



ICAO

International Civil Aviation Organization

Eleventh Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/11)

Video Teleconference, 02 – 06 August 2021

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

### REGIONAL ATFM IMPLEMENTATION STATUS

(Presented by the Secretariat)

#### SUMMARY

This paper presents the current reported ATFM implementation status of Asia/Pacific Administrations, reported against the performance objectives of the Regional Framework for Collaborative ATFM.

## 1. INTRODUCTION

1.1 ATM/SG/5 (2017) agreed to the following Conclusion:

***Conclusion ATM/SG/5-3: Asia/Pacific Regional Framework for Collaborative ATFM Amendment***

*That,*

- 1. the Regional Framework for Collaborative ATFM be amended to include the information and performance objectives in **Appendix D to the Report**; and*
- 2. the ATFM Implementation Status Report form provided in **Appendix E to the Report** be included in the Regional Framework for Collaborative ATFM as an appendix and made available on the ICAO Asia/Pacific Regional Office website; and*
- 3. Asia/Pacific Administrations are urged to report their ATFM implementation status at least once annually by no later than 30 April each year, using the ATFM Implementation Status Report Form.*

## 2. DISCUSSION

2.1 Reports (due by 30 April each year) were received from the following 23 Administrations in 2018 and/or 2019:

Australia Bangladesh, Cambodia, China, Hong Kong China, Macao China, India, Indonesia, Japan, Malaysia, Maldives, Myanmar, Nepal, New Caledonia, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Thailand, Viet Nam and USA

2.2 Reports for 2020 due date were received from only four APAC Administrations.

India, Indonesia, Singapore and Thailand.

2.3 COVID-19 pandemic-related disruption to ICAO meeting planning, and to APAC ANSP activities, may have contributed to the lack of reporting in 2020. While this disruption continues, reports for 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.

2.4 The ATFM Implementation Status Report form provides for two tiers of status reporting:

**A:** Administrations that are expected, or intend, to implement and distribute cross-border ATFM measures under the terms of the Performance Improvement Plan of the Asia/Pacific Regional Framework for Collaborative ATFM; and

**B:** Administrations that are not expected to implement and distribute cross-border ATFM measures<sup>1</sup> as described in A.

2.5 Administrations reporting against Tier B implementation were requested to note the Regional Framework for Collaborative ATFM and Asia/Pacific Seamless ATM Plan elements referring to *ATFM Program Airports*, *High Density Airports* and *High Density FIRs*, and commence reporting against Tier A elements where any of their aerodromes or FIRs met these criteria.

2.6 The collated Regional ATFM implementation status data is provided in **Attachment A**.

2.7 In alignment with the methodology applied to assessment of implementation status in a number of significant ATM technical fields in the APAC Region, implementation status of each Administration is assessed as *Robust* (90 – 100% implementation), *Marginal* (70 – 89%) or *Incomplete* (0 – 69%).

2.8 **Table 1** summarizes current implementation status. Administrations that have filed reports against the incorrect reporting tier, or have not reported at all, are indicated accordingly. Where implementation of items 2 or 32 of the report form (handling of FPL and ATS messages in accordance with ICAO Doc 4444 *Procedures for Air Navigation Services – Air Traffic Management - PANS-ATM*), and ICAO is aware that the FPL and ATS message addressing requirements published in their AIP or otherwise promoted by the Administration concerned are not compliant with PANS-ATM provisions, implementation status of zero has been recorded.

Administration (Tier)	% Implementation		Implementation Status
	2020	2021	
Afghanistan (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Australia (A)	<i>incorrect report</i>	87	Marginal
Bangladesh (B)	14	13	Incomplete
Bhutan (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Brunei Darussalam (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Cambodia (A)	63	<i>no report</i>	Incomplete
China (A)	87	<i>no report</i>	Marginal

<sup>1</sup> Administrations that are not expected to implement and distribute cross-border ATFM measures are expected to implement a number of other elements of the Regional Framework for Collaborative ATFM in order to support regional cross-border ATFM..

