam	Joint Director (ATM) Pakistan Civil Aviation Authority <u>PAKISTAN</u>
	87.	Mr. Ali Hassan	Senior Deputy Director (Air Traffic Services) Pakistan Civil Aviation Authority <u>PAKISTAN</u>
	88.	Mr. Muhammad Asif	Senior Deputy Director (ATM) Pakistan Civil Aviation Authority – DAAR <u>PAKISTAN</u>
	89.	Mr. Ali Mansoor	Manager ATM/ATS Revenue Pakistan Civil Aviation Authority <u>PAKISTAN</u>
	90.	Engr Saad Qaiser	Assistant Director (CNS) Pakistan Civil Aviation Authority <u>PAKISTAN</u>
	91.	Ms. Fatima Bushra Ahmed	Assistant Director APS Pakistan Civil Aviation Authority <u>PAKISTAN</u>
15.	PHILIPPINES (4)		
	92.	Mr. Robin F. Alzona	Acting Division Chief, Aerodrome Division, Air Traffic Service Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>

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	STATE/NAME		TITLE/ORGANIZATION
	93.	Mr. Virgilio Cipriano	Air Traffic Management Officer V, ATFM Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
	94.	Mrs. Tamyia Lemuria T. Sullivan	Air Traffic Management Officer III Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
	95.	Mr. Ryan Cave	Air Traffic Management Officer I Civil Aviation Training Center - Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
16.	REPUBLIC OF KOREA (15)		
	96.	Mr. Young-Min KIM	Deputy Director Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) <u>REPUBLIC OF KOREA</u>
	97.	Ms. Sohyun Park	Assistant Director Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) <u>REPUBLIC OF KOREA</u>
	98.	Ms. Gakyoung Min	Assistant Director Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) <u>REPUBLIC OF KOREA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	99.	Mr. Sang Il Lee	Assistant Officer Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) <u>REPUBLIC OF KOREA</u>
	100.	Mr. Jongmin Kim	ATFM Officer Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) <u>REPUBLIC OF KOREA</u>
	101.	Ms. Jihee Kim	ATFM Officer Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) <u>REPUBLIC OF KOREA</u>
	102.	Mr. Jaehyun Kwon	ATCC Officer Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) <u>REPUBLIC OF KOREA</u>
	103.	Mr. Soonhyuck Lee	Manager Korea Airports Corporation <u>REPUBLIC OF KOREA</u>
	104.	Ms. Hayoung Jo	Assistant Manager Korea Airports Corporation <u>REPUBLIC OF KOREA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	105.	Mr. Heonju Lee	Assistant Manager Korea Airports Corporation <u>REPUBLIC OF KOREA</u>
	106.	Mr. Heonju Lee	Airside Operator Korea Airports Corporation <u>REPUBLIC OF KOREA</u>
	107.	Mr. James(Yong Ki) Yi	Director Incheon International Airport Corporation <u>REPUBLIC OF KOREA</u>
	108.	Mr. Seungryul, Lee	Senior Manager Incheon International Airport Corporation <u>REPUBLIC OF KOREA</u>
	109.	Mr. Sang-jung KIM	Manager Incheon International Airport Corporation <u>REPUBLIC OF KOREA</u>
	110.	Mr. Oungseob Shin	Aviation Safety Researcher Korea Institute of Aviation Safety Technology <u>REPUBLIC OF KOREA</u>
17.	SINGAPORE (8)		
	111.	Mr. Joel Ng	Chief (Systems Planning) Civil Aviation Authority of Singapore <u>SINGAPORE</u>

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	STATE/NAME		TITLE/ORGANIZATION
	112.	Mr. Cheoh Wee Pin, Simon	Senior Air Traffic Control Manager Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	113.	Ms. Fatin Zunairah Binte Zulkifli	Senior ATC Manager Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	114.	Mr. Chan Tai Khoon	Deputy Director (ATM Engineering & Integration) Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	115.	Mr. Chin Hao Wong	Air Traffic Control Officer Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	116.	Mr. Zhang Huanbin	Head ATC Specialist (ATFM) Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	117.	Ms. Amelia Yeo	Air Traffic Control Officer Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	118.	Mr. Jack Toh	Senior Engineer (Air Traffic Management Support Systems) Civil Aviation Authority of Singapore <u>SINGAPORE</u>

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18.	THAILAND (25)		
	119.	Ms. Thitibhorn Prathumchai	Air Navigation Services Officer The Civil Aviation Authority of Thailand <u>THAILAND</u>
	120.	Ms. Achiraya Dechanuntasin	Officer The Civil Aviation Authority of Thailand <u>THAILAND</u>
	121.	Mr. Jirakrit Thamnarak	Air Traffic Standard Oversight Division Officer The Civil Aviation Authority of Thailand <u>THAILAND</u>
	122.	Ms. Jenita Chantranon	Aerodrome Certificate Officer The Civil Aviation Authority of Thailand <u>THAILAND</u>
	123.	Ms. Naruemon Lueangprasert	Aerodrome Certificate Officer The Civil Aviation Authority of Thailand <u>THAILAND</u>
	124.	Ms. Pataraporn Jessadapornchai	Aerodrome Standards The Civil Aviation Authority of Thailand <u>THAILAND</u>
	125.	Ms. Kodchagorn Kaewmanee	Aerodrome Standards Development Officer The Civil Aviation Authority of Thailand <u>THAILAND</u>

