



International Civil Aviation Organization

# What is Seamless ATM?

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# Introduction

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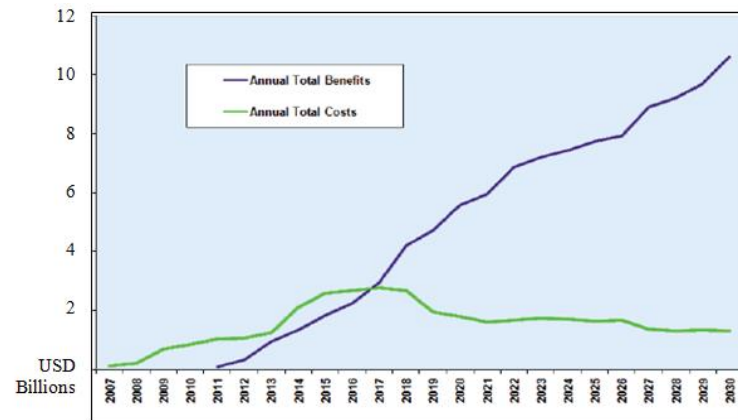
# Drivers

- Historically, States and ANSPs have developed their own infrastructure tailored only to suit their own national needs, and some Air Navigation Service Providers (ANSPs) did not operate within a business-like environment.
- There was no means of the Asia/Pacific undertaking a European or North American type of ATM modernisation programme like SESAR or NextGen.
- However, the Asia/Pacific aimed to make huge strides in safety and efficiency, simply by addressing the **organisational** and **human performance** issues that prevent optimal ATM, even with the current systems.

# Drivers

- Top decision-makers and regional bodies need to know the economic and environmental imperatives to prioritise Seamless ATM planning-
  - *IATA's economic analysis indicated that if Asia Pacific States do not implement the critical ASBU elements of the Seamless ATM Draft Plan, aviation's contribution to the Regional GDP would fall from today's **2.2%** to **0.81%** by 2030.*

- US Economic Cost-Benefit Analysis



- Engagement by the military was necessary to convey the message that supporting the civil aviation air navigation structure **protected the vital economies** of the region, so was consistent with defence missions.

# Drivers

- Although the Asia/Pacific is currently the world's busiest air traffic region, the Middle East, Africa and South America were also experiencing a dramatic growth of traffic; thus ATM problems were not confined to the Asia/Pacific.
- It would appear that a form of Seamless ATM Planning also needs to be implemented in other busy regions to provide the capacity and improved services necessary to cope with growth.
- In addition, the Asia/Pacific neighbours the AFI, MID, EUR, NAM and SAM regions, so it was important that trans-regional aspects of seamless planning were considered.

# Seamless ATM 101

- What is the purpose of 'Seamless ATM'?
  - *The objective of Seamless ATM is the safe and interoperable provision of harmonized and consistent air traffic management service provided to a flight, appropriate to the airspace category and free of transitions due to a change in the air navigation service provider or Flight Information Region.*

(Asia/Pacific Seamless ATM Planning Group, APSAPG)

# Seamless ATM 101

- Seamless ATM is intended to develop and deploy ATM solutions capable of ensuring safety and efficiency of air transport throughout the Asia/Pacific region.
- Seamless ATM is consistent with the *Global ATM Operational Concept* (Doc 9854), which contains a vision of an integrated, harmonized, and globally interoperable ATM System, with a planning horizon up to and beyond 2025.

# APSAPG

- The 46th DGCA conference (Japan, 2009) committed to a Seamless ATM Asia/Pacific by issuing the *Kansai Statement*.
- APANPIRG formed the APSAPG to develop a Seamless ATM Plan.
- The facility-orientated ICAO Aviation System Block Upgrade (ASBUs) were only a **part** of the solution, which also needed to cover:
  - human performance; and
  - civil/military cooperation aspects.
- The Seamless ATM Plan was intended