



ICAO

International Civil Aviation Organization

Thirteenth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/13)

Bangkok, Thailand, 03 – 07 April 2023

Agenda Item 4: Review of Current 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.*

1.2 ATM/SG/10 (2022) agreed to the following Conclusions:

Conclusion ATM/SG/10-1: Revised Reporting Date for ATM Regional Plans' Implementation Status Monitoring

That,

States are urged to report their implementation status of the performance expectations of the following regional plans by not later than 28 February each year:

- a) Regional ATM Contingency Plan;*
- b) Regional Framework for Collaborative ATFM;*
- c) Regional Plan for Collaborative AIM; and*

- d) *Regional SAR Plan; and*
- e) *The implementation reporting forms for each of these regional plans be updated to provide for reporting in percentages of implementation.*

This Conclusion supersedes the status reporting requirements of Conclusions ATM/SG 5-3, 5-8 and 7-16

Conclusion ATM/SG/10-6: Regional ATFM Implementation Status Reporting

That,

1. *the ATFM Implementation Status Report form (version 3.0) provided in Appendix F to the Report be adopted, and made available on the ICAO Asia/Pacific Regional Office website;*
2. *Asia/Pacific Administrations are urged to report their ATFM implementation status at least once annually by no later than 28th February each year, using the ATFM Implementation Status Report Form; and*
3. *The Regional Framework for Collaborative ATFM be amended to include the information in Appendix F to the Report.*

Note: This Conclusion supersedes Conclusion ATM/SG/5-3

2. DISCUSSION

2.1 Reports for 2023 (due by 28 February) 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.

2.2 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 as described in A.

Note: 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.

2.3 Administrations reporting against Tier B implementation should 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.

2.4 The collated Regional ATFM implementation status data (*excluding Phase III*) is provided in **Attachment A**. The implementation status data of Phase III is provided in **Attachment B**.

2.5 In alignment with the methodology applied to assessment of implementation status in several 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%).

2.6 Recognizing the substantial performance expectations in PARS/PASL Phase III, the different update cycles between the Asia/Pacific Seamless ANS Plan and the Framework, the significant impact due to COVID-19 pandemic, and the potential benefits of a more granular progress tracking, Regional ATFM Capability Phase III is proposed to be divided into sub-phases A and B, with expected implementation of 03 November 2022 and November 2025. Phase IIIB Regional ATFM capabilities, with expected implementation by November 2025, will not be considered for evaluation and compliance. Therefore, response for the implementation status of such elements will be voluntary in nature.

2.7 **Table 1** summarizes current implementation status.

Administration (Tier)	% Implementation			Implementation Status
	2021	2022	2023	
Afghanistan (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Australia (A)	87	<i>no report</i>	<i>no report</i>	Did Not Report
Bangladesh (B)	13	13	<i>no report</i>	Did Not Report
Bhutan (A)	<i>no report</i>	<i>no report</i>	21	Incomplete
Brunei Darussalam (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Cambodia (A)	<i>no report</i>	82	95	Robust
China (A)	<i>no report</i>	<i>no report</i>	97	Robust
Hong Kong, China (A)	89	89	95	Robust
Macao, China (B)	<i>no report</i>	<i>no report</i>	39	Incomplete
Cook Islands (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Fiji (B)	<i>no report</i>	<i>no report</i>	0	Incomplete
France (French Polynesia) (B)	<i>no report</i>	<i>no report</i>	40	Incomplete
DPR Korea (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
India (A)	92	84	85	Marginal
Indonesia (A)	71	63	54	Incomplete
Japan (A)	89	94	91	Robust
Kiribati (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Lao PDR (A)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Malaysia (A)	<i>no report</i>	<i>no report</i>	36	Incomplete
Maldives (B)	<i>no report</i>	<i>no report</i>	<i>no report</i>	Did Not Report
Marshall Islands (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Micronesia (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported

Administration (Tier)	% Implementation			Implementation Status
	2021	2022	2023	
Mongolia (A)	<i>no report</i>	40	28	Incomplete
Myanmar (B)	<i>no report</i>	<i>no report</i>	<i>no report</i>	Did Not Report
Nauru (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Nepal (B)	43	40	<i>no report</i>	Did Not Report
New Caledonia (B)	<i>no report</i>	<i>no report</i>	<i>no report</i>	Did Not Report
New Zealand (A)	<i>no report</i>	67	78	Marginal
Pakistan (B)	11	80	59	Incomplete
Palau (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Papua New Guinea (A)	<i>no report</i>	<i>no report</i>	<i>no report</i>	Did Not Report
Philippines (A)	61	77	59	Incomplete
Republic of Korea (A)	82	87	93	Robust
Samoa (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Singapore (A)	97	97	99	Robust
Solomon Islands (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Sri Lanka (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Timor Leste (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Tonga (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Thailand (A)	90	90	91	Robust
Tuvalu (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
United States (A)	94	<i>no report</i>	96	Robust
Vanuatu (B)	<i>never reported</i>	<i>no report</i>	<i>no report</i>	Never Reported
Viet Nam (A)	34	34	71	Marginal

Table 1: Asia/Pacific Region ATFM Implementation Status (excluding Phase III)

2.8 The ATFM implementation of only eight Administrations: Cambodia, China, Hong Kong China, Japan, Republic of Korea, Singapore, Thailand, United States, were assessed as *Robust for phases IA, IB, and II*.

2.9 **Table 2** summarizes the current implementation status for Phase III for information only.

Administration (Tier)	% Implementation
	2023
Afghanistan (B)	<i>no report</i>
Australia (A)	<i>no report</i>
Bangladesh (B)	<i>no report</i>
Bhutan (A)	9
Brunei Darussalam (B)	<i>no report</i>
Cambodia (A)	25
China (A)	91
Hong Kong, China (A)	75
Macao, China (B)	<i>no report</i>
Cook Islands (B)	<i>no report</i>
Fiji (B)	<i>no report</i>
France (French Polynesia) (B)	<i>no report</i>
DPR Korea (B)	<i>no report</i>
India (A)	53
Indonesia (A)	38
Japan (A)	59
Kiribati (B)	<i>no report</i>
Lao PDR (A)	<i>no report</i>
Malaysia (A)	39
Maldives (B)	<i>no report</i>
Marshall Islands (B)	<i>no report</i>
Micronesia (B)	<i>no report</i>
Mongolia (A)	7
Myanmar (B)	<i>no report</i>
Nauru (B)	<i>no report</i>
Nepal (B)	<i>no report</i>
New Caledonia (B)	<i>no report</i>
New Zealand (A)	19
Pakistan (B)	<i>no report</i>
Palau (B)	<i>no report</i>
Papua New Guinea (A)	<i>no report</i>
Philippines (A)	0
Republic of Korea (A)	31

Administration (Tier)	% Implementation
	2023
Samoa (B)	<i>no report</i>
Singapore (A)	68
Solomon Islands (B)	<i>no report</i>
Sri Lanka (B)	<i>no report</i>
Timor Leste (B)	<i>no report</i>
Tonga (B)	<i>no report</i>
Thailand (A)	66
Tuvalu (B)	<i>no report</i>
United States (A)	100
Vanuatu (B)	<i>no report</i>
Viet Nam (A)	41

Table 2: Asia/Pacific Region ATFM Implementation Status of Phase III (information only)

2.10 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>.

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

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; and
- c) discuss any relevant matters as appropriate.