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	STATE/NAME		TITLE/ORGANIZATION
	126.	Ms. Wilasinee Phanngam	Transport Technical Officer Department of Airports of Thailand <u>THAILAND</u>
	127.	Ms. Amolabha Ruangtham	Transport Technical Officer Department of Airports of Thailand <u>THAILAND</u>
	128.	Mr. Phiphat Chokarpha	Computer Technical Officer Practitioner Level Department of Airports of Thailand <u>THAILAND</u>
	129.	Mr. Piyawut Tantimekabut	Air Traffic Management Network Manager Aeronautical Radio of Thailand Ltd. <u>THAILAND</u>
	130.	Ms. Amornrat Jirattigalachote	Strategic Planning Manager (Engineering) Aeronautical Radio of Thailand Ltd. <u>THAILAND</u>
	131.	Mr. Sakon Sinlapakun	Senior Air Traffic Systems Engineer Aeronautical Radio of Thailand Ltd. <u>THAILAND</u>
	132.	Mr. Sagoon Fucharoen	Senior Air Traffic Management Data Officer Aeronautical Radio of Thailand Ltd. <u>THAILAND</u>

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	STATE/NAME		TITLE/ORGANIZATION
	133.	Mr. Dudsadee Sungthong	Senior Air Traffic Management Data Officer Aeronautical Radio of Thailand Ltd. <u>THAILAND</u>
	134.	Mr. Aram Lertlum	ATC Manager Aeronautical Radio of Thailand Ltd. <u>THAILAND</u>
	135.	Mrs. Latchida Apaphant	Executive Vice President Airports of Thailand Public Company Limited <u>THAILAND</u>
	136.	Mr. Adisak Toonsoongnern	Director Flight Service Division Airside Operations Department, Suvarnabhumi Airport Airports of Thailand Public Company Limited <u>THAILAND</u>
	137.	Mr. Nattapon Khonsue	Senior Airport Operations Officer Airports of Thailand Public Company Limited <u>THAILAND</u>
	138.	Mr. Chaichan Paecharoen	Director, Airport Operation Development Division, Innovation and Knowledge Development Department Airport of Thailand Public Company Limited <u>THAILAND</u>

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	STATE/NAME		TITLE/ORGANIZATION
	139.	Ms. Saowakhon Tetiya	Aerodrome Safety Specialist Aviation Service Standard Division Aviation Services Standard Department Airports of Thailand Public Company Limited <u>THAILAND</u>
	140.	Ms. Supinda Chaowitthaya	Senior Engineer, Airport Operation System Division, Department of Information Technology System Airports of Thailand Public Company Limited <u>THAILAND</u>
	141.	Ms. Suvachira Teeraphathananon	Senior Engineer, Airport Operation System Division, Department of Information Technology System Airports of Thailand Public Company Limited <u>THAILAND</u>
	142.	Ms. Namjai Saengpratoom	Analyst, Airport Operation Development Division, Innovation and Knowledge Development Department Airport of Thailand Public Company Limited <u>THAILAND</u>
	143.	Ms. Wongwaran Kongpolprom	Analyst, Airport Operation Development Division, Innovation and Knowledge Development Department Airport of Thailand Public Company Limited <u>THAILAND</u>
19.	UNITED STATES (4)		
	144.	Mr. Michael Watkins	Senior Air Traffic Representative, Asia Pacific Federal Aviation Administration <u>SINGAPORE</u>

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	STATE/NAME		TITLE/ORGANIZATION
	145.	Mr. Greg Byus	Manager, CDM and International Operations Federal Aviation Administration Air Traffic Control System Command Center <u>UNITED STATES</u>
	146.	Mr. Albert O'Neill	Telecommunications Federal Aviation Administration <u>UNITED STATES</u>
	147.	Mr. Hoang Tran	International Telecommunications Lead Federal Aviation Administration ATO, Program Management Organization <u>UNITED STATES</u>
20.	VIET NAM (13)		
	148.	Mr. Ho Doan Trang	Officer CAAV <u>VIET NAM</u>
	149.	Mr. Long Nguyen Cong	Deputy Director General Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	150.	Mr. Pham Xuan Thanh	Deputy Manager, ATFMS Division Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>

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	STATE/NAME		TITLE/ORGANIZATION
	151.	Mr. Bui Thanh Ha	Director - ATS department Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	152.	Mr. Nguyen Văn Dung	Deputy Director Air Traffic Services Department Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	153.	Mr. Nguyen Dong Anh	Deputy Manager, ATFMU - ATFMU Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	154.	Mr. Pham Van Hoi	Deputy Manager CNS Operations Center – ATFMU Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	155.	Mr. Dinh Ngoc Tuyen	ATFM Officer, ATFMU – ATFMU Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	156.	Mr. Tran Quoc Tuan	Technical Expert, ATFMU Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>

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	STATE/NAME		TITLE/ORGANIZATION
	157.	Mr. Nguyen Hong Hiep	IT Sepcialist Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	158.	Ms. Ly Dang Hong	Official, Corporation Office Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	159.	Ms. Vu Thi Thanh Bach	Official Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	160.	Ms. Nguyen Thi Thom	Head of ATS Group Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
21.	ACI (1)		
	161.	Mr. Shun-Leung Wong	Head - Technical Affairs, Safety, Capacity and ATM Airports Council International <u>HONG KONG, CHINA</u>
22.	CANSO (4)		
	162.	Mr. Soh Poh Theen	Director Asia Pacific Affairs CANSO <u>SINGAPORE</u>

