INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE THIRTEENTH MEETING OF THE ASIA/PACIFIC AIR TRAFFIC FLOW MANAGEMENT STEERING GROUP (ATFM/SG/13)

Bangkok, Thailand, 03 – 07 April 2023

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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APPENDIXES

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INTRODUCTION

Meeting

1.1 The Thirteenth Meeting of Air Traffic Flow Management Steering Group (ATFM/SG/13) was held in Bangkok, Thailand from 03 to 07 April 2023.

Attendance

2.1 The ATFM/SG/13 meeting was attended by 104 participants from 17 Administrations, and four International Organizations including Australia, Cambodia, China, Hong Kong China, India, Indonesia, Japan, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Republic of Korea, Singapore, Thailand, United States, Viet Nam, CANSO, IATA, 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, was elected to chair the ATFM/SG/13 meeting.

3.2 Mr. Hiroyuki Takata, Regional Officer Air Traffic Management (ATM), ICAO Asia and Pacific Regional Office, and Mr. Manjunath Krishna Nelli, Regional Officer ATM were Secretary for the ATFM/SG/13 meeting. They were assisted by, Mr. Shane Sumner, Regional Officer ATM/AIM, Mr. Ying Weng Kit, ATM Officer and Dr. Prakayphet Chalayonnawin, Programme Analysis Associate (ATM), ICAO Asia and Pacific Regional Office.

Opening of the Meeting

4.1 On behalf of Mr. Tao Ma, Regional Director of the ICAO Asia and Pacific Regions, Mr. Hiroyuki Takata 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 20 working papers, eight 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 recorded its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

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

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

Decisions of ATFM/SG that related 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 Draft Decisions

Nil.

7.4 List of Decisions

<table>
<tr><td colspan="3">Decision ATFM/SG/13-1: Update Terms of Reference of ATFM Information Requirements Small Working Group</td></tr>
<tr><td colspan="2">What: That, the ATFM/IR/SWG Terms of Reference (TOR) be amended as detailed in Appendix C to the report.</td><td>Expected impact:
☐Political / Global
☐Inter-regional
☐Economic
☐Environmental
☒Ops/Technical</td></tr>
<tr><td>Why: To include A-CDM in ATFM/IR/SWG activities and simplify SWG</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
</table>

working processes.	
When: 7-Apr-23	Status: Adopted by ATFM/SG
Who: ☐Sub groups ☐APAC States ☐ICAO APAC RO ☐ICAO HQ ☒Other: ATFM/SG	

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REPORT ON AGENDA ITEMS

Agenda Item 1: Election of Chair/Adoption of Agenda

1.1 Mr. Piyawut Tantimekabut, Air Traffic Management Network Manager, AEROTHAI, Thailand, was elected to chair the ATFM/SG/13 meeting.

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

Agenda Item 2: Review Outcomes of Related Meetings

Updates from MET/R WG (WP/02)

2.1 The Chair of the Meteorological Requirements Working Group (MET/R WG) presented updates related to the Group, including information on the MET/ATM survey, an updated MET/ATM regional guidance document, education on the ICAO space weather advisory service and user requirements for System-Wide Information Management (SWIM)-based MET information services supporting ATFM.

2.2 The meeting was informed that the updated *Asia/Pacific Regional Guidance for Tailored Meteorological Information and Services to Support Air Traffic Management Operations*, Third Edition, August 2022 (adopted by MET SG/26; Decision MET SG/26/02 referred) was available on the ICAO APAC Office website at: https://www.icao.int/APAC/Documents/edocs/2022-08_APAC-REG-GUIDANCE-FOR-TAILORED-MET-TO-SUPPORT-ATM_3rd-Ed.pdf.

2.3 The meeting was informed that the proposed ICAO APAC *Webinar on the Space Weather Advisory Information Services* was postponed to a date to be confirmed in 2023.

2.4 MET/R WG designated an ad hoc group to identify and document use cases and user requirements for SWIM-based MET information services supporting ATFM in the APAC region. The meeting was informed that MET experts in the ad hoc group would consult ATFM experts to understand better the APAC ATFM operations and supplement the use cases with detailed information.

2.5 The MET/R WG/12meeting would be held at the ICAO APAC Regional Office in Bangkok, Thailand, from 01 to 05 May 2023, including an ICAO APAC Webinar on Meteorology/Air Traffic Management (MET/ATM Webinar).

2.6 The meeting agreed to include contributing to the MET/R-WG on further refining SWIM-based MET information service scenarios and developing other scenarios as an action item for the group.

2.7 The meeting also discussed the possibility of holding the ATFM/SG meeting in conjunction with MET/R-WG meetings in the future for better synergy. The meeting took note of the upcoming MET/ATM seminar in May 2023 and sought support from States for their contribution.

2.8 In response to a query, the meeting was informed that in accordance with ICAO Annex 3, four global space weather advisory centres are established to provide advisory information for the space weather phenomena. These were US Space Weather Prediction, European PECASUS, Australia, Japan, Canada and France Consortium, and China and Russia Consortium. The meeting was also informed that the ICAO Doc 10100 (Manual on Space Weather Information in Support of International Air Navigation) had all the required information on space weather advisory services. In addition, for user awareness, the ICAO APAC Regional Office would hold a space weather-related webinar/seminar in the future.

Agenda Item 3: ATFM Global Update

The CANSO Air Traffic Flow Management (ATFM) Data Exchange Network for Cooperative Excellence (CADENCE) (WP/3)

3.1 The meeting was informed of the CANSO Air Traffic Flow Management (ATFM) Data Exchange Network for Cooperative Excellence Task Force (CADENCE TF), created to support regional ATFM and Collaborative Decision Making (CDM) among Caribbean and Latin American States.

3.2 CANSO also informed the meeting of the accomplishments of the CANSO ATFM Data Exchange Network for the Americas (CADENA), including the Operational Information System (OIS). The purpose of the OIS was to accelerate the implementation and enhancement of regional ATFM/CDM from a politically neutral standpoint, in an economical manner. The CADENCE Task Force's approach to advance regional ATFM/CDM supported ICAO's "No Country Left Behind" policy.

3.3 The meeting was informed how CADENA dealt with contingency situations such as natural disasters, including extreme weather, volcanic activities, earthquakes, etc., ATC service interruptions and airport capacity issues by using a prepared checklist for 15 identified contingency situations.

3.4 CANSO also provided information on training on CADENA, including how to estimate nominal and dynamic airport/airspace sector capacity declarations.

3.5 The meeting was informed of the CADENCE OIS developed by CANSO and CGH Technologies, Inc. The platform would enable ANSPs, airlines and potentially other airspace users to share information, facilitate situational awareness, and engage all stakeholders in the development of collaborative approaches to address issues included, but not limited to:

a) Regional Traffic Management Measures

b) Active Reroutes and Route database

c) Airport Delays (arrival and departure)

d) Advisories (Urgent or FYI)

e) NOTAMs

f) ATFM Daily Plan

g) Email Push Notification

h) Contingency Forms

i) Airport/Airspace Capacity

j) Other unique information such as briefings related to commercial space operations or volcanic eruptions and their related impacts.

3.6 The CADENA OIS was publicly accessible via https://www.cadenaois.org.

3.7 In response to a query on cyber security and the development of mobile apps for the OIS platform, the meeting was informed that the platform was meant for information sharing only and not for interactive machine-to-machine information exchange, and the means of information exchange was done via the chat and request/response functions for basic communication. If ATFM measure exchanges were necessary, the OIS should be tailored by APAC.

3.8 It was suggested that advanced MET information could also be included as information to Stakeholders in the OIS platform in the future. The discussion also focused on the various training provided to the Stakeholders.

3.9 The meeting expressed interest for the idea of using OIS as a means of sharing information on ATM, including the information on space vehicle launch and recovery coordination.

3.10 However, further discussion on possible use cases of CADENCE OIS beyond the scope of ATFM is required. CANSO was therefore asked to provide a similar briefing to the upcoming ATM/SG/11 for further discussion.

Latin America and Caribbean (LAC) Regional Free Route Airspace (FRA) Roadmap (IP/2)

3.11 CANSO shared information on Latin America and Caribbean (LAC) regional free route airspace (FRA) roadmap. Information was provided on the step-by-step approach adopted by the stakeholders (CANSO, IATA, ICAO, participating airlines and ANSPs) to the implementation of FRA. The steps included establishment of Planned Airway System Alternative (PASA) Routes, trial User Preferred Routes (UPRs), and Strategic Direct Routing (SDR) leading to regional FRA.

ICAO ATM Ops Panel ATFM WG progress (SP/6)

3.12 The Secretary of the ATM Ops Panel provided information on the progress of ATFM-related amendment of Annex 11 *Air Traffic Services*, Doc 4444 *Procedures for Air Navigation Services – ATM* (PANS-ATM), and Doc 9971 *Manual on Collaborative Air Traffic Flow Management*, which targeted 2026 publication.

3.13 The meeting was reminded that the current Annex 11 requirement of ATFM was only for airspace where air traffic demand at times exceeded, or was expected to exceed, the declared capacity of the air traffic control services concerned. An amendment proposed for inclusion in the forthcoming edition of Annex 11 required all States/Administrations to implement ATFM.

3.14 The meeting was also informed that Doc 4444 and Doc 9971 would be amended, including a new chapter of Doc 9971, in connection with the Annex 11 amendment.

