

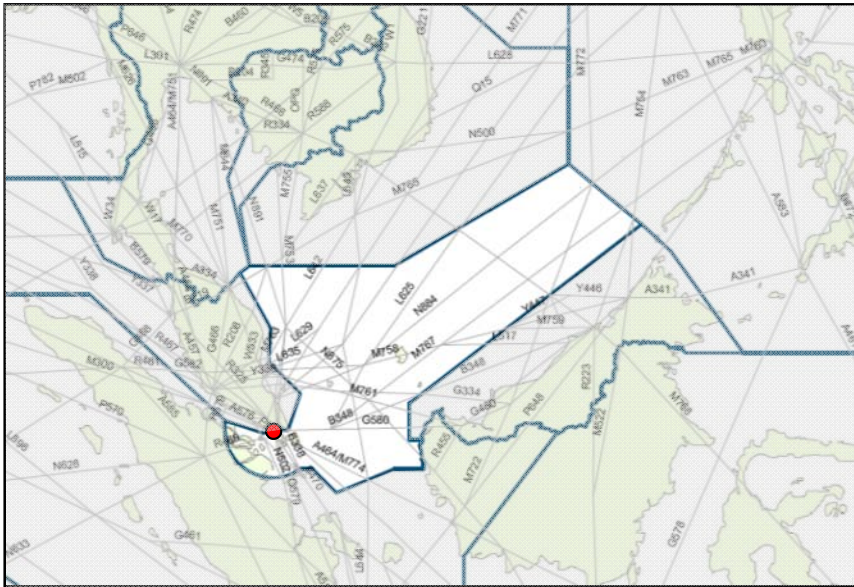


Why Cross-Border ATFM? A Singapore's Perspective

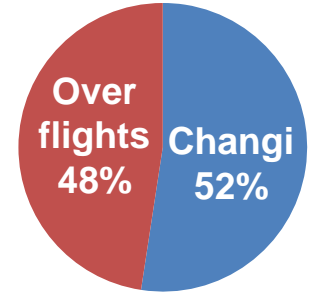
Hermizan Jumari

17 October 2015

Air Traffic Management in Singapore



662,000 (2014)
Total Movements
Changi - **341,400**



