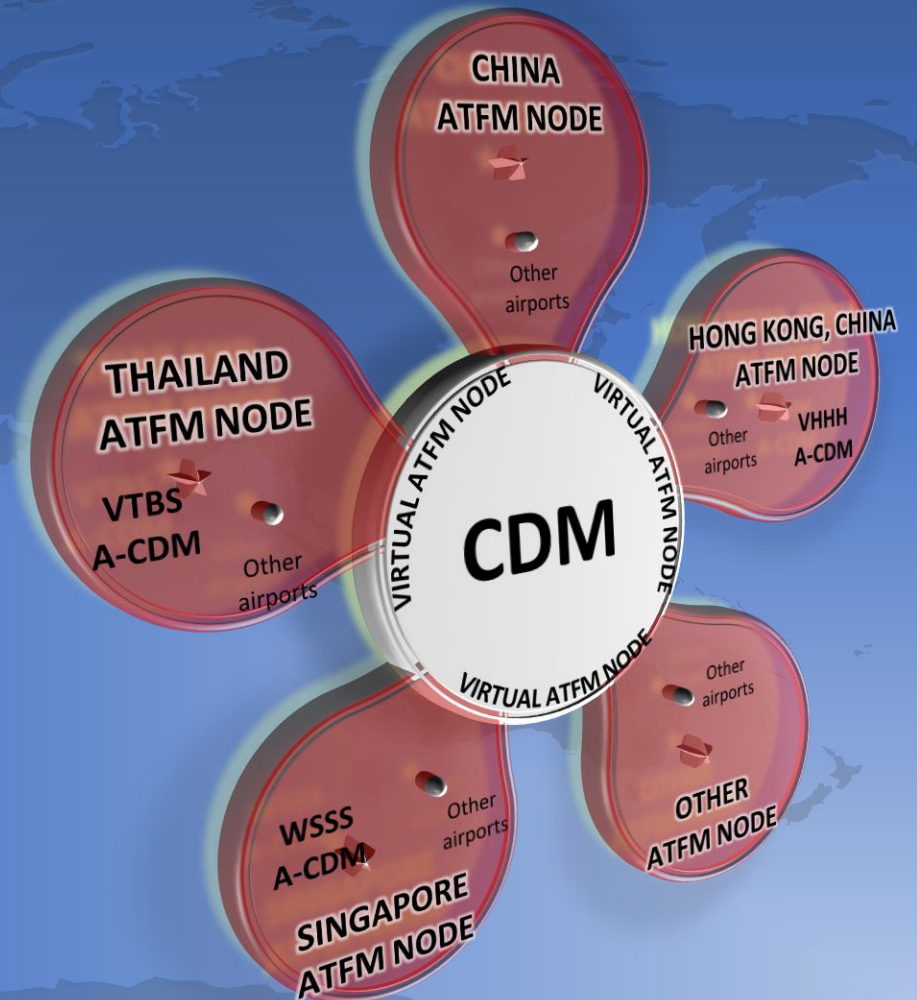


# APAC Cross-Border Multi-Nodal ATFM Collaboration (AMNAC) *Progress Update*

ATFM/SG/15

28 April – 2 May 2025



# Where We Are



**>1,500**

Rounds of distributed  
ATFM measures

**23**

Project meetings

**12**

ANSPs participating in the project  
(+ *CANSO & IATA Support*)

**10**

Years since the start of  
the implementation  
(2015 – Today)



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# Where We Are

Tiered Level	Capabilities & Members
Level 3	<ul style="list-style-type: none"><li>▪ Able to generate, deliver, and receive CTOTs;</li><li>▪ Able to comply with CTOTs from all Level-3 ATFM Nodes</li></ul> <p><i>Current members:</i></p> <ul style="list-style-type: none"><li>▪ Cambodia, China, Hong Kong China, Republic of Korea, Singapore, Thailand, Viet Nam</li></ul>
Level 2	<ul style="list-style-type: none"><li>▪ Able to comply with CTOTs from all Level-3 ATFM Nodes</li></ul> <p><i>Current members:</i></p> <ul style="list-style-type: none"><li>▪ Indonesia, Malaysia, Myanmar, the Philippines</li></ul>
Level 1	<ul style="list-style-type: none"><li>▪ Observe and participate in the project progress</li></ul> <p><i>Current members:</i></p> <ul style="list-style-type: none"><li>▪ Lao PDR</li></ul>

+ Participation from Japan as trial partner, and India as invited observers



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# Topics to be Covered

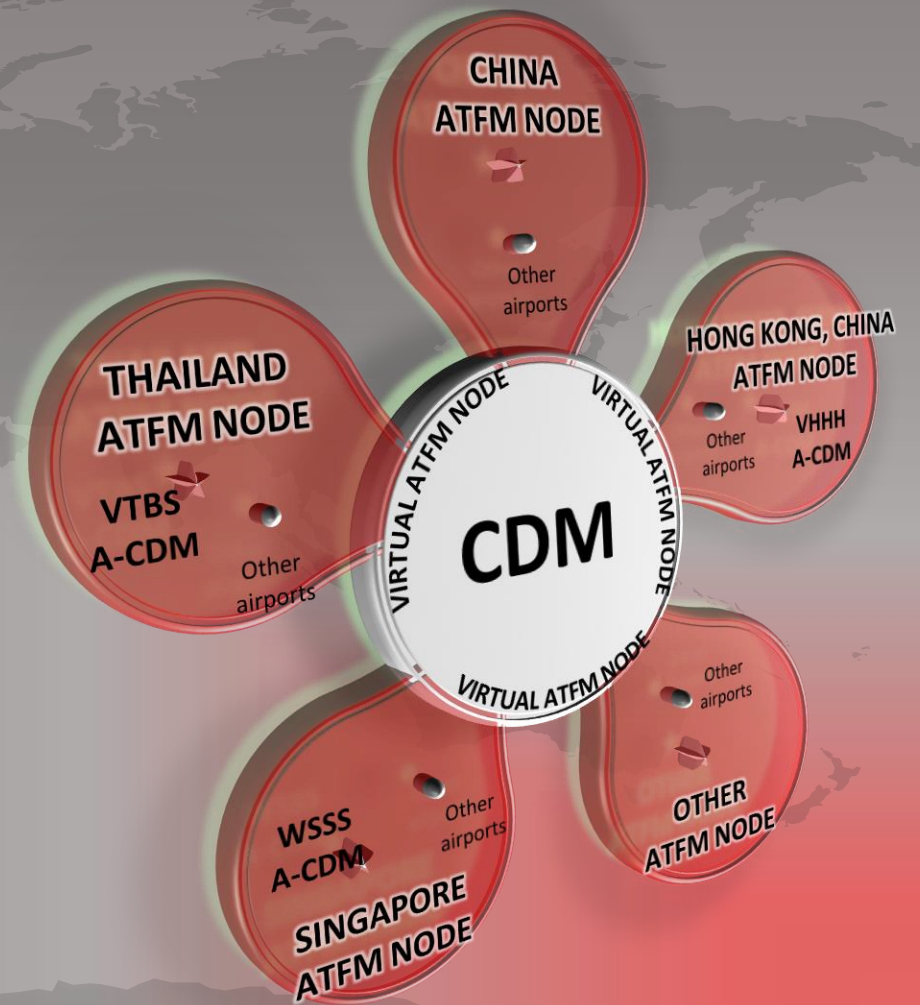
- ❖ Updates on the AMNAC Network
- ❖ Adoption of a Revised ADP Template
- ❖ Network Post-Operations Analysis
- ❖ One CTOT Solution (OCS) Operational Trial
- ❖ The Next Generation ATFM
- ❖ Workshop on FF-ICE
- ❖ Technical Updates



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# *Updates on the AMNAC Network*