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		Not implemented = 0% Partial implementation = 20%, 50%, 75% Full implementation = 100%																		
		Bhutan	Cambodia	China	Hong Kong, China	Macao, China	Fiji	French Polynesia	India	Indonesia	Japan	Malaysia	Mongolia	New Zealand	Pakistan	Philippines	Republic of Korea	Singapore	Thailand	United States
A. Administrations Distributing ATFM Measures																				
Indicate whether your Administration has:																				
1	Enacted regulations for the implementation of ATFM	100%	100%	100%	100%				100%	100%	100%	100%	0%	100%		100%	100%	100%	100%	100%
2	Implemented a program of annual or bi-annual strategic airport and airspace capacity, and strategic demand analysis	50%	100%	100%	100%				50%	50%	100%	0%	100%	100%		100%	50%	100%	100%	50%
3	Performed an analysis of current traffic demand and expected growth for the next 5 years (rolling)	25%	100%	100%	100%				50%	50%	50%	25%	50%	50%		25%	50%	100%	50%	100%
4	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 homogeneous ATM areas and major traffic flows identified in the Asia and Pacific Regions	50%	100%	100%	100%				50%	50%	100%	50%	50%	50%		50%	100%	100%	100%	50%
5	Made arrangements for relevant ATFMU to chair and/or participate in regularly scheduled ATFM conferences for pre-tactical ATFM planning	0%	100%	100%	100%				100%	50%	100%	0%	50%	0%		50%	100%	100%	100%	100%
6	Commenced ATFM post-operations analysis and rectification, taking guidance from the Asia/Pacific ATFM Post-Operations Analysis Recommended Framework as starting point	50%	100%	100%	100%				100%	0%	100%	50%	50%	100%		0%	100%	100%	100%	100%
7	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	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
8	Enacted requirements to ensure FPL is submitted no less than 3 hours prior to EOBT except where necessary for operational or technical reasons	100%	100%	0%	100%				100%	100%	0%	100%	0%	100%		0%	100%	100%	100%	0%
9	Enacted requirements to ensure a DLA message is transmitted when the departure of an aircraft for which basic FPL has been sent is delayed by more than 15 minutes after the EOBT specified in that basic FPL	100%	100%	100%	100%				100%	100%	100%	0%	0%	100%		0%	100%	100%	100%	100%
10	Ensured that, when there is a delay from a GDP, CTOT and other slot allocation information originated from the ATFMU is communicated to all relevant stakeholders	0%	100%	100%	100%				100%	100%	100%	0%	0%	100%		50%	100%	100%	100%	100%
11	Implemented or designed systems to ensure that FPL are not discarded from relevant ATM systems as a consequence of ATFM delay.	0%	100%	100%	100%				100%	0%	100%	100%	0%	100%		0%	100%	100%	100%	100%
12	Implemented common fixes, terminology and communications in ATFM, AMAN/DMAN and A-CDM systems	0%	NA	100%	100%				100%	50%	50%	NA	0%	100%		NA	100%	100%	100%	50%
13	Optimized ATC separation and reduced runway occupancy times at all ATFM program airports and in associated terminal airspace	0%	50%	100%	100%				100%	50%	100%	50%	0%	75%		75%	100%	100%	50%	75%
14	Implemented strategic airport slot allocation at all international airports where demand significantly exceeds airport capacity	0%	100%	100%	100%				100%	100%	100%	0%	100%	50%		100%	100%	100%	100%	100%
15	Implemented pre-tactical modelling of airport and airspace configuration and traffic demand, and the effect of ATFM measures	0%	100%	100%	50%				50%	25%	100%	50%	25%	50%		25%	100%	100%	50%	50%
16	Implemented tactical ATFM measures for flights inbound to ATFM program airports	0%	100%	100%	100%				100%	50%	100%	0%	50%	100%		50%	100%	100%	100%	100%
17	Enabled sharing of relevant information between all stakeholders through implementation of CDM	0%	100%	100%	100%				100%	100%	100%	0%	0%	100%		100%	100%	100%	100%	100%
18	Implemented dynamic updating of airport and airspace capacity constraints, capacity calculations and demand information	0%	100%	100%	50%				100%	50%	100%	50%	0%	50%		50%	50%	100%	100%	50%
19	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	50%	100%	100%	100%				100%	50%	50%	50%	0%	100%		100%	100%	100%	100%	50%
20	Established ATFM capability with appropriately trained staff and operating procedures	50%	100%	100%	100%				100%	50%	100%	50%	50%	50%		50%	100%	100%	100%	100%
21	Developed procedures for ATFMU, ATS Units, airspace users, and airport operators when ATFM program is active	50%	100%	100%	100%				100%	100%	100%		50%	50%		100%	100%	100%	100%	50%
22	Implemented local ATC procedures and, where available, CDM processes facilitating compliance with received CTOT	0%	100%	100%	100%				100%	100%	100%	50%	0%	100%		100%	100%	100%	100%	50%
23	Implemented tactical ATFM measures for flights inbound to constrained airspace	0%	100%	100%	100%				0%	0%	100%	50%	50%	100%		100%	100%	100%	100%	0%