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

Regional ATFM Implementation Status (WP/4)

4.1 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 for 2023 were received from 20 APAC Administrations:

Bhutan, Cambodia, China, Hong Kong China, Macao China, Fiji, France - French Polynesia, India, Indonesia, Japan, Malaysia, Mongolia, New Zealand, Pakistan, Philippines, Republic of Korea, Singapore, Thailand , United States and Viet Nam.

4.2 Based on reports received States were assessed as having *Robust* (90-100%), *Marginal* (70-89%) or *Incomplete* (0-69%) implementation.

4.3 Cambodia, China, Hong Kong China, Japan, Republic of Korea, Singapore, Thailand and USA were assessed as having Robust implementation.

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

Afghanistan, Brunei Darussalam, Cook Islands, DPR Korea, Kiribati, Lao PDR, Marshall Islands, Micronesia, Nauru, Palau, Samoa, Solomon Islands, Sri Lanka, Timor Leste, Tonga, Tuvalu and Vanuatu.

4.5 **Table 1** summarized current implementation status.

Administration (Tier)	**% Implementation**			**Implementation Status**
	2021	**2022**	**2023**	
Afghanistan (B	*never reported*	*no report*	*no report*	Never Reported
Australia (A)	87	*no report*	*no report*	Did Not Report
Bangladesh (B)	13	13	*no report*	Did Not Report
Bhutan (A)	*no report*	*no report*	21	Incomplete
Brunei Darussalam (B)	*never reported*	*no report*	*no report*	Never Reported
Cambodia (A)	*no report*	82	95	Robust
China (A)	*no report*	*no report*	97	Robust
Hong Kong, China (A)	89	89	95	Robust
Macao, China (B)	*no report*	*no report*	39	Incomplete
Cook Islands (B)	*never reported*	*no report*	*no report*	Never Reported
Fiji (B)	*no report*	*no report*	0	Incomplete
France (French Polynesia) (B)	*no report*	*no report*	40	Incomplete
DPR Korea (B)	*never*	*no report*	*no report*	Never Reported

	reported			
India (A)	92	84	85	Marginal
Indonesia (A)	71	63	54	Incomplete
Japan (A)	89	94	91	Robust
Kiribati (B)	*never reported*	*no report*	*no report*	Never Reported
Lao PDR (A)	*never reported*	*no report*	*no report*	Never Reported
Malaysia (A)	*no report*	*no report*	36	Incomplete
Maldives (B)	*no report*	*no report*	*no report*	Did Not Report
Marshall Islands (B)	*never reported*	*no report*	*no report*	Never Reported
Micronesia (B)	*never reported*	*no report*	*no report*	Never Reported
Mongolia (A)	*no report*	40	28	Incomplete
Myanmar (B)	*no report*	*no report*	*no report*	Did Not Report
Nauru (B)	*never reported*	*no report*	*no report*	Never Reported
Nepal (B)	43	40	*no report*	Did Not Report
New Caledonia (B)	*no report*	*no report*	*no report*	Did Not Report
New Zealand (A)	*no report*	67	78	Marginal
Pakistan (B)	11	80	59	Incomplete
Palau (B)	*never reported*	*no report*	*no report*	Never Reported
Papua New Guinea (A)	*no report*	*no report*	*no report*	Did Not Report
Philippines (A)	61	77	59	Incomplete
Republic of Korea (A)	82	87	93	Robust
Samoa (B)	*never reported*	*no report*	*no report*	Never Reported
Singapore (A)	97	97	99	Robust
Solomon Islands (B)	*never reported*	*no report*	*no report*	Never Reported
Sri Lanka (B)	*never reported*	*no report*	*no report*	Never Reported
Timor Leste (B)	*never reported*	*no report*	*no report*	Never Reported
Tonga (B)	*never*	*no report*	*no report*	Never Reported

	reported			
Thailand (A)	90	90	91	Robust
Tuvalu (B)	*never reported*	*no report*	*no report*	Never Reported
United States (A)	94	*no report*	96	Robust
Vanuatu (B)	*never reported*	*no report*	*no report*	Never Reported
Viet Nam (A)	34	34	71	Marginal

Table 1: Updated Asia/Pacific Region ATFM Implementation Status

4.6 The *Regional ATFM Monitoring and Reporting Form* was available on the ICAO Asia/Pacific Regional Office eDocuments (ATM) web-page at:

https://www.icao.int/APAC/Pages/eDocs.aspx

4.7 Administrations that had not yet submitted reports were requested to submit their ATFM implementation status using the Regional ATFM Monitoring and Reporting Form, to the ICAO APAC office for inclusion in the final report of the meeting.

4.8 A proposal was made to include ATFM measure effectiveness into the Regional ATFM Monitoring and Reporting Form. However, the meeting recognized that the Form was intended to monitor ATFM implementation status rather than the performance of ATFM measures and operations. The measurement of ATFM measure effectiveness should therefore be carried out by States as part of the ATFM post-operations analysis process. Also, the Form already included a requirement for States to conduct ATFM post-operations analysis as part of the ATFM implementation.

Progress Update from Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC) (WP/5)

4.9 The meeting was provided with the progress update of the Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC), a collaborative effort by Air Navigation Service Providers (ANSPs) from States/Administrations in the Asia/Pacific region to implement cross-border ATFM.

4.10 The AMNAC Core Team had developed a network post-operations analysis portal to track the impact of and compliance with Ground Delay Programmes (GDPs) activated over time as part of the AMNAC initiative. The aim of the portal was to identify problem areas to be addressed quantitatively. Based on the data up to December 2022, the following key observations were captured:

- From 2019 onward, a majority (> 90%) of flights with assigned Calculated Take Off Times (CTOTs) departed from aerodromes under the jurisdiction of Level-2 and Level-3 ATFM nodes, signifying that CTOT compliance facilitation should be provided for most flights.

- The COVID-19 pandemic resulted in a significant traffic downturn and a sharp reduction in the need for GDPs between 2020 and early 2022. However, an increasing number of GDPs have been activated in recent months in response to traffic congestion. This corresponds well with the rise of traffic demand as the pandemic wanes and travel restrictions are lifted. Additionally, "zero-delay" GDPs continued to be initiated by Hong Kong China with participation from both AMNAC and East Asia ATM Coordination Group (EATMCG) members (Japan and Republic of Korea).
- While flights' compliance to CTOTs – especially those issued by Thailand and Hong Kong China – were generally good (70% - 90%), there were still instances of low compliance such as during the Singapore-initiated GDP for Singapore Air Show 2022 (the average compliance rate was 47.6%).

4.11 The meeting was informed of key outcomes from the AMNAC/19 meeting, including the resolution of conflicting ATFM measures, and the need for further quantitative exploration of fuel savings and emission reduction benefits from ATFM operations.

4.12 The meeting was also informed of the progress from the Technical Sub-Group of the AMNAC Core Team in developing and testing information exchange models, in collaboration with the Asia/Pacific SWIM Task Force (SWIM TF), to enable "ATFM-on-SWIM" operations in the region. It was expected that the ATFM information exchange trial on SWIM technical infrastructure over the region's Common aeRonautical VPN (CRV), using the FIXM v4.1 with APAC Extension, would be carried out in Q2/2023. Moreover, the meeting was informed of the need to identify the specific FIXM version to support the harmonized implementation across the Asia/Pacific region in the future, and that currently v4.2 with extension was identified. It was also shared that the FIXM version to be selected should be able to support not only the ATFM information exchange but also the transition to the FF-ICE/R1 operation.

4.13 The meeting was invited to participate in the routine APAC Bi-Weekly ATFM Web Conference on Thursday every two weeks at 0800 UTC to share and discuss ATM capacity limitations and possible ATFM measures. States and/or ANSPs may contact AMNAC Core Team members to request to be included in the invitation list.

4.14 Responding to a query regarding information about the AMNAC bi-weekly conferences being displayed on the ICAO website in the COVID-19 & ACCRPG Sub-Groups pages, the meeting was informed that the information would be moved to a separate section of the ICAO website and would be available to all stakeholders.

4.15 The meeting was informed of the ATFM philosophy adopted to manage multiple capacity constraints in the United States. In case of multiple constraints, in general, destination airport constraints would be considered first, then en-route constraints, and the least impact on the whole situation would need to be confirmed.

4.16 The meeting agreed that collaboration and education of stakeholders were essential for resolving such scenarios.

NARAHG Update (WP/6)

4.17 The meeting was provided with an update on the progress of the Northeast Asia Regional ATFM Harmonization Group (NARAHG), formed by China, Japan, and Republic of Korea (ROK).

4.18 The meeting was informed of the trial operational procedure for typhoon detour flights conducted during September 2022. The paper noted that from 04 – 06 September, during typhoon Hinnamnor, the procedure for typhoon detour flights was applied to 172 flights bound for Southeast Asia departing from ROK. China, Japan, and ROK regularly shared FPLs for each detour route. It was observed that the overall delay was 50% shorter than before.

4.19 The paper noted that the challenges of identification of target aircraft as one of the issues observed during the trial.

4.20 The meeting was informed that test/trial data exchange by ATFM systems between China and ROK via CRV would start in May 2023. Monthly trials would be conducted after the data connection was established to confirm the common operation procedure.

4.21 Clarification of the operational procedures for typhoon detour flights, and on the data format being used for operation trials for information exchange over CRV, was provided by NARAHG members.