Administration (Tier)	% Implementation		Implementation Status
	2020	2021	
Hong Kong, China (A)	65	89	Marginal
Macao, China (B)	23	<i>no report</i>	Incomplete
Cook Islands (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Fiji (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
France (French Polynesia) (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
DPR Korea (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
India (A)	91	92	Robust
Indonesia (A)	68	71	Incomplete
Japan (A)	89	89	Marginal
Kiribati (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Lao PDR (A)	<i>never reported</i>	<i>no report</i>	Did Not Report
Malaysia (A)	16	<i>no report</i>	Incomplete
Maldives (B)	20	<i>no report</i>	Incomplete
Marshall Islands (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Micronesia (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Mongolia (B)	<i>no report</i>	39	Incomplete
Myanmar (B)	30	<i>no report</i>	Incomplete
Nauru (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Nepal (B)	0	<i>no report</i>	Incomplete
New Caledonia (B)	43	<i>no report</i>	Incomplete
New Zealand (A)	44	<i>no report</i>	Incomplete
Pakistan (B)	30	11	Incomplete
Palau (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Papua New Guinea (B)	21	<i>no report</i>	Incomplete
Philippines (A)	74	61	Incomplete
Republic of Korea (A)	78	82	Marginal
Samoa (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Singapore (A)	96	97	Robust
Solomon Islands (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Sri Lanka (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Timor Leste (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Tonga (B)	<i>never reported</i>	<i>no report</i>	Did Not Report

Administration (Tier)	% Implementation		Implementation Status
	2020	2021	
Thailand (A)	83	90	Robust
Tuvalu (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
United States (A)	97	94	Robust
Vanuatu (B)	<i>never reported</i>	<i>no report</i>	Did Not Report
Viet Nam (A)	26	34	Incomplete

**Table 1:** Asia/Pacific Region ATFM Implementation Status

2.9 The ATFM implementation of only four Administrations; India, Singapore, Thailand United States, were assessed as *Robust*.

2.10 The meeting is invited to note that a review of the Regional Framework for Collaborative ATFM including its performance objectives and implementation reporting criteria will be undertaken in the near future. WP18 refers.

2.11 The *Regional ATFM Monitoring and Reporting Form* is available in MS Excel format on the ICAO Asia/Pacific Regional Office eDocuments (ATM) web-page at:

<https://www.icao.int/APAC/Pages/new-eDocs.aspx>.

2.12 The completed form should be forwarded to the Regional Office ([apac@icao.int](mailto:apac@icao.int)) in MS Excel format, to facilitate collation of the data.

#### Revised Due Date for Implementation Status Reports

2.13 In addition to ATFM implementation status reporting, the ATM/AIS/SAR community currently submits implementation status reports against the performance objectives of the Regional ATM Contingency Plan, Regional Plan for Collaborative AIM, and Regional SAR Plan, each with a different due date. Many APAC Administrations bundle their status reports into a single email to the APAC Regional Office, prior to the earliest due date.

2.14 The Secretariat is considering proposing to ATM/SG/9 that the reporting dates for all such reports should be aligned to a common date of 28 February each year. This would ensure that the reported data is received sufficiently early to facilitate implementation reporting to the relevant technical group while allowing flexibility in the scheduling of technical meetings.

2.15 The meeting is invited to comment on this proposal.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) provide any updates on ATFM implementation, using the status reporting form;
- c) comment on the and
- d) discuss any relevant matters as appropriate.

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Not implemented = 0    Partial implementation = 0.5    Full implementation = 1