6 Contiguous boundaries with Area Control Centres

- Bangkok
- Ho Chi Minh
- Jakarta
- Kuala Lumpur
- Kota Kinabalu
- Manila

1 Area Control Centre
7 En-route Sector



1 Approach Control Centre



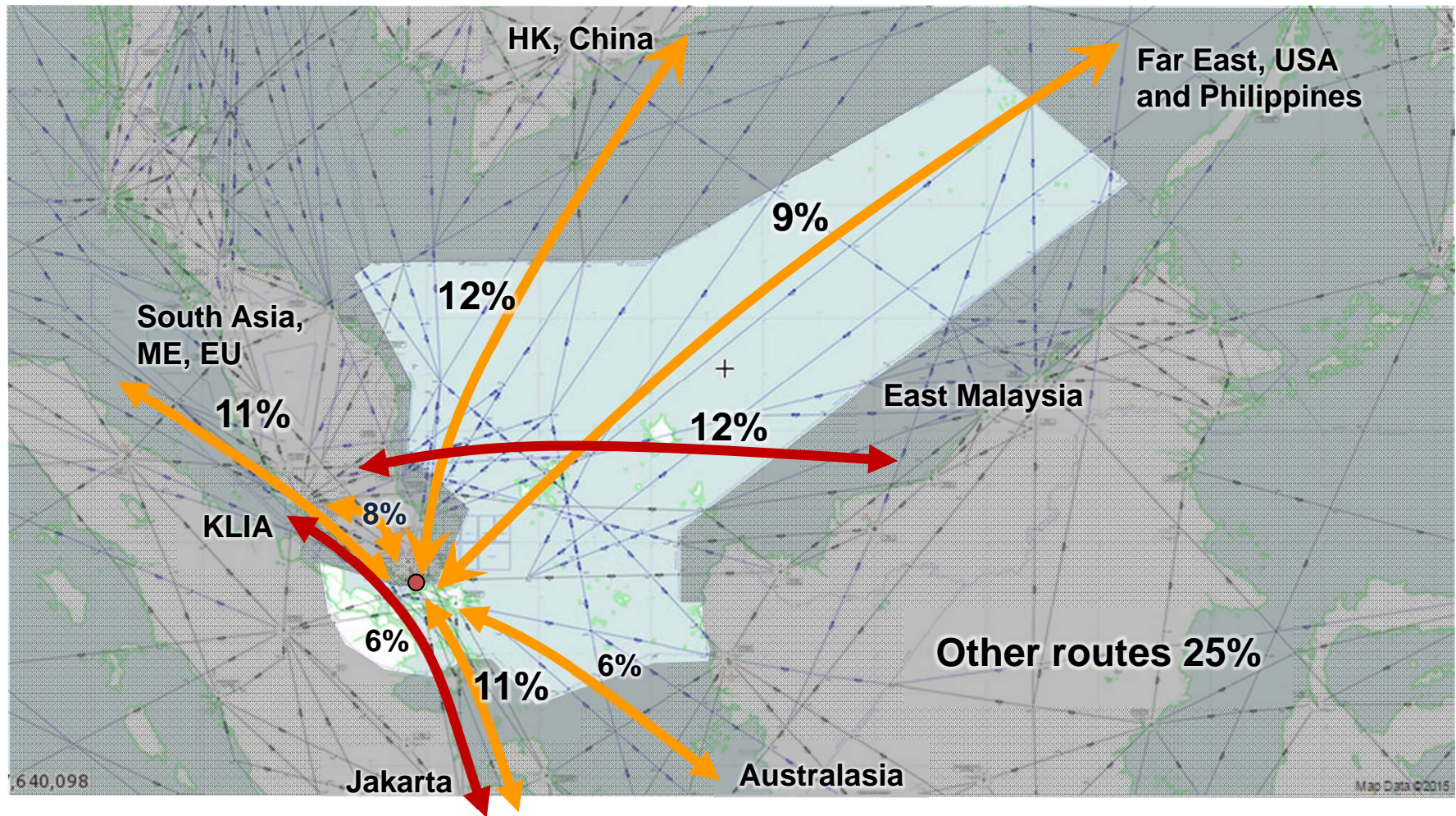
2 Air traffic control towers

- Changi