4.22 In response to a query, the meeting was informed that the delay time reduced by 50% from China was based on a simple comparison of MINIT from the last year.

4.23 The meeting reiterated the basic concept of the Regional Framework for ATFM; that issuance of CTOT is preferable to using MINIT/MIT.

4.24 Further trials would take place for more effective operations in the future.

Progress Updates on ATFM Collaboration among EATMCG Members using Multi-Nodal ATFM Concept of Operations (WP/7)

4.25 The meeting was provided with the progress updates of ATFM Collaboration among the East Asia Air Traffic Management Coordination Group (EATMCG) members using the multi-nodal ATFM concept of operations.

4.26 The meeting was informed that Hong Kong China and ROK had initiated a series of Ground Delay Programme (GDP) operational trials with other EATMCG members on a monthly basis to validate the Concept of Operations (CONOPS) continuously, and to develop internal handling procedures, in collaboration with the AMNAC initiative since ATFM/SG/12 (September 2022).

4.27 The meeting was further informed that the group utilized email as the primary means of CTOT distribution/revision, and Hong Kong China had promoted the idea of using Slot Allocation Messages (SAMs) via AFTN with the group members for consideration. The meeting noted that the Regional Framework for Collaborative ATFM specified the use of the Flight Information Exchange Model (FIXM) (where capability existed) or AFTN for the distribution of ATFM measures.

4.28 The progress update of the member Administrations Hong Kong China, Japan, Republic of Korea, and the Philippines, was provided.

4.29 The meeting discussed the operational agreements executed among members of EATMCG, and supported the ongoing trials between the members.

4.30 The meeting also reiterated that the sub-regional groups must have common operational procedures.

BOBCAT Operational Updates (WP/8)

4.31 The meeting was provided with an operational update on the Bay of Bengal Cooperative ATFM (BOBCAT) system, normally used for night-time westbound flights through the Kabul FIR.

4.32 The BOBCAT ATFM service was suspended and the Bangkok ATFM Unit operating hours were reduced; however, the system continued to be maintained by Thailand, and the service could be resumed when traffic demand crossing the Kabul FIR once again exceeded the airspace's capacity.

4.33 An internal analysis by Thailand confirmed the capability to deliver BOBCAT CTOTs via AFTN/AMHS using SAMs, Slot Revision Messages (SRMs) and Slot Cancellation Messages (/SLCs) could be developed for the BOBCAT ATFM system. The capability could be delivered within 2023 after the required system tests. Therefore, Thailand would like to engage with some States able to process SAM/SRM/SLC for ATFM purpose to conduct system tests during the development in the second half of 2023.

4.34 The impact of Afghanistan airspace closure on traffic flow in Pakistan and India was noted. IATA informed the meeting that airlines were incurring high costs due to the airspace closure.

4.35 The meeting discussed the issue of Calculated Time Over (CTO) compliance at the boundary points, and was informed that the focus was to accommodate airlines at their preferred levels rather than meeting the CTO window. A member highlighted that these issues could also serve as lessons learned which would help with the regional capabilities building for ATM initiatives such as FF-ICE and TBO.

4.36 The current Afghanistan situation, including information on CCT meetings and bilateral meetings with Afghanistan, was shared with the meeting.

National Traffic Flow Management System (WP/9)

4.37 The meeting was provided information on the concept and functions of the National Traffic Flow Management system (NTFM) built in China.

4.38 The NTFM was a unified ATFM system deployed in the Operation Management Center (OMC), eight regional ATFM units and 36 ATM sub-bureaus and stations, which covered the entire ATM system in China. The meeting was informed that NTFM would also effectively connect with cross-border ATFM in the Asia-Pacific region. With the NTFM, ATFM measures in China had transitioned from separation-based to capacity-based ATFM measures and provided *One CTOT Solution* to generate a CTOT that met multiple constraints.

4.39 The meeting was further informed that China had deployed Airport Collaborative Decision-Making (A-CDM) at airports with a passenger throughput of more than 10 million and strengthened the construction of AMAN and DMAN responding to a complete ATFM-related system. The meeting noted that China had issued the "Collaborative ATFM Business Rules" and the "Collaborative ATFM Operation Procedures" to standardize ATFM operations and gradually create an efficient ATFM collaborative operation environment.

4.40 Regarding Cross-Border ATFM, the meeting was informed that the ATFM system interconnection test via AFTN was successfully conducted between the NTFM and Hong Kong China in November 2022, and with AEROTHAI in March 2023. Singapore, having tested with Hong Kong China and Thailand previously in December 2021, expressed interest to conduct similar system interconnection test via AFTN with China's NTFM system and would coordinate with China subsequently. The meeting also noted that Macau China planned to join a unified coordination platform.

4.41 In response to a query, the meeting was informed that the concept of Internet of Everything (IOE) was used, but actual connection wasn't provided through ordinary internet connection. AFTN or CRV were used instead.

4.42 Clarification was provided on the Civil-Military cooperation arrangement in ATFM. It was noted that military flights were not subject to any restrictions, and NTFM only focused on civil flights.

4.43 Coordination procedures with other NARAHG members and the AMNAC group were discussed, and the meeting was informed that the NTFM Centre would eventually be the single entity for all cross-border coordination with China. The meeting supported continuing interconnection trials through AFTN with the NTFM Centre.

Diurnal Wind Variation Study for Runway Capacity Optimization at Hong Kong International Airport (WP/10)

4.44 The meeting was informed of the runway capacity optimization efforts and its tangible benefits achieved through collaboration between the Air Navigation Service Provider (Hong Kong Civil Aviation Department) and the Meteorological Agency (Hong Kong Observatory) in Hong Kong China.

4.45 Historical daily wind data from anemometers located at various locations along the runways at HKIA was collected and analysed. Occasions of a tailwind of five knots or more with reference to runway-in-use were identified as a basis for the need for a runway change.

4.46 Inserting firebreaks at appropriate intervals of the summer 2023 schedule, which tied in with the wind change patterns and corresponded with higher runway change probability, could reduce airborne/ground delays induced by the change, thus minimizing the need to initiate ATFM measures.

4.47 The tangible operational benefits highlighted the importance of ANSP and MET agency collaboration.

4.48 The meeting appreciated the data and analysis provided by Hong Kong China, and noted the close relationship between MET information services and ATM provision.

4.49 Responding to the query on the effectiveness of strategic slot allocation based on historical MET data, the meeting was informed that the post-operational analysis showed a significant adherence to the predicted data.

Resuming CTO Trials within Fukuoka FIR (WP/11)

4.50 Japan provided information on the resumption of CTO trials within Fukuoka FIR. The meeting was informed of the previous trial operations between 2011 and 2014. Preliminary verification had been conducted in 2020 and 2021 on the accuracy of estimated time of arrival (ETA) calculated by the ATC system.

4.51 Trial operations had resumed in March 2023. The objectives of the trial operations were;

- To share the delay between domestic flights and international flights.
- Enhance the balance between airspace capacity and traffic flow,
- Reduce airborne holdings and excessive radar vectors.
- Consequently, reduce fuel consumption and improve operational efficiency.

4.52 Post operations analysis would examine the extent of reduction of delays to domestic

flights, controller workload, and the ETA accuracy in the ATC systems.

4.53 The meeting discussed technical matters such as maximum delay that could be absorbed in CTO operations, the relationship between CTO delay and AMAN advisory, the accuracy of CTO, and the display of CTO advisory to ATCOs. The meeting encouraged Japan to continue sharing information on this issue in future meetings.

Cross-Border ATFM-CDM Collaboration related to Korean SAT (WP/12)

4.54 The meeting was informed of the cross-border ATFM/CDM collaboration between the ROK and China, Hong Kong China and Japan for the noise abatement requirements of the Korean College Scholastic Ability Test (SAT) event by engaging in collaborative decision-making to apply CTO/CTOT/Minutes-in-Trail (MINIT) measures.

4.55 The ROK informed the meeting that Korean SAT took place every November. During the listening comprehension test, all aircraft in Incheon FIR were prohibited from taking off and landing so as to not disturb students for about 50 minutes, which could cause airborne holding.

4.56 Three different ATFM measures were applied to meet the restrictions; CTO with China, MINIT with Japan, and CTOT with Hong Kong China. Together with the application of strategic ATFM measures and the cooperation of neighbouring ATFMUs, ROK was able to reduce airborne delays and holdings.

4.57 The meeting noted that noise abatement procedures have become increasingly important at all major airports, and the application of ATFM measures may become the norm to reduce the impact of noise.

4.58 It was further noted that the paper described three different ATFM measures with three various cross-border partners and expressed concern over the workload of the FMP in such a scenario. ROK acknowledged the same and stated that information sharing was the key to successful execution. The meeting was also informed that the ATFM-CDM collaboration resulted in achieving the objectives of reducing airborne delay.

Internal Collaborative Operation Mode of Cross-Border ATFM (WP/13)

4.59 China presented a Concept of operations (CONOPS) of the internal collaborative process of coordination of cross-border ATFM in China.

4.60 The meeting was informed of the China's participation in Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC) and the development of internal process to facilitate cross-border ATFM. The paper described the three stages of evolution of operational concept from 2015 to 2023.

4.61 The National Traffic Management (NTFM) centre acted as node leader for China. The meeting was informed of the operational procedure of segregating domestic and international flights, and the transfer of responsibility for traffic flow management of international flights to cross-border ATFM units. The meeting was also informed of the two levels of operational coordination of cross-border ATFM between the originating ATFMU, cross-border ATFMU and international ATFMU**.** The meeting was also informed about the various mechanisms for reception of CTOT messages.

