



From BOBCAT to Cross-Border ATFM

IATA-ICAO Cross-Border ATFM Workshop

3 – 4 September 2015

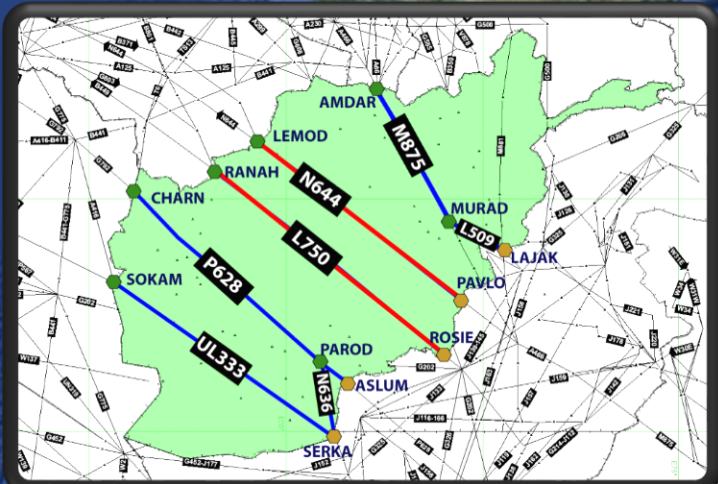
Delhi, India



Piyawut Tantimekabut (Toon)
Air Traffic Management Network Manager
Network Operations ATM Centre, AEROTHAI

Collaborative ATFM through Afghanistan

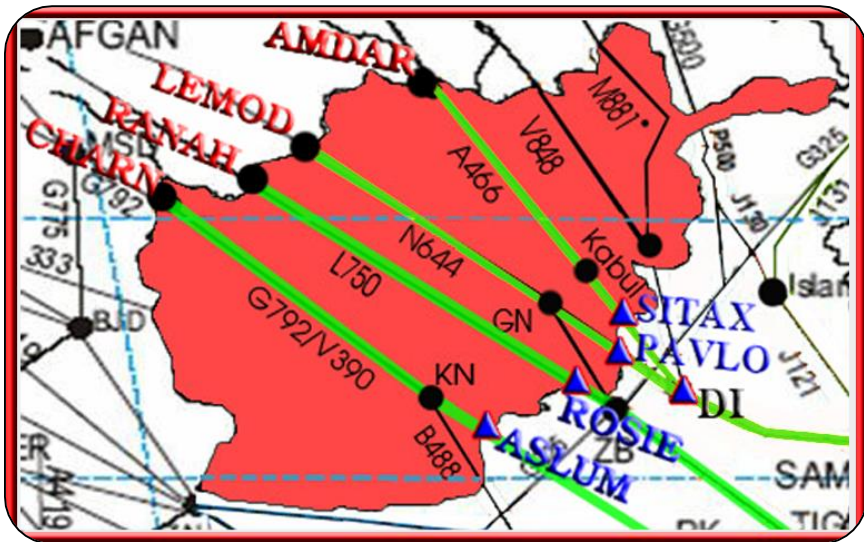
BOBCAT



es/Spot Image
ate Geographer
S. Navy, NGA, GEBCO
pa Technologies

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Why ATFM Procedure using the Bay of Bengal Cooperative ATFM System (BOBCAT)?



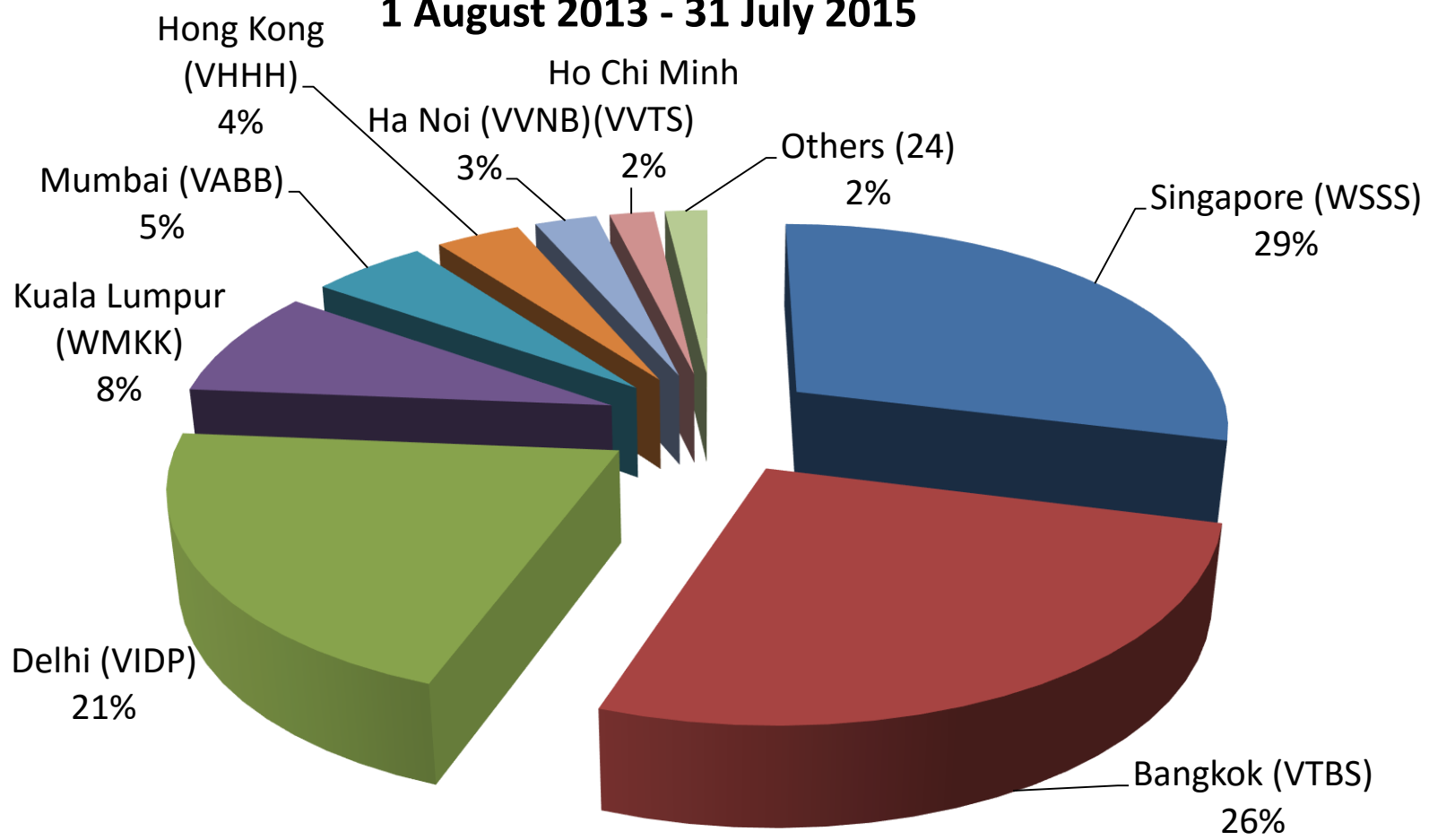
- Afghanistan airspace capacity
 - Military Operations
 - Lack of RVSM
- Uncoordinated Departures
- Westbound Night Time Traffic :
European Curfew
- Traffic Increase



