



ICAO BEIJING RSO UNITING AVIATION

NO COUNTRY  
LEFT BEHIND



# ICAO Doc 9971 and APAC Cross Border ATFM Initiatives

**Hiroyuki Takata**

*Regional Officer ATM (ATFM/CDM)  
ICAO APAC RSO*

Cross Border ATFM Workshop  
Bangkok, Thailand

17-18 November 2015



# Outline

- Traffic trend in Asia Pacific Region
- GANP (ASBU)
- Regional Sub-Office
- Sub-regional ATFM initiatives in APAC
- Doc 9971
  - Manual on Collaborative Air Traffic Flow Management





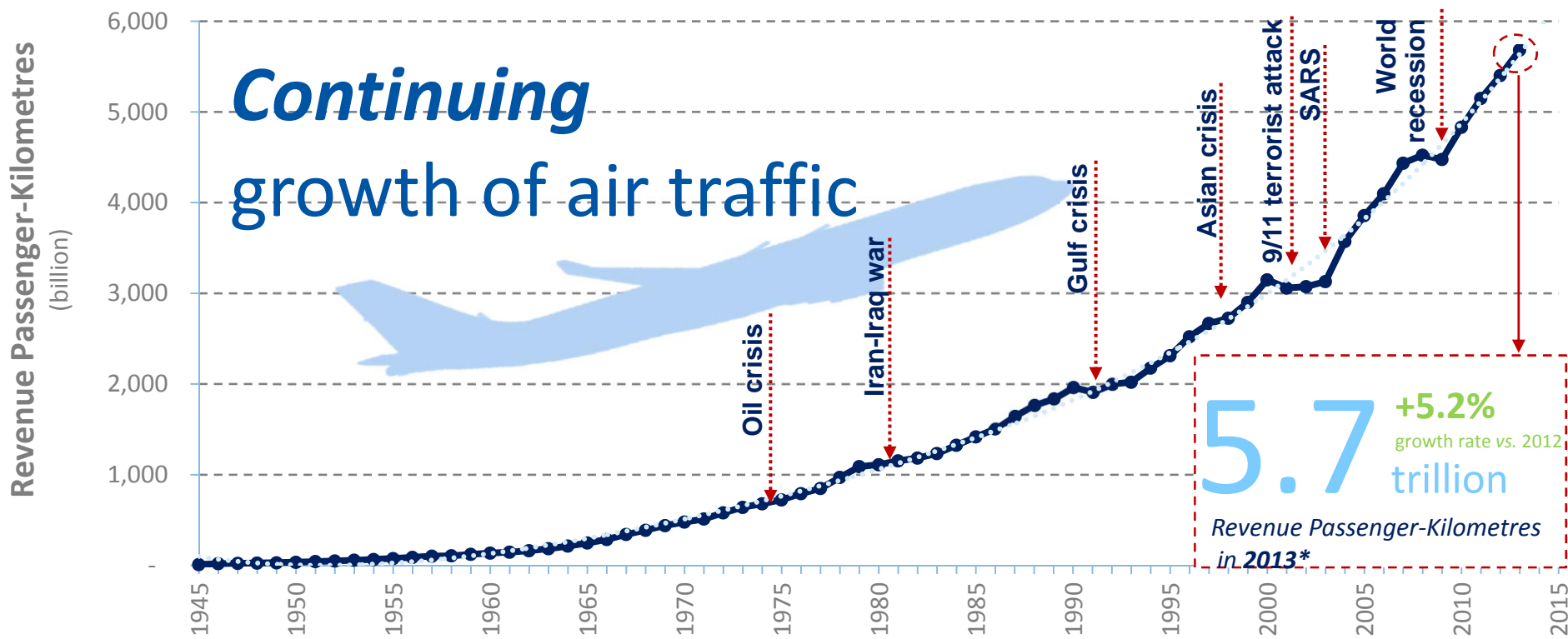
ICAO BEIJING RSO UNITING AVIATION

NO COUNTRY  
LEFT BEHIND



# Traffic trend in APAC





Note: world total scheduled services

\*preliminary results



### Global airline trends In APAC

- 8,086,343 scheduled departures (2013)  
30% share in terms of world RPKs (2012)
- Medium-term Passenger Traffic Forecasts (PKP)  
+7.4% (2015)  
+7.5% (2016)
- Foster international collaboration leading to optimal, seamless ATM Environment

