International Civil Aviation Organization

The Ninth Meeting of the APANPIRG ATM Sub-Group (ATM/SG/9)

Video Teleconference, 01– 05 November 2021

Agenda Item 5: ATM Systems (Modernisation, Seamless ATM, CNS, ATFM)

AIR TRAFFIC FLOW MANAGEMENT STEERING GROUP OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes of the 11th Meeting of the Air Traffic Flow Management Steering Group (ATFM/SG/11).

1. INTRODUCTION

1.1 The 11th Meeting of Air Traffic Flow Management Steering Group (ATFM/SG/11) was held by Video Teleconference (VTC) hosted by the ICAO Asia/Pacific Regional Office, from 02 to 06 August 2021. The VTC was attended by 191 participants from 20 Administrations and seven International Organizations 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.

1.2 A total of 19 working papers, 11 information papers, and 12 presentations were considered by the meeting. The meeting papers, presentation and report are available on the ATFM/11 meeting web-page:

https://www.icao.int/APAC/Meetings/Pages/2021-ATFM-SG-11.aspx

1.3 The meeting agreed to one Draft Decision (Revised ATFM/SG Terms of Reference: ongoing APAC regional A-CDM work be conducted by ATFM/SG).

2. DISCUSSION

Related Meeting Outcomes

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

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 AOP/SG/5 (29 June to 2 July 2021) 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.

2.6 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 **Attachment A** be adopted.

2.7 The meeting agreed that action items 5/2 and 5/3 from the APA-CDM/TF Task List (**Figure 1**) be included in the ATFM/SG Task List, pending APANPIRG consideration of the Draft Decisions.

	ACTION ITEM/PLANNED ACTIVITIES	RESPONSIBLE PARTY	TIME FRAME	STATUS	REMARKS
5/2	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.	Hong Kong China to lead China, India, Republic of Korea, Thailand, Group of Experts, CANSO	APA-CDM/TF/6	**In progress**	APA-CDM/TF/6 WP/03 Task to be carried out by the APANPIRG technical body assigned ongoing responsibility for oversight of A-CDM.
5/3	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.	Thailand to lead Hong Kong China, India, Group of Experts, CANSO	APA-CDM/TF/6	**To be commenced**	Task to be carried out by the APANPIRG technical body assigned ongoing responsibility for oversight of A-CDM.

Figure 1: APA-CDM/TF Task List (excerpt)

ATFM Outcomes from the ICAO ATM Operations Panel

2.8 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.

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

2.9 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

2.10 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.

2.11 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.

2.12 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.

2.13 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.

BOBCAT Operational Updates

2.14 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.

2.15 **Figure 2** illustrated the BOBCAT Slot Request volume for the period.

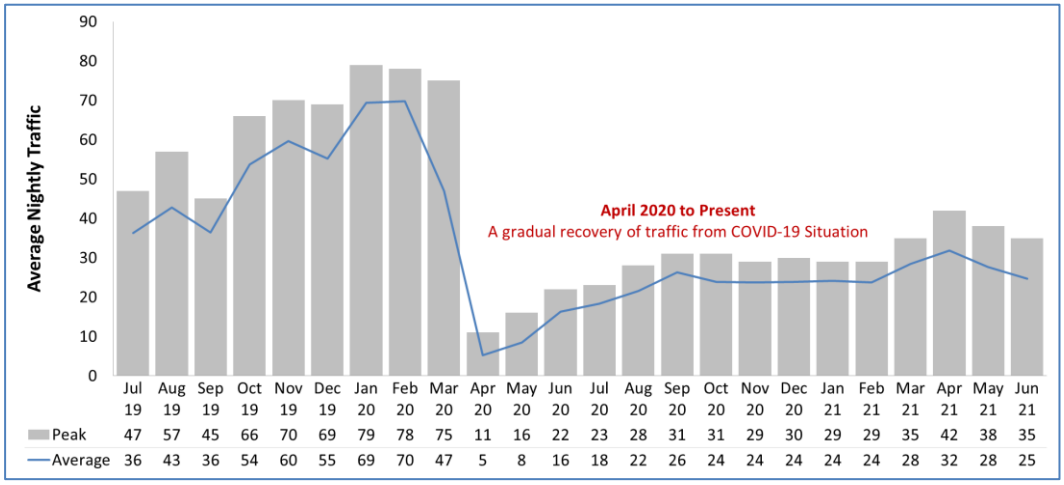

Figure 2: BOBCAT Traffic Demand from Slot Request: July 2019 – June 2021

2.16 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.