Traffic Distribution: Departure Aerodromes



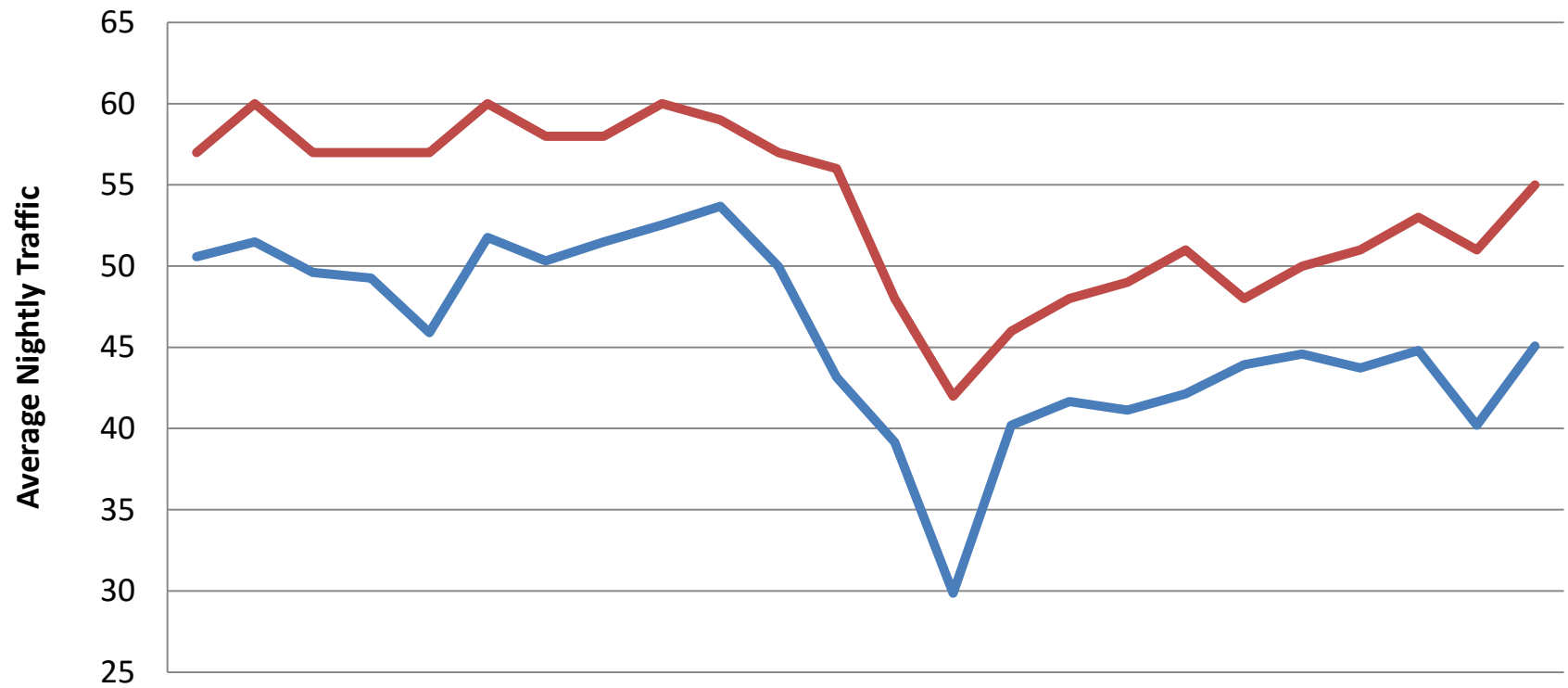
BOBCAT Slot Request by Departure Airport 1 August 2013 - 31 July 2015



BOBCAT Traffic Demand



BOBCAT Traffic Demand from Slot Request 1 Aug 2013 - 31 Jul 2015



	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14	Jul 14	Aug 14	Sep 14	Oct 14	Nov 14	Dec 14	Jan 15	Feb 15	Mar 15	Apr 15	May 15	Jun 15	Jul 15
Average	51	52	50	49	46	52	50	51	53	54	50	43	39	30	40	42	41	42	44	45	44	45	40	45
Series2	57	60	57	57	57	60	58	58	60	59	57	56	48	42	46	48	49	51	48	50	51	53	51	55



Benefits

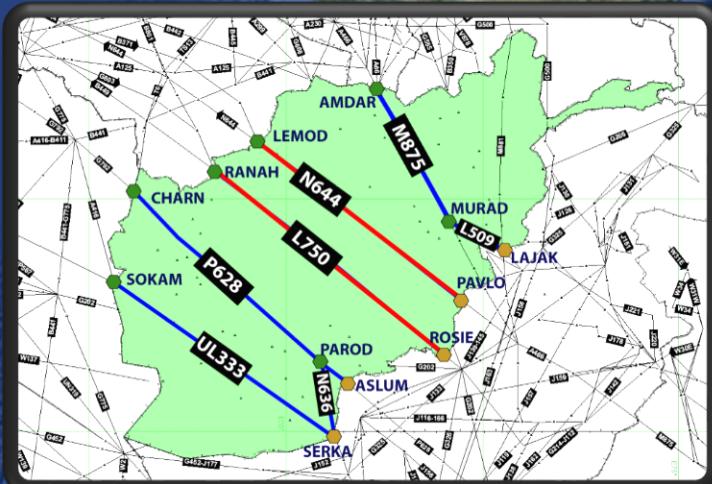


- Regularity of departures
- Orderly Afghanistan entry
- Optimal FL achieved (80 – 90% in Afghanistan)
- Reroutes and technical stops eliminated
- Reduction of ATCO and flight crew workloads
- Environmental Outcome (Jul 2007 – Jul 2015):
 - **Estimated Airline Cost Savings: USD 107 million**
 - **Estimated Fuel Savings: 107 million kg**
 - **Estimated Emissions Savings: 432 million kg**
 - Based on IATA estimates in 2007