		Australia	Bangladesh	Cambodia	China	Hong Kong, China	Macao, China	India	Indonesia	Japan	Malaysia	Maldives	Mongolia	Myanmar	Nepal	New Caledonia	New Zealand	Pakistan	Papua New Guinea	Philippines	Republic of Korea	Singapore	Sri Lanka	Timor Leste	Thailand	United States	Viet nam	
<b>A. Administrations Distributing ATFM Measures</b>																												
<b>Indicate whether your Administration has:</b>																												
1	Enacted regulations for the implementation of ATFM	0.5	0.0	0.0	0.5	1.0		1.0	1.0	1.0	0.5		0.5	0.0			0.5	0.0	0.0	1.0	1.0	1.0				1.0	1.0	0.5
2	Ensured the origination, distribution and processing of FPL and ATS messages in accordance with ICAO Doc 4444 PANS-ATM and the Regional Framework for Collaborative ATFM	1.0	0.0	0.0		1.0		1.0	1.0	1.0	0.5		1.0	0.0			1.0	0.0	0.5	1.0	1.0	1.0				1.0	0.5	0.5
3	Implemented common fixes, terminology and communications in ATFM, AMAN/DMAN and A-CDM systems	1.0	0.0	0.5	0.5	1.0		1.0	0.5	0.5	0.0		0.5	0.0			1.0	0.0	0.5	0.5	0.5	1.0				1.0	1.0	0.5
4	Implemented meteorological services to support ATM in the terminal area (e.g. Meteorological Service in Terminal Area - MSTa)	1.0	0.0	0.0	1.0	1.0		1.0	1.0	1.0	0.5		0.5	0.0			0.5	0.0	1.0	0.0	1.0	1.0				0.0	1.0	1.0
5	Established ATFM capability with appropriately trained staff and operating procedures	1.0	0.0	1.0	0.5	1.0		1.0	0.5	1.0	0.5		0.5	0.0			0.0	0.0	0.5	1.0	0.5	1.0				1.0	1.0	0.5
6	Implemented local procedures for ATFM operations and communication, including phraseology and terminology for ATFM Units, ATS Units, airspace users, and airport operators, drawn from ICAO Doc. 9971	1.0	0.0	1.0	0.5	1.0		1.0	0.5	0.5	0.0		0.0	0.0			0.5	0.0	0.0	1.0	0.5	1.0				1.0	0.5	1.0
7	Performed an analysis of current traffic demand and expected growth for the next 5 years (rolling)	1.0	0.0	1.0	1.0	1.0		1.0	0.5	1.0	0.0		1.0	0.0			0.5	0.0	1.0	0.5	0.5	1.0				0.5	1.0	0.5
8	Implemented a program of bi-annual strategic airport and airspace capacity, and strategic demand analysis	1.0	0.0	0.5	1.0	1.0		1.0	0.5	1.0	0.0		1.0	0.0			0.0	0.0	0.5	0.0	0.5	1.0				1.0	1.0	0.5
9	Commenced daily pre-tactical airport and airspace capacity-demand analysis for ATFM Program airports and associated terminal airspace as well as enroute ATC sectors supporting the busiest Asia/Pacific city pairs	1.0	0.0	0.0	0.5	1.0		1.0	0.5	1.0	0.0		0.0	0.0			0.0	0.0	0.0	0.5	1.0	1.0				1.0	1.0	0.0
10	Implemented pre-tactical modelling of airport and airspace configuration and traffic demand, and the effect of ATFM measures	1.0	0.0	1.0	1.0	1.0		1.0	0.5	1.0	0.0		0.5	0.0			0.0	0.0	0.0	0.5	1.0	1.0				0.5	1.0	0.0
11	Implemented dynamic updating of airport and airspace capacity constraints, capacity calculations and demand information	1.0	0.0	0.5	1.0	0.5		1.0	0.5	1.0	0.0		0.0	0.0			0.5	0.0	0.0	0.5	0.5	1.0				1.0	1.0	0.0
12	Implemented strategic airport slot allocation at all international airports where demand significantly exceeds airport capacity	0.5	0.0	1.0	1.0	1.0		1.0	1.0	1.0	0.5		0.5	0.0			1.0	0.0	1.0	1.0	1.0	1.0				1.0	1.0	0.5
