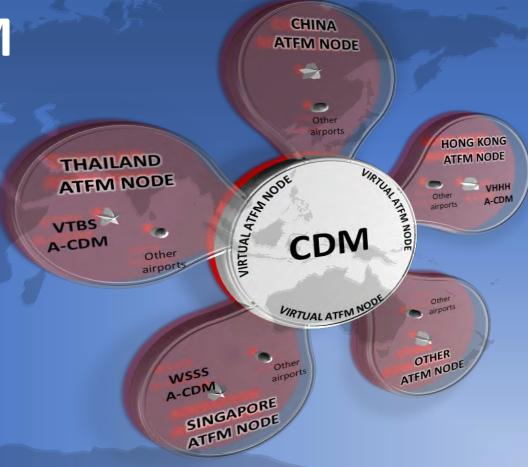
Outcomes from the Special Topic Meeting on the Future of APAC ATFM



ATFM/SG/15 28 Apr – 2 May 2025



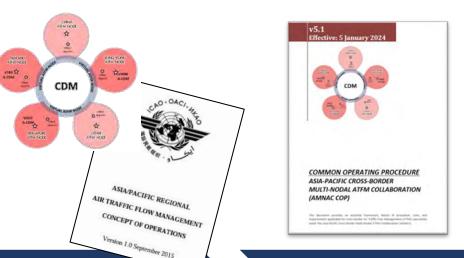


How Did We Get Here?









2011 - 2012

2013 - 2014

2015 - 2019

2020 - 2025

The Early Days

Concept Development **Concept Validation** & Ops Trial

Operational *Implementation*

CANSO Whole-of-Flight CDM Project (BKK – SIN) Human-in-the-Loop & Tabletop Exercises

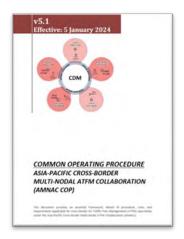
Distributed Multi-Nodal ATFM Network **Operational Trial**

Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC)





Where Are We Headed?





Strong Network Lack of transparency



Conflicting measures

Sub-optimal network



2020 - 2025

"APAC ATFM 2.0" ConOps

Operational Implementation

Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC) Address existing challenges, leverage emerging technologies, & prepare for integration with future ATM concepts 2034+

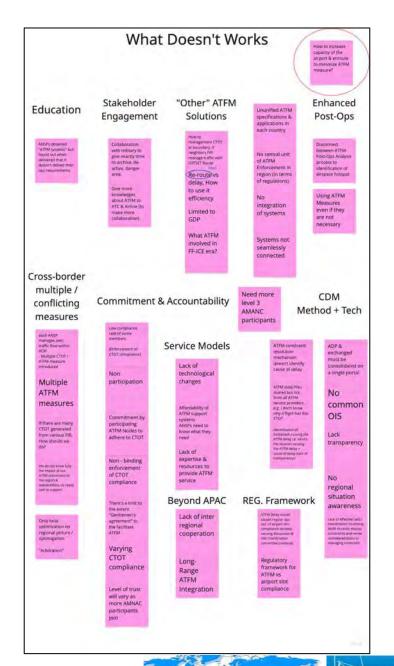
FF-ICE/R1
Operational

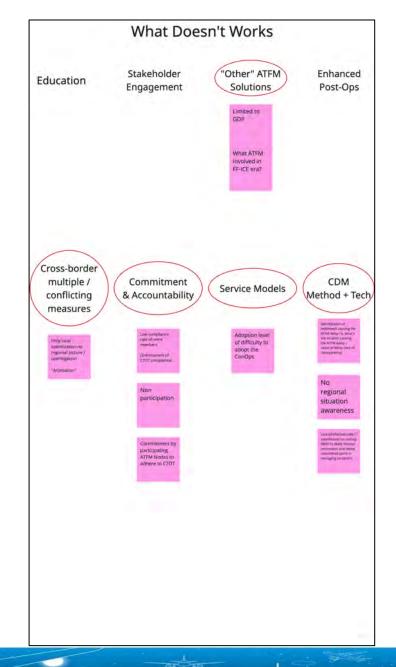
Initial trajectory-based flight planning process and enhanced data exchange



Review of Today











Review of Today's Operations

	Clusters	Summary
What Works	Organization	Collaborative environment; flexible participation structure suitable for varying readiness levels
	Method	Ability to implement cross-border GDP
	Acceptability	Growing memberships through strong reputation of the AMNAC initiative
	Technologies	Flexibility in ATFM systems employed, and move toward automated message exchanges