- Seletar

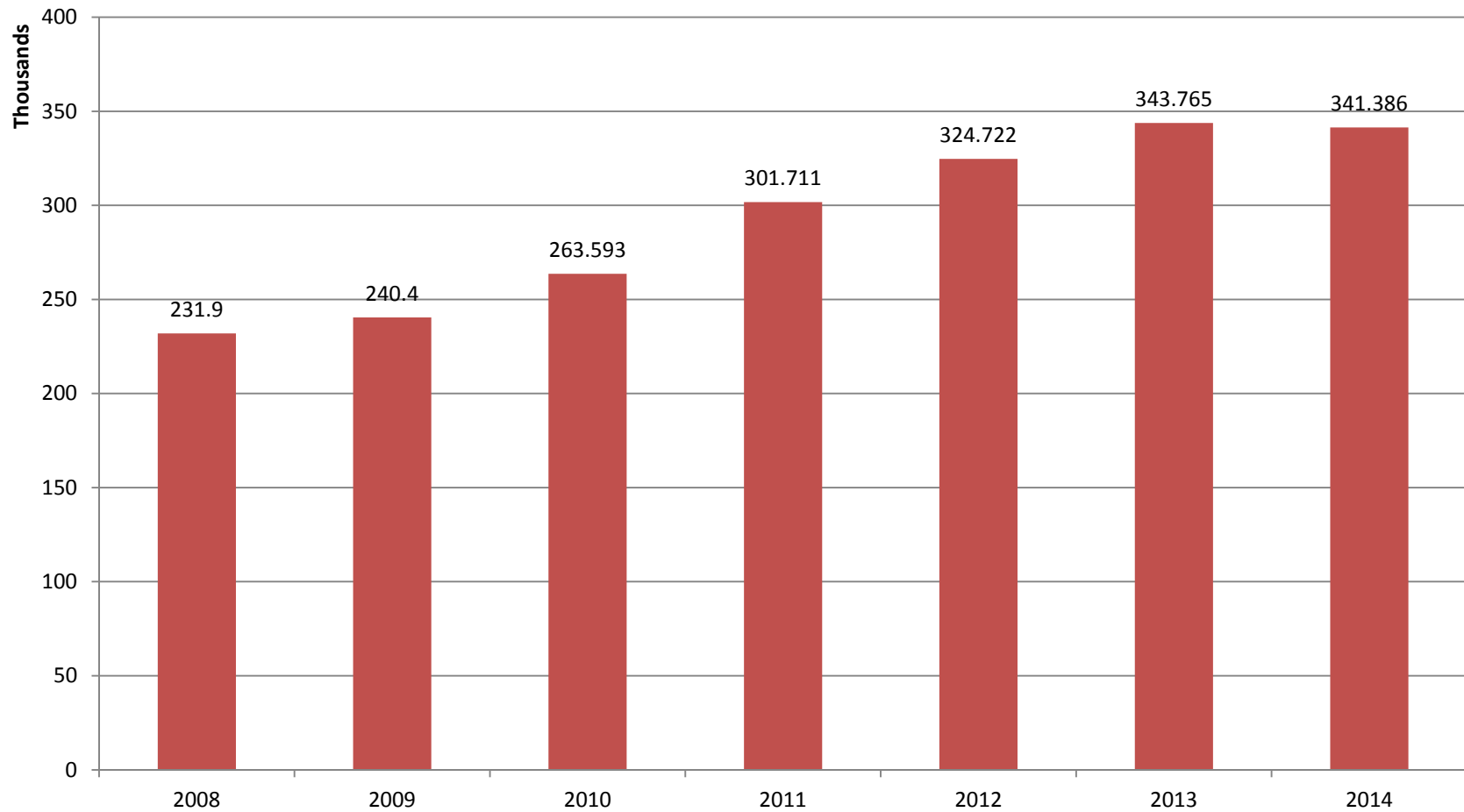


350
Air Traffic Controllers

Major Traffic Flows in Singapore FIR



Air Traffic Volume at Changi



Source : Changi Airport Group through CAPA

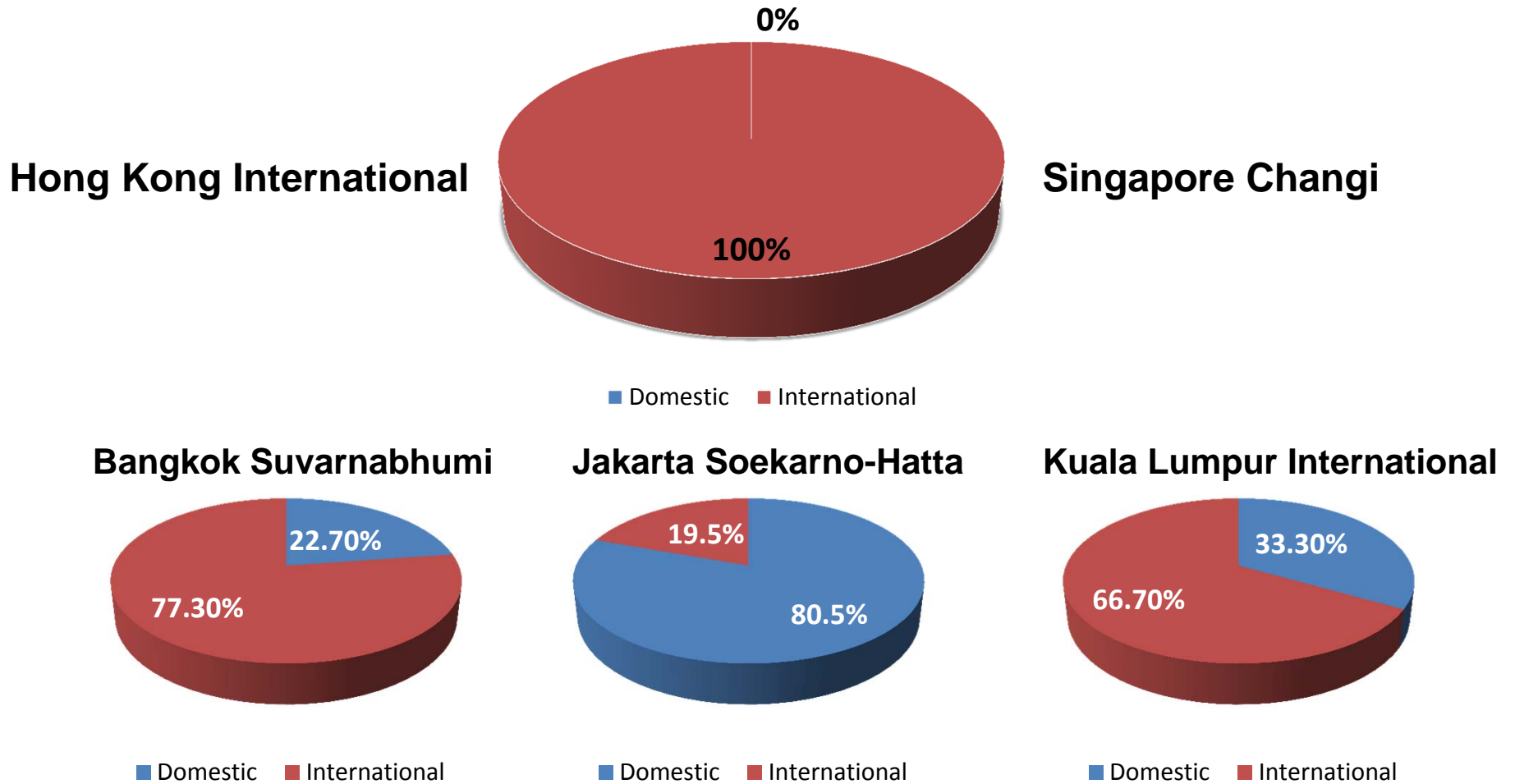
How do we deal with these?