Collaborative ATFM through Afghanistan

BOBCAT



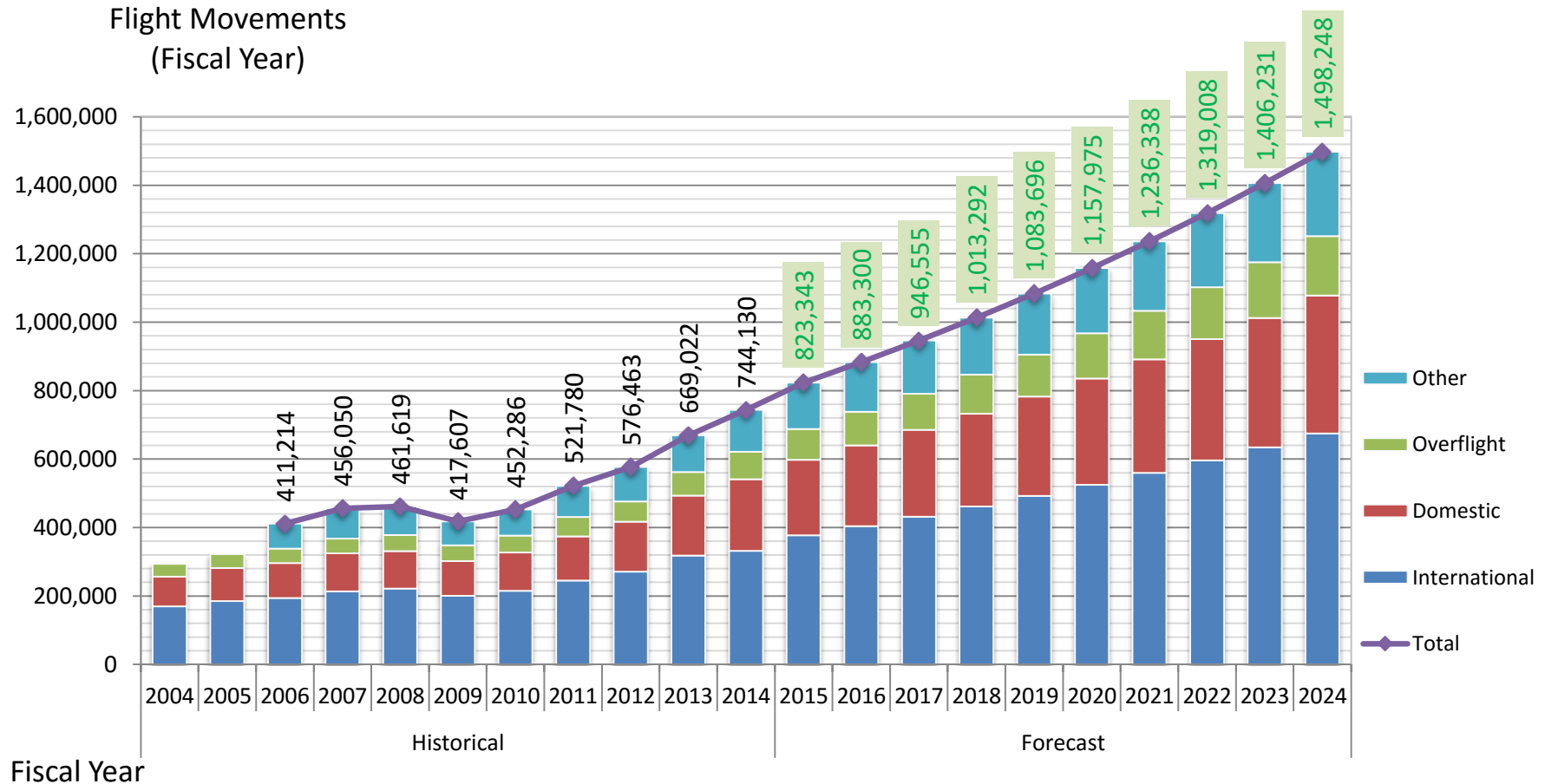
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ate Geographer
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Thailand Air Traffic Demand