2.17 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.

2.18 **Figure 3** illustrated CTOT compliance per aerodrome of departure.

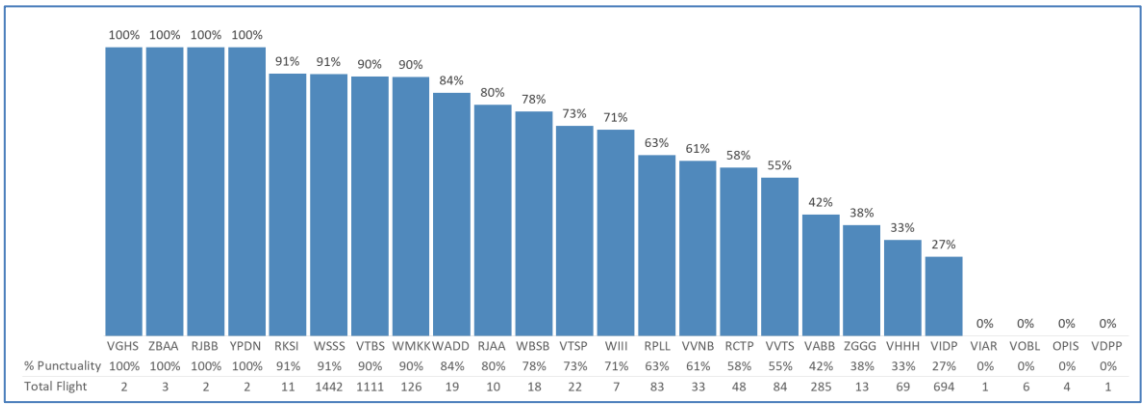

Figure 3: Average CTOT Compliance: July 2019 - June 2021

2.19 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 January 2018 to December 2019, and some partial information on the period between January and March 2020.

2.20 The meeting was informed that additional flight levels had become available in the Kabul FIR. (**Figure 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)

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

2.21 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.

2.22 The meeting is invited to note the current ATM contingency situation in the Kabul FIR. BOBCAT system operations have been temporarily suspended until such time as demand for overflights of Afghanistan resumes.

Progress Updates from Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC)

2.23 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.

2.24 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%.

2.25 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.

2.26 The meeting was further informed that ANSPs wishing to receive Slot Allocation Messages (SAMs) 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.

2.27 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 Queueing Protocol (AMQP) version 1.0 and the Asia/Pacific FIXM 4.1 Extension.

2.28 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

2.29 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).

2.30 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.

2.31 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.

2.32 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.

2.33 In response to a query 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.

2.34 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.

2.35 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

2.36 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.

2.37 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.

2.38 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.

2.39 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.

2.40 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.

2.41 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.

C-ATFM System – Future Plans

2.42 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.

2.43 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.

2.44 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 (ADEXP) 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.

2.45 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.

2.46 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.

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

2.48 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

2.49 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.

2.50 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.

2.51 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.

ATFM after Normalization of the AKARA – FUKUE Corridor

2.52 Japan and Republic of Korea 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.

2.53 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)

2.54 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.

2.55 In response to a query 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

2.56 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.

2.57 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.

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

Experience on Integration of A-CDM with ATFM in Hong Kong International Airport

2.59 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.

2.60 Information was provided on the adoption of 15 of the 16 milestones in the EUROCONTROL A-CDM approach (**Figure 5**), the departure release mechanism at HKIA, and a comparison of Actual Start-up Approval Times (ASATs) versus Target Start-up Approval Times (TSATs).