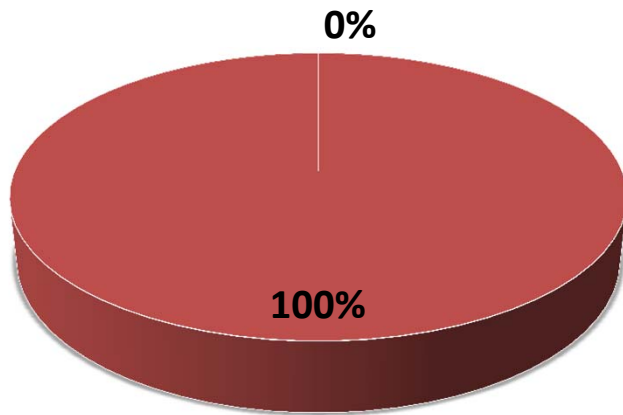
ATFM Around the World



International vs Domestic Traffic



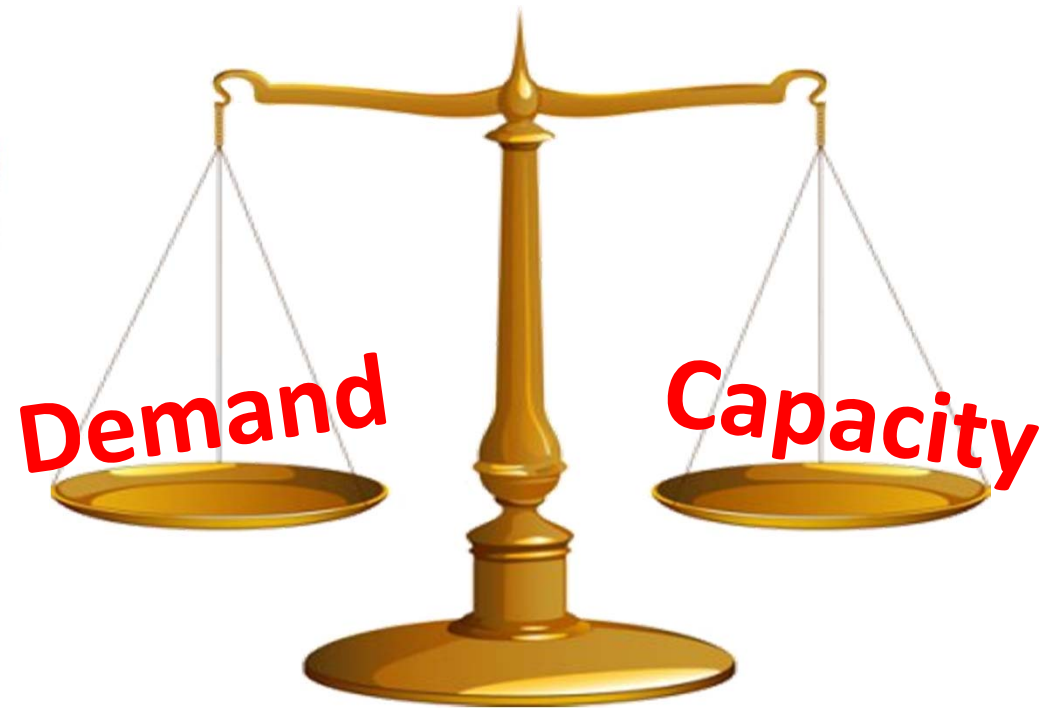
How do you balance demand and capacity?