Flight Movements in Bangkok FIR FY2004 - 2014 and Forecast for FY2015 - 2024



Thailand Air Traffic Demand

North

148,593 Flights/Year
407 Flights Daily
Overall GR: **23.2%**

	Volume	GR
Int'l	57%	26.5%
Dom	38%	20.5%
Overfly	5%	8.6%

East/North East

182,610 Flights/Year
500 Flights Daily
Overall GR: **11.3%**

	Volume	GR
Int'l	64%	4.0%
Dom	25%	46.2%
Overfly	11%	0.1%

West

109,558 Flights/Year
300 Flights Daily
Overall GR: **-1.4%**

	Volume	GR
Int'l	70%	-2.2%
Dom	0%	
Overfly	30%	0.8%

South

237,881 Flights/Year
652 Flights Daily
Overall GR: **7.0%**

	Volume	GR
Int'l	35%	2.1%
Dom	55%	11.1%
Overfly	10%	3.8%

Note: Annual Growth Rate / Data up to 31 Jun 2015

3-4 Sep 2015

©BCAT to Cross-Border ATFM

Capacity vs Demand – Bangkok ACC Sectors

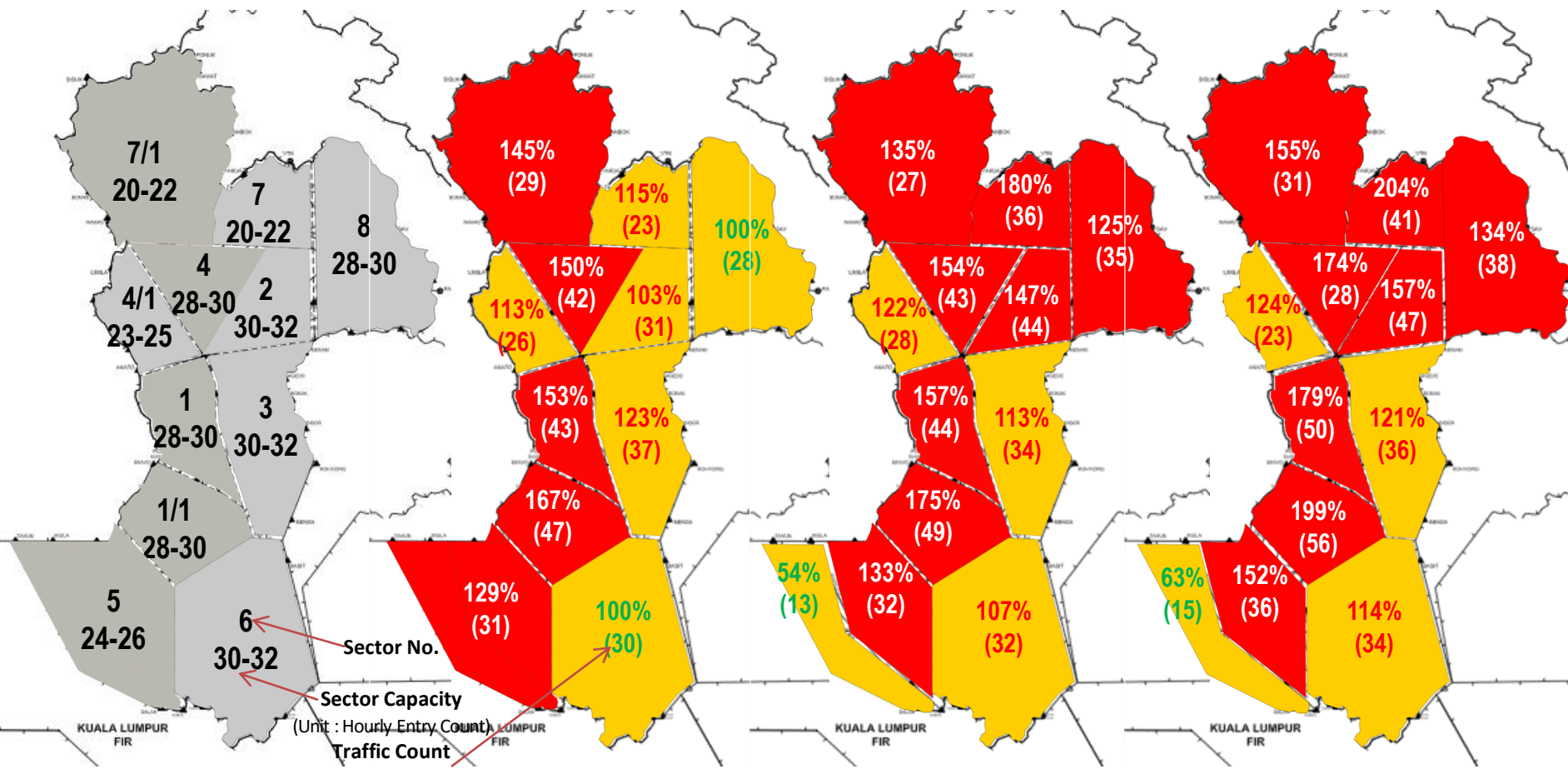


Capacity Aug 2013

Capacity vs Peak Hourly Traffic 2014

Capacity vs Peak Hourly Traffic 2015*

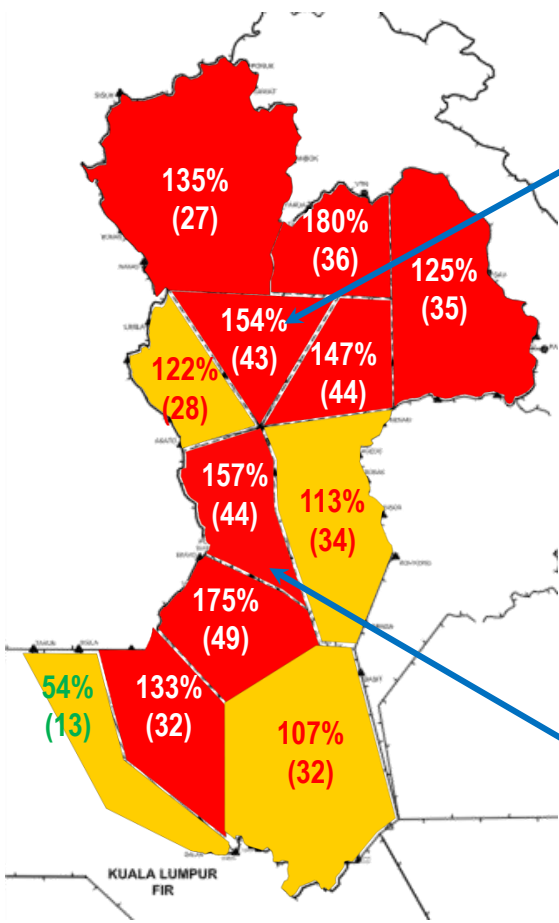
Capacity vs Peak Hourly Traffic 2016**



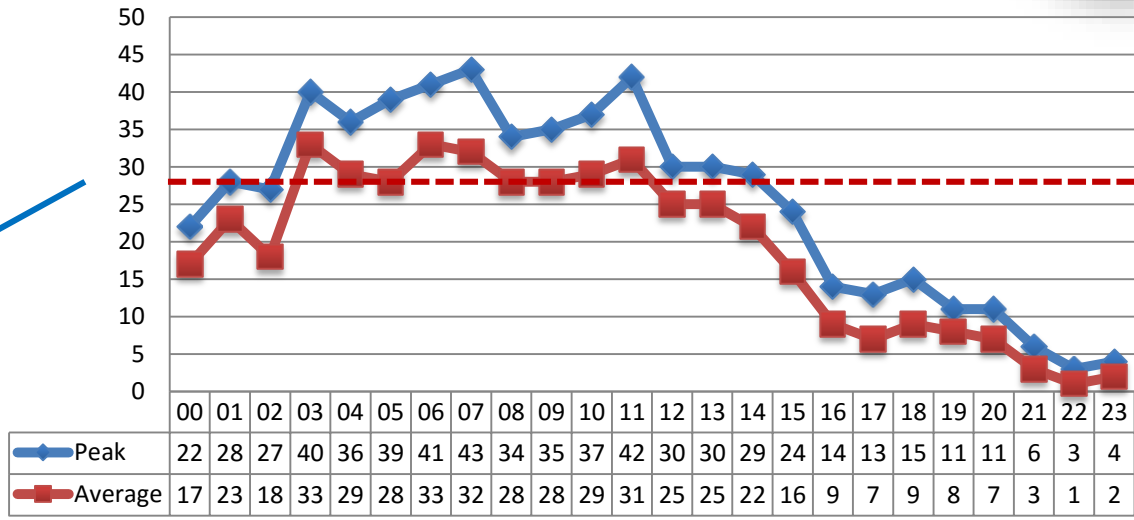
Capacity vs Demand – Bangkok ACC Sectors