Review of Today's Operations

	Clusters	Summary
What Doesn't Work	Education	Gaps in awareness/education resulting in ANSPs obtaining systems that do not fit their needs
	Stakeholder Engagement	Insufficient stakeholder engagement resulting in misunderstanding among operational personnel
	Systems Integration	Lack of integration and connectedness among ATFM systems
	Enhanced Post-Ops Analysis	Disconnect between ATFM post-ops analysis results and capacity enhancement efforts in the region

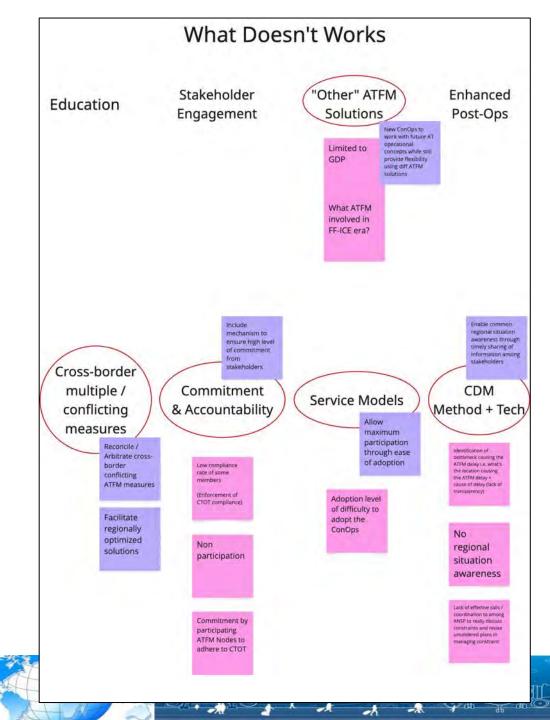


Review of Today's Operations

	Clusters	Summary
What Doesn't Work	Cross-Border Conflicting ATFM Measures	Inability to reconcile conflicting ATFM measures and provide network-wide optimization
	Commitment and Accountability	Lack of commitment and accountability from member ANSPs and stakeholders
	ATFM Service Models	Gaps in adoption of ATFM from APAC States due to affordability of implementing ATFM services
	Support for Other ATFM Solutions	Primary focus on GDP and no procedures for other ATFM solutions
	CDM Methods and Technologies	Gaps in effective region-wide CDM and lack of common situational awareness



Vision Statements / Guiding Principles





DISTRIBUTED MULTI-NODAL ATFM NETWORK

We Want the New ConOps to...

CDM Methods & Techs

Enable common situational awareness through timely sharing of information among stakeholders

ATFM Service Models

> Allow maximum participation through ease of adoption

Commitment Accountability

Include mechanism to ensure high level of commitment from stakeholders

Other ATFM Solutions

Work with future ATM operational concepts while providing flexibility of using different ATFM solutions

Cross-Border Conflicting Measures

- Reconcile/arbitrate cross-border conflicting ATFM solutions
- > Facilitate regionally optimized ATFM solutions

"Achieve By" Target Timeline

2028 2030 2032

APAC FF-ICE/R1 **APAC SWIM APAC FPL2012 Mandatory Services Implementation** Sunset