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	STATE/NAME		TITLE/ORGANIZATION
	163.	Mr. Stuart Ratcliffe	Co-Chair ATFM/A-CDM WG CANSO <u>UNITED STATES</u>
	164.	Ms. Tanino Midori	Co-Chair, CADENCE TF CAMSO <u>UNITED STATES</u>
	165.	Mr. Joe Hof	Co-Chair, CADENCE TF CANSO <u>UNITED STATES</u>
23.	IATA (7)		
	166.	Mr. John Moore	Assistant Director – Safety and Flight Operations- ASPAC IATA <u>SINGAPORE</u>
	167.	Mr. Zhang Ti	Manager Safety & ATFM Liaison IATA <u>CHINA</u>
	168.	Mr. Yoshiki Imawaka	Executive Advisor IATA/All Nippon Airways (ANA) <u>JAPAN</u>

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	STATE/NAME		TITLE/ORGANIZATION
	169.	Mr. George Chan	Regulatory Affairs Manager – Operations and Industry IATA <u>HONG KONG, CHINA</u>
	170.	Mr. Shin Imshik	Deputy General Manager/Performance Engineering IATA/Korean Air <u>REPUBLIC OF KOREA</u>
	171.	Mr. Julian Fung	International Operations Manager IATA <u>HONG KONG, CHINA</u>
	172.	Mr. Mark Hebert	Manager Flight Dispatch Quality and Training Air Canada <u>CANADA</u>
24.	IFAIMA (1)		
	173.	Mr. Erdenebaatar Davaasuren	APAC Regional Director IFAIMA <u>MONGOLIA</u>
25.	IFALPA (2)		
	174.	Captain Ishtiaque Hossain	EVP APAC IFALPA
	175.	Mr. Sivanit Ratanadib	IFALPA Director IFALPA <u>THAILAND</u>

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	STATE/NAME		TITLE/ORGANIZATION
26.	IFATCA (1)		
	176.	Mr. Anthony Ang	Executive Vice- President Asia Pacific Region International Federation of Air Traffic Controllers' Associations (IFATCA) <u>SINGAPORE</u>
27.	IDS AIRNAV S.R.L. (1)		
	177.	Mr. Marcello Davide Mannino	Head of Marketing Operations IDS AIRNAV S.r.l. <u>ITALY</u>
28.	CHINA STATE KEY LABORATORY OF AIR TRAFFIC MANAGEMENT SYSTEM AND TECHNOLOGY (4)		
	178.	Mr. Jibo Huang	Director, Decision-making Department State Key Laboratory of Air Traffic Management System and Technology <u>CHINA</u>
	179.	Dr. Jing Tian	Senior Engineer China State Key Laboratory of Air Traffic Management System and Technology <u>CHINA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	180.	Dr. Wenyi Tang	Engineer China State Key Laboratory of Air Traffic Management System and Technology <u>CHINA</u>
	181.	Mr. Changjie Liu	Engineer China State Key Laboratory of Air Traffic Management System and Technology <u>CHINA</u>
29.	ICAO (10)		
	182.	Mr. Shane Sumner	Regional Officer, Air Traffic Management ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	183.	Mr. Hiroyuki Takata	Regional Officer, ATM ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	184.	Mr. Punya Raj Shakya	Regional Officer, Aerodrome and Ground Aids ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	185.	Mr. Peter Dunda	Regional Officer, Aeronautical Meteorology/Environment ICAO Asia and Pacific Regional Office <u>THAILAND</u>

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	186.	Mr. Mior Adli Bin Mior Sallehuddin	Regional Officer ATM (AOM-ASM) ICAO Asia & Pacific Regional Sub-Office (APAC RSO) <u>CHINA</u>
	187.	Ms. Sunok Lee	Regional Officer ATM ICAO Asia & Pacific Regional Sub-Office (APAC RSO) <u>CHINA</u>
	188.	Mr. Han Chee Chew	Air Traffic Management Officer ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	189.	Ms. Wenhan Zhong	Associate Regional Officer, Communications, Navigation and Surveillance ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	190.	Ms. Pornruedee Ruthapichairak	Business Development Officer ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	191.	Ms. Prakayphet Chalayonnawin	Programme Analysis Associate, Air Traffic Management ICAO Asia and Pacific Regional Office <u>THAILAND</u>

LIST OF WORKING PAPERS AND INFORMATION PAPERS

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	2	Outcomes from the Asia/Pacific Airport Collaborative Decision-Making Task Force	Secretariat
WP/4	3	ATFM Outcomes from the ICAO ATM Operations Panel	Chair
WP/5	3	<i>withdrawn</i>	-
WP/6	3	CANSO ATFM Data Exchange Network for Cooperative Excellence – CADENCE	CADENCE TF Co-Chair
WP/7	4	BOBCAT Operational Updates	Thailand
WP/8	4	Progress Update from Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration	China, Hong Kong China, Singapore, Thailand, CANSO and IATA
WP/9	4	ATFM Collaboration among EATMCG Members Using Multi-Nodal ATFM Concept of Operation	Hong Kong China, Japan, Republic of Korea
WP/10	4	C-ATFM System – Future Plans	India
WP/11	4	Impact of COVID-19 on C-ATFM Operations	India
WP/12	4	Ground Delay Programme Operational Trials at Hong Kong International Airport	Hong Kong China
WP/13	4	Experience on Integration of A-CDM with ATFM in Hong Kong International Airport	Hong Kong China
WP/14	4	Missing DEP Messages	Secretariat
WP/15	4	Regional ATFM Implementation Status	Secretariat
WP/16	5	APAC User Requirements for SWIM-Based MET Information Services	MET R/WG Ad-hoc Group
WP/17	5	Survey of State Meteorological Information Supporting Air Traffic Management	MET R/WG Chair
WP/18	5	Updating the Regional Framework for Collaborative ATFM	Secretariat
WP/19	6	ATFM Points of Contact	Secretariat
WP/20	8	Terms of Reference and Task List	Secretariat