4.62 In response to a query on a division of responsibilities, it was clarified that local ATFMU could decide ATFM measures for domestic flights in coordination with NTFM; for international flights, the ATFM measures could only be imposed by the node leader.

4.63 Much discussion took place on the "two level conduction and one level collaboration" and it was clarified that existing cross-border coordination procedures would continue.

4.64 It was also noted that the internal collaboration among various nodes in China would take place without affecting any cross-border coordination mechanisms. China also confirmed that existing points of contact with international stakeholders would remain the same until the NTFM Center became fully operational. Specifically, Sanya ATFMU would remain the main ATFM coordination point with neighbors in Southeast Asia and that the neighbors could contact Sanya ATFMU upon receiving any flow restrictions from China to coordinate appropriate responses, e.g., complying with CTOTs assigned by Sanya ATFMU instead.

The CONOPS of Collaborative Multi-Constraint Conversion Program (CMCP+) - One CTOT Solution (OCS) on Conflicting ATFM Measures (WP/14)

4.65 China presented the CONOPS of the Collaborative Multi-constraint Conversion Program (CMCP+) based on the concept of One CTOT Solution.

4.66 The meeting was informed about the challenges faced by the Airspace User when multiple, conflicting ATFM measures are imposed by different ATFM units (ANSPs) and the requirement to choose one ATFM measure which would meet all the constraints. The upgrading of Collaborative MIT Conversion Program (CMCP) to Collaborative Multi-constraint Conversion Program (CMCP+) was aimed at providing ONE CTOT for every flight, to meet all constraints.

4.67 The meeting was informed of the phased development of Collaborative Miles-in-Trail (MIT) Conversion Program (CMCP) from 2015 to 2022 and the future development of Collaborative Multi-constraint Conversion Program (CMCP+) from 2023.

4.68 The meeting was invited to consider including the CMCP CONOPS in the Asia Pacific Regional Framework for Collaborative ATFM for reference.

4.69 The meeting noted that the Regional concept of operations was based on multi-nodal operations. Extending such de-conflicting procedures to cross-border ATFM operations would require multiple coordination efforts and complex methods of information sharing as well as potentially a centralized ATFM function for the region, which might not be possible.

4.70 In response to a query on the applicability of the procedures, China clarified that the concept was currently being used within China but it could be expanded to a regional level, and that China shared the information for considerations by regional members.

4.71 ICAO noted that the Regional Framework document described, in section 8, the harmonization of multiple flow management programs as a Research and Development consideration. The meeting encouraged China to continue working on the concept and share progress in future meetings.

Analysis of Lead Time of Filing Flight Plan (WP/15)

4.72 India provided an analysis of Flight Plan Submission Lead Time for all the Flight Plans (FPLs) received at ATFM from 1st October to 31st Dec 2022. The purpose of the analysis was to monitor compliance with provisions of Aeronautical Information Publication (AIP) India ENR 1.9 regarding flight planning requirements in the context of ATFM.

4.73 AIP India ENR 1.9 section 4 recommended Flight Planning requirements stated, for all airline operators, 'Flight plans shall be submitted at least 3 hours before the EOBT'.

4.74 According to the analysis, the distribution of FPL filing time with respect to filed EOBT was shown as below.

Filing of FPL prior to EOBT (Hours: Minutes)	**Between 00:00 to 02:59**	**Between 03:00 to 5:59**	**Between 06:00 to 08:59**	**Between 09:00 to 11:59**	**Between 12:00 to 14:59**	**More than 15:00**
Percentage	**16.56**	36.32	21.76	13.23	5.42	6.71

4.75 Filing a flight plan with sufficient lead time would optimize the delay distribution among affected flights. Early filing of FPL also helped provide longer lead time and improved predictability for the application of ATFM measures, which in turn allowed the use of GDP with more advance notice to stakeholders and reduced short notice or unplanned repetitive use of tactical ATFM measures.

4.76 Responding to a query on whether the delayed filing of flight plans resulted in any punitive measures, the meeting was informed that the result was inaccurate traffic demand prediction and consequent air traffic holding. It was noted that a similar analysis had been presented in earlier meetings. IATA pointed out the need to align the AIP-published flight planning requirement with the regionally agreed version in the Regional Framework for Collaborative ATFM.

4.77 ICAO reiterated the regional expectation and urged States to continue engaging with airlines and IATA to improve compliance with the requirement.

Addressing of Flight Plans and Missing (DEP) Messages (WP/16)

4.78 ICAO provided an update on the issue of missing Departure (DEP) messages, as discussed at multiple meetings of the Air Traffic Flow Management Steering Group (ATFM/SG) and ATM Sub-Group

4.79 The meeting was reminded of ICAO Doc 4444 Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) procedures for the addressing of ATS messages, noting that there were multiple examples of APAC Administrations specifying noncompliant 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 Doc 8585 *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services*. It was noted that the specification of non-compliant addresses was a key factor in missing FPL and associated ATS messages (including DEP messages).

4.80 The meeting was also reminded of the ATM/SG/7-5 (2019) Conclusion on ATS Message Reception and Handling.

4.81 Analysis of incorrect FPL addressing requirements in AIP would continue, with a view to

raising APANPIRG ATM and Airspace Safety Deficiencies against non-compliance with ICAO Annexes and PANS where necessary.

4.82 The meeting was informed of the APAC Administrations for which APANPIRG ANS Deficiencies had been 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/33:

- Deficiency deleted – Bangladesh, India, Malaysia, Nepal, USA; and
- Deficiency remained in place – Maldives

4.83 The meeting was invited to note that few Administrations achieved 100% of DEP messages transmitted to all relevant participating FIRs. All Administrations should examine their processes and system configuration in order to improve overall performance.

4.84 A large percentage of missing DEP messages pertained to flights departing from other ICAO regions (Middle East/Europe/Africa-Indian Ocean AFI). The meeting also noted that APAC States had made considerable progress in reducing the percentage of DEP messages.

4.85 Another regional analysis of missing DEP messages would be conducted in June 2023. Participating States would be requested to collect FPL data of all international flights operated in their respective FIRs for a period of one week, along with details of the missing DEP messages related to those flights.

4.86 Thailand informed the meeting that, upon request, relevant flight plan data for the Bangkok (VTBB) FIR could be provided to States needing it for further investigation into the missing DEP messages.

4.87 Responding to a query on implementing a single, centralized flight planning system similar to the EUROCONTROL IFPS (Initial Flight Processing System), ICAO informed the meeting that Regional Supplementary Procedures for the APAC region had no such provisions which, in the Europe (EUR) Region's case, enabled the unique situation of a single IFPS serving many European States. Individual States could ensure delivery of all FPL to their own centralized flight plan processing solutions through relatively simple technology that was already used in many States to redistribute all received FPLs internally to any locally required addressees.

4.88 The meeting agreed to the proposal for conducting a Regional Analysis of missing DEP messages in June.

Update on the A-CDM, ATFM Implementation in Viet Nam (IP/3)

4.89 Viet Nam shared information on the progress of the implementation of A-CDM and ATFM. A-CDM had been implemented in Noi Bai (VVNB) and Tan Son Nhat (VVTS) international airports in a phased manner, and trial operations were implemented in 2023. Viet Nam was participating in AMNAC as a Level-2 multi-node ATFM operation. Viet Nam has seek Thailand's cooperation to support their effort to upgrade to a Level-3 ATFM capability.

ATFM Post operations Analysis (IP/7)

4.90 India shared information on the various performance metrics derived from the post-operation analysis of applied ATFM measures in 2022, and also highlighted the challenges in data assimilation. Information was also shared on the lessons learned for future ATFM operations.

State of Aviation Post-COVID-19 (IP/8)

4.91 IATA shared a summary of economic and traffic data illustrating the impacts of COVID-19 on the airline industry and the progress of recovery since States had re-opened international borders. The aviation industry was expected to recover to 2019 levels in 2024. Asia Pacific region was forecast to lead traffic growth in the longer term (2040 horizon), surpassing other regions by 2028. In summary, air traffic globally was expected to be fully recovered by 2025, with Asia Pacific being in the later stage.

Agenda Item 5: A-CDM Operations and A-CDM/ATFM Integration

A-CDM Operations and A-CDM ATFM Integration (IP/4)

5.1 Malaysia shared information on the progress of A-CDM implementation at Kuala Lumpur International Airport (KLIA). The project planned to conduct operational trials in Q4 2023 and go live by the end of Q4 2023/Q1 2024. A-CDM/ATFM Integration was planned for Q3 2024.

A-CDM Operation 2nd Phase Plan in RKSI (IP/5)

5.2 ROK shared information on the implementation progress of A-CDM at Incheon International Airport. Information was shared on the phased implementation of A-CDM and the subsequent inclusion of Departure Manager (DMAN) to automate the generation of Target Take Off Time/ Target Startup Approval Time (TTOT/TSAT).

Agenda Item 6: Regional ATFM Framework, A-CDM Plan and related Guidance Material

A-CDM Implementation – Regional Monitoring Scheme (WP/17)

6.1 ICAO presented a brief on A-CDM implementation in APAC and a proposal to develop an annual regional monitoring and reporting scheme for the elements of the Asia/Pacific A-CDM Implementation Plan, noting that there was currently no mechanism for States to report implementation progress.