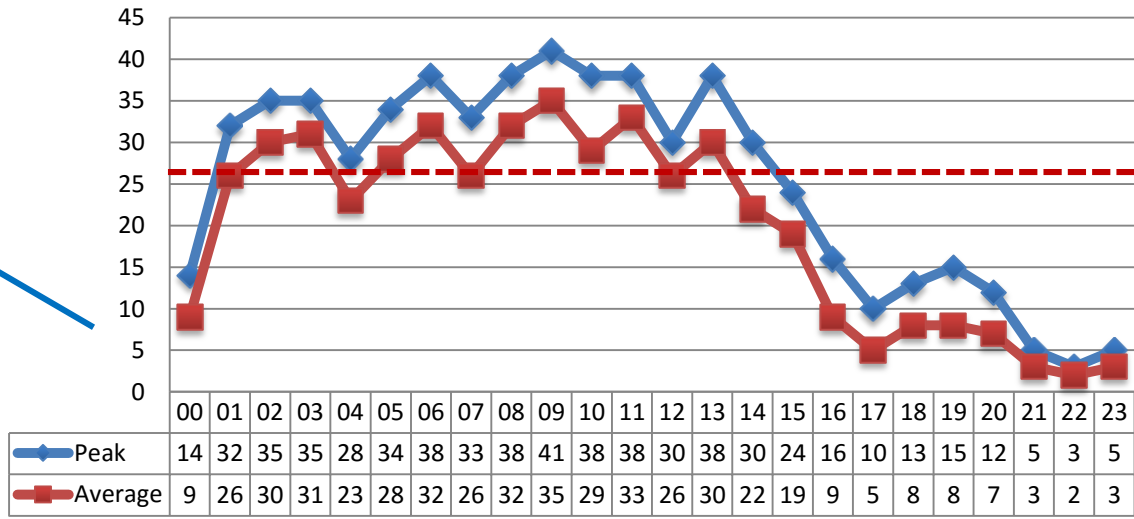
Capacity vs Peak Hourly Traffic 2015*



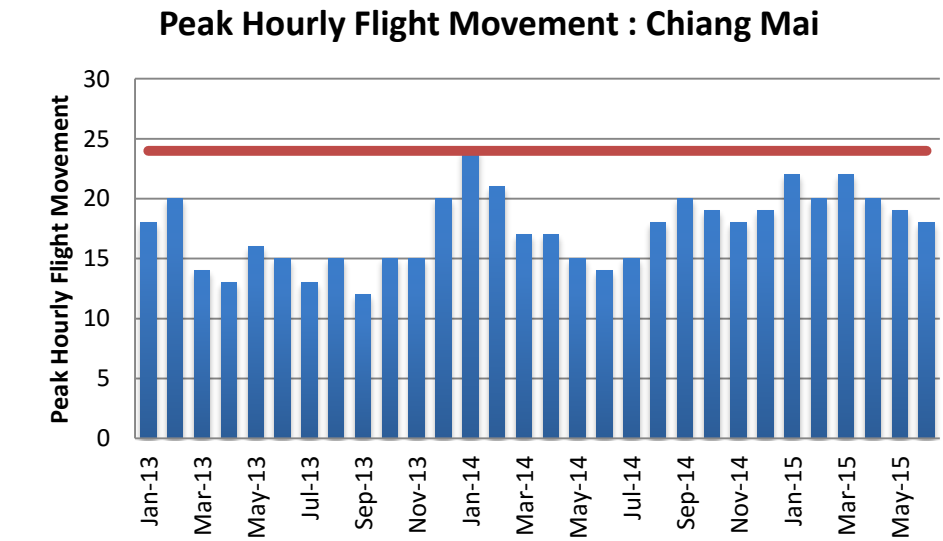
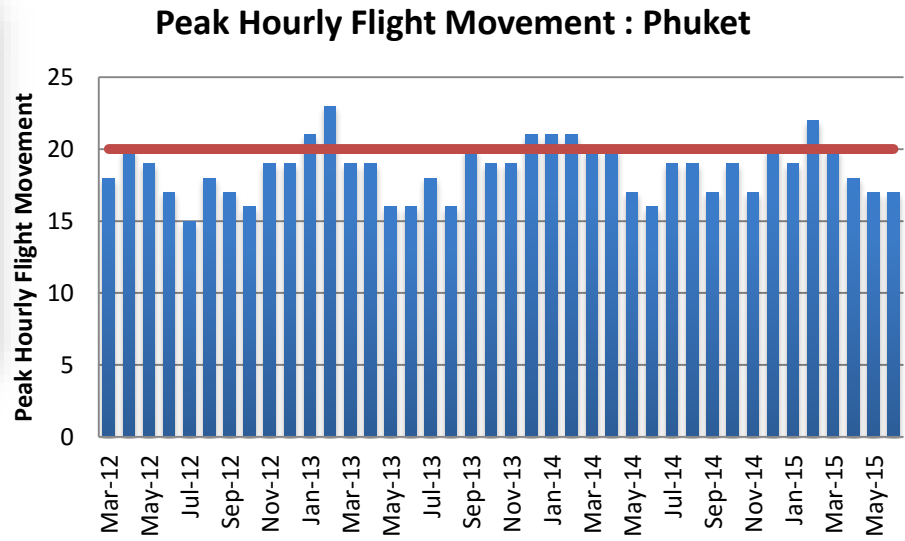
Hourly Traffic Volume - January 2015 - Sector4



Hourly Traffic Volume - January 2015 - Sector1



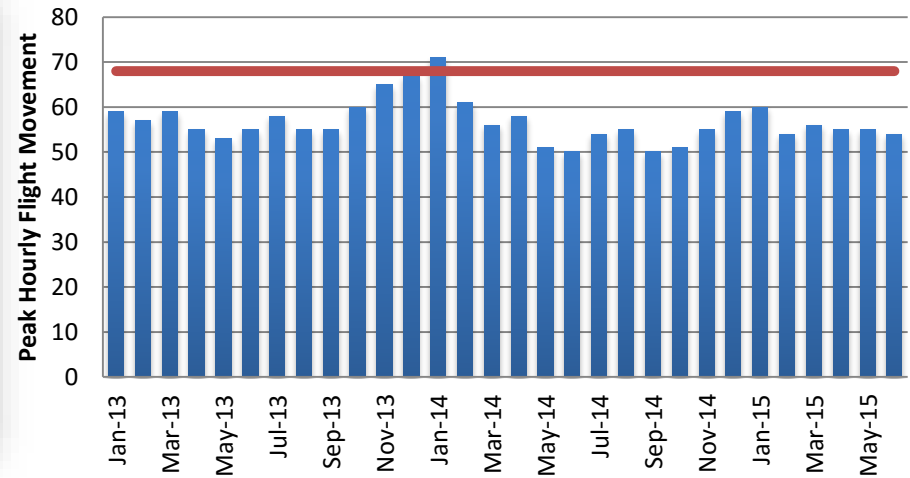
Capacity vs Demand - Chiang Mai & Phuket



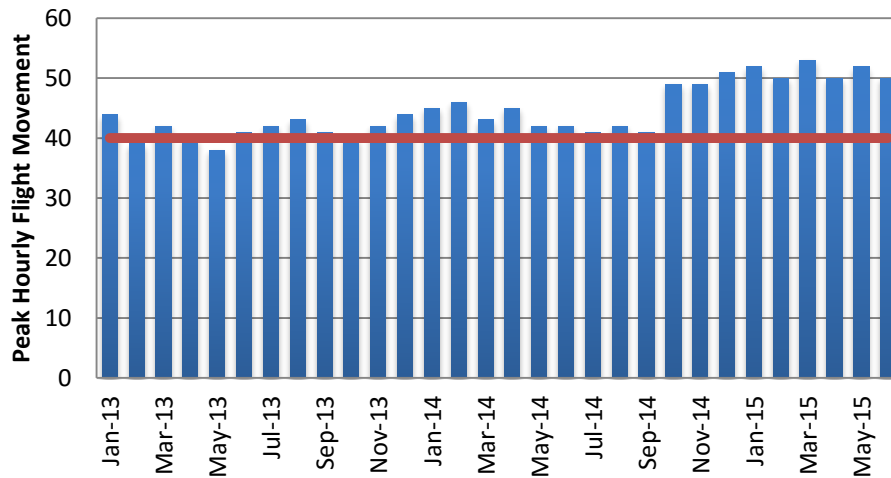
Capacity vs Demand – Bangkok Airports



Peak Hourly Flight Movement : Suvarnabhumi



Peak Hourly Flight Movement : Don Mueang



CANSO Bangkok-Singapore Whole-Flight CDM (2011-2012)