\*Revenue Passenger-Kilometers (RPK)

\*Passenger-Kilometers Performed (PKP)

Travel between Asia Pacific and the Middle East

**13.4%** CAGR over the last two years

**-3.7%**  
1,450,000

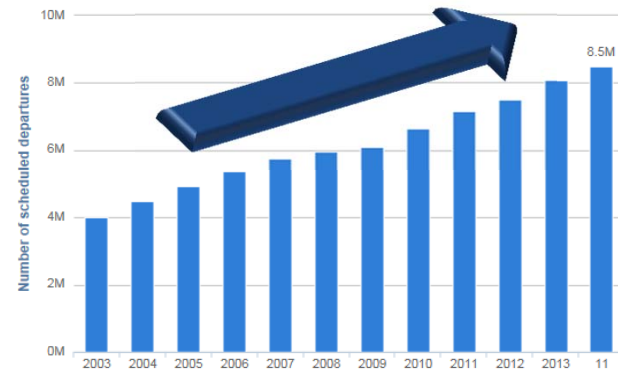
**10.2%**  
2,390,000

**4.8%**  
3,470,000

Compound Annual Growth Rate (CAGR) Q1 2009 - Q1 2011

- $\geq 10\%$
- $> 3\%, < 10\%$
- $> -3\%, \leq 3\%$
- $\leq -3\%$

Traffic History APAC



The global emerging economic centres are also leading in domestic growth. Domestic traffic has increased in:

Brazil by **28%** Russia by **23%** China by **14%** India by **14%**



# The world's largest market

- As the Asia Pacific region, the world's largest market for air transport, continues to grow, it becomes essential to optimize the use of available capacity through ATFM.

	Passenger Volume	Annual %
Indonesia	92,534,902	20.4
Thailand	62,831,288	16.4
China	404,174,939	11.8
Singapore	42,438,276	7.6
Malaysia	51,821,210	7.5
Japan	148,450,196	4.9
India	97,677,318	4.4
Hong Kong	44,399,060	3.9
Korea, Republic of	62,166,163	1.2
Australia	81,983,309	0.6
Asia/Southwest Pacific	1,075,572,893	8.5



ICAO BEIJING RSO UNITING AVIATION

NO COUNTRY  
LEFT BEHIND



# GANP (ASBU)

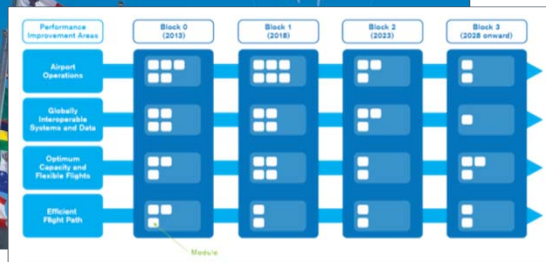




# ICAO's Role in ATM Modernization

## STRATEGIC OBJECTIVE ②

*“Increase the capacity and improve the efficiency of the global civil aviation system”*