6.2 The meeting was reminded of the ASBU (Aviation System Block Upgrades) elements of the GANP (Global Air Navigation Plan) related to A-CDM and Network Operations (NOPS), elements A-CDM- B0/1, B0/2, B1/1, and NOPS-B0/4, B1/3.

6.3 The meeting also noted the performance expectations related to A-CDM in the APAC Seamless ANS Plan.

6.4 The meeting was informed that, at present, there was not a Regional Monitoring mechanism for the States to report the progress of A-CDM Implementation and planning.

6.5 It was proposed to develop an annual regional monitoring and reporting scheme for the elements of the Asia Pacific A-CDM Implementation Plan and the task to be undertaken by ATFM/IR/SWG.

6.6 The meeting agreed to the proposal. The Chair reminded the ATFM/IR/SWG members to include A-CDM experts in the ATFM/IR/SWG for this task. IATA suggested that Airport Council International (ACI) might also be included in this matter, which was agreed by the meeting.

Agenda Item 7: Any Other Business

Capacity Assessment and a proposal for a workshop (WP/18)

7.1 ICAO presented a brief overview of requirements in ICAO provisions and regional guidance documents for capacity assessment by States for long-term planning and establishing of ATFM, along with available guidance material on the process.

7.2 It was noted that various methodologies for capacity assessment were described in guidance materials.

7.3 Noting that ICAO APAC Office had previously conducted a workshop in 2019 on the subject ,and the need for States to further review, update and discuss the subject on a regular basis, it was proposed to conduct a capacity assessment workshop wherein States would be invited to share their experiences in conducting capacity assessment of airports and airspace sectors.

7.4 The meeting supported the proposal, and member States volunteered to participate in the workshop. Suggestions were made on the workshop topics, including discussion of methodologies and follow-up actions.

7.5 The meeting agreed to the proposal.

ATFM Points of Contact (WP/19)

7.6 In accordance with usual practice at meetings of ICAO APAC technical groups in the ATM, AIM and Search and Rescue (SAR) fields, including ATFM, A-CDM and CCT, 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.

Long Range Air Traffic Flow Management Concept (IP/6)

7.7 CANSO shared information on the White Paper published by the CANSO ATFM/A-CDM Workgroup on developments in Long-Range Air Traffic Flow Management (LR-ATFM). While acknowledging that LR-ATFM was still in development, the paper shared several considerations for implementing the concept as described in the White Paper.

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

7.8 The Chair of the MET/R WG presented updates related to the MET/R WG ad-hoc group consisting of MET and ATFM. Membership, key deliverables, and Terms of Reference of the ad-hoc group were shared with the meeting. In addition, examples of use case scenarios to support ATFM such as typhoon detours and volcanic ash avoidance were introduced to the meeting.

7.9 The meeting was requested to support the ad-hoc group to achieve the key deliverables and provide additional use cases from the ATFM/ATM perspective.

Agenda Item 8: Review of Task List

Terms of Reference and Task List (WP/19)

8.1 The meeting agreed on the amendment of the ATFM Information Requirements Small Working Group (ATFM/IR/SWG) Terms of Reference provided in **Appendix C to the Report**, to include A-CDM and simplify the SWG work processes. The meeting agreed to the following Decision:

Decision ATFM/SG/13-1: Update Terms of Reference of ATFM Information Requirements Small Working Group

That, the ATFM/IR/SWG Terms of Reference (TOR) be amended as detailed in **Appendix C to the report**.

8.2 The ATFM/SG Task List, as reviewed and updated by the meeting, was provided in **Appendix D to the Report**.

Agenda Item 9: Date and Venue of the Next Meeting

9.1 The next meeting of ATFM/SG was tentatively planned to be held in April or May 2024 in conjunction with MET/R WG to organize a joint plenary session and MET/ATM seminar. Other related meetings' schedules, such as SWIM/TF, needed to be taken into account to fix the date. Any Administration considering hosting ATFM/SG/14 or later meetings was invited to contact ICAO.

Closing of the Meeting

10.1 The Chair thanked all participants for their contributions to the ATFM/SG/13 meeting.

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List of Participants

	STATE/NAME		TITLE/ORGANIZATION
1.	**AUSTRALIA (1)**		
	1.	Mr. Ashwin Naidu	Aviation Customer Lead Australia Bureau of Meteorology **AUSTRALIA**
2.	**CAMBODIA (4)**		
	2.	Mr. Chhun Sivorn	Director of Air Navigation Standard and Safety Department State Secretariat of Civil Aviation **CAMBODIA**
	3.	Mr. Oun Makara	Chief of Air Traffic Services Air Navigation Standard and Safety Department State Secretariat of Civil Aviation **CAMBODIA**
	4.	Mr. Vichcheka Buntong	ATM Supervisor Cambodia Air Traffic Services **CAMBODIA**
	5.	Mr. Khorn Vannak	Air Traffic Management Manager Cambodia Air Traffic Services **CAMBODIA**

	STATE/NAME		TITLE/ORGANIZATION
3.	**CHINA (6)**		
	6.	Mr. Xiaodong Wu	Director of ATFM office Operation Management Center Air Traffic Management Bureau Civil Aviation Administration of China **CHINA**
	7.	Mr. Yongqiang Fu	Deputy Director of Sanya Area Control Center Air Traffic Management Bureau Civil Aviation Administration of China **CHINA**
	8.	Mr. Yang Enlong	Assistant of ATC Division of Middle South Regional ATMB Air Traffic Management Bureau Civil Aviation Administration of China **CHINA**
	9.	Mr. Liu Hong	Senior Engineer Operation Supervisory Center Civil Aviation Administration of China **CHINA**
	10.	Mr. Xiaoyu Yan	Engineer Air Traffic Management Bureau Civil Aviation Administration of China **CHINA**

	STATE/NAME		TITLE/ORGANIZATION
	11.	Mr. Yanlong Xia	Engineer Operation Supervisory Center Civil Aviation Administration of China **CHINA**
4.	**HONG KONG, CHINA (4)**		
	12.	Mr. Anfernee Poon	Senior Operations Officer (Strategic Planning) Hong Kong Civil Aviation Department **HONG KONG, CHINA**
	13.	Mr. Chin Ting Fok	Air Traffic Control Officer / Project Officer Hong Kong Civil Aviation Department **HONG KONG, CHINA**
	14.	Ms. Wei-Shuen Cheryl Chan	Evaluation Officer Hong Kong Civil Aviation Department **HONG KONG, CHINA**
	15.	Mr. Gene KWOK	Electronics Engineer Hong Kong Civil Aviation Department **HONG KONG, CHINA**
5.	**INDIA (4)**		
	16.	Ms. Vineeta Upadhyay	Joint General Manager Air Traffic Management Air Traffic Flow Management Airports Authority of India **INDIA**

	STATE/NAME		TITLE/ORGANIZATION
	17.	Mr. Anup Kumar	Joint General Manager Air Traffic Management Air Traffic Flow Management Airports Authority of India **INDIA**
	18.	Mr. Ashish Nandan Lal	SM CNS Airports Authority of India **INDIA**
	19.	Mr. Abhishek Raj	Manager Air Traffic Management Air Traffic Flow Management Airports Authority of India **INDIA**
6.	**INDONESIA (5)**		
	20.	Mr. Tian Kusdinar	Chief of ATM DGCA Indonesia **INDONESIA**
	21.	Mr. Catur Yudhistira	Air Navigation Oversight Program Evaluator Officer DGCA Indonesia **INDONESIA**
	22.	Mr. Nur Said Eko Nugroho	Air Navigation Inspector (ATS) DGCA Indonesia **INDONESIA**

	STATE/NAME		TITLE/ORGANIZATION
	23.	Mr. Dedy Syahputra	Junior Manager of CDM AirNav Indonesia **INDONESIA**
	24.	Ms. Zakiah Agus	ATFM Junior Manager AirNav Indonesia **INDONESIA**
7.	**JAPAN (2)**		
	25.	Mr. Toshihiro YONE	Special Assistant to the Director Japan Civil Aviation Bureau (JCAB) **JAPAN**
	26.	Mr. Kenichi Yamakawa	Senior Air Traffic Management Officer Air Traffic Management Center Japan Civil Aviation Bureau (JCAB) **JAPAN**
8.	**MALAYSIA (6)**		
	27.	Mr. Raja Amsyar Hillman Raja Badrul Hisham	Deputy Director of Air Traffic Management Civil Aviation Authority of Malaysia **MALAYSIA**
	28.	Mr. Irman Ridwan	Principal Assistant Director Civil Aviation Authority of Malaysia **MALAYSIA**

	STATE/NAME		TITLE/ORGANIZATION
	29.	Mr. Abd Hasman Abd Muhimim	General Manager Malaysia Airports Holdings Berhad **MALAYSIA**
	30.	Mr. Mohamad Yazed Yahaya	Senior Executive Malaysia Airports Holding Berhad **MALAYSIA**
	31.	Ms. Ruzliana Fazila Kamarudin	Manager Malaysia Airports Holding Berhad **MALAYSIA**
	32.	Mr. Zainul Rizal Jamil	Senior Manager Advanced Air Traffic Systems (M) Sdn Bhd **MALAYSIA**
9.	**MONGOLIA (1)**		
	33.	Mr. Turbat Batbayar	Director Air Traffic Flow Management Division, National Civil Aviation Center, Civil Aviation Authority of Mongolia **MONGOLIA**
10.	**NEPAL (2)**		
	34.	Mr. Sitaram Bhandari	Deputy Director Civil Aviation Authority of Nepal (CAAN) **NEPAL**