Thailand and Singapore
CNS/ATM SYSTEM



CAAS
Civil Aviation Authority of Singapore



Supported by

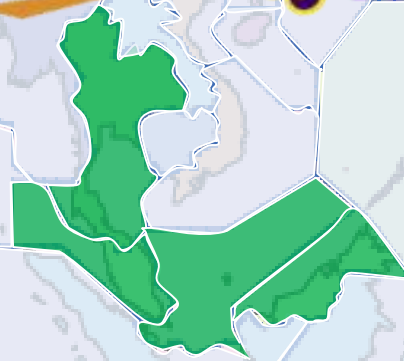

CHANGI
airport singapore


SINGAPORE
AIRLINES


DCA
MALAYSIA

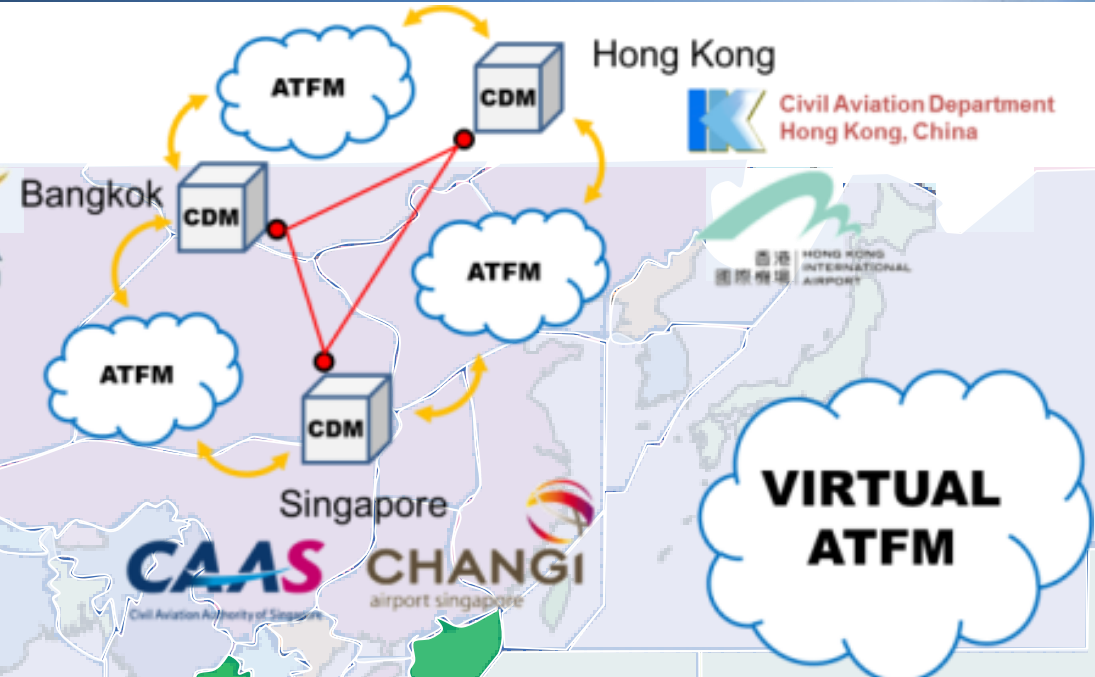

THAI


AOT



Tripartite CDM/ATFM Project (2012-2013)

Thailand and Hong Kong
CNS/ATM SYSTEM



Hong Kong



Bangkok

Singapore



APEC ATM Emissions Reduction Project (2012-2013)