13	Made arrangements for relevant ATFMU to chair and/or participate in daily ATFM conferences for pre-tactical ATFM planning	1.0	0.0	0.5	1.0	1.0		1.0	0.5	1.0	0.0		0.5	0.0			0.0	0.0	0.0	0.5	1.0	1.0				1.0	1.0	0.0
14	Commenced daily preparation of an ATFM Daily Plan (ADP) for all ATFM Program airports and associated terminal airspace	1.0	0.0	1.0	1.0	1.0		1.0	1.0	1.0	0.0		0.5	0.0			0.0	0.0	0.0	1.0	1.0	1.0				1.0	1.0	0.5
15	Enabled sharing of relevant information between all stakeholders through implementation of CDM capability	1.0	0.0	0.5	1.0	1.0		1.0	1.0	1.0	0.5		0.0	0.0			1.0	0.0	0.0	0.5	1.0	1.0				1.0	1.0	0.5
16	Developed procedures for ATFMU, ATS Units, airspace users, and airport operators when ATFM program is active	1.0	0.0	1.0	1.0	1.0		1.0	1.0	1.0	0.0		0.5	0.0			0.5	0.0	0.0	1.0	1.0	1.0				1.0	1.0	0.5
17	Implemented tactical ATFM measures for flights inbound to ATFM program airports	1.0	0.0	1.0	1.0	1.0		1.0	1.0	1.0	0.5		0.5	0.0			1.0	0.0	0.0	0.5	1.0	1.0				1.0	1.0	0.0
18	Implemented tactical ATFM measures for flights inbound to constrained airspace	0.0	0.0	0.5	1.0	0.5		1.0	0.0	1.0	0.0		0.5	0.0			0.0	0.0	0.0	0.5	1.0	0.5				1.0	1.0	0.0
19	Promulgated procedures for tactical management of ATFM measures, including revision, cancellation, suspension, de-suspension, where necessary	1.0	0.0	0.5	1.0	1.0		1.0	1.0	1.0	0.0		0.5	0.0			0.5	0.0	0.0	1.0	1.0	1.0				1.0	1.0	0.0
20	Ensured tactical ATFM measures for are only applied during periods of constraint	1.0	0.0	1.0	1.0	1.0		1.0	1.0	1.0	0.5		0.0	0.0			0.5	0.0	0.0	1.0	1.0	1.0				1.0	1.0	0.0
21	Promulgated procedures to avoid subjecting individual flights to more than one tactical ATFM measure	1.0	0.0	1.0	1.0	0.5		1.0	0.5	1.0	0.0		0.5	0.0			0.5	0.0	0.0	0.0	1.0	1.0				1.0	1.0	0.0
22	Implemented local ATC procedures and, where available, CDM processes facilitating compliance with received CTOT	1.0	0.0	1.0	1.0	1.0		1.0	1.0	1.0	0.5		0.0	0.0			0.5	0.0	0.0	1.0	1.0	1.0				1.0	1.0	0.5
23	Implemented distributed multi-nodal ATFM information distribution capability	0.0	0.0	1.0	1.0	1.0		0.0	1.0	0.0	0.0		0.0	0.0			0.0	0.0	0.0	1.0	0.0	1.0				1.0	0.0	0.5
24	Ensured the interoperability of implemented ATFM, A-CDM, AMAN, DMAN, ATM automation systems and airspace user systems, where operational interfaces exist or are planned, using FIXM or, where FIXM capability has not yet been established, ADEXP	0.5	0.0	0.0	1.0	0.5		0.5	0.5	0.0	0.0		0.0	0.0			0.5	0.0	0.0	0.0	0.5	0.5				1.0	1.0	0.0
25	Ensured ATFM systems take long haul flights into account in demand predictions	1.0	0.0	0.0	1.0	1.0		1.0	1.0	1.0	0.0		0.0	0.0			0.0	0.0	0.0	1.0	1.0	1.0				1.0	1.0	0.0
26	Ensured ATM and ATFM systems provide timely update of estimate information for airborne aircraft	1.0	0.0	1.0	1.0	0.5		1.0	1.0	1.0	0.0		0.0	0.0			0.5	0.0	1.0	0.5	1.0	1.0				1.0	1.0	0.5
27	Commenced ATFM post-operations analysis and rectification, taking guidance from the Regional Framework as starting point	1.0	0.0	1.0	0.5	1.0		1.0	0.0	1.0	0.0		0.5	0.0			0.5	0.0	0.0	0.5	1.0	1.0				1.0	1.0	0.5
28	Developed procedures and agreements for post-operational analysis of cross-border ATFM with stakeholders	1.0	0.0	0.0	1.0	1.0		0.0	0.0	1.0	0.0		0.5	0.0			0.0	0.0	0.0	0.0	1.0	1.0				1.0	1.0	0.5