		STATE/NAME	TITLE/ORGANIZATION
	35.	Mr. Sujesh kaji Bajracharya	Air Traffic Controller Civil Aviation Authority of Nepal (CAAN) **NEPAL**
11.		**PAKISTAN (2)**	
	36.	Mr. Fazal Ur Rehman	Senior Joint Director (ATS) Pakistan Civil Aviation Authority **PAKISTAN**
	37.	Mr. M. Sarfaraz Gohar	Senior Joint Director ATS Pakistan Civil Aviation Authority **PAKISTAN**
12.		**PHILIPPINES (1)**	
	38.	Ms. Tamya Lemuria T. Sullivan	Air Traffic Management Officer III Air Traffic Services Civil Aviation Authority of the Philippines **PHILIPPINES**
13.		**REPUBLIC OF KOREA (8)**	
	39.	Mr. Jin-Jong Lee	Deputy Director Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) **REPUBLIC OF KOREA**

	STATE/NAME		TITLE/ORGANIZATION
	40.	Mr. Kyutae Kim	Assistant Director Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) **REPUBLIC OF KOREA**
	41.	Mr. Jehyun Kwon	ATCC Officer Ministry of Land, Infrastructure and Transport of the Republic of Korea (MOLIT) **REPUBLIC OF KOREA**
	42.	Mr. Woo Jin Kim	ATFM Ministry of Land, transport and Maritime Affairs, Republic of Korea (MOLIT) **REPUBLIC OF KOREA**
	43.	Mr. Hae Chan Noh	Associate Manager Korea Airports Corporation **REPUBLIC OF KOREA**
	44.	Mr. Heungback Choi	Airside Operator Korea Airports Corporation **REPUBLIC OF KOREA**
	45.	Mr. Sangjeong Kim	Manager Incheon International Airport Corporation (IIAC) **REPUBLIC OF KOREA**

	STATE/NAME		TITLE/ORGANIZATION
	46.	Mr. Dongjin Yun	Assistant manager Incheon International Airport Corporation (IIAC) **REPUBLIC OF KOREA**
14.	**SINGAPORE (7)**		
	47.	Ms. Jialing He	Head ATC Specialist (ATFM) Civil Aviation Authority of Singapore **SINGAPORE**
	48.	Mr. Huanbin Zhang	Head (ATM – Development) Civil Aviation Authority of Singapore **SINGAPORE**
	49.	Mr. Cheoh Wee Pin, Simon	Senior Air Traffic Control Manager Civil Aviation Authority of Singapore **SINGAPORE**
	50.	Ms. Thia Lee May	Lead Air traffic controller Civil Aviation Authority of Singapore (CAAS) **SINGAPORE**
	51.	Mr. You Sheng Kong	ATC Manager (Systems Planning) Civil Aviation Authority of Singapore **SINGAPORE**

	STATE/NAME		TITLE/ORGANIZATION
	52.	Mr. Jack Toh	Principal Engineer (Air Traffic Management Support Systems) Civil Aviation Authority of Singapore **SINGAPORE**
	53.	Mr. Jason Sim	Engineer Civil Aviation Authority of Singapore **SINGAPORE**
15.	**THAILAND (27)**		
	54.	Mr. Buntoeng Megchai	Air Navigation Operations Planning Manager The Civil Aviation Authority of Thailand **THAILAND**
	55.	Mr. Nitchaphon Chuaprang	Air Navigation Operations Planning Senior Officer The Civil Aviation Authority of Thailand **THAILAND**
	56.	Mr. Sikarate Tarasak	Air Navigation Operations Planning Officer The Civil Aviation Authority of Thailand **THAILAND**
	57.	Ms. Kamonchanok Chuamnat	Air Navigation Operations Officer The Civil Aviation Authority of Thailand **THAILAND**

	STATE/NAME		TITLE/ORGANIZATION
	58.	M.L. Pongabha Abhakara	ANS Specialist The Civil Aviation Authority of Thailand **THAILAND**
	59.	Ms. Pinthong Choungchot	Aerodrome Standards Development Officer The Civil Aviation Authority of Thailand **THAILAND**
	60.	Ms. Pataraporn Jessadapornchai	Aerodrome Standards Development Officer The Civil Aviation Authority of Thailand **THAILAND**
	61.	Ms. Thitibhorn Prathumchai	Air Navigation Services Standards Development Officer The Civil Aviation Authority of Thailand **THAILAND**
	62.	Ms. Wilasinee Phanngam	Transport Technical Officer Department of Airports **THAILAND**
	63.	Ms. Ploykaprib Soralump	Transport Technical Officer Department of Airports of Thailand **THAILAND**
	64.	Mr. Piyawut Tantimekabut	Air Traffic Management Network Manager Aeronautical Radio of Thailand Ltd. **THAILAND**

	STATE/NAME		TITLE/ORGANIZATION
	65.	Ms. Amornrat Jirattigalachote	Strategic Planning Manager Aeronautical Radio of Thailand Ltd. **THAILAND**
	66.	Mrs. Wachiraporn Chaiwattanakulkit	Air Traffic Controller 2 Aeronautical Radio of Thailand Ltd. **THAILAND**
	67.	Mr. Arthit Tosukolvan	Engineer Aeronautical Radio of Thailand Ltd. **THAILAND**
	68.	Mr. Sakon Sinlapakun	Senior Air Traffic Systems Engineer Aeronautical Radio of Thailand Ltd. **THAILAND**
	69.	Mr. Sugoon Fucharoen	Senior Air Traffic Management Data Officer Aeronautical Radio of Thailand Ltd. **THAILAND**
	70.	Mr. Dudsadee Sungthong	Senior Air Traffic Management Data Officer Aeronautical Radio of Thailand Ltd. **THAILAND**
	71.	Mr. Chayanin Phoosangthong	Administration Officer Airports of Thailand Public Company Limited **THAILAND**

	STATE/NAME		TITLE/ORGANIZATION
	72.	Mr. Amnat Jenpanitsap	Administration Officer Airports of Thailand Public Company Limited **THAILAND**
	73.	Ms. Saowakhon Tetiya	Aerodrome Safety Specialist Airports of Thailand Public Company Limited **THAILAND**
	74.	Ms. Thitiporn Potiluck	Senior Aerodrome Safety Officer Airports of Thailand Public Company Limited **THAILAND**
	75.	Ms. Threenuch Lueangwichit	Senior Airport Operations Officer Airports of Thailand Public Company Limited **THAILAND**
	76.	Ms. Suvachira Teeraphathananon	Senior Engineer Airports of Thailand Public Company Limited **THAILAND**
	77.	SGT. Peerapat Chancharoen	Senior Airport Operations Officer Airports of Thailand Public Company Limited **THAILAND**
	78.	Mr. Supaphon Israngura Na Ayuthya	Senior Analyst Airports of Thailand Public Company Limited **THAILAND**

	STATE/NAME		TITLE/ORGANIZATION
	79.	Ms. Napat Tangkananusorn	Senior Analyst Airports of Thailand Public Company Limited **THAILAND**
	80.	Ms. Sonthaya Iamsua	Administration Officer Airports of Thailand Public Company Limited **THAILAND**
16.	**UNITED STATES (3)**		
	81.	Ms. Midori Tanino	Global ATM Program Manager Federal Aviation Administration ATO International, Mission Support Services **UNITED STATES**
	82.	Ms. Almira Ramadani	Senior Air Traffic Representative, Asia Pacific Federal Aviation Administration Air Traffic Organization, Mission Support **SINGAPORE**
	83.	Mr. Vern Payne	Manager, CDM and International Operations Federal Aviation Administration Air Traffic Control System Command Center **UNITED STATES**
17.	**VIET NAM (10)**		
	84.	Mr. Luu Van Chieu	Official - Air Traffic Management of the Air Navigation Department Civil aviation authority of Viet Nam **VIET NAM**

	STATE/NAME		TITLE/ORGANIZATION
	85.	Mr. Nguyen Cong Long	Deputy General Director Viet Nam Air Traffic Management Corporation (VATM) **VIET NAM**
	86.	Mr. Nguyen Dung Van	Deputy Director of ATS Department Viet Nam Air Traffic Management Corporation (VATM) **VIET NAM**
	87.	Mr. Nguyen Dang Minh	Director of Airport Operation Department Airports Corporation of Viet Nam (ACV) **VIET NAM**
	88.	Mr. Dinh Gia Quyen	Manager of Safety Management Office – Safety and Quality Management Department Airports Corporation of Viet Nam (ACV) **VIET NAM**
	89.	Mr. Chau Hoang Nam	Executive of Technology and Environment Department Airports Corporation of Viet Nam (ACV) **VIET NAM**
	90.	Ms. Do Dieu Huyen	Executive of Airport Operation Department Airports Corporation of Vietnam (ACV) **VIET NAM**