INFORMATION PAPERS

NUMBER	AGENDA	INFORMATION PAPERS	PRESENTED BY
IP/1	-	Provisional List of Papers	Secretariat
IP/2	2	Update on SWIM Regional Coordination	IATA on behalf of ICAO APAC SWIM/TF

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NUMBER	AGENDA	INFORMATION PAPERS	PRESENTED BY
IP/3	4	ATFM after Normalization of the AKARA Corridor	Japan
IP/4	4	ATFM after Normalization of the AKARA – FUKUE Corridor	Republic of Korea
IP/5	4	Handling of Non-Scheduled and General Aviation Flights	Philippines
IP/6	4	Cross-Border ATFM Research in China	China
IP/7	4	Application of PMS and AMAN in Shanghai TMA	China
IP/8	4	Air Traffic Flow Management Development in China	China
IP/9	4	Developments in the Long Range ATFM Initiative in Singapore	Singapore
IP/10	4	Supporting Operators under COVID-19 Pandemic	Japan
IP/11	5	Update on Information Exchange Model Development to support ATFM Operations, ATFM/A-CDM Integration and FF-ICE/TBO in Asia/Pacific Region	Thailand

PRESENTATIONS

NUMBER	AGENDA	PRESENTATIONS	PRESENTED BY
SP/1	-	Practices of ATFM Technology Implementation in China Aviation (Sponsored Content)	China State Key Laboratory of Air Traffic Management System and Technology
SP2	3	The CANSO ATFM Data Exchange Network for Cooperative Excellence (CADENCE) (WP/6)	CADENCE TF
SP/3	4	BOBCAT Operational Updates (WP/7)	Thailand
SP/4	4	Progress Update from Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC) (WP/8)	China, Hong Kong China, Singapore, Thailand, CANSO and IATA
SP/5	4	ATFM Collaboration among EATMCG Members Using Multi-Nodal ATFM Concept of Operation (WP/9)	Hong Kong China, Japan, Republic of Korea
SP/6	4	Ground Delay Programme Operational Trials at Hong Kong International Airport (WP/12)	Hong Kong China
SP/7	4	C-ATFM System – Future Plans (WP/10)	India
SP/8	4	Impact of COVID-19 on ATFM Operations	India
SP/9	4	NARAHG Update	China, on behalf of NARAHG (China, Japan, Republic of Korea)
SP/10	4	Air Traffic Flow Management Development in China (IP/8)	China
SP/11	4	Experience on Integration of A-CDM and ATFM Hong Kong International Airport (WP/13)	Hong Kong China
SP/12	5	APAC User Requirements for SWIM-Based MET Information Services	MET R/WG Ad-hoc Group

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DRAFT AMENDMENT -Terms of Reference

AIR TRAFFIC FLOW MANAGEMENT STEERING GROUP (ATFM/SG)

1. Having considered relevant documents such as the *Manual on Collaborative Air Traffic Flow Management* (Doc 9971), regional air traffic data and the Asia/Pacific Region city pairs and associated airspace and ATS routes and aerodromes experiencing the most significant traffic demand, and noting the Asia/Pacific Seamless ATM Plan provisions for structural airspace capacity increasing measures, develop an Asia/Pacific Regional ATFM Framework which addresses ATFM implementation and ATFM operational issues in the Asia/Pacific Region;
2. Identify, research and recommend appropriate guidance regarding:
 - a. capacity assessment and adjustment mechanisms;
 - b. regular review for all aerodromes and ATC sectors where traffic demand is expected to reach capacity, or is resulting in traffic congestion;
 - c. mechanisms for ATFM and A-CDM data gathering, collation and sharing between States, International Organizations and ICAO, which may include;
 - i. capacity assessments, including factors affecting capacity such as special use airspace status, runway closures and weather information;
 - ii. traffic demand information which may include flight schedules, flight plan data, repetitive flight plan data as well as associated surveillance updates of flight status; and
 - iii. ATFM Daily Plan;
 - d. compliance by airspace and aerodrome users with ATFM and A-CDM measures; and
 - e. any other guidance relevant to the Regional ATFM Framework and Asia/Pacific A-CDM Implementation Plan.
3. Maintain an overview of CDM/ATFM and A-CDM programs being conducted within the Region, with a view to facilitating their coordination and alignment, and to promote;
 - a. harmonized procedures;
 - b. Implementation of the performance expectations of the Regional ATFM Framework and Asia/Pacific A-CDM Implementation Plan;
 - c. Interoperability of A-CDM with ATFM
4. Review the effectiveness of existing and planned ATFM and A-CDM programs in the Asia and Pacific Region, and make specific recommendations regarding ATFM, including any adjacent airspace affecting the Asia and Pacific Regions, and research and recommend appropriate mechanisms for the on-going review of such programs.

5. The Group coordinates closely with other relevant bodies such as ~~the Airport Collaborative Decision Making Task Force (APA-CDM/TF)~~, Airport Operations and Planning Sub-Group, the Meteorological Requirements Working Group (MET/R WG) and System-Wide Information Management Task Force (SWIM TF).
6. The Group reports to the ATM Sub-Group.