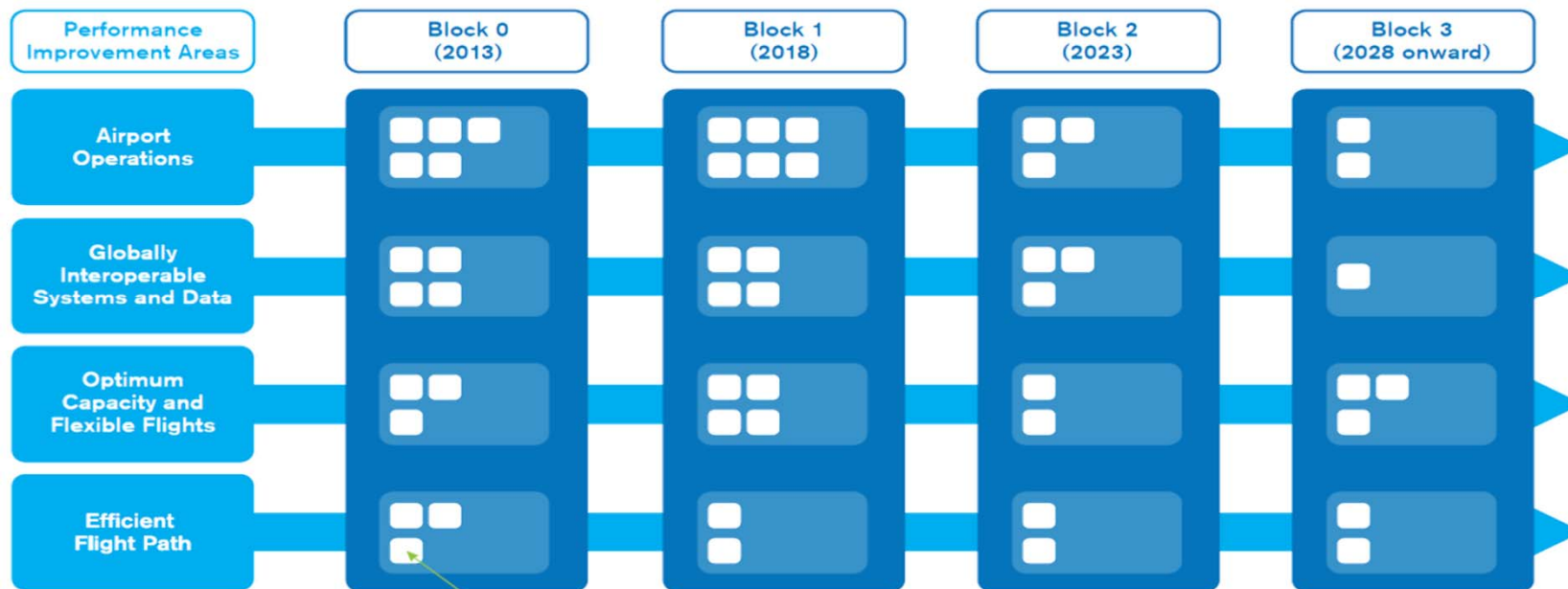


- Through the **GANP**, offer a **long-term vision** to assist **all aviation stakeholders**, and ensure **continuity** and **harmonization** among modernization programmes
- Through the **Aviation System Block Upgrades (ASBU)**, provide a consensus-driven **modernization strategy** for integrated planning





# Global Air Navigation Plan (GANP)



**PRIORITIES**

- PERFORMANCE BASED NAVIGATION (PBN)
- CONTINUOUS DESCENT AND CLIMB OPERATIONS (CDO/CCO)
- COLLABORATIVE DECISION-MAKING (CDM & A-CDM) & ATFM



ICAO BEIJING RSO UNITING AVIATION

NO COUNTRY  
LEFT BEHIND



# ICAO Asia and Pacific Regional Sub-Office (RSO)





## ICAO APAC RSO

- ICAO Council agreed to establish a Regional Sub-Office (RSO) of the Asia Pacific (APAC) Office on 14 November 2011.
- RSO was inaugurated in Beijing, China on 27 June 2013.





## RSO - Responsibilities

- To improve airspace organization and maximize ATM performance and capability in Asia and Pacific.
- To support States on **implementation** of efficient management of airspace and air traffic flow in the APAC Region through Airspace Organization and Management (AOM), Collaborative Decision Making (CDM), Air Traffic Flow Management (ATFM), Flexible Use of Airspace (FUA) and Performance-Based Navigation (PBN) aimed at meeting traffic growth.



RO as Main Player  
RSO as Supporting Player

RO as Supporting Player  
RSO as Main Player

Note: Performance Monitoring and Reporting will be under the responsibility of the RO.