		Not implemented = 0% Partial implementation = 20%, 50%, 75% Full implementation = 100%																			
		Bhutan	Cambodia	China	Hong Kong, China	Macao, China	Fiji	French Polynesia	India	Indonesia	Japan	Malaysia	Mongolia	New Zealand	Pakistan	Philippines	Republic of Korea	Singapore	Thailand	United States	Vietnam
24	Ensured tactical ATFM measures are only applied during periods of constraint	0%	100%	100%	100%			100%	0%	100%	0%	0%	100%		100%	100%	100%	100%	100%	100%	
25	Promulgated procedures to avoid subjecting individual flights to more than one tactical ATFM measure	0%	0%	100%	100%			100%	0%	100%	0%	0%	100%		0%	100%	100%	100%	100%	0%	
26	Developed procedures and agreements for post-operational analysis of cross-border ATFM with stakeholders	0%	100%	100%	100%			50%	50%	100%	50%	50%	0%		50%	100%	100%	100%	100%	50%	
27	Ensured post-operations analyses are used for planning ATFM, airspace and ATS route improvements	0%	100%	100%	100%			100%	50%	100%	0%	50%	50%		50%	50%	100%	50%	100%	50%	
28	Commenced daily preparation and sharing of an ATFM Daily Plan (ADP) for all ATFM Program airports and associated terminal airspace	0%	100%	100%	100%			100%	0%	100%	0%	50%	0%		50%	100%	100%	100%	100%	100%	
29	Promulgated procedures for tactical management of ATFM measures, including revision, cancellation where necessary	0%	100%	100%	100%			100%	0%	100%	0%	50%	100%		100%	100%	100%	100%	100%	100%	
30	Ensured interoperability of implemented ATFM, A-CDM, AMAN, DMAN, ATM automation systems and airspace user systems where operational interfaces exist or are planned	0%	NA	100%	75%			50%	75%	50%	0%	0%	100%		NA	50%	75%	75%	100%	50%	
31	Implemented meteorological services to support ATM in the terminal area (e.g. Meteorological Service in Terminal Area - MSTa)	0%	100%	100%	100%			100%	100%	100%	100%	25%	100%		25%	100%	100%	25%	100%	50%	
32	Implemented distributed multi-nodal ATFM information distribution capability	0%	100%	100%	100%			0%	100%	100%	0%	0%	NA		100%	100%	100%	100%	100%	100%	
33	Ensured ATFM systems take long haul flights into account in demand predictions	0%	100%	100%	100%			100%	0%	100%	100%	0%	100%		100%	100%	100%	100%	100%	50%	
34	Ensured ATM and ATFM systems provide timely update of estimate information for airborne aircraft	0%	100%	100%	50%			100%	50%	100%	50%	0%	100%		100%	100%	100%	100%	100%	50%	
B. Administrations Facilitating ATFM Measures (but not expected to implement and distribute cross-border ATFM measures)																					
Indicate whether your Administration has:																					
43	Implemented a program of annual or bi-annual strategic airport and airspace capacity, and strategic demand analysis					50%	0%	0%							50%						
44	Performed an analysis of current traffic demand and expected growth for the next 5 years (rolling)					50%	0%	0%							100%						
45	Made arrangements for relevant personnel from ATSU to participate in regularly scheduled ATFM conferences for pre-tactical ATFM planning					0%	0%	NA							NA						
46	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					100%	0%	100%							100%						
47	Enacted requirements to ensure FPL is submitted no less than 3 hours prior to EOBT except where necessary for operational or technical reasons					100%	0%	0%							0%						
48	Enacted requirements to ensure a DLA message is transmitted when the departure of an aircraft for which basic FPL has been sent is delayed by more than 15 minutes after the EOBT specified in that basic FPL					0%	0%	100%							0%						
49	Ensured local stakeholders are able to access CTOT information readily, either directly from the ATFMU distributing it or through local dissemination					0%	0%	0%							100%						
50	Implemented or designed systems to ensure that FPL are not discarded from relevant ATM systems as a consequence of ATFM delay.					100%	0%	100%							100%						
51	Optimized ATC separation and reduced runway occupancy times at all ATFM program airports and in associated terminal airspace					50%	0%	25%							NA						
52	Enabled sharing of relevant information between all stakeholders through implementation of CDM					0%	0%	100%							0%						
53	Implemented local procedure with regards to ATFM operations and communication, including phraseologies, among ATFMU, ATS Units, airspace users, and airport operators drawn from ICAO Doc 9971					50%	0%	50%							50%						