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Air Traffic Flow Management Steering Group

Task List

(last updated ATFM/SG/10, 08 May 2020)

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
5/1	<p>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:</p> <ul style="list-style-type: none"> 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 Closed	<p>Transferred to ATFM/SG by SAIOACG/5</p> <p>Poor punctuality performance is actively being monitored and rectified where possible by IATA/States.</p> <p>SAIOACG/5: this is still problematic.</p> <p>TASK 6/2 also refers</p> <p>Reviewed by ATFM/SG/10</p> <p>The task should be actioned further after traffic recovery (COVID-19)</p> <p>Reviewed ATFM/SG/11</p> <p>ATFM compliance covered by routine ATFM programs guided by Regional Post-Ops Analysis Recommended Framework</p>

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
5/10	Develop First Draft Operational Requirements Document	ATFM/SG/12	ATFM/IR/SWG	Open	<p>Dependent on meeting schedule cycle</p> <p>Updated ATFM/SG/8</p> <p>Reviewed ATFM/SG/11 The need for the task to be reviewed after the Framework 2022 update.</p>
5/13	Research ATFM for long range flights	Ongoing	Australia/India/Japan/New Zealand/Pakistan/Singapore/Thailand/CANSO/IATA	Open	<p>Updated ATFM/SG/8</p> <p>Updated ATFM/SG/11</p> <p>Action Item 11/8 also refers.</p>
6/2	Detailed list of non-compliance with BOBCAT entry times	Ongoing	Thailand	Open Closed	<p>To be provided in conjunction with BOBCAT update papers, with a link to where the list is available.</p> <p>Task 5/1 also refers.</p> <p>Updated at ATFM/SG/10</p> <p>Updated ATFM/SG/11</p> <p>ATFM compliance covered by routine ATFM programs guided by Regional Post-Ops Analysis Recommended Framework</p>

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
7/1	Investigate and Develop a draft PfA for Doc 7030 Regional Supplementary Procedures for Cross-border ATFM	ATFM/SG/12	China/Japan/Singapore/Thailand/Secretariat	Open	Final Decision on this yet to be made. Update ref ATFM/SG/9 report ADEXP and EET in FPL First draft provided Action Item updated at ATFM/SG/10
8/3	Investigate and report on reasons for high rates of non-compliance with received CTOT at Jakarta. Report to ATM/SG/7 and Multi-Nodal/18	Multi-Nodal/18 ATFM/SG/12	Indonesia Chair/Secretariat	Open	Refer also ATFM/SG/9 IP/13
8/5	ATFM Points of Contact for Implementation Status Reporting	Ongoing	States	Open Closed	Reports to be submitted by end of April each year Where ATFM POCs for status reporting are not provided, the most recent participants at ATFM/SG meetings will be the POC. Note that this list is (currently) separate from the consolidated ATM Points of Contact List.
9/1	Draft regional guidance for advance notice of ATFM measures	ATFM/SG/11 ATFM/SG/12	China/Japan/Singapore/Thailand/Secretariat	Open Closed	Consolidated in action item 11/8 and included in the scope of work of the Regional Framework Review 2022

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
9/2	Review and Update Regional ATFM Framework per ATFM/SG/9 Report para 4.11 (maximum achievable airborne delay) para 4.16 (ATFM qualification schemes) para 4.30 (use case for CTO) para 5.7 (example post-ops analysis) para 5.11 (example demand analysis) para 6.23 (DLA messages) para 6.29 (major review)	ATFM/SG/11 ATFM/SG/12	China, Hong Kong China, India, Japan, Mongolia, Singapore, Thailand, USA	Open Closed	First draft to be provided at ATFM/SG/11 (planned Video Teleconference Q3 or Q4 2020) Updated ATFM/SG/11 Consolidated in action item 11/8 and included in the scope of work of the Regional Framework Review 2022
9/3	Develop operational scenario for CTO for airborne flights	ATFM/SG/11	Australia, Japan, New Zealand, Singapore, Thailand	Open Completed	FIXM use case included in APAC FIXM Version 4.1 ATFM Extension. First draft of operational scenario/guidance to be included in draft revision to Regional ATFM Framework document ATFM/SG/11. Action Item 5/13 LR ATFM also refers
9/5	Missing DEP messages follow-up multi-State analysis	24 July 2020 ATM/SG/9	Australia, China, India, Japan, Mongolia, Singapore, Thailand	Open	To be coordinated/confirmed, depending on level of traffic recovery post-COVID-19 pandemic

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
9/9	Analysis of MET requirements to support Non-ASBU elements of Seamless ATM ANS Plan	ATFM/SG/12	Secretariat/MET R WG Chair	Open	Updated ATFM/SG/11 To be discussed by MET/R WG/9 MET/R WG/11 – to consider in context of 2022 update of Seamless ANS Plan
10/1	Streamline Status Reporting requirements	ATM/SG/8	Secretariat	Open Closed	Shifting meeting schedules, and ICAO requests for status reports to SAIOACG/SEACG, which were usually held before the annual due date for implementation status reports. Updated ATFM/SG/11 Consolidated in action item 11/8, and included in the scope of work of the Regional Framework Review 2022
10/2	Additional case studies for inclusion in Post Operations Analysis Recommended Framework	24 July 2020	Australia/Thailand	Open Completed	To be included in the document for consideration by ATM/SG/8