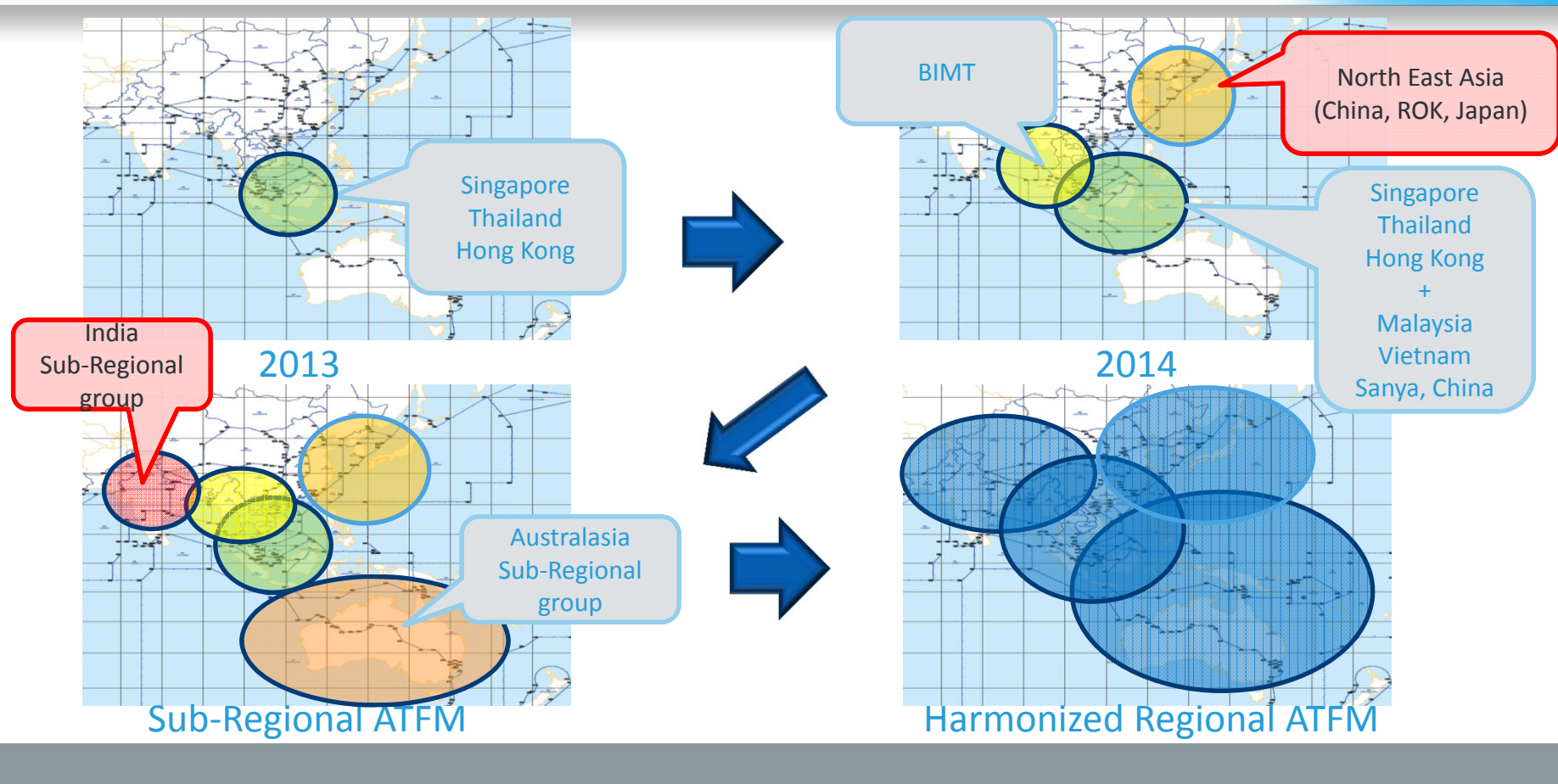
ICAO BEIJING RSO UNITING AVIATION

NO COUNTRY  
LEFT BEHIND



# Regional ATFM Initiatives

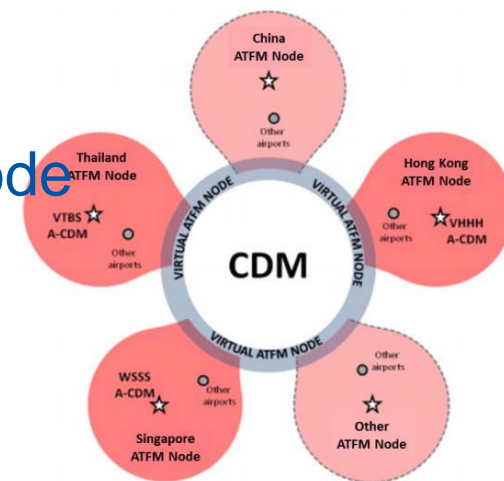






# Multi-Nodal ATFM Group

- Level 3 ATFM Nodes
  - China
  - Hong Kong China
  - Singapore
  - Thailand
- Level 2 ATFM Nodes
  - Indonesia
  - Malaysia
- Level 1 ATFM Nodes
  - Cambodia
  - Philippines
  - Viet Nam
- Advisory ATFM Node
  - Australia







# NARAHG

- North-Asia Regional ATFM Harmonization Group
- China, Japan and Republic of Korea
- Principles of Cooperation were agreed
- Post Operations Analysis
  - Japan-ROK-Beijing
  - Japan/ROK-Shanghai
- Exchanging data (ADP)
- Trial Daily Telecon





## BIMT

- Bangladesh, India, Myanmar and Thailand
- ATFM harmonization agreed under BIMT standing agenda
- Establish CDM telecon / process
- RSO is invited to facilitate ATFM agenda





# Mekong

- Vietnam, Laos PDR, Cambodia, Thailand and Myanmar
- ATFM is a standing agenda in Mekong Coordination Meeting