Not implemented = 0% Partial implementation = 20%, 50%, 75% Full implementation = 100%		Bhutan	Cambodia	China	Hong Kong, China	Macao, China	Fiji	French Polynesia	India	Indonesia	Japan	Malaysia	Mongolia	New Zealand	Pakistan	Philippines	Republic of Korea	Singapore	Thailand	United States	Viet nam	
		54	Developed procedures for ATS units, airspace users, and airport operators when ATFM program is active					0%	0%	50%							100%					
55	Implemented local ATC procedures and, where available, CDM processes facilitating compliance with received CTOT					50%	0%	0%							50%							
56	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					50%	0%	0%							50%							
57	Developed procedures and agreements for post-operational analysis of cross-border ATFM with stakeholders					50%	0%	0%							50%							
58	Ensured post-operations analyses are used for planning ATFM, airspace, and ATS route improvements					50%	0%	NA							50%							
59	Ensured capability to receive ATFM Daily Plan (ADP) from Administrations distributing the ATFM measures and to distribute it among local stakeholders for situational awareness					0%	0%	0%							50%							
60	Ensured ATM systems provide timely update of estimate information for airborne aircraft					0%	0%	100%							100%							
61	Educated ATM staff and stakeholders on the basic of ATFM and its connection with ATS					50%	0%	50%							50%							
Average Implementation		21%	95%	97%	95%	39%	0%	40%	85%	54%	91%	36%	28%	78%	59%	59%	93%	99%	91%	96%	71%	

***2023 Update to the revised ATFM Regional ATFM Monitoring and Reporting Form version 3.0**

Note: Questions 35-42 for Phase III will not be considered for evaluation in the ATFM/SG/13.

Not implemented = 0% Partial implementation = 20%, 50%, 75% Full implementation = 100%		Bhutan	Cambodia	China	Hong Kong, China	India	Indonesia	Japan	Malaysia	Mongolia	New Zealand	Philippines	Republic of Korea	Singapore	Thailand	United States	Viet nam
A. Administrations Distributing ATFM Measures																	
Indicate whether your Administration has:																	
35	Implemented A-CDM at international aerodrome and integrated with ATFM operations with appropriate information exchange between the two systems and processes	0%	NA	100%	75%	100%	75%	75%	0%	0%	50%	NA	50%	75%	100%	75%	
36	Established national civil-military ATM coordination body to enable strategic, pre-tactical, and tactical airspace management (ASM)	0%	0%	100%	100%	100%	0%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%
37	Established a civil-military ATM coordination body to regularly review the use of Special Use Airspace (SUA) to ensure optimal usage all airspaces based on the FUA concept	0%	100%	100%	100%	100%	50%	100%	100%	0%	0%	0%	100%	100%	100%	100%	50%
38	Established regulations to support a safe integration of UAS operations in non-segregated airspace	75%	NA	75%	75%	25%	25%	50%	25%	NA	50%	NA		NA	50%	100%	50%
39	Implemented ATFM information distribution capability utilizing FIXM v4.2 (or later), extended where necessary, to enable the exchange of flight-specific ATFM information	0%	0%	100%	50%	0%	0%	0%	0%	0%	0%	0%		0%	0%	100%	0%
40	Integrated ATFM, AMAN/DMAN, and A-CDM systems through cross-platform information exchange based on FIXM v4.2 (or later) with appropriate extension	0%	0%	50%	50%	50%	0%	50%	0%	0%	0%	0%		50%	50%	100%	
41	Established research and development programs to explore novel capacity enhancement techniques such as free route airspace, extended arrival metering, dynamic airspace configurations, target time operations, and collaborative trajectory options, with an emphasis on needs, safety case, and		50%	100%	100%	50%	100%	50%	NA	50%	50%	NA		100%	100%	100%	50%
42	Implemented Meteorological information exchange with ATM and ATFM systems using IWXXM v3.0 (or later)	0%	0%	100%	50%	0%	50%	50%	50%	0%	0%	0%		50%	50%	100%	0%
Average Implementation		9%	25%	91%	75%	53%	38%	59%	39%	7%	19%	0%	31%	68%	66%	100%	41%

***2023 Update to the revised ATFM Regional ATFM Monitoring and Reporting Form version 3.0**