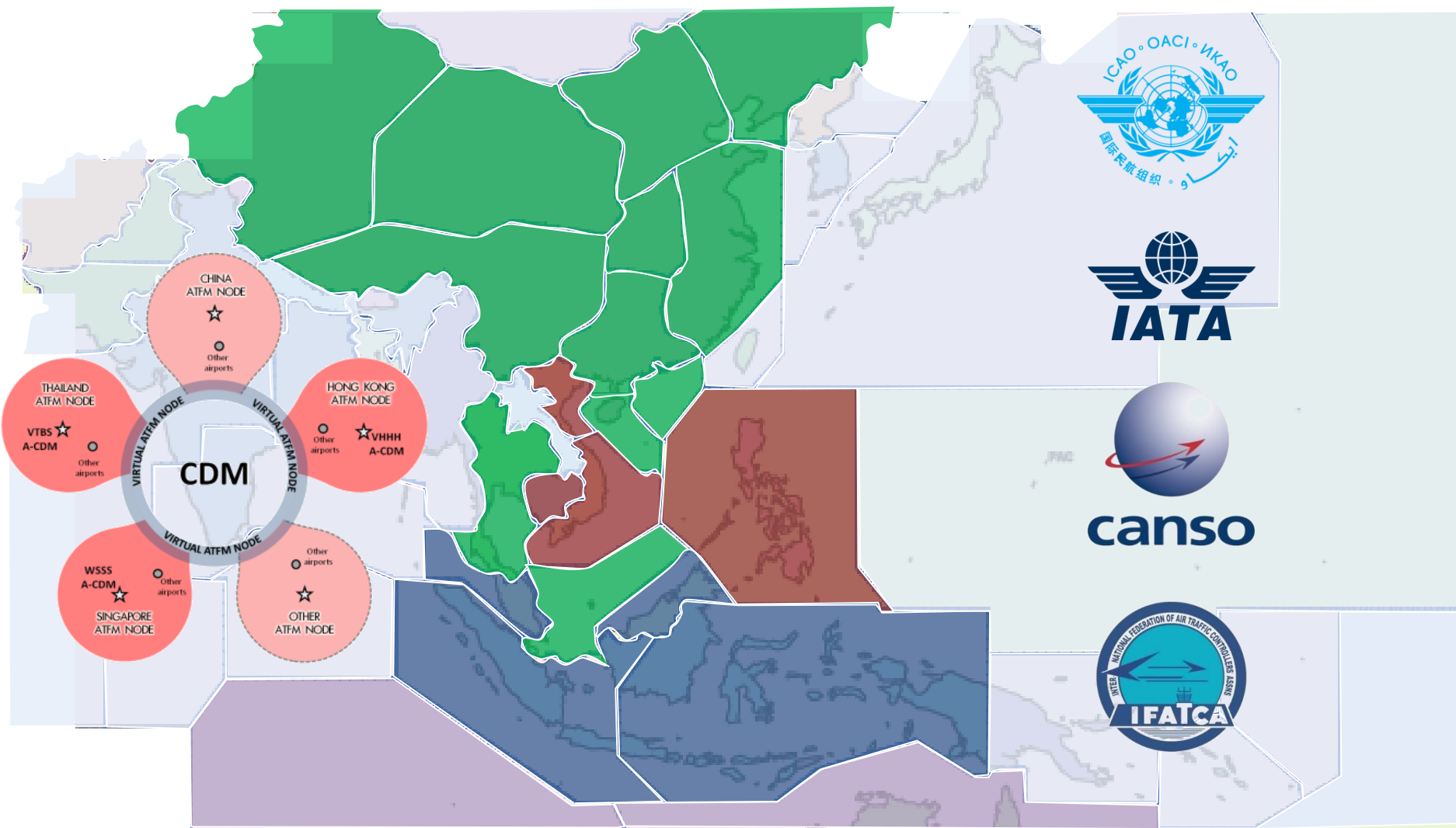


**Air Traffic Management
Emissions Reduction
Project Report**

APEC Transportation Working Group
December 2013

Distributed Multi-Nodal ATFM/CDM Network (2014+)