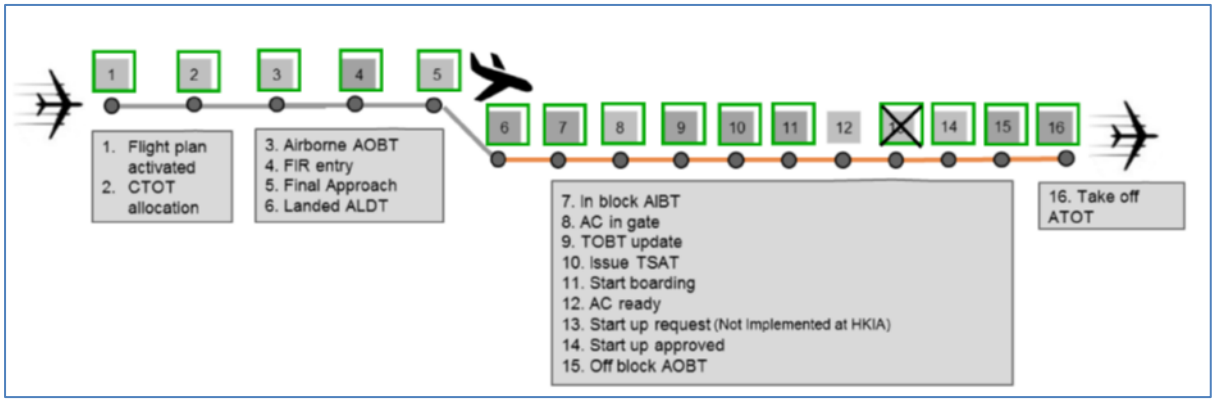

Figure 5: A-CDM Milestones for Hong Kong International Airport (HKIA)

2.61 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.

2.62 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.

2.63 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.

2.64 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

2.65 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.

2.66 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).

2.67 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.

2.68 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.

2.69 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. However, due to unexpected demand on constrained resources the 2021 analysis has not yet been conducted.

2.70 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.

2.71 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).

2.72 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

2.73 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.

2.74 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.

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

- India, Singapore, Thailand and USA were assessed as having Robust implementation.
- Australia, China, Hong Kong China, Japan, Indonesia, Pakistan and Republic of Korea were assessed as Marginal implementation.
- Bangladesh, Cambodia, Macao China, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Caledonia, New Zealand, Papua New Guinea, Philippines and Viet Nam were assessed as Incomplete.

2.76 The following APAC States had never provided an implementation status report, and their implementation status recorded as Did Not 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, and Vanuatu.

2.77 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.

2.78 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.

APAC User Requirements for SWIM-Based MET Information Services Supporting ATFM

2.79 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***.

2.80 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.

2.81 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)***.

Survey of State Meteorological Information Supporting Air Traffic Management

2.82 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.

2.83 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.

2.84 All APAC Administrations were invited to participate in the Survey, which would be circulated in August 2021.

Updating the Regional Framework for Collaborative ATFM

2.85 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.

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

2.87 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.

2.88 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.

2.89 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.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) note the ***Draft Decision AOP/SG/5-4: Dissolution of the APA-CDM/TF***;

c) Agree to the ***Draft Decision ATFM/SG/11-1: Revised ATFM/SG Terms of Reference***;

d) note the progress of:

i) ATMOPSP;

ii) CANDENCE;

iii) BOBCAT;

iv) AMNAC;

v) EATMCG;

vi) Hong Kong China GDP Trial;

vii) Central ATFM (India) and impact of COVID-19;

viii) ATFM on AKARA-Fukue corridor;

ix) NARAHG;

e) note the experience on Integration of A-CDM with ATFM in Hong Kong International Airport;

f) continue to improve DEP message origination, and ensure that FPL addressing requirements comply with ICAO Doc 4444 - PANS-ATM;

g) note the continued slow regional progress in implementation of the performance expectations of the Regional Framework for Collaborative ATFM;

h) note the APAC User Requirements for SWIM-based MET Information Services Supporting ATFM drafted by MET R/WG;

i) note the Survey of State Meteorological Information Supporting Air Traffic Management conducted by MET R/WG; and

j) discuss any relevant matters as appropriate.

…….

<table>
<tr><td colspan="3">Draft Decision ATFM/SG/11-1: Revised ATFM/SG Terms of Reference</td></tr>
<tr><td colspan="2">What: 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.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To ensure the continuity of regional A-CDM activity conducted under APANPIRG</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 5-Nov-21</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>