- Possible Foundation ATFM workshop in Mekong States in 2016





ICAO BEIJING RSO UNITING AVIATION

NO COUNTRY  
LEFT BEHIND



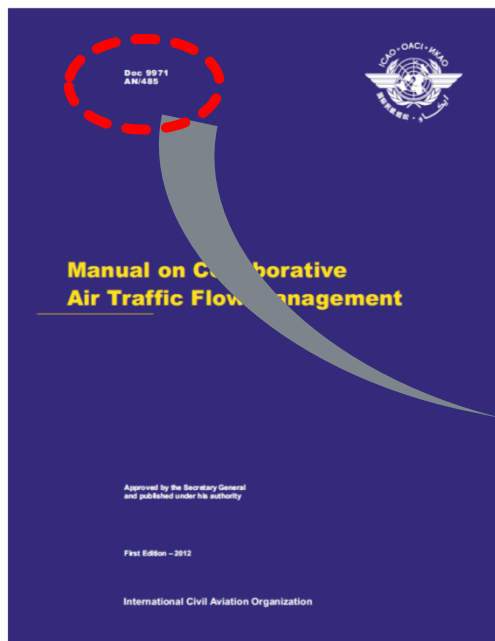
# Doc 9971

## Manual on Collaborative ATFM





# Doc 9971



**Doc 9971  
AN/485**



# Doc 9971

- Doc 9971 has been published in 2012 with only Part 1 – Collaborative Decision Making (CDM)
- Doc9971 Part 2 – Air Traffic Flow Management (ATFM)
- This document was created by “ATFM coordination team” led by ICAO HQ (Brazil, EUROCONTROL, FAA, Hong Kong, India, Japan, Russia, Thailand, IATA, CANSO, ICAO ROs)
- Doc9971 Part 3 – Airport CDM (ACDM) will be published in the future



## Doc 9971 (Cont'd)

- Doc 9971 is intended to for the following stakeholders;
  - Air navigation service providers
  - Airspace users
  - Airline operation centers
  - Airport operators
  - Airport ground handlers
  - Airport slot coordinators
  - Regulators
  - Military authorities
  - Security authorities
  - Meteorological agencies
  - Industries related to aviation