Thailand and International
CNS/ATM SYSTEM

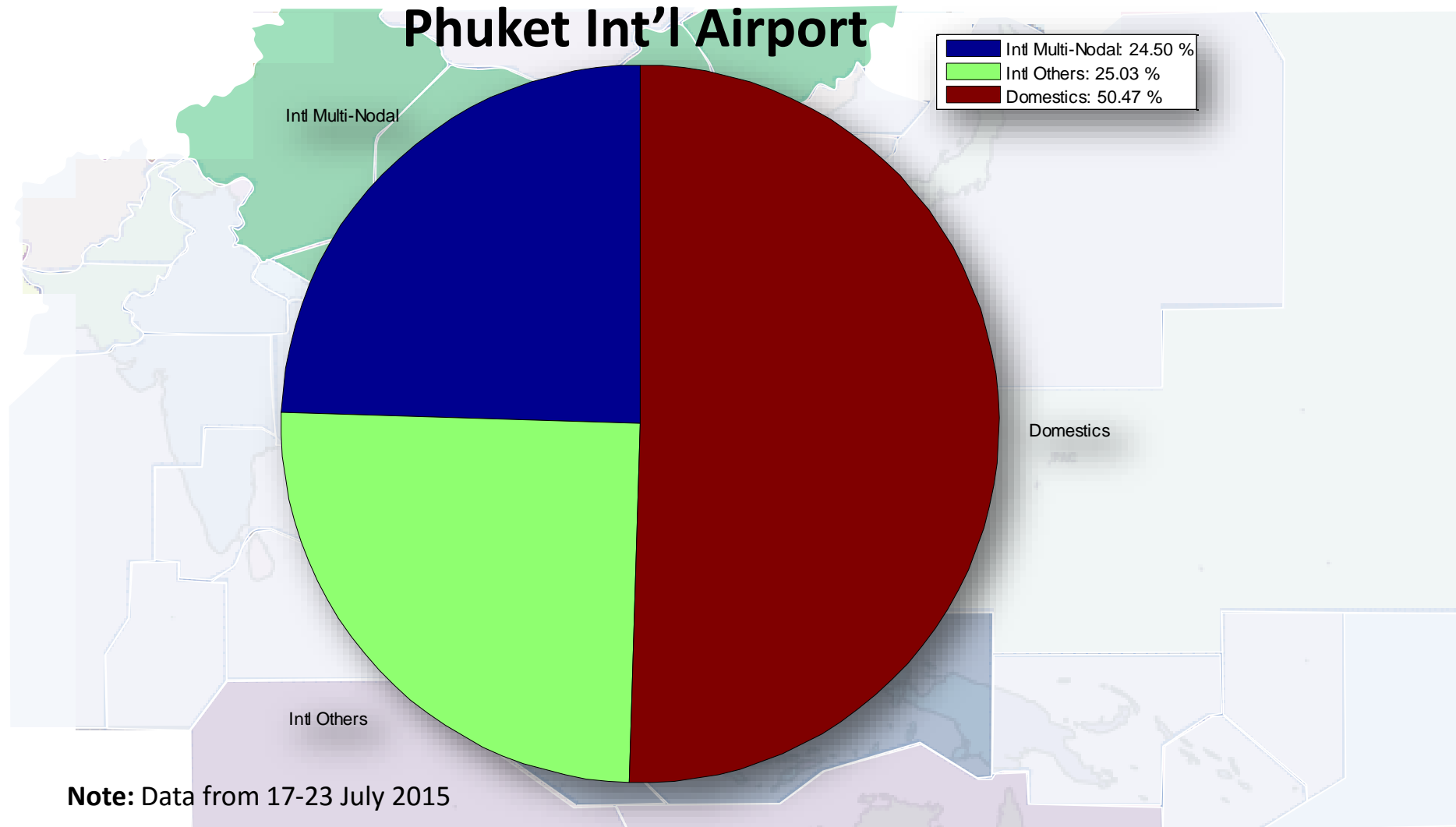


Multi-Nodal ATFM Ops Trial Participation by Departure Aerodromes



ATFM Participation of Departures

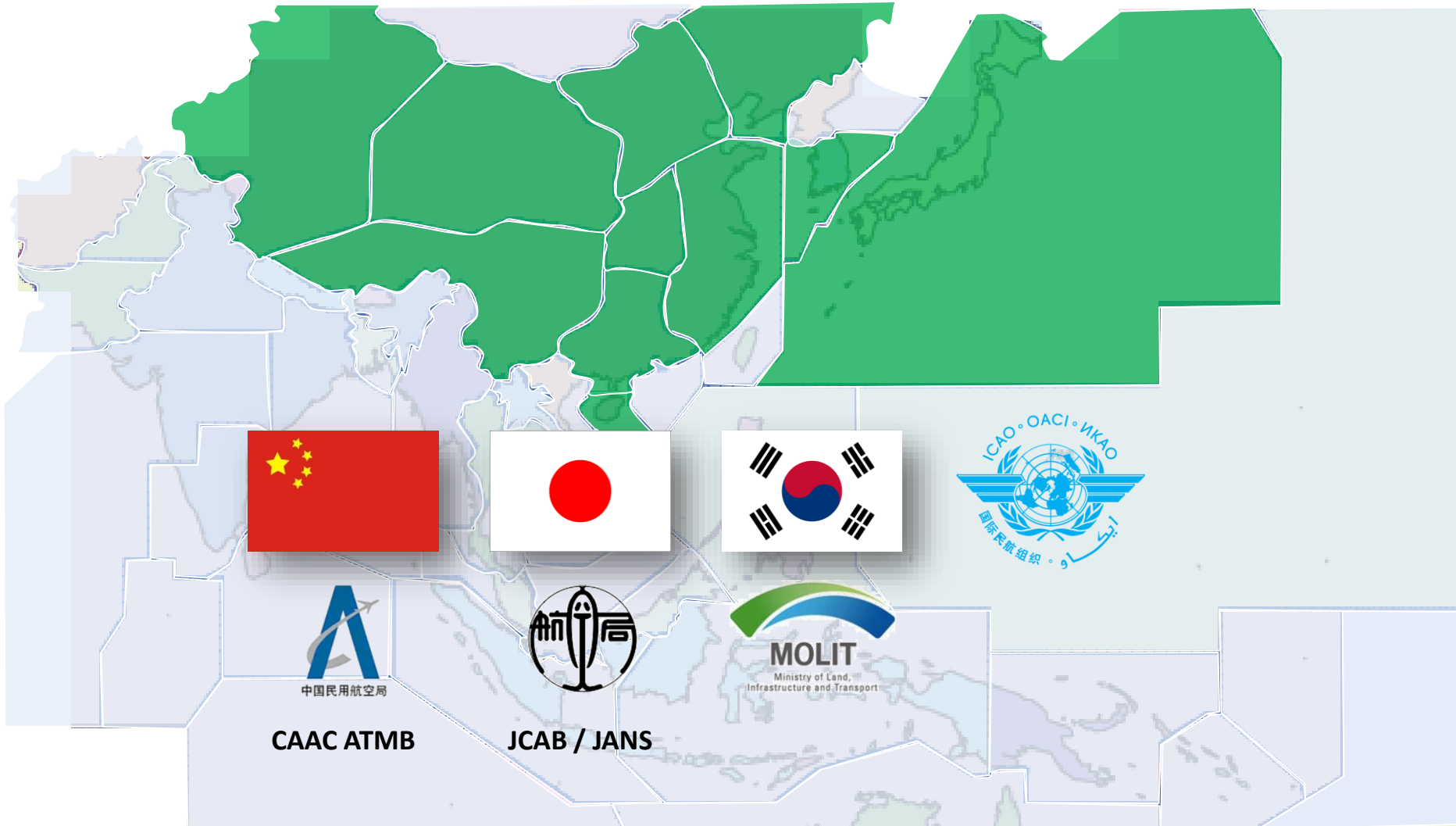
Phuket Int'l Airport



Note: Data from 17-23 July 2015

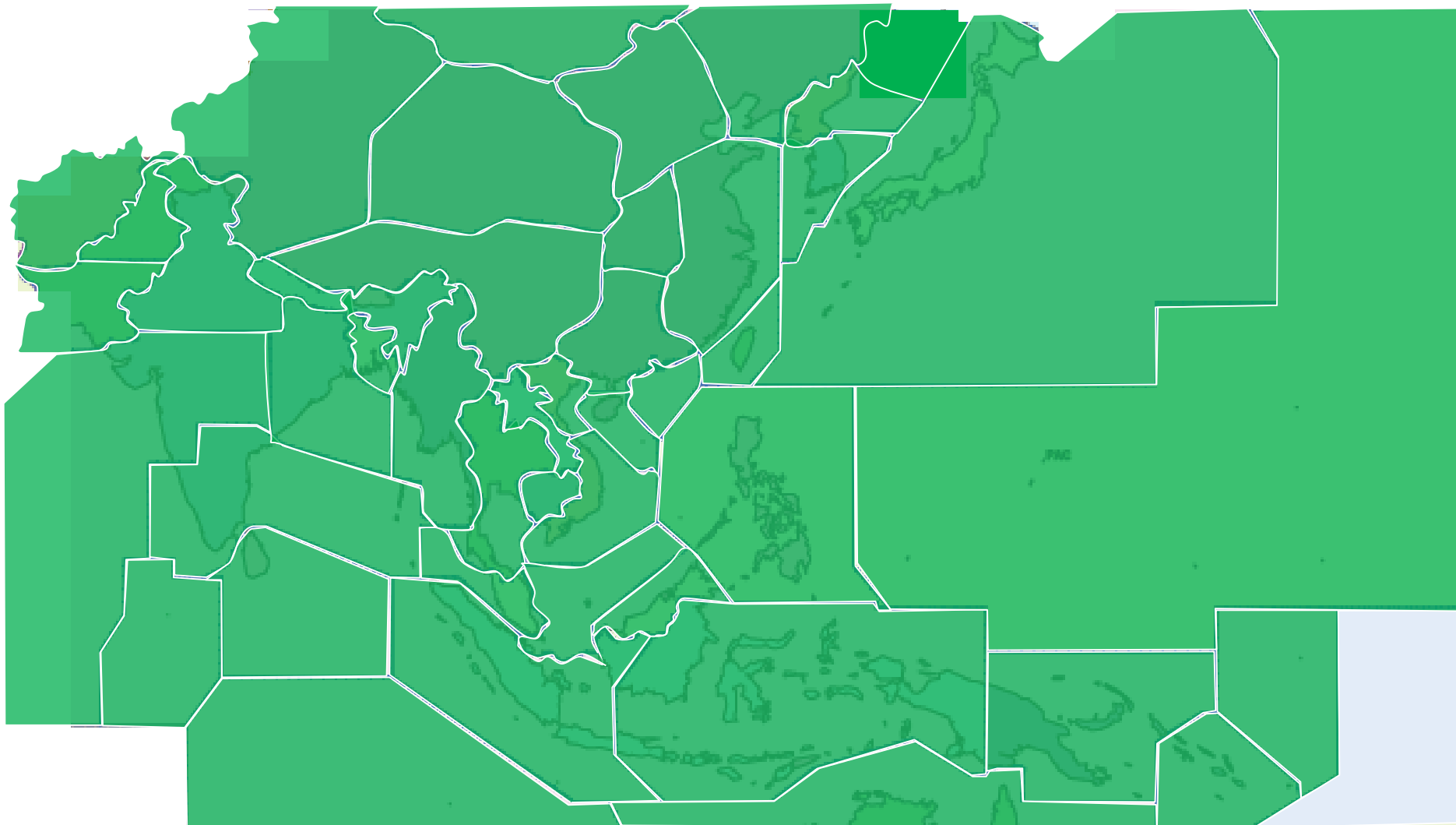
North Asia Regional ATFM Harmonization Group (NARAHG) (2014+)

Thailand and International
CNS/ATM SYSTEM



Towards Regional Cross-Border ATFM

Thailand and International
CNS/ATM SYSTEM





Thank You!