	STATE/NAME		TITLE/ORGANIZATION
	91.	Mr. Nguyen Phi Hung	Executive of Safety and Quality Control Office, Noi Bai International Airport Airports Corporation of Vietnam (ACV) **VIET NAM**
	92.	Mr. Vu Ngoc Tuan	Deputy Director of Airport Operation Center, Noi Bai International Airport Airports Corporation of Vietnam (ACV) **VIET NAM**
	93.	Mr. Cao Quoc Phong	Deputy Director of Airport Operation Center, Tan Son Nhat International Airport Airports Corporation of Vietnam (ACV) **VIET NAM**
18.	**CANSO (1)**		
	94.	Mr. Stuart Ratcliffe	Co-Chair of the CANSO ATFM/A-CDM Work Group CANSO **UNITED STATES**
19.	**IATA (2)**		
	95.	Mr. John Moore	Assistant Director, Safety and Flight Operations, ASPAC IATA **SINGAPORE**

	STATE/NAME		TITLE/ORGANIZATION
	96.	Mr. George Chan	Regulatory Affairs Manager – Operations and Industry IATA **HONG KONG, CHINA**
20.	**IFATCA (2)**		
	97.	Ms. Cheryl YC Chen	EVP IFATCA – Asia and Pacific **CANADA**
	98.	Mr. John Wagstaff	Representative IFATCA – Asia and Pacific **CANADA**
21.	**ICAO (6)**		
	99.	Mr. Hiroyuki Takata	Regional Officer, Air Traffic Management ICAO Asia and Pacific Regional Office **THAILAND**
	100.	Mr. Manjunath K Nelli	Regional Officer, Air Traffic Management ICAO Asia and Pacific Regional Sub-Office **CHINA**
	101.	Mr. Shane Sumner	Regional Officer, Air Traffic Management ICAO Asia and Pacific Regional Office **THAILAND**

	STATE/NAME		TITLE/ORGANIZATION
	102.	Mr. Ying Weng Kit	Air Traffic Management Officer ICAO Asia and Pacific Regional Office **THAILAND**
	103.	Ms. Zhong Wenhan	Associate CNS Officer ICAO Asia and Pacific Regional Office **THAILAND**
	104.	Dr. Prakayphet Chalayonnawin	Programme Analysis Associate, Air Traffic Management ICAO Asia and Pacific Regional Office **THAILAND**

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LIST OF WORKING PAPERS AND INFORMATION PAPERS

WORKING PAPERS

NUMBER	AGENDA	WORKING PAPERS	PRESENTED BY
WP/1	1	Provisional Agenda	Chairman
WP/2	2	Updates from MET/R WG	MET/R WG
WP/3	3	The CANSO Air Traffic Flow Management (ATFM) Data Exchange Network for Cooperative Excellence (CADENCE)	CANSO
WP/4	4	Regional ATFM Implementation Status	Secretariat
WP/5	4	Progress Updates from Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC)	China, Hong Kong China, Singapore, Thailand, CANSO, and IATA
WP/6	4	NARAHG Update	China, Japan and Republic of Korea
WP/7	4	Progress Updates on ATFM Collaboration among EATMCG Members using Multi-Nodal ATFM Concept of Operations	Hong Kong China, Japan, Philippines, and Republic of Korea
WP/8	4	BOBCAT Operational Updates	Thailand
WP/9	4	National Traffic Flow Management System	China
WP/10	4	Diurnal Wind Variation Study for Runway Capacity Optimization at Hong Kong International Airport	Hong Kong China
WP/11	4	Resuming CTO Trials within Fukuoka FIR	Japan
WP/12	4	Cross-Border ATFM-CDM Collaboration related to Korean SAT	Republic of Korea, China, Japan, and Hong Kong China
WP/13	4	Internal Collaborative Operation Mode of Cross-Border ATFM	China
WP/14	4	The CONOPS of Collaborative Multi-Constraint Conversion Program (CMCP+) - One CTOT Solution (OCS) on Conflicting ATFM Measures	China

NUMBER	AGENDA	WORKING PAPERS	PRESENTED BY
WP/15	4	Analysis of Lead Time of Filing Flight Plan	India
WP/16	4	Addressing of Flight Plans and Missing (DEP) Messages	Secretariat
WP/17	6	A-CDM Implementation- Regional Monitoring Scheme	Secretariat
WP/18	7	Capacity Assessment	Secretariat
WP/19	7	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	3	Latin America and Caribbean (LAC) Regional Free Route Airspace (FRA) Roadmap	CANSO
IP/3	4	Update on the A-CDM, ATFM Implementation in Viet Nam	Viet Nam
IP/4	5	A-CDM Operations and A-CDM ATFM Integration	Malaysia
IP/5	5	A-CDM Operation 2nd Phase Plan in RKSI	Republic of Korea
IP/6	7	Long Range Air Traffic Flow Management Concept	CANSO
IP/7	4	ATFM Post operations Analysis	India
IP/8	4	State of Aviation Post-COVID-19	IATA

PRESENTATIONS

NUMBER	AGENDA	INFORMATION PAPERS	PRESENTED BY
SP/1 (WP/5)	4	Progress Updates from Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC)	China, Hong Kong China, Singapore, Thailand, CANSO, and IATA
SP/2 (WP/11)	4	Resuming CTO Trials within Fukuoka FIR	Japan
SP/3 (WP/3)	3	The CANSO Air Traffic Flow Management (ATFM) Data Exchange Network for Cooperative Excellence (CADENCE)	CANSO
SP/4 (IP/6)	7	Long Range Air Traffic Flow Management Concept	CANSO
SP/5 (IP/8)	4	State of Aviation Post-COVID-19	IATA
SP/6	3	ICAO ATM Ops Panel ATFM WG progress	ICAO
SP/7 (WP/9)	4	National Traffic Flow Management System	China
SP/8 (WP/10)	4	Diurnal Wind Variation Study for Runway Capacity Optimization at Hong Kong International Airport	Hong Kong China
SP/9 (WP/7)	4	Progress Updates on ATFM Collaboration among EATMCG Members using Multi-Nodal ATFM Concept of Operations	Hong Kong China, Japan, Philippines, and Republic of Korea
SP/10 (WP/13)	4	Internal Collaborative Operation Mode of Cross-Border ATFM	China
SP/11 (WP/14)	4	The CONOPS of Collaborative Multi-Constraint Conversion Program (CMCP+) - One CTOT Solution (OCS) on Conflicting ATFM Measures	China
SP/12	7	APAC User Requirements for SWIM-Based MET Information Services Supporting ATFM	MET/R WG

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Terms of Reference

(changes marked up)

ATFM Information Requirements Small Working Group (ATFM/IR/SWG)

Recognizing the direction provided in the Asia/Pacific Seamless ANS Plan, Asia/Pacific Regional Framework for Collaborative ATFM, ~~and~~ Regional ATFM Concept of Operations, and Asia/Pacific Airport Collaborative Decision Making (A-CDM) Implementation Plan, the ATFM/IR/SWG will:

1. Support harmonized implementation of cross-border ATFM, including common operating procedures and a common network level CDM process, between States and groups of States in the Asia/Pacific Region;

2. Support harmonized implementation of A-CDM, including common terminologies and operating procedures, in the Asia/Pacific Region and its integration with ATFM;

~~3. Develop a draft operational requirements document detailing:~~

~~a) Items of ATFM Information that collaborative ATFM participants should distribute or publish, amend or cancel, including but not limited to:~~

~~i. ADP;~~

~~ii. Initiation, amendment or cancellation of ATFM measures;~~

~~iii. Compliance monitoring information such as ATOT, ATO and ALDT;~~

~~*Note: Collaborative ATFM Participants may include ATFMU, ATSU (ACC/APP/TWR), Airspace Users and Airport Operators.*~~

~~b) Network and/or node administrator arrangements;~~

~~c) Required reliability and availability of the distributed multi-nodal network and its links and interfaces, where not already established.~~

~~d) Notification parameters guidance for ATFM measure implementation.~~

3. Develop operational requirements for information exchange models, including Flight Information Exchange Model (FIXM) and any other standardized exchange models, necessary for the exchange of ATFM and A-CDM information in the Asia/Pacific Region;

4. Make recommendations to ATFM/SG on interim methods of ATFM information exchange in the absence of FIXM capability between States, including:

    a. Systems and methods of information exchange ; and

    b. Minimum data elements to be exchanged;

5. Establish close working arrangement with other relevant ICAO regional groups on related issues, including ATFM Interface Control Document (ICD) and the implementation technical specifications required for cross-border ATFM described in the Regional Framework for

Collaborative ATFM, ~~and~~ the Regional ATFM Concept of Operations and Asia/Pacific A-CDM Implementation Plan.

6. Develop any necessary Proposals for Amendment (PfAs) to the Regional Framework for Collaborative ATFM, ~~and~~ Regional ATFM Concept of Operations and Asia/Pacific A-CDM Implementation Plan, for discussion and agreement by ATFM/SG.

The ATFM/IR/SWG will conduct its activities mainly by electronic means between meetings of the ATFM/SG, with face-to-face meetings conducted only where necessary and in conjunction with other meetings where opportunity presents. The group should include, as a minimum, representatives from the Asia/Pacific Administrations participating in Sub-Regional ATFM project groups ~~including, but not limited to, the Distributed Multi-Nodal ATFM Network Project, the North-east Asia Regional ATFM Harmonization Group (NARAHG), Australia and India,~~ and/or providing ATFM/A-CDM, and relevant international organizations, ~~supported by ICAO~~ led by a rapporteur selected from among the members. Other APAC Administrations may participate according to their ATFM and/or A-CDM needs.