## Doc 9971 (Cont'd)

- Doc 9971 shows basic ideas of ATFM
  - What is the starting point regarding the development of an ATFM service?
  - What are the foundational objectives and principles of ATFM?
  - What are the benefits of implementing an ATFM service?
  - How does an ATFM service operate?
  - How is an ATFM service structured and organized?
  - What are the roles and responsibilities of the stakeholders in the ATFM service?
  - How is the capacity of an airspace sector and airport determined?
  - How are ATFM processed applied in order to balance the demand and capacity within its area of responsibility?
  - How is an ATFM service implemented?
  - What are ATFM Measures and how are they established and applied?
  - What data and information are exchanged in an ATFM service?
  - What terminology/phraseology is used in ATFM?
  - What resources are available to States regarding the various aspects of ATFM?





## Doc 9971 (Cont'd)

- In addition, as Appendix
  - Sample of international ATFM operations planning telephone conference format
  - Sample of ATFM data exchange agreement
  - Determining airport acceptance rate (FAA)
  - Determining sector capacity (FAA)
  - Example of capacity planning and assessment process (Euro Control)
  - Example of planning process for ATFM implementation
  - Template of letter of agreement between flight management units



## Doc 9971 (Cont'd)

- Chapter 1. Introduction
- Chapter 2. The ATFM service
- Chapter 3. ATFM structure and organization
- Chapter 4. Capacity, demand and ATFM phases
- Chapter 5. ATFM implementation
- Chapter 6. ATFM measures
- Chapter 7. Data exchange
- Chapter 8. ATFM communication
- Appendix A.-G.



## ATFM philosophy

- ATFM is an enabler of air traffic management (ATM) efficiency and effectiveness.
- It contributes to the safety, efficiency, cost effectiveness, and environmental sustainability of an ATM system.



## The objectives of ATFM

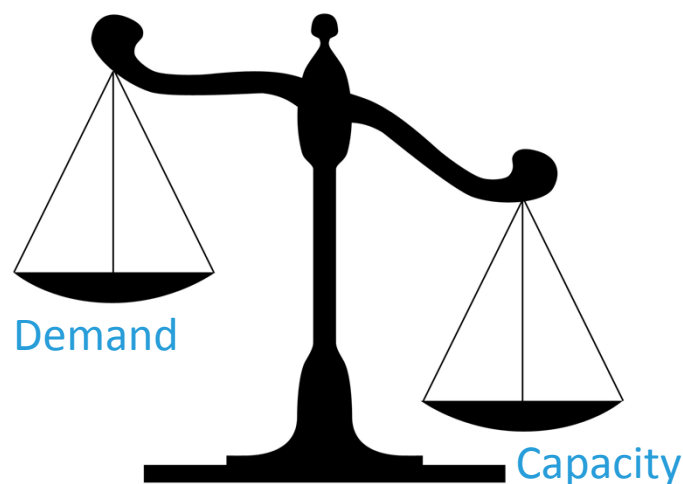
- Enhance the safety
- Reduce ATC workload
- Optimize airspace capacity
- Maximize operational benefits and global efficiency