		Not implemented = 0    Partial implementation = 0.5    Full implementation = 1																										
		Australia	Bangladesh	Cambodia	China	Hong Kong, China	Macao, China	India	Indonesia	Japan	Malaysia	Maldives	Mongolia	Myanmar	Nepal	New Caledonia	New Zealand	Pakistan	Papua New Guinea	Philippines	Republic of Korea	Singapore	Sri Lanka	Timor Leste	Thailand	United States	Vietnam	
29	Ensured post-operations analyses are used for planning ATFM, airspace and ATS route improvements	0.5	0.0	1.0	1.0	0.5		1.0	0.5	1.0	0.0		1.0	0.0			0.5	0.0	0.0	0.5	1.0	1.0			0.5	1.0	0.5	
30	Implemented ATS route structure improvements including CCO/CDO to reduce ATC workload and use aircraft capability to meet ATFM measures	1.0	0.0	0.5	1.0	0.5		1.0	1.0	0.5	0.5		0.5	0.0			1.0	0.0	0.5	0.5	0.5	1.0			1.0	1.0	0.0	
31	Optimized ATC separation and reduced runway occupancy times at all ATFM program airports and in associated terminal airspace	1.0	0.0	0.5	1.0	1.0		1.0	1.0	1.0	0.0		0.0	0.0			0.5	0.0	0.0	0.5	0.5	1.0			0.5	1.0	0.5	
<b>B. Administrations Facilitating ATFM Measures (but not expected to implement and distribute cross-border ATFM measures)</b>																												
Indicate whether your Administration has:																												
32	Ensured the origination, distribution and processing of FPL and ATS messages in accordance with ICAO Doc 4444 PANS-ATM and the Regional Framework for Collaborative ATFM	0.0	0.5			0.0		0.0	0.0	0.0		1.0	0.0	1.0	0.0	1.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
33	Implemented local procedure with regards to ATFM operations and communication, including phraseologies, among ATFMU, ATS Units, airspace users, and airport operators	0.0	0.0			0.0	0.5	0.0	0.0	0.0		0.0	0.0	0.0	0.0	1.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
34	Educated ATM staff and stakeholders on the basic of ATFM and its connection with ATS	0.0	0.5			0.0	0.5	0.0	0.0	0.0		0.5	0.0	0.5	0.0	1.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
35	Made arrangements for relevant personnel from ATSU to participate in daily ATFM conferences for pre-tactical ATFM planning	0.0	0.5			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0			0.0	0.0	0.0	
36	Enabled sharing of relevant information between all stakeholders through implementation of CDM capability	0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.5		0.5		0.0	0.0	0.0			0.0	0.0	0.0	
37	Developed procedures for ATS units, airspace users, and airport operators when ATFM program is active	0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.5	0.0	0.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
38	Ensured local stakeholders are able to access CTOT information readily, either directly from the ATFMU distributing it or through local dissemination	0.0	0.0			0.0	0.5	0.0	0.0	0.0		0.0	0.0	1.0	0.0	1.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
39	Ensured ATM systems provide timely update of estimate information for airborne aircraft	0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0	1.0	0.0	1.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
40	Developed ATFM post-operations analysis workflow among ATFMU, ATS units, airspace users, and airport operators to ensure proper and timely feedback mechanism can be distributed to ATFMU originating the ATFM measures	0.0	0.0			0.0	0.5	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
41	Developed procedures and agreements for post-operational analysis of cross-border ATFM with stakeholders	0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
42	Ensured post-operations analyses are used for planning ATFM, airspace, and ATS route improvements	0.0	0.0			0.0	0.5	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
43	Implemented ATS route structure improvements including CCO/CDO to reduce ATC workload and use aircraft capability to meet ATFM measures	0.0	0.0			0.0	0.5	0.0	0.0	0.0		1.0	0.0	0.0	0.0	0.5		0.0		0.0	0.0	0.0			0.0	0.0	0.0	
44	Optimized ATC separation and reduced runway occupancy times at all ATFM program airports and in associated terminal airspace	0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0			0.0	0.0	0.0	
45	Performed an analysis of current traffic demand and expected growth for the next 5 years (rolling)	0.0	0.5			0.0	0.5	0.0	0.0	0.0		0.5	0.0	0.5	0.0	0.5		1.0		0.0	0.0	0.0			0.0	0.0	0.0	
46	Implemented a program of bi-annual strategic airport and airspace capacity, and strategic demand analysis	0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.5		0.0	0.0	0.0			0.0	0.0	0.0	
Total		27.0	2.0	19.5	27.0	27.5	3.5	28.5	22.0	27.5	5.0	3.0	12.0	4.5	0.0	6.5	13.5	11.0	6.5	19.0	25.5	30.0	0.0	0.0	28.0	29.0	10.5	
Implementation %		87%	13%	63%	87%	89%	23%	92%	71%	89%	16%	20%	39%	30%	0%	43%	44%	73%	21%	61%	82%	97%			90%	94%	34%	

Note: State/Administration that did not submit the reporting status are Afghanistan, Bhutan, Brunei, Cook Islands, DPRK, Fiji, Kiribati, Lao PDR, Marshall Islands, Micronesia, Nauru, Palau, Samoa, Solomon Islands, Sri Lanka, Timor Leste, Tonga, Tuvalu, and Vanuatu