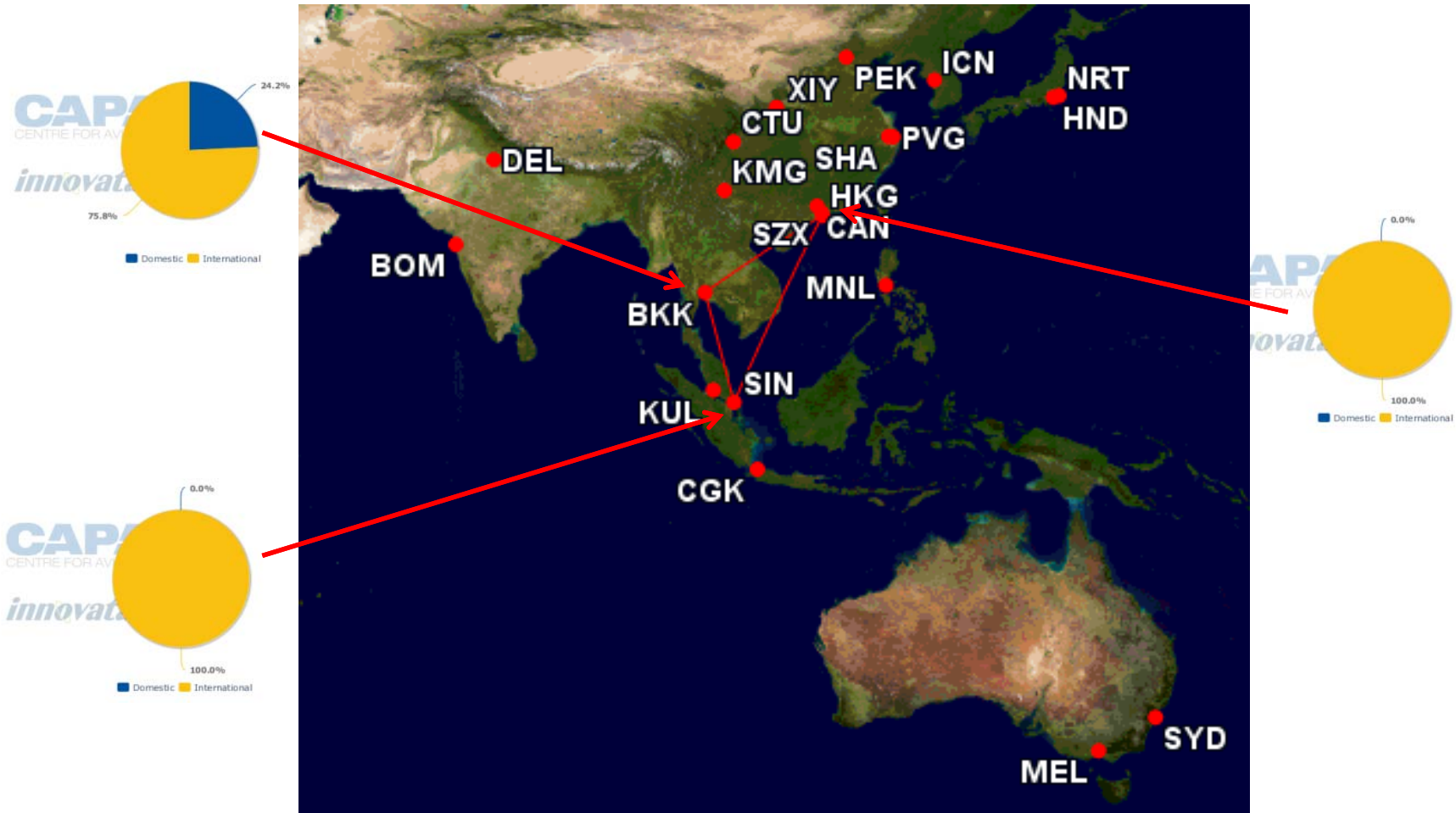
■ Domestic ■ International

Singapore Changi

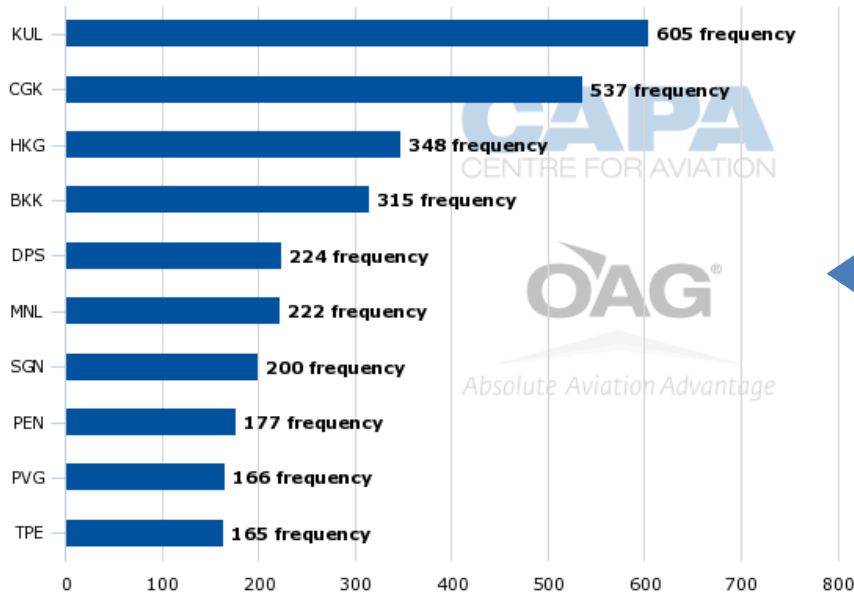
Hong Kong International



ATFM Concept for the Region

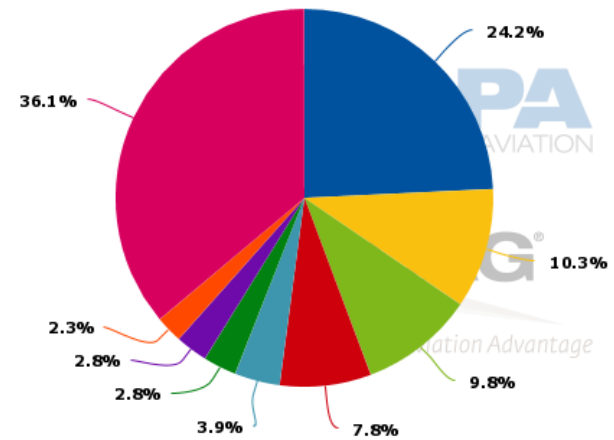


Managing International Flights at Changi



Focus on major city pairs

Engaging local based carriers



- Singapore Airlines
- SilkAir
- Tigerair
- Jetstar Asia
- AirAsia
- Garuda Indonesia
- Indonesia AirAsia
- Malaysia Airlines
- Other