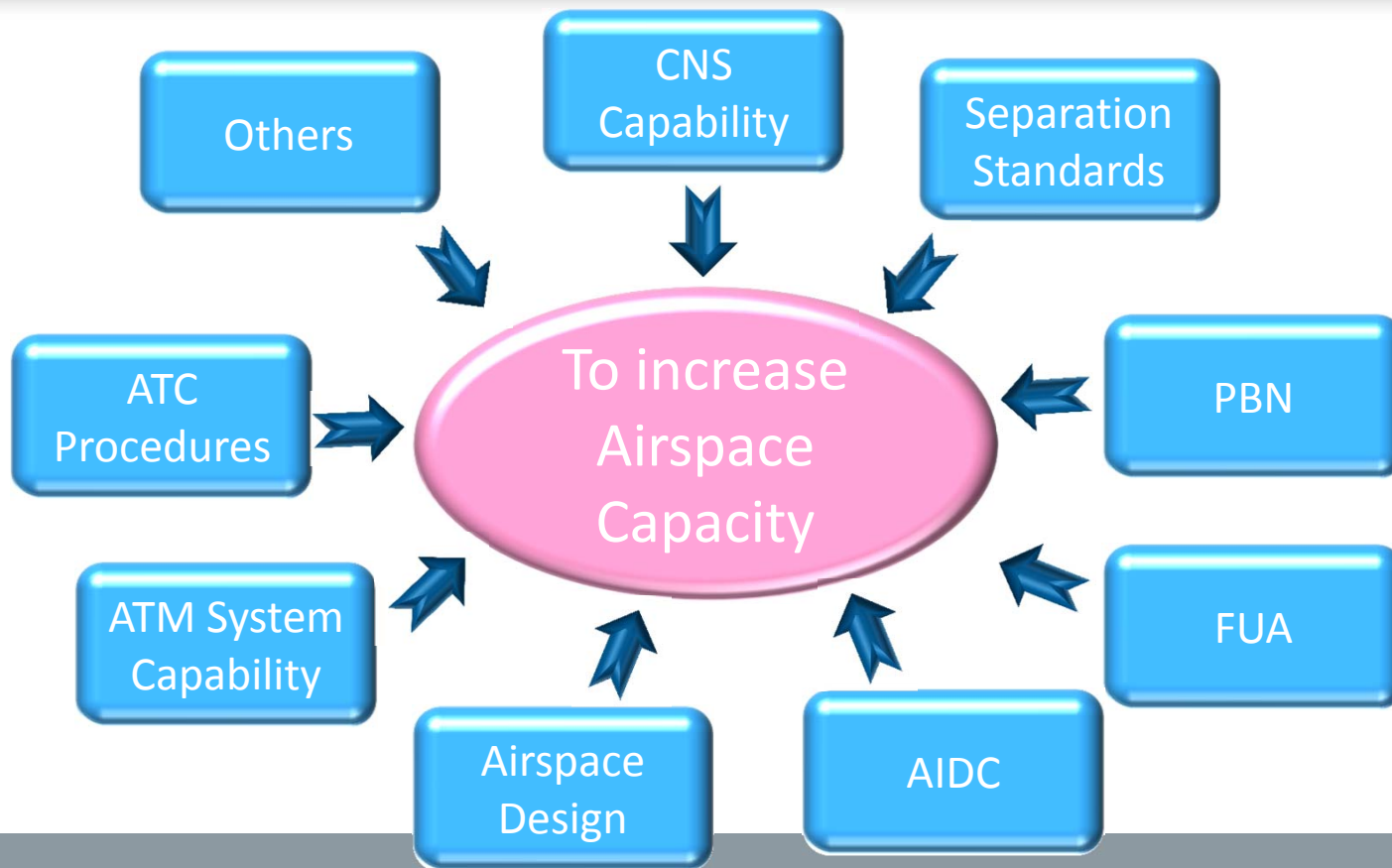




# What is ATFM?

- ATFM is  
demand/capacity balancing







## Keys to the successful implementation

- The CDM process is a key enabler of an ATFM strategy
- Achieving a robust coordination among aviation stakeholders (CDM)
  - All the stakeholders work together to improve the overall performance of the ATM system
  - Such coordination will take place within a FIR, between FIRs, and ultimately, between regions





## Keys to the successful implementation

- ATFM and its applications should NOT be restricted to one State or FIR
  - Because of their far-reaching effects on the flow of traffic elsewhere
  - PANS-ATM, Doc 4444 states that ATFM should be implemented on the basis of a regional air navigation agreement or, when appropriate, as a multilateral agreement
- Airspace is a common resource for all users and ensure equity and transparency





ICAO BEIJING RSO

UNITING AVIATION

NO COUNTRY LEFT BEHIND



ICAO

North American  
Central American  
and Caribbean  
(NACC) Office  
Mexico City

South American  
(SAM) Office  
Lima

ICAO  
Headquarters  
Montréal

Western and  
Central African  
(WACAF) Office  
Dakar

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Sub-office  
Beijing

Asia and Pacific  
(APAC) Office  
Bangkok



THANK YOU