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
10/3	Nomination of ATFM Experts to participate in MET/R WG Ad Hoc Group	11 May 2020	Australia, Hong Kong China, Japan, Singapore, Thailand, CANSO, IATA Other States welcome to join the Ad hoc group.	Open Completed	Email to secretariat ssummer@icao.int ; MET R Ad-hoc Group for development of APAC Use Case and User Requirements for SWIM-based MET Information Services Supporting ATFM now includes ATFM experts from all identified Administrations/IOs.
10/4	Communication strategy and enhanced work plan for ATFM/IR/SWG	15 May 2020 ATFM/SG/12	Chair/Secretariat	Open	Action Item 5/10 also refers
10/5	Develop agenda and offline work schedule ATFM/SG/11 for review of Regional Framework for Collaborative ATFM	15 May 2020 30 September 2021	Chair/Secretariat	Open	Agenda focused on Review of Regional ATFM Framework Work schedule to include frequent VTC progress meetings. Updated ATFM/SG/11. Partly completed. Scope of work agreed. Action item 11/8 refers. Schedule and rapporteur to be finalized.

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
10/6	Nominate experts to work on offline tasks for Review of Regional ATFM Framework	15 May 2020 30 September 2021	States/IOs	Open	Email to Secretariat ssummer@icao.int Updated ATFM/SG/11 ATFM/IR/SWG to manage.
10/7	Respond to survey on MET services for ATM, to be distributed by State Letter	TBC State Letter ATFM/SG/12	All Administrations	Open	Updated ATFM/SG/11. State Letter (to be distributed) will include reply-by date.
11/1	<i>APA-CDM/TF Action Item 5/2 - included in ATFM/SG Task List pending APANPIRG decision on re-assignment of responsibility for A-CDM.</i> Develop joint operational procedure guidance for the integration of ATFM and A-CDM operations, focusing the integration between A-CDM and "cross-border" ATFM in collaboration with Experts from ATFM/SG and SWIM TF	ATFM/SG/12	(APA-CDM/TF/6) Hong Kong China to lead China, India, Pakistan, Republic of Korea, Thailand, Group of Experts, CANSO	In progress	Included at ATFM/SG/11 APA-CDM/TF/6 WP/03 Task to be carried out by the APANPIRG technical body assigned ongoing responsibility for oversight of A-CDM.
11/2	<i>APA-CDM/TF Action Item 5/3 -Included in ATFM/SG Task List pending APANPIRG decision on re-assignment of responsibility for A-CDM.</i> Identify any other data attributes which are necessary to support the A-CDM and ATFM integrated operations (from A-CDM perspective), in addition to the ones already included in the current version of the FIXM v4.1 Extension in collaboration with Experts from ATFM/SG and SWIM TF.	ATFM/SG/12	(APA-CDM/TF/6) Thailand to lead Hong Kong China, India, Pakistan, Group of Experts, CANSO	To be commenced	Included at ATFM/SG/11 Task to be carried out by the APANPIRG technical body assigned ongoing responsibility for oversight of A-CDM. Dependent on progress of action item 11/1 Refer also SWIM/TF progress on FIXM 4.2 Extension

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
11/3	Follow up technical enquiry on whether BOBCAT can send SAM to ATC at departure aerodromes outside Thailand that are not transiting the Bangkok FIR.	ATFM/SG/12	Thailand	Open	ATFM/SG/11 Report para 4.7 May require support/guidance from AMNAC Technical Sub-Group and/or ATFM/IR/SWG.
11/4	Contribute knowledge and experience on integration of ATFM and AMAN/XMAN, Long Range ATFM and TBFM to CANSO white paper.	30 September 2021	Australia/China/India/Japan/New Zealand/Pakistan/Singapore/Thailand/USA/CANSO/IATA	Open	ATFM/SG/11 Report para 4.56 and 4.69 All administrations welcome to input. Not restricted to CANSO members only.
11/5	Provide specific data on flights for which DEP messages for flights entering the Bangkok FIR were not received, in order that action could be taken to rectify the problem.	31 August 2021	Thailand	Open Completed	ATFM/SG/11 Report para 4.80
11/6	Examine proposal to rename <i>marginal</i> implementation status to better reflect the level of progress for internal ANSP reporting.	05 November 2021	Secretariat	Open	ATFM/SG/11 Report para 4.89
11/7	Review Draft <i>APAC User Requirements for SWIM-based MET Information Services Supporting ATFM</i> and provide additional use cases to MET R/WG Ad hoc Group.	30 September 2021	All Administrations	Open	ATFM/SG/11 Report para 5.2
11/8	Review Regional Framework for Collaborative ATFM.	ATFM/SG/12	ATFM/IR/SWG and CANSO Nomination of SWG members to be made by 15 September 2021 (action item 10/6)	Open	(Consolidation of action items 9/1, 9/2, 10/1). Scope of work provided in ATFM/SG/11 Report of the Meeting – Appendix E