The ATFM/IR/SWG reports to ATFM/SG.

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Terms of Reference

ATFM Information Requirements Small Working Group (ATFM/IR/SWG)

Recognizing the direction provided in the Asia/Pacific Seamless ANS Plan, Asia/Pacific Regional Framework for Collaborative ATFM, Regional ATFM Concept of Operations, and Asia/Pacific Airport Collaborative Decision Making (A-CDM) Implementation Plan, the ATFM/IR/SWG will:

1. Support harmonized implementation of cross-border ATFM, including common operating procedures and a common network level CDM process, between States and groups of States in the Asia/Pacific Region;

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3. Develop operational requirements for information exchange models, including Flight Information Exchange Model (FIXM) and any other standardized exchange models, necessary for the exchange of ATFM and A-CDM information in the Asia/Pacific Region;

4. Make recommendations to ATFM/SG on interim methods of ATFM information exchange in the absence of FIXM capability between States, including:

    a. Systems and methods of information exchange ; and

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5. Establish close working arrangement with other relevant ICAO regional groups on related issues, including ATFM Interface Control Document (ICD) and the implementation technical specifications required for cross-border ATFM described in the Regional Framework for Collaborative ATFM, the Regional ATFM Concept of Operations and Asia/Pacific A-CDM Implementation Plan; and

6. Develop any necessary Proposals for Amendment (PfAs) to the Regional Framework for Collaborative ATFM, Regional ATFM Concept of Operations and Asia/Pacific A-CDM Implementation Plan, for discussion and agreement by ATFM/SG.

The ATFM/IR/SWG will conduct its activities mainly by electronic means between meetings of the ATFM/SG, with face-to-face meetings conducted only where necessary and in conjunction with other meetings where opportunity presents. The group should include, as a minimum, representatives from the Asia/Pacific Administrations participating in Sub-Regional ATFM project groups and/or providing ATFM/A-CDM, and relevant international organizations, led by a rapporteur selected from among members. Other APAC Administrations may participate according to their ATFM and/or A-CDM needs.

The ATFM/IR/SWG reports to ATFM/SG.

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Air Traffic Flow Management Steering Group

Task List

(last updated ATFM/SG/13, 7 April 2023)

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
~~5/10~~	Develop First Draft Operational Requirements Document	~~ATFM/SG/12~~ ATFM/SG/13	ATFM/IR/SWG	~~Open~~ Closed	Dependent on meeting schedule cycle Updated ATFM/SG/8 Reviewed ATFM/SG/11 The need for the task to be reviewed after the Framework 2022 update. ATFM/IR/SWG reports to ATFM/SG/13
~~5/13~~	Research ATFM for long range flights	Ongoing ~~ATFM/SG/13~~ ~~ATM/SG/10~~ ~~(CANSO)~~	Australia/ India/ Japan/ New Zealand/ Pakistan/ Singapore/ Thailand/ CANSO/ IATA	~~Open~~ Closed	Updated ATFM/SG/8 Updated ATFM/SG/11 Action Item 11/8 also refers. CANSO provided a paper at ATFM/SG/13
~~7/1~~	Investigate and Develop a draft PfA for Doc 7030 Regional Supplementary Procedures for Cross-border ATFM	~~ATFM/SG/12~~ ~~ATFM/SG/13~~	China/Japan/Singapore/Thailand/Secretariat	~~Open~~ Closed	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

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
9/5	Missing DEP messages follow-up multi-State analysis	~~24 July 2020~~ ~~ATM/SG/9~~ ~~30 September 2022 (POC)~~ ~~October (data gathering)~~ ~~APANPIRG/33 (by 31 Oct)~~ ATM/SG/11	Australia, China, India, Japan, Mongolia, Singapore, Thailand, Indonesia, Viet Nam, Cambodia	Open	To be coordinated/confirmed, depending on level of traffic recovery post-COVID-19 pandemic POC confirmation ATFM/SG/12 report para. 4.39 and 4.43 2023 data collection will be tentatively in June 2023
9/9	Analysis of MET requirements to support Non-ASBU elements of Seamless ANS Plan	~~ATFM/SG/12~~ ~~ATFM/SG/13~~ ATFM/SG/15	Secretariat/MET R WG Chair	Open	Updated ATFM/SG/11 To be discussed by ~~MET/R WG/9~~ MET/R WG/~~11~~ 13– to consider in context of 202~~2~~3 update of Seamless ANS Plan
11/1	*APA-CDM/TF Action Item 5/2 - included in ATFM/SG Task List pending APANPIRG decision on re-assignment of responsibility for A-CDM.* 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~~ ~~ATFM/SG/13~~ ~~ATM/SG/10~~ ~~(CANSO)~~ ATFM/SG/14	(APA-CDM/TF/6) ATFM/IR/SWG ~~to lead~~ ~~China, Hong Kong 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. ~~CANSO provides a paper ATM/SG/10~~

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
~~**11/2**~~	*APA-CDM/TF Action Item 5/3 - Included in ATFM/SG Task List pending APANPIRG decision on re-assignment of responsibility for A-CDM.* 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 v4.2 Extension in collaboration with Experts from ATFM/SG and SWIM TF.	~~ATFM/SG/12~~ ~~31 December 2022~~ ~~(Operational requirement)~~	(APA-CDM/TF/6) Thailand to lead Hong Kong China, India, Pakistan, Group of Experts, CANSO	~~To be commenced~~ ~~Open~~ Completed	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 offline with SWIM/TF ATFM/SG/12 report para. 5.15
~~**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~~ ~~ATFM/SG/13~~	Thailand	~~Open~~ Completed	ATFM/SG/11 Report para 4.7 May require support/guidance from AMNAC Technical Sub-Group and/or ATFM/IR/SWG.
~~**12/2**~~	Amend provisional Agenda to include specific item for A-CDM matters	30 September 2022	Chair, Secretariat	~~Open~~ Completed	ATFM/SG/12 report para. 1.2

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
12/3	Register the Asia/Pacific Bi-Weekly Web Conference (AMNAC) to share the ATFM-related information	Ongoing	Administrations willing to join	Open	ATFM/SG/12 report para. 4.29 invitation extended to some States outside of AMNAC ATFM/SG/13 report para. 4.13
12/4	CTO compliance window follow-up (lessons learned from other Regions)	~~ATFM/SG/13~~ Ongoing	Secretariat	Open	ATFM/SG/12 report para. 4.73
~~**12/5**~~	Provide Regional ATFM Monitoring and Reporting Form for 2022	30 September 2022	Administrations not yet submitted	~~Open~~ Completed	ATFM/SG/12 report para. 4.49
12/6	Explore what seasonal meteorological conditions information (airport and airspace) are required during ATFM strategic phase in coordination with AUs	~~MET/R WG/12 (22-26 May 2023)~~ MET/R WG/13	ATFM/IR/SWG	Open	ATFM/SG/12 report para. 5.3 Hong Kong China provides a presentation to MET/ATM seminar in May 2023
~~**12/7**~~	Provide A-CDM Points of Contact	30 September 2022	Administrations and IOs	~~Open~~ Completed	ATFM/SG/12 report para. 6.1
~~**12/8**~~	Consider a guidelines for each element of the Regional ATFM Plan and Monitoring and Reporting Form	30 September 2022	ATFM/IR/SWG	~~Open~~ Completed	ATFM/SG/12 report para. 5.14
~~**12/9**~~	Consider to include of the remarks column in the Regional ATFM Plan and Monitoring and Reporting Form	30 September 2022	ATFM/IR/SWG	~~Open~~ Completed	ATFM/SG/12 report para. 5.14
~~**12/10**~~	Provide a FAQ to assist States in reviewing their ATFM implementation	ATFM/SG/13	New Zealand, Hong Kong China, Thailand and Singapore	~~Open~~ Closed	ATFM/SG/12 report para. 4.16
13/1	Report on the progress of CTO trials	ATFM/SG/14	Japan	Open	ATFM/SG/13 report para. 4.53
13/2	Report on the progress of multi constraints resolution	ATFM/SG/14	China	Open	ATFM/SG/13 report para. 4.71

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
13/3	Support the workshop on capacity assessment, and consider to include ATFM-related USOAP PQs	Nov 2023 (tentative)	Secretariat, China, Thailand, Singapore, Japan, Hong Kong China, ROK, Pakistan, USA, India, Malaysia, Philippines, IATA and CANSO	Open	ATFM/SG/13 report para. 7.5
13/4	Nominate A-CDM expert(s) to the ATFM/IR/SWG for A-CDM related tasks	31 May 2023	All administrations	Open	ATFM/SG/13 report para. 6.6
13/5	Draft Regional A-CDM Implementation monitoring and reporting scheme	ATFM/SG/14	ATFM/IR/SWG	Open	ATFM/SG/13 report para. 6.6
13/6	Provide a presentation on CADENCE for ATM/SG/11	ATM/SG/11	CANSO	Open	ATFM/SG/13 report para. 3.10
13/7	Update MET/R WG ad-hoc group member list (ATFM experts)	MET/R WG/12	MET/R WG ad-hoc group member	Open	ATFM/SG/13 report para. 2.4
13/8	Provide feedback and additional use cases for *APAC User Requirements for SWIM-based MET Information Services Supporting ATFM* to MET R/WG ad-hoc group	MET/R WG/13	Secretariat, All administrations	Open	ATFM/SG/13 report para. 2.4