Evolution of the ATFM Concept

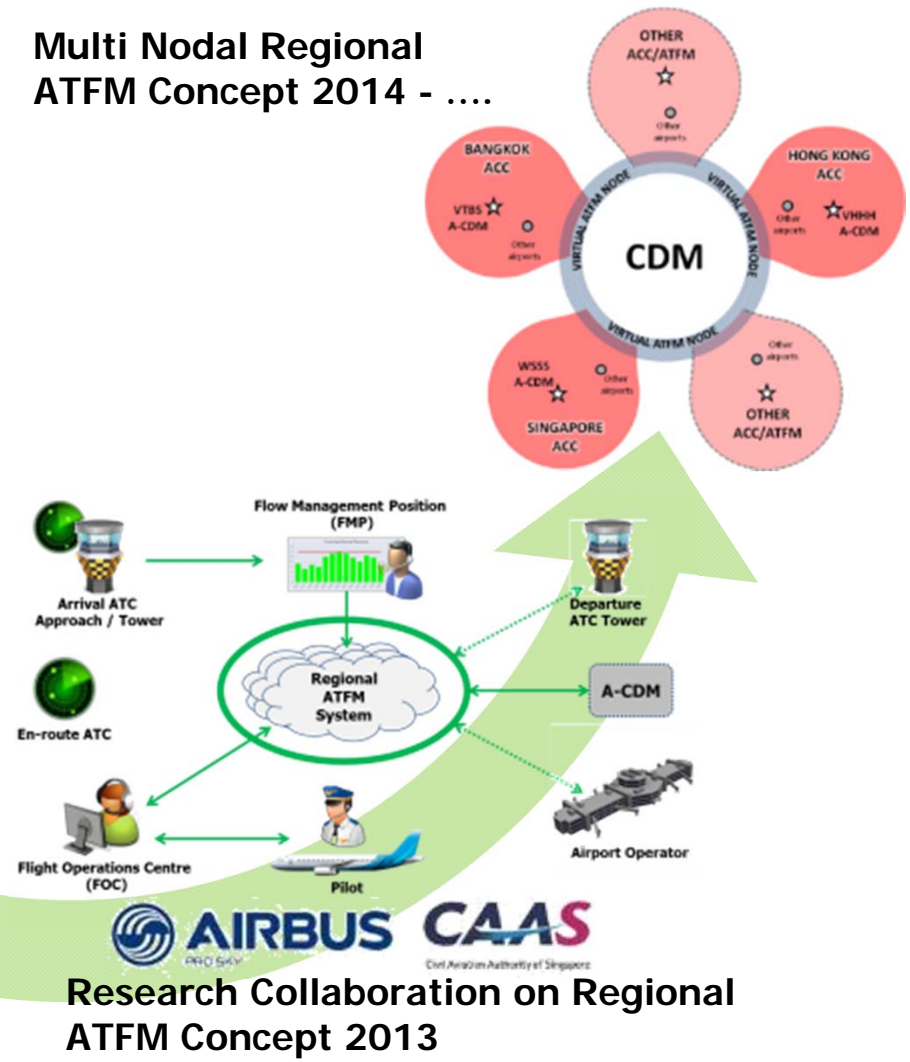


CANSO Whole of flight CDM Pilot Project between BKK-SIN 2011-2012



Tripartite CDM Project between BKK-HKG-SIN 2012-2013

Multi Nodal Regional ATFM Concept 2014 -



Research Collaboration on Regional ATFM Concept 2013

Collaboration; Key to Cross-Border ATFM



Photo credit: NATS UK