# AMNAC Network Updates



Welcome **Viet Nam** as a Level-3 ATFM Node  
*October 2024 onward*



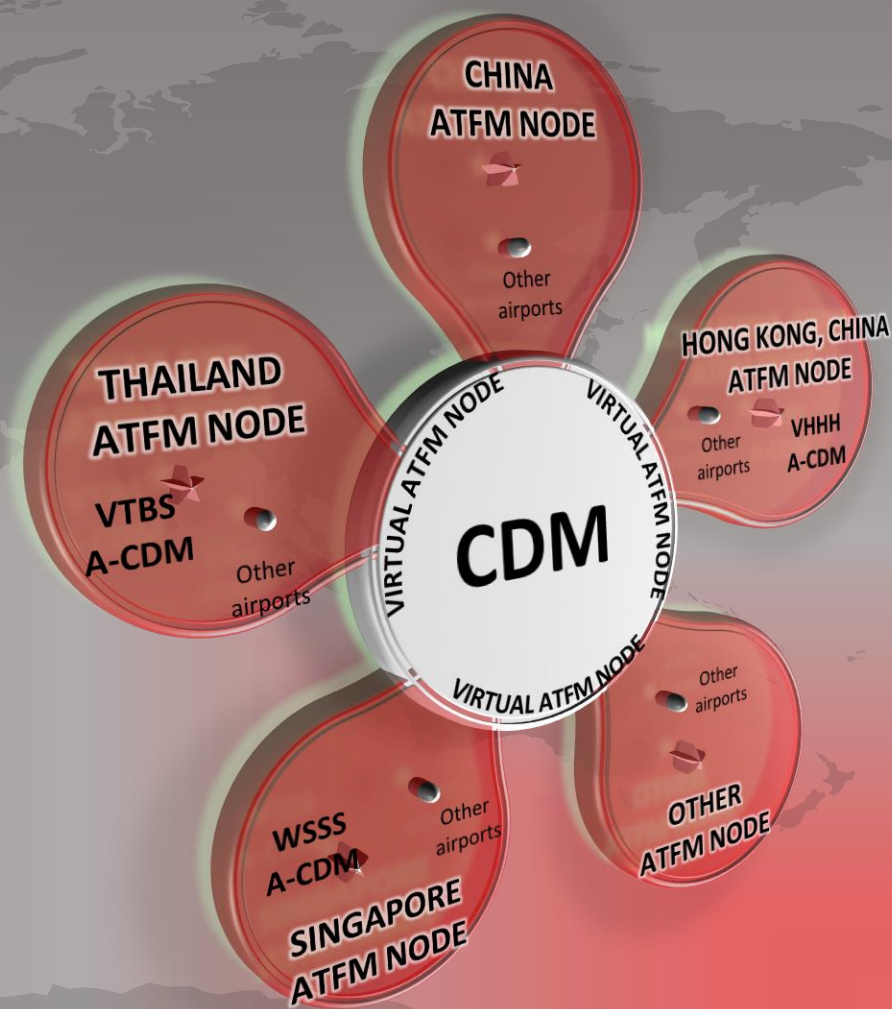
New procedure requiring AMNAC Level-3 prospectus to conduct GDP trials with AMNAC Core Team prior to the upgrade  
*Ref: AMNAC COP v6.1 (paras. 3.11 – 3.13)*



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# *Adoption of a Revised ADP Template*



# Revised ADP Template

- Harmonized use of data fields
- Added clarity on the definition of each data field
- Current distribution procedure retained
- Support further development of XML-based model for SWIM-based “digital” ADP exchange
- **Ref: AMNAC COP v6.1, Annex D**



## Annex D: ATFM Daily Plan (ADP) Template

E-MAIL SUBJECT & FILE NAME: **ADP\_VTBB\_20241015\_1**

ORIGINATOR	ICAO 4 LETTER CODE [E.G. VTBB]
DATE / TIME OF ISSUANCE	DD MMM YYYY / HHMM UTC [E.G. 14 OCT 2024 / 0800 UTC]
VERSION	1

CONSTRAINTS AND IMPACT				
LOCATION	APPLICABLE PERIOD (UTC)		DESCRIPTION	CAPACITY IMPACT
	START	END		
AD or FIR ICAO 4 LETTER CODE	DD MMM YYYY HHMM	DD MMM YYYY HHMM	[FREE TEXT]	[FREE TEXT]
VTBS	14 OCT 2024 2300	15 OCT 2024 1100	TFC CONGESTION	AAR = 32
VTBB SECTOR 1S	15 OCT 2024 0200	15 OCT 2024 1100	TFC CONGESTION	(Nil)

ATFM MEASURE			
LOCATION	APPLICABLE PERIOD (UTC)		DESCRIPTION
	START	END	
AD or FIR ICAO 4 LETTER CODE	DD MMM YYYY HHMM	DD MMM YYYY HHMM	[FREE TEXT]
VTBS	14 OCT 2024 2300	15 OCT 2024 1100	GDP FOR FLT DEST VTBS
VTBB SECTOR 1S	15 OCT 2024 0200	15 OCT 2024 1100	GDP FOR FLT INTO 1S DEST VTBD, VTBS, VTBU DURING CONGESTION (FLOW RATE: MINIT = 4)

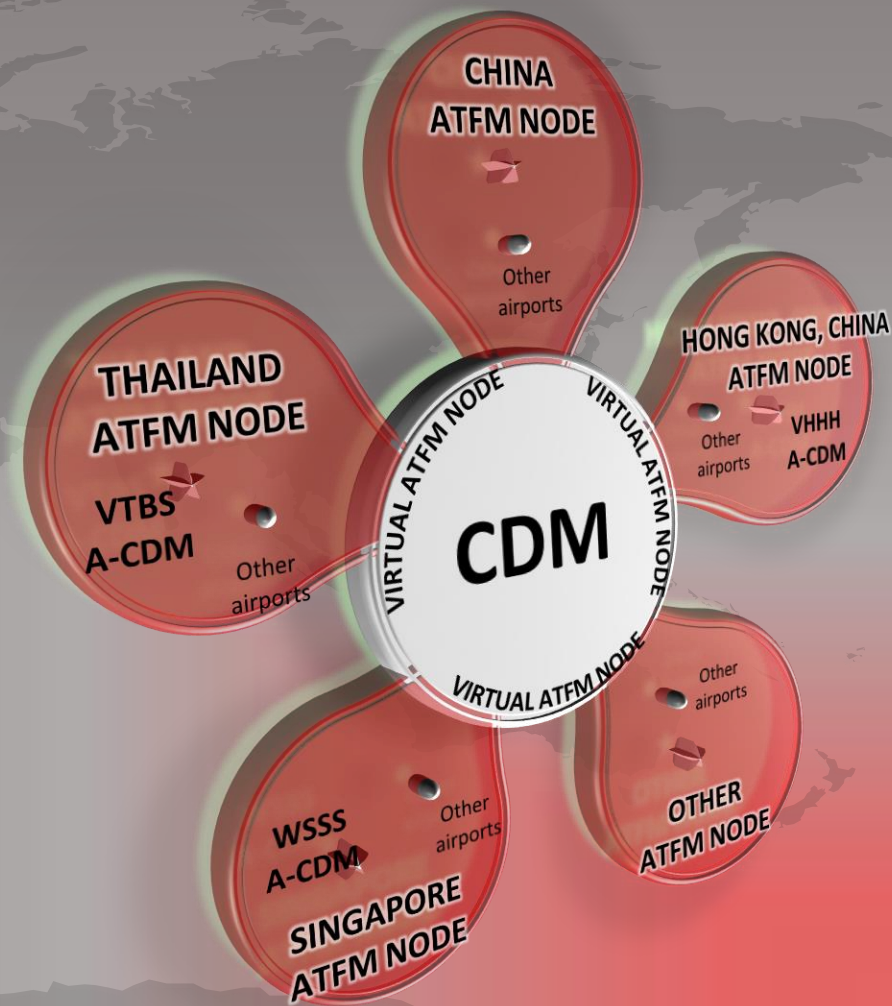
OTHER INFORMATION
Bangkok ATFMU Contact Information E-Mail: <a href="mailto:atfm@bobcat.aero">atfm@bobcat.aero</a> Phone: +66 2287 8024 / +66 2287 8025 CTOT View Page: <a href="https://atfm.aerorhai.aero">https://atfm.aerorhai.aero</a>



# *Network*

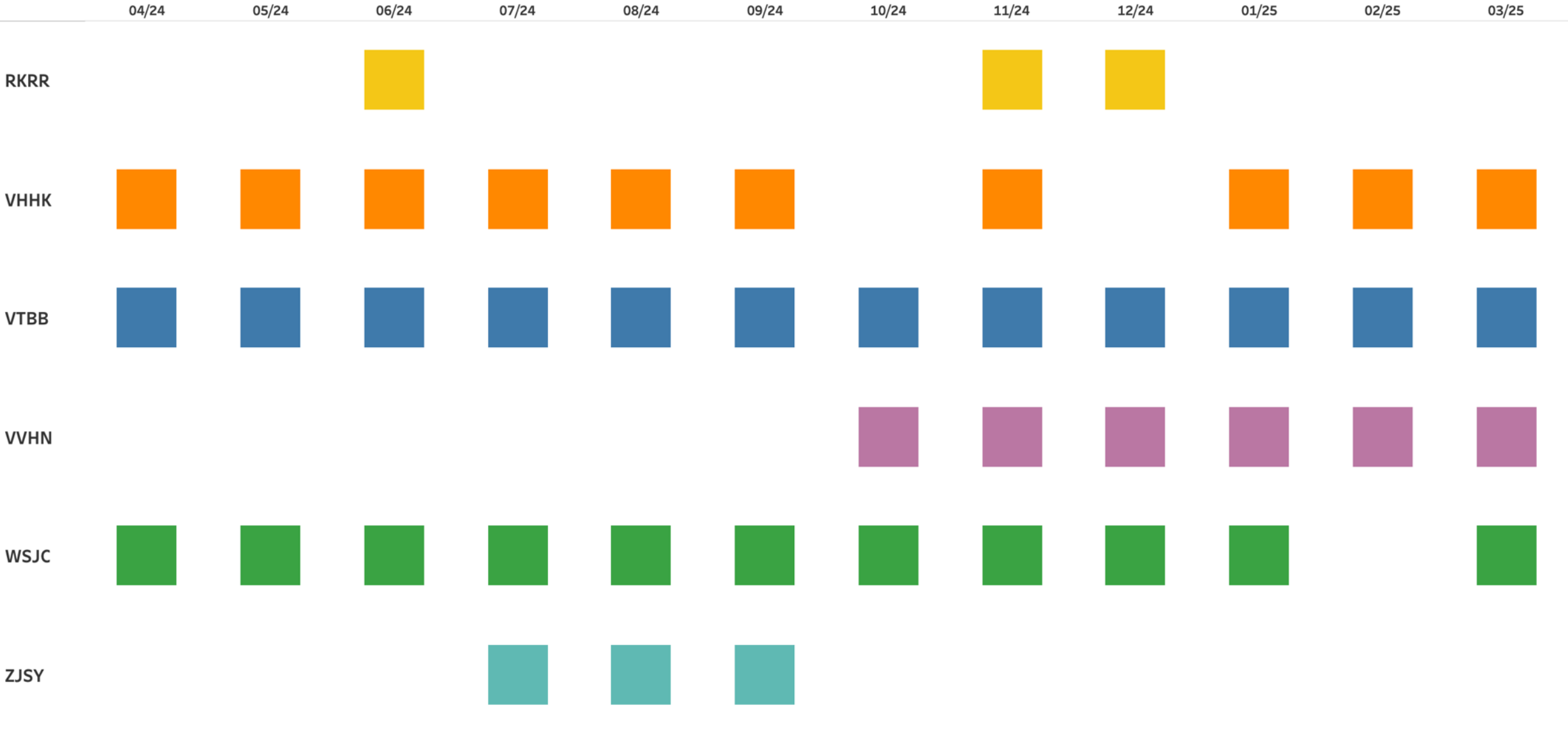
## *Post-Operations Analysis*

### *April 2024 – March 2025*



# Where Data Came From

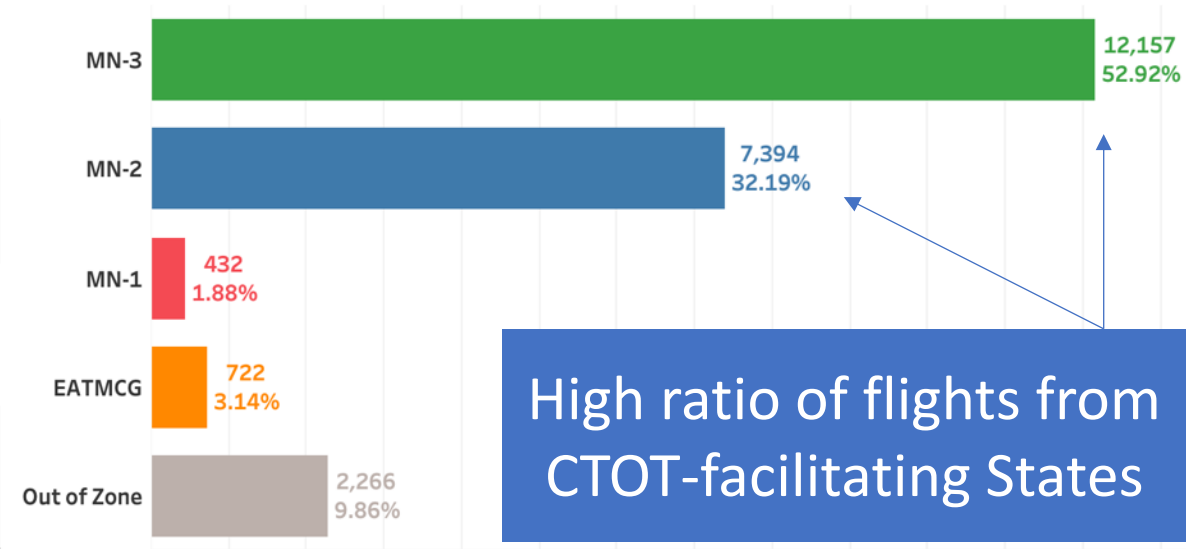
This chart indicates the Nodes that have submitted the data for each month.



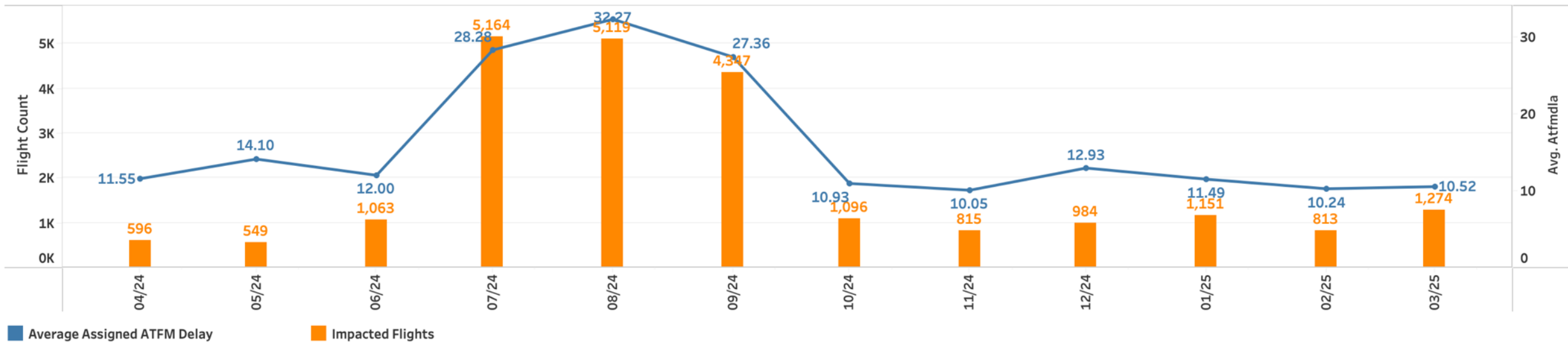
# Overall Network Impact

	ZJSY	VTBB	WSJC	VHHK	VVHN	RKRR
Impacted Flights	11,909	8,001	1,824	1,025	135	77
# of ATFM Days	92	365	44	33	31	4
Total Assigned ATFM Delay	400,456	70,022	27,060	21,966	4,011	1,810
Average Assigned ATFM Delay	33.63	8.75	14.84	21.43	29.71	23.51

Flight Count by ADEP Levels (Initiating ATFMU: All)

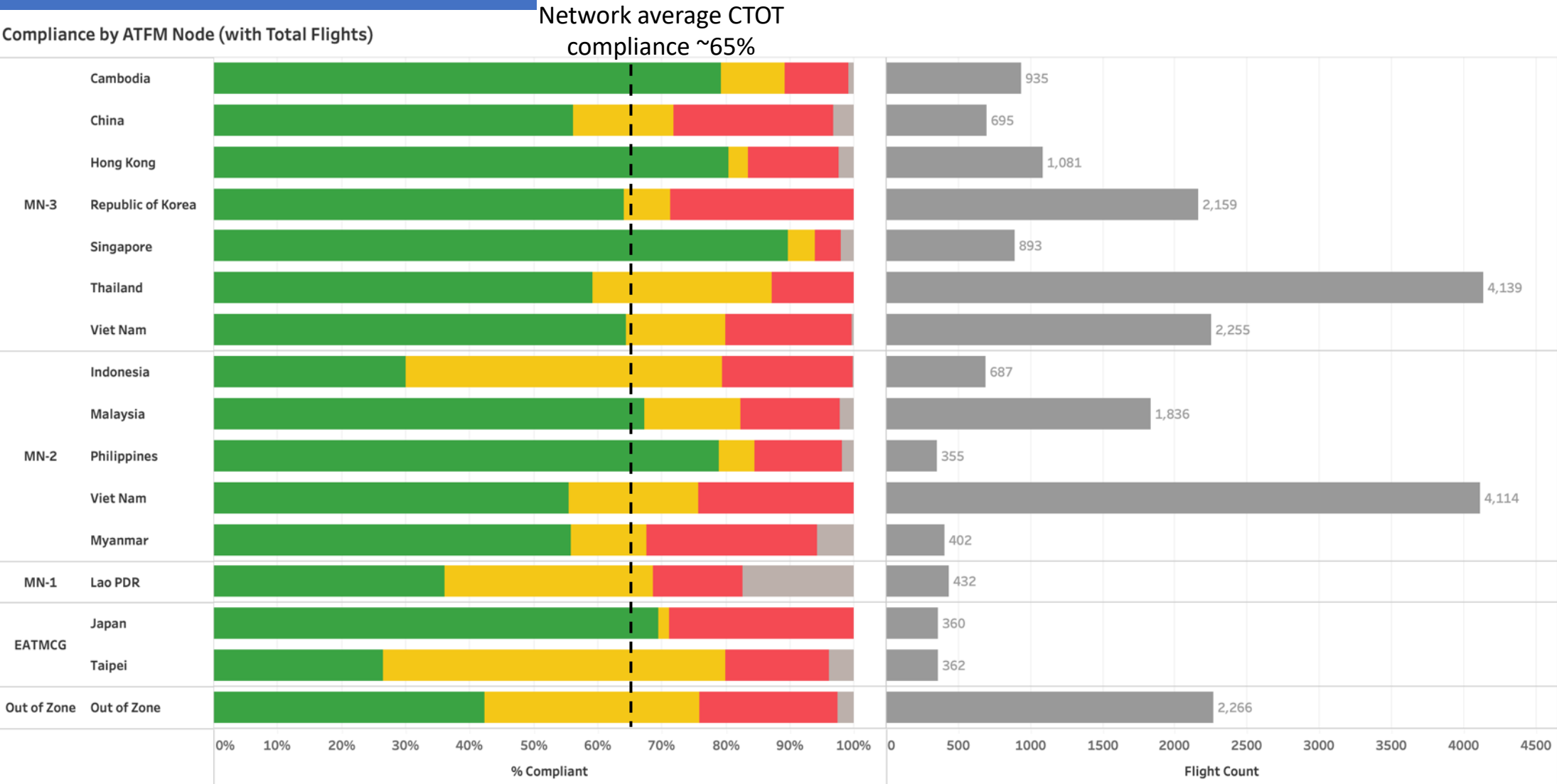


Flight Count & Average ATFM Delay (Initiating ATFMU: All)



# Compliance Assessment

Still some issues with CTOT compliance that need to be addressed



Compliant

Early

Late

No Info



# Filtered Compliance Feature

## Filtered Departure CTOT Compliance

Year: 2024  
Initiating ATFMU: VTBB  
Airline: All  
Departure Country & Airport: Singapore / All

### Filters

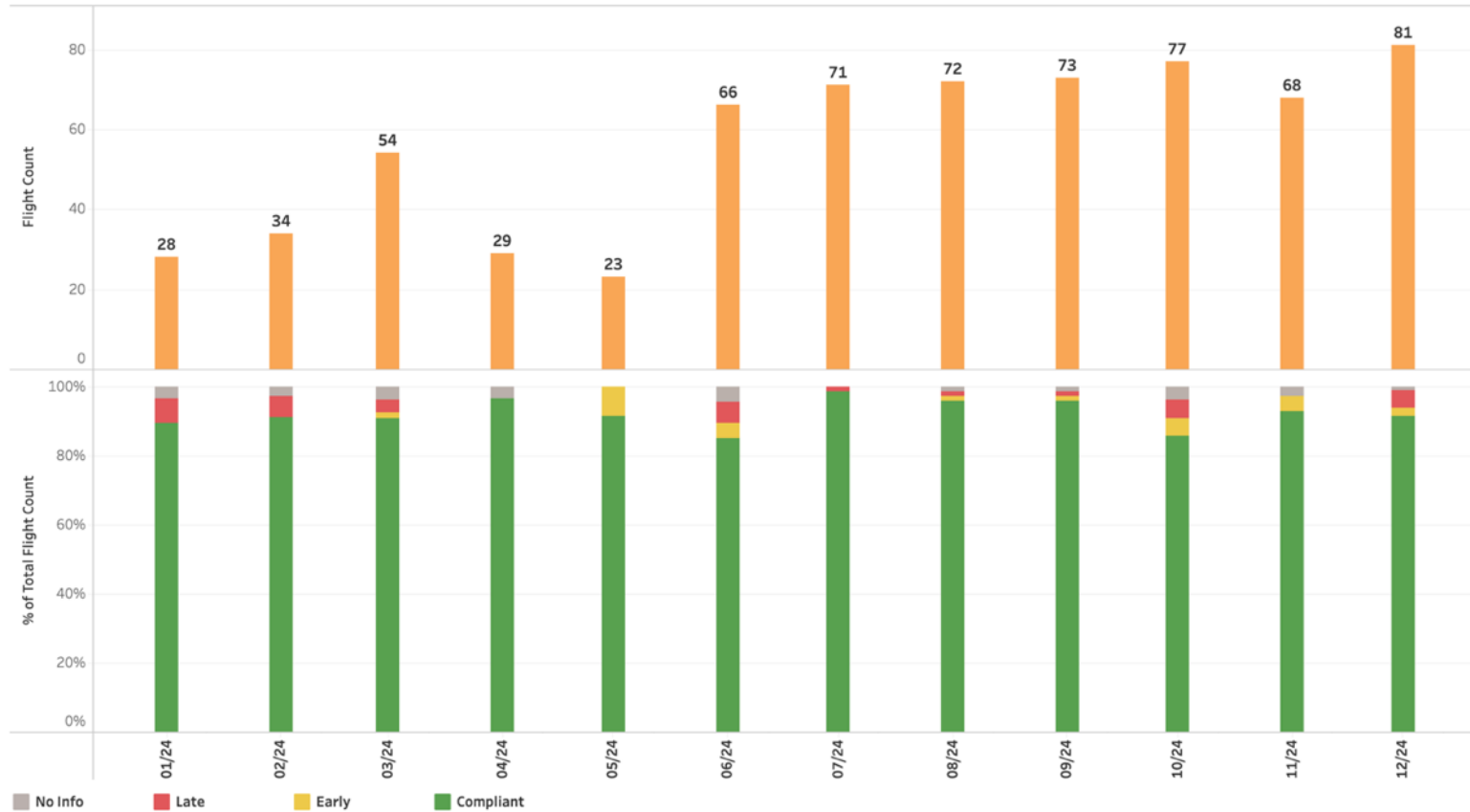
Year  
2024

Initiating ATFMU  
VTBB

Airline  
(All)

ADEP Country  
Singapore

Departure Airport  
(All)



Use “Filtered Compliance”  
tab for a detailed review





# Areas of Improvement

- ☐ Compliance performance from Level-2 and Level-3 ATFM nodes (improving, but can be better)
- ☐ Mismatches between compliance reporting from Initiating ATFM Node and Facilitating ATFM Node
- ☐ Identification of causes and exact locations of ATM resources creating ATFM delays
- ☐ Feedback mechanism to capacity enhancement forums

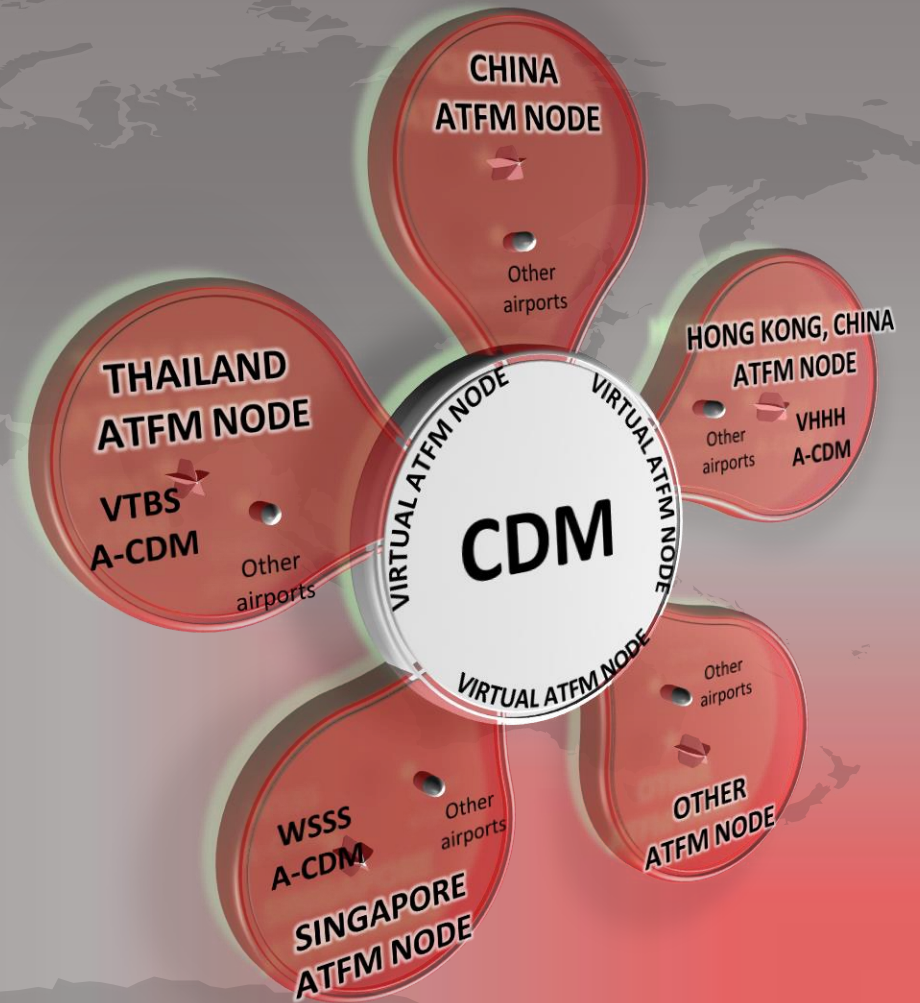


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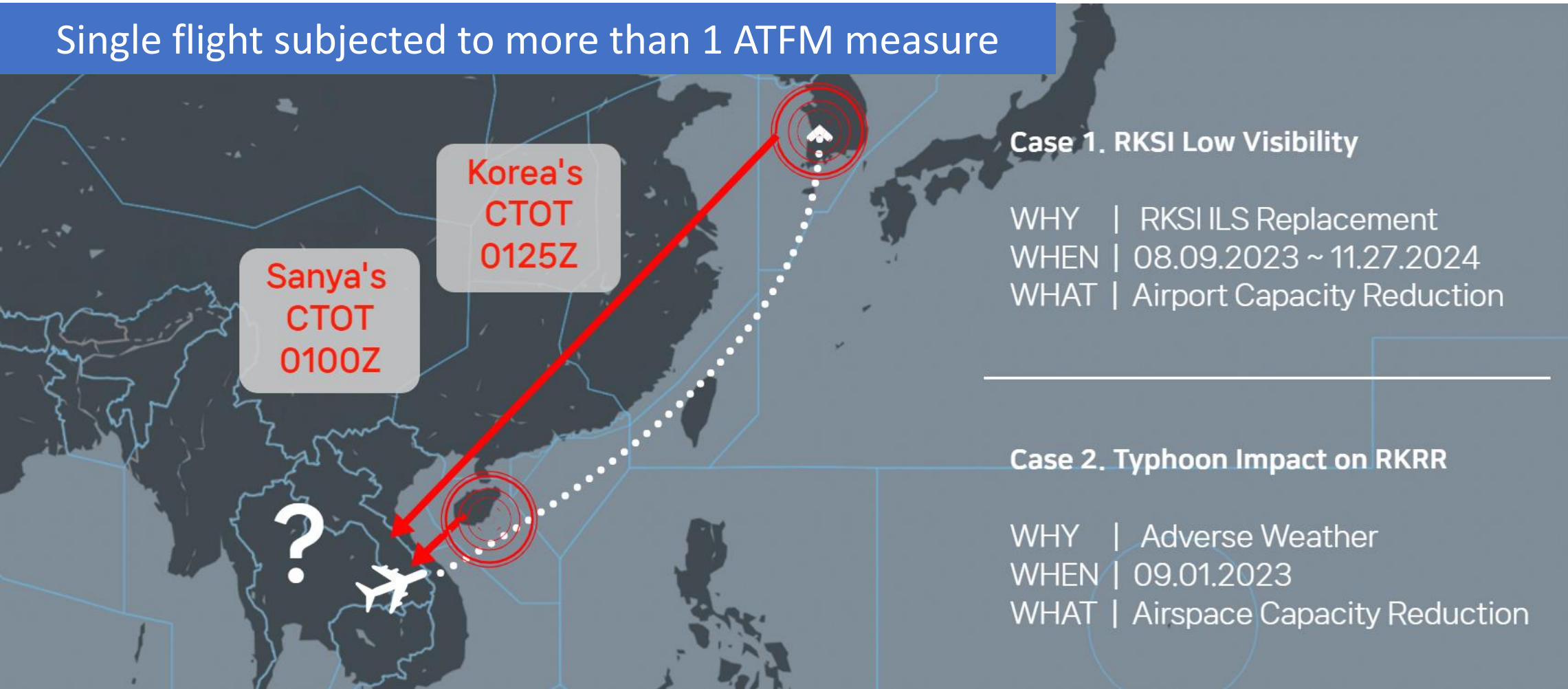
# *One CTOT Solution (OCS) Operational Trial*





# Recap on Conflicting ATFM Measures

Single flight subjected to more than 1 ATFM measure



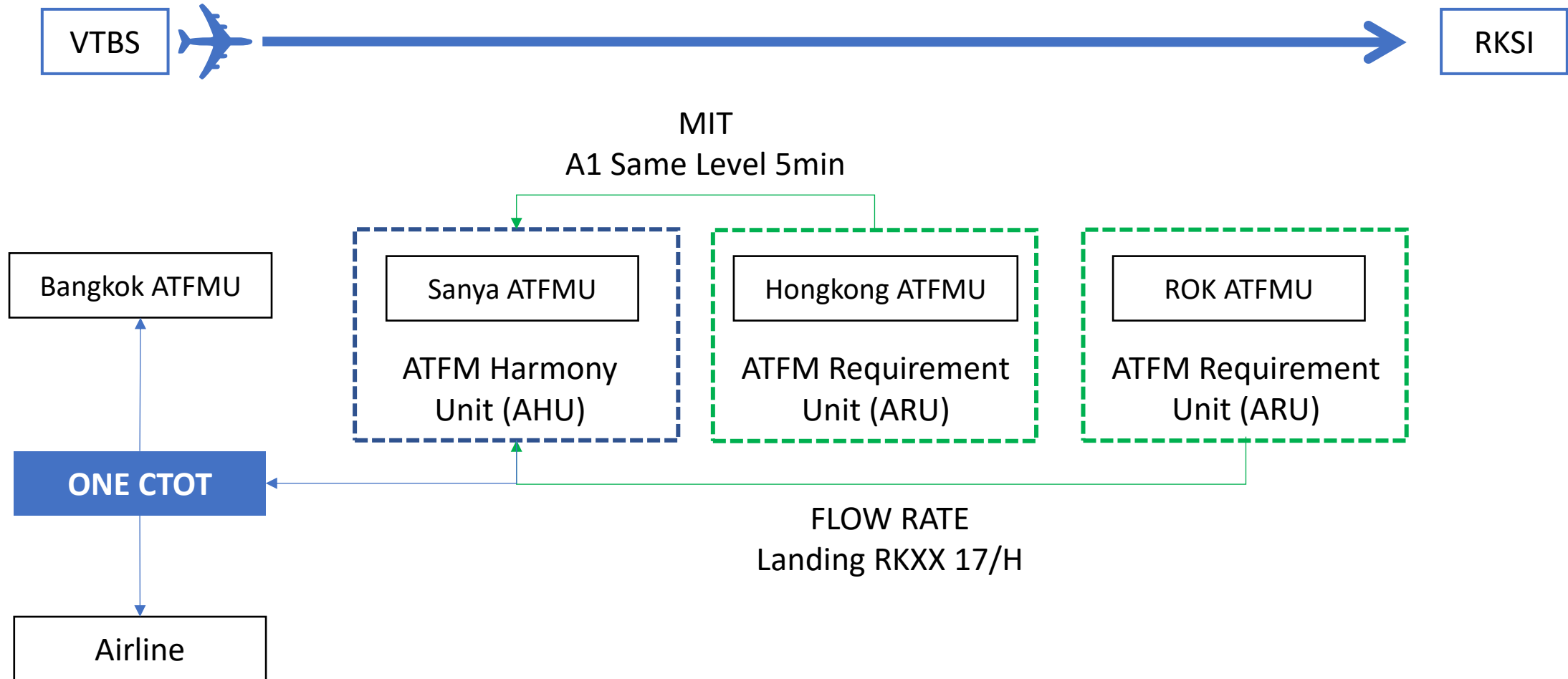
Courtesy: ATMO, Republic of Korea



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# Recap on One CTOT Solution (OCS) Concept





# Findings from OCS Operational Trials



Courtesy: ATMB, China

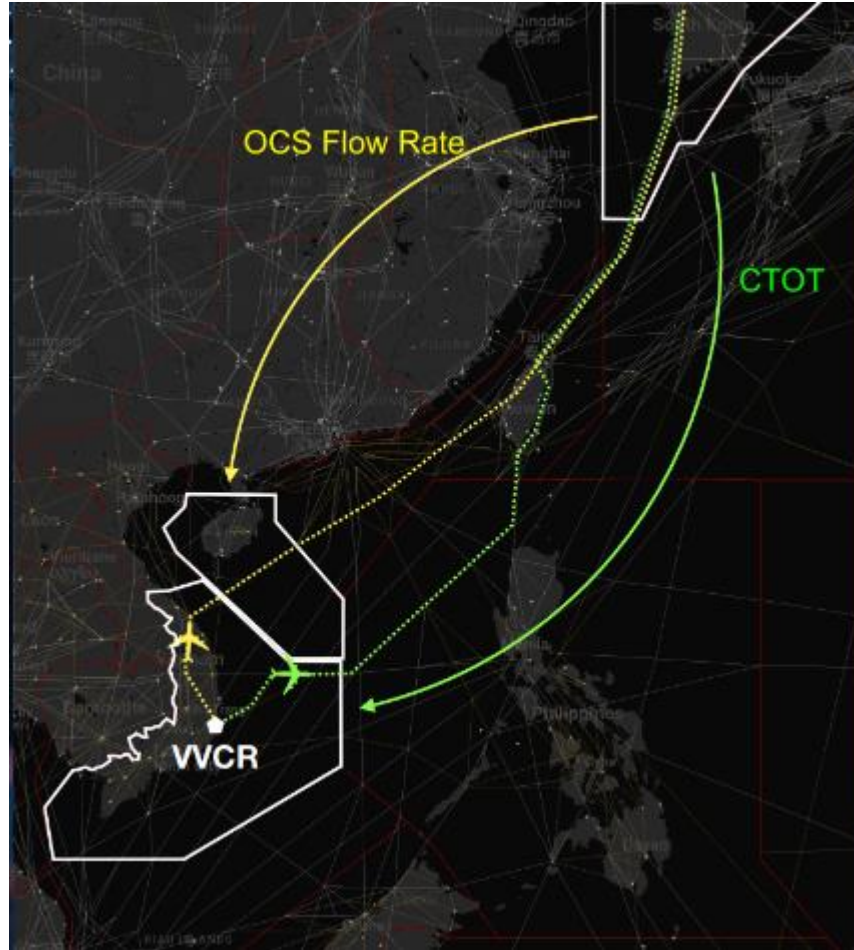
- Effective in regulating the traffic flow
- Confusion among facilitating ATFM Nodes on CTOT coordination during initial phase
- Suggested for upstream AHU to share CTOTs with downstream ARU for better traffic demand planning



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# Issues and Challenges arising from operational trial



- Lack of transparency in stating the source(s) of ATFM delays
- Airspace user file for route change with CHG to avoid ground delay, resulting in insufficient dissemination lead time when CTOT is re-issued by ARU

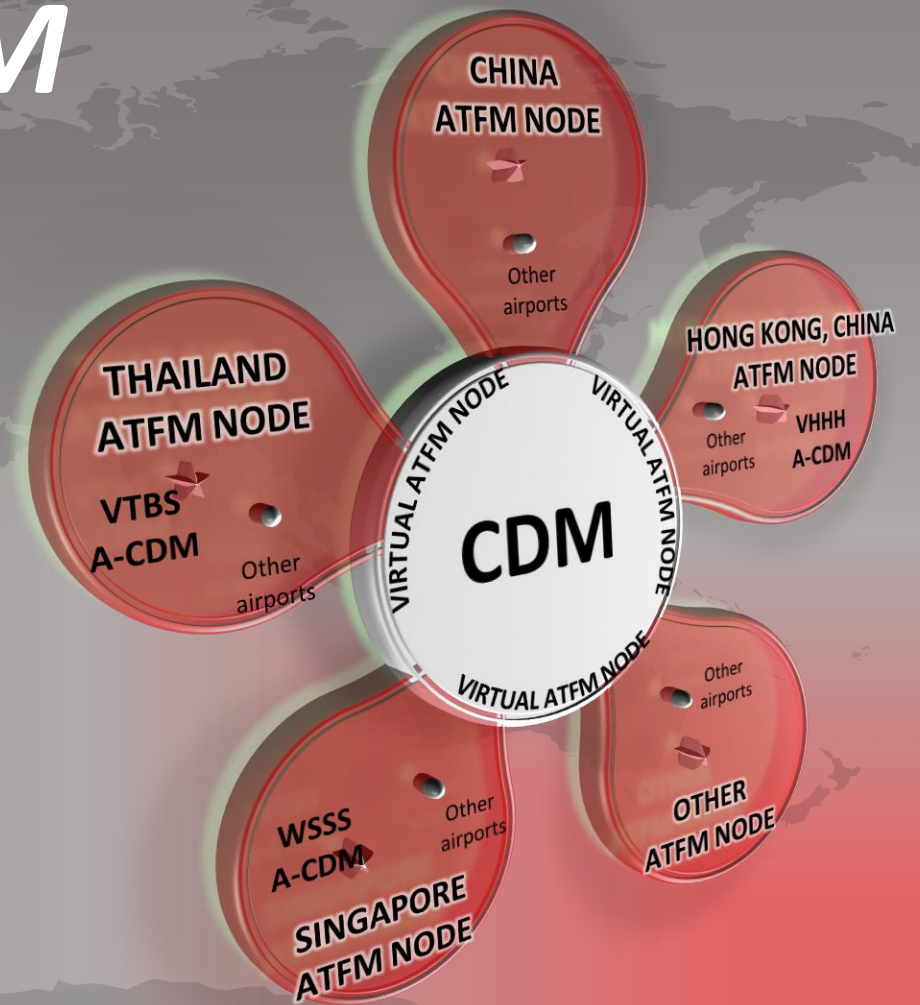
Courtesy: ATMO, Republic of Korea



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# *The Next Generation ATFM*





# Arising Issues and gaps in Distributed Multi-Nodal ATFM Network Concept

Frequent Occurrences of conflicting ATFM measures

Focused more on local optimization as opposed to cross-border optimization

➤ Workshop was conducted in March 2025 to discuss on how current ATFM operations could be improved

High Cost of ATFM implementation

Slow uptake/progress of ATFM implementation

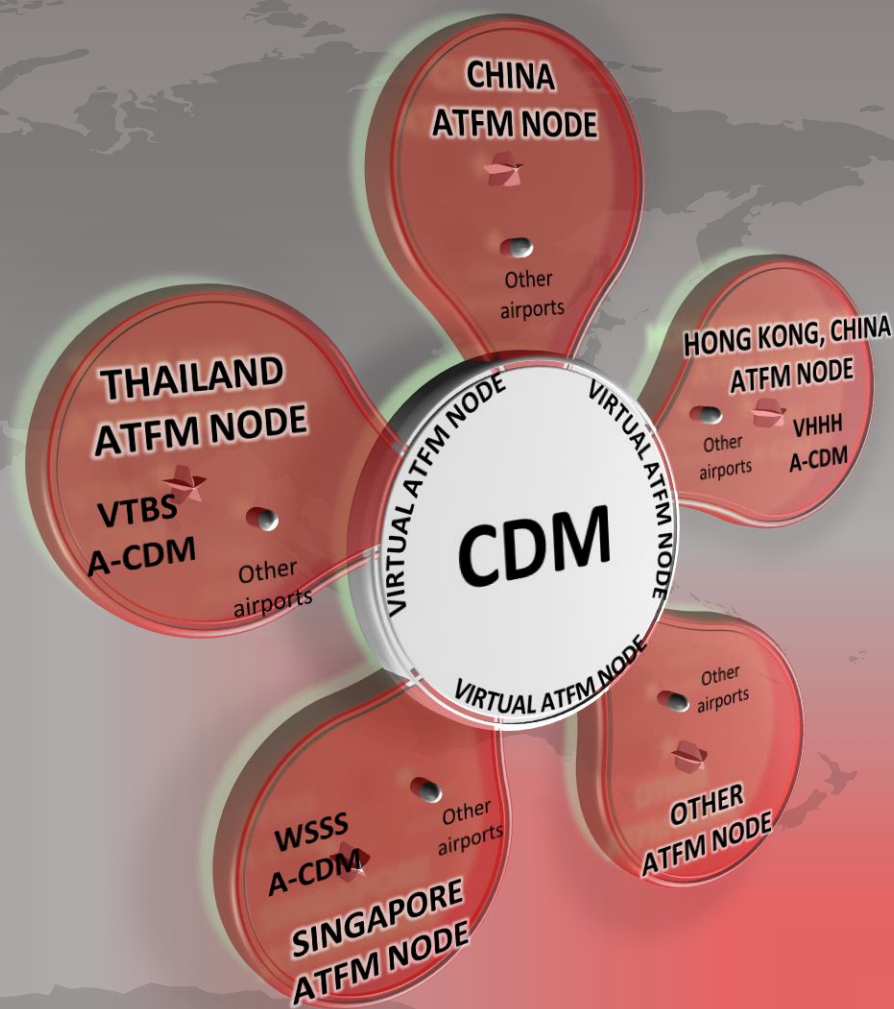
**More details in another WP**



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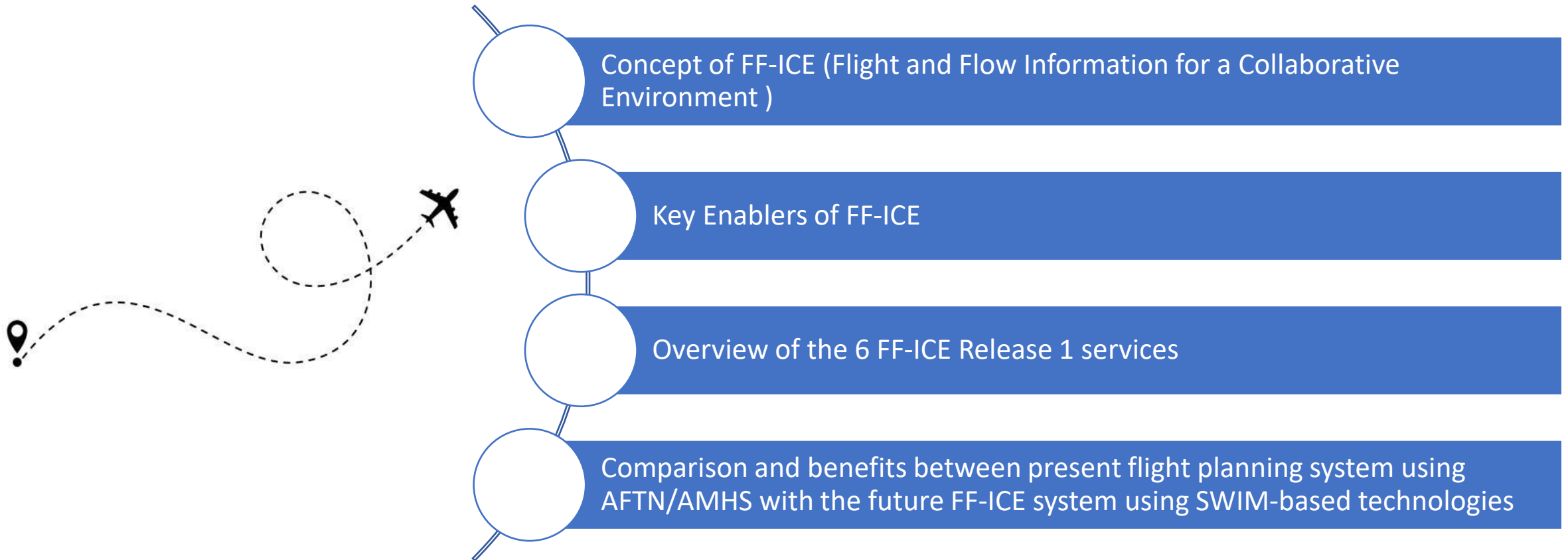


# *Workshop on ATFM and FF-ICE*





# Topics covered during the Workshop



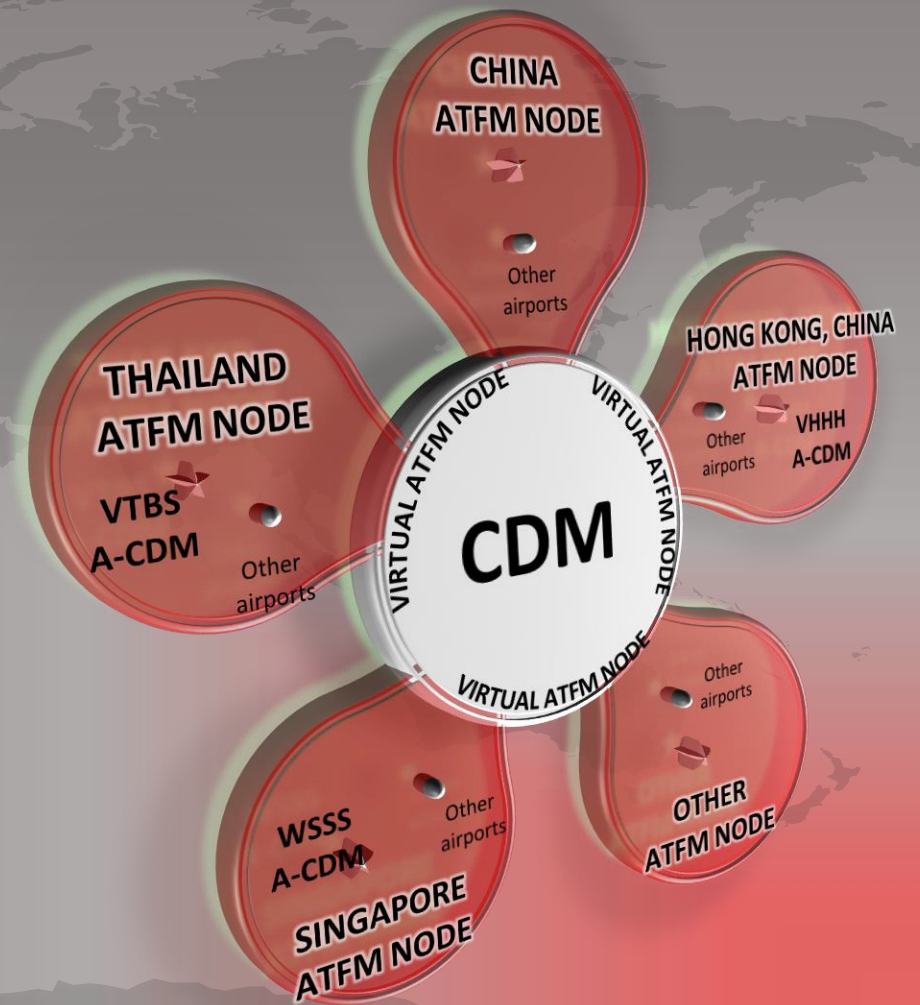
Concerns were raised on the excessive coordination, especially for flights passing through multiple FIRs



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# *Technical Updates*



# Summary of Technical Updates

# FIXM Version Change Process

The AMNAC TSG developed a change process for the revision of the common FIXM version to support information exchange in Asia Pacific

# Update on FIXM V4.3 Extension Development for APAC

The AMNAC TSG identified data fields required for cross-border ATFM operations and discussed on mapping these data fields with data attributes of FIXM v4.3 Core and the necessity for an extension

# Amendment to APAC AFTN/AMHS-Based ICD for ATFM

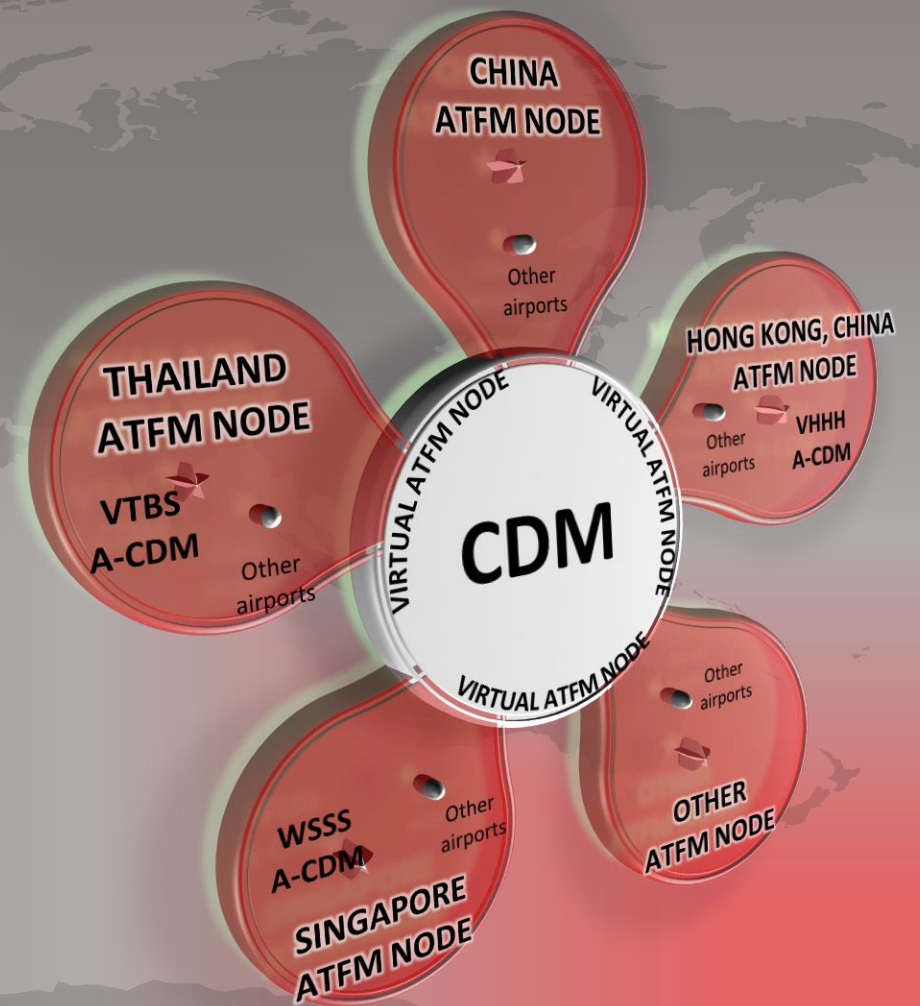
The AMNAC Core Team agreed to adapt the full REGCAUSE codes from the EUCONTROL's ATFCM Users' Manual and harmonise the use of REGUL



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# *Related Working Papers*



# Other Related Working Papers

WP	Title
WP/16	Outcomes from the Special Topic Meeting on the Future of Asia-Pacific ATFM
WP/07	Update on FIXM V4.3 Extension Development for Asia/Pacific Region
WP/24	Establishment of a Change Process of FIXM Version for Asia/Pacific Cross-Border Operational ATFM System-to-System Information Exchange in SWIM
WP/06	Amendments to Asia/Pacific Region AFTN/AMHS-Based Interface Control Document for ATFM, Version 2.0





# Action by the Meeting

- a. Note the information contained in this paper
- b. Note the good progress made by AMNAC and its invitation to other States/Administrations to participate in the collaboration
- c. Discuss any relevant matters as appropriate



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# *Thank You!*