2022 Review of the Regional Framework for Collaborative ATFM

Provisional Scope of Work

Item	Framework Reference	Description	ATFM/SG Task List or other references	Responsible Party
1.	Sections 1, 2 and 3	Redraft preliminary sections of the Framework (Section 1 – Scope of the Framework, Section 2 – Development and Objectives of the Framework and Section 3 – Executive Summary)	Action Item 9/2 ATFM/SG/11 WP/18	Chair and Secretariat
2.	Section 4	Abbreviations and Acronyms – review to remove entries not used elsewhere in the document, and to include any necessary new abbreviations and acronyms (Secretariat task)	Action Item 9/2 ATFM/SG/11 WP/18	Secretariat
3.	1.15	Document Review cycle to be updated – subject to further discussion, and consideration of ATFM/SG/11 participant preference for review cycle coincident with Seamless ANS Plan review cycle.	ATFM/SG/11 Report 5.10	Chair and Secretariat in consultation with ATFM/SG members
4.	5.1 and Appendix A	ATFM Principles (and Framework Appendix A) to be updated in line with any relevant changes to the Seamless ANS Plan, and improved knowledge and experience gained since publication of Version 1.0 of the Framework. Principles should also be reviewed to remove duplication of principles now included in Doc 9971, except where deemed necessary for APAC significance. Reference to principles in Doc 9971 should be included.	Action Item 9/2 ATFM/SG/11 WP/18	
5.	5.2	ATFM-Related Aviation System Block Upgrades (ASBU) to be revised to reflect regional priorities in the Seamless ANS Plan, the updated ASBU scheme in the latest version of the GANP, and any ASBU modules that impact upon the performance objectives of the ATFM Framework.	Action Item 9/2 ATFM/SG/11 WP/18	

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Item	Framework Reference	Description	ATFM/SG Task List or other references	Responsible Party
6.	5.4	<i>ATFM-Related Performance Objectives of the Seamless ANS Plan</i> to be revised to reflect the ATFM/CDM-related performance objectives and implementation phases in the latest update of the Seamless Plan.	Action Item 9/2 ATFM/SG/11 WP/18	
7.	5.7 and Appendix B	<i>Collaborative Decision-Making</i> (and Framework Appendix B) to be reviewed against the latest guidance in ICAO Doc 9971 – <i>Manual on Collaborative ATFM</i> , and updated in recognition of the development of the APAC Multi-Nodal ATFM Collaboration (AMNAC) from the original multi-nodal ATFM operational trial upon which Appendix B to the framework was based.	Action Item 9/2 ATFM/SG/11 WP/18	
8.	5.18	<i>ATFM Phases</i> to be reviewed and rationalized against the latest guidance in Doc 9971.	Action Item 9/2 ATFM/SG/11 WP/18	
9.	5.23	<i>Airspace and Airport Capacity Improvement</i> to be reviewed against the latest guidance in Doc 9971 (with unnecessary duplication deleted), and any parallel information in the <i>Asia/Pacific A-CDM Implementation Plan</i> .	Action Item 9/2 ATFM/SG/11 WP/18	
10.	5.27	<i>Capacity Planning, Assessment and Declaration</i> to be reviewed against the latest guidance in Doc 9971. Guidance for demand analysis should also be included, and an example of a demand and capacity analysis should be considered for inclusion as new appendix to the Framework document.	Action Item 9/2 ATFM/SG/11 WP/18	

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Item	Framework Reference	Description	ATFM/SG Task List or other references	Responsible Party
11.	5.33	<i>ATFM Daily Plan</i> (Framework Appendix C) to be reviewed against the latest guidance in Doc 9971, and updated to reflect any revised or additional experience gained by APAC ATFM units exchanging ADP.	Action Item 9/2 ATFM/SG/11 WP/18	
12.	New	<i>Advance Notice of ATFM Measures</i> (new element) – insert guidance on advance notification requirements for ATFM measures, including time parameters for the locking in of measures. ATFM/SG/10 Task List action item 9/1.	Action Item 9/1 Action Item 9/2 ATFM/SG/11 WP/18	
13.	New	Draft regional <i>guidance for operational use of CTO</i>	Action Item 9/2	
14.	New	Draft or update regional guidance and performance expectation for origination of DLA messages	Action Item 9/2 ATFM/SG/9 report 6.23	
15.	New	<i>ATFM for Long Range Flights</i> – include any relevant information, supported by proposed performance objectives in Section 7 and revision of associated information in Section 8.	Action Item 5/13 Action Item 9/2 ATFM/SG/11 WP/18	
16.	New	Draft regional guidance for <i>maximum achievable/assignable airborne delay</i>	Action Item 9/2 ATFM/SG/9 report 4.11	
17.	New	<i>ATFM Post-Operations Analysis</i> (new element) – insert brief discussion of the need for, and benefits of, post-operations analysis of ATFM, including reference to the separate <i>Asia/Pacific ATFM Post-Operations Analysis Recommended Framework</i> .	Action Item 9/2 ATFM/SG/11 WP/18	

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Item	Framework Reference	Description	ATFM/SG Task List or other references	Responsible Party
18.	5.41 5.58	<i>ATFM Terminology</i> (and Framework Appendix D) to be reviewed and updated to include the Basic Phrases for Cross-Border ATFM Coordination (Working Draft), currently published on the ICAO Asia/Pacific Regional Office website, and the updated guidance in Doc 9971. The subsequent section <i>ATFM Phrases</i> should also be consolidated here.	Action Item 9/2 ATFM/SG/11 WP/18	
19.	New	<i>Incorporate references to and background information on A-CDM</i> , including relevant references from Doc 9971, Regional A-CDM Implementation Plan, common milestones, Regional Joint Operational Procedure Guidance for ATFM/A-CDM integration (if developed), common milestones See also item 20.	Action Item 11/1 Action Item 11/2	