2028

2032

Medium-Term Short-Term

Include mechanism for high commitment

Common situational awareness thru timely info sharing

> Allow max participation thru ease of adoption

Work with future ATM ConOps with diff types of ATFM solutions

Reconcile / arbitrate conflicting measures Facilitate regionally optimized ATFM

solutions

2035

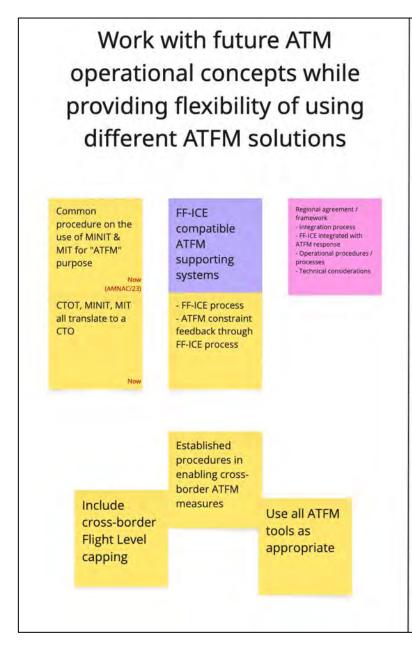
Long-Term



Initial Solutions

Strategic Enablers

Technological Enablers Operational Enablers



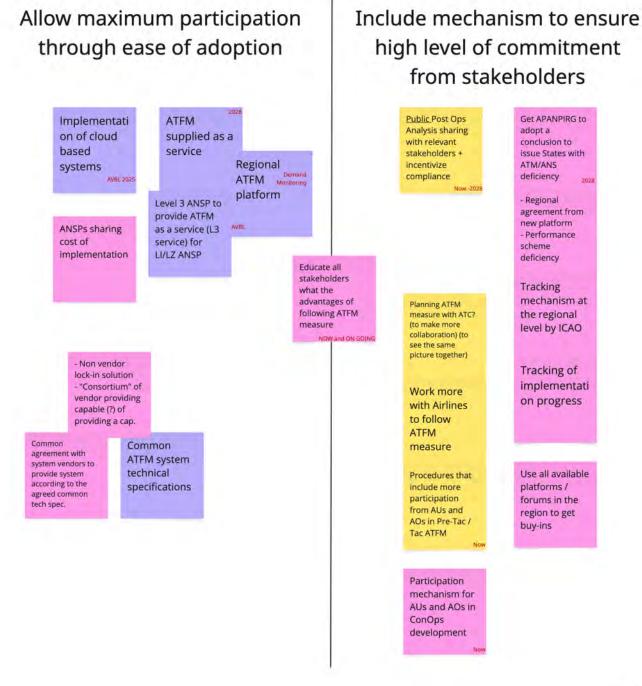






Initial Solutions

Strategic Technological Operational Enablers Enablers



Initial Solutions

Strategic Technological Operational Enablers Enablers

Reconcile / Arbitrate crossborder conflicting ATFM measures

Agree on the priorities on various ATFM solutions

Clear and transparent rules for managing conflicting ATFM solutions

Agreed "Rules of engagement" or COP

Automate CDM as much as possible through systems

Systems can negotiate with each other

Common flight info sharing along the whole route & deconflicting -> FF-ICE

Facilitate regionally optimized solutions

- Agreed optimization method / approach - Agreed trajectory modelling - Agreement on minimum

set of trajectory data

um

Regional

Platform

ATFM

Performance specification for optimization

Agreed set of rules to evaluate regional impact & benefit into scores

> Common (plugin) optimizing service for each ATFM system

Tech to sense make ATFM measures its requirements then deconflict it.

Ensure equity in ATFM delay incurred (in a long run) // Sell & Buy in from CE

ATFM

Common factors

deemed to be

Rules that

are fair &

acceptable

Develop trial

system

prototype

Buy-in from

ICAO & AAC

identified by ANSPs

important towards

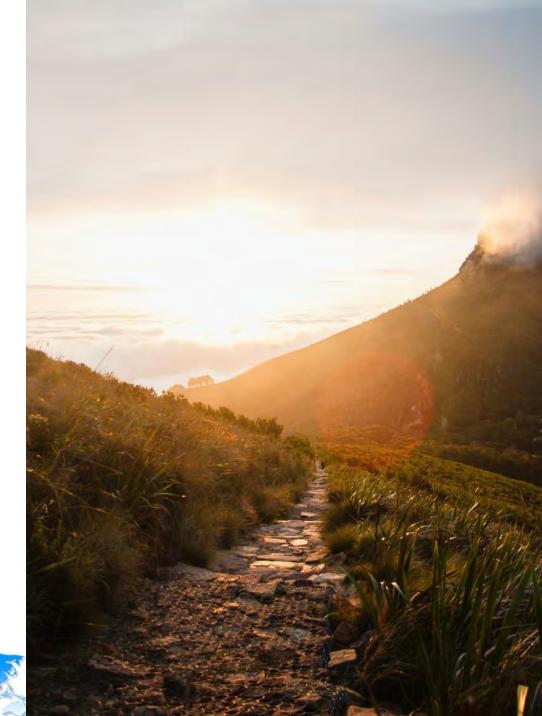
optimizing air traffic



DISTRIBUTED MULTI-NODAL ATFM NETWORK

Next Steps

- Establish an ad-hoc group under ATFM/SG to work on the new ConOps (WP/14 refers)
- ➤ Ensure alignment or complementary work plan and close coordination between the ad-hoc group and the *Next Generational ATFM Working Group* established under the APAC ANSP Committee (AAC) (AAC/4 refers)





Action by the Meeting

- note the information contained in this paper,
- discuss the needs for a review of the regional ATFM concept of operations, b)
- review the outcomes of the STM, particularly the proposed basis for the c) revised regional ATFM concept of operations,
- share ideas on the future regional ATFM concept of operations, and
- discuss any relevant matters as appropriate.



