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Item	Framework Reference	Description	ATFM/SG Task List or other references	Responsible Party
20.	5.46	<p><i>ATFM System Communications, ATFM Information Distribution, and ATFM Communications by AFS</i> to be consolidated and updated to updated to align with latest guidance in Doc 9971, and to refer specifically to the Asia/Pacific AFTN/AMHS-Based ICD for ATFM and the Asia/Pacific FIXM version 4.1 Extension.</p> <ul style="list-style-type: none"> • Table 1 – <i>Minimum ATFM Information for Distribution and Sharing</i> should be updated according latest ATFM knowledge, and to take into account elements of A-CDM information supporting the integration of A-CDM with cross-border ATFM (ATFM/SG/11 WP/18 Table 3). <p>Consideration should also be given to the development of an appendix detailing ATFM milestones and their application (operational scenarios), aligned with that provided in the APAC A-CDM Implementation Plan (ATFM/SG/11 WP/18 Attachment B). Priority should be given to operational scenarios for CTOT and CTO (ATFM/SG Task List action item 9/3)</p>	Action Item 9/2 ATFM/SG/11 WP/18	
21.	5.59	<p><i>Meteorological Information for ATFM</i> to be updated to include examples of latest information available to advanced ANSPs, and to include direct reference to the <i>Regional Guidance for Tailored MET Information to Support ATM</i>.</p>	Action Item 9/2 ATFM/SG/11 WP/18	
22.	5.68	<p><i>Asia/Pacific Region ATFM Implementation Study</i> may be replaced by updated information. However, due to the considerable specialist effort required the previous study was funded by IATA. Considering constrained resources available to States and International Organizations, this information may also be considered for removal. See also discussion of Section 6 of the Framework in item 28.</p>	Action Item 9/2 ATFM/SG/11 WP/18	

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Item	Framework Reference	Description	ATFM/SG Task List or other references	Responsible Party
23.	5.72	<i>Asia/Pacific Region ATFM Operational Concept</i> – no change is proposed to this element of the Framework document as the Regional ATFM Concept of Operations remains unchanged. However, it may be considered for relocation into preliminary sections 1, 2 or 3.	Action Item 9/2 ATFM/SG/11 WP/18	
24.	5.75	<i>Training and Competencies for ATFM Personnel</i> (Framework Appendix E) – no change is proposed to this element of Section 5 of the Framework document. However, it is proposed that Appendix E (31 pages) be removed to form a separate document, with reference to that document included in the Framework.	Action Item 9/2 ATFM/SG/11 WP/18	
25.	New element	<i>ATFM Qualification Schemes</i> discussion of ATFM qualification schemes that exist in the APAC region should be considered for insertion, aligned as necessary with the provisions of ICAO Annex 1.	Action Item 9/2 ATFM/SG/9 report 4.16 ATFM/SG/11 WP/18	
26.	5.78	<i>Regional ATFM Implementation Guidance</i> (Framework Appendix F) – this element may be shortened to provide reference to the implementation guidance provided in Doc 9971, which integrated the guidance provided in Framework Appendix F. The appendix should then be removed.	Action Item 9/2 ATFM/SG/11 WP/18	
27.	5.82	<i>Regional ATFM Implementation Monitoring</i> (Framework Appendix G) should be updated, with any consequential amendments as necessary, to expand its reporting categories to take into account proposed amendments to Framework Section 7 – Performance Improvement Plan.	Action Item 9/2 ATFM/SG/11 WP/18	

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Item	Framework Reference	Description	ATFM/SG Task List or other references	Responsible Party
28.	Section 6	<p>Current Situation - be reviewed to remove redundant information, and to insert the 2022 regional ATFM implementation status data gathered under the Regional ATFM Implementation Monitoring process described in Section 5.</p>	Action Item 9/2 ATFM/SG/11 WP/18	
29.	Section 7	<p>Performance Improvement Plan – to be reviewed and amended as follows, as a minimum:</p> <ul style="list-style-type: none"> • Review the structure of the Performance Improvement Plan. The plan was structured into three phases (Phases IA, IB and II) commencing 12 November 2015, with the final phase expected to be implemented by 08 November 2018. If required after the review of the Framework against ATFM-related performance objectives of the Asia/Pacific Seamless ANS plan, a further implementation phase or phases should be considered. All existing performance expectations should be consolidated; • Review the definition of <i>ATFM Program Airports</i>, taking into account Seamless ANS Plan performance expectations for both ATFM and A-CDM, and any relevant elements of the Asia/Pacific A-CDM Implementation Plan; • Review the use of high density FIRs and busiest city pairs to define performance expectations; • Update of the regionally agreed FIXM version to the Asia/Pacific FIXM Version 4.1 Extension; • Reflecting APAC experience review the use of MINIT and MIT, with a view to limiting their use to tactical application by ATC in response to unexpected short-notice capacity constraints pending the formulation of a program of more mature ATFM measures by ATFM Units/Centres; 		

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Item	Framework Reference	Description	ATFM/SG Task List or other references	Responsible Party
		<ul style="list-style-type: none"> • Include reference to the Asia/Pacific ATFM Post-Operations Analysis Recommended Framework; • Revise performance expectations to take into account ANSPs in geographical locations where their ATFM time horizon does not require them to distribute cross-border ATFM measures. 		
30.	Section 8	Research and Future Development Possibilities – to be updated to take into account trial projects currently underway in the cross-border ATFM environment, and any relevant updates in earlier sections of the Framework document.		
31.	-	Develop first draft of Operational Requirements Document (ORD) . This ATFM/IR/SWG task should be reviewed after the Framework 2022 update	Action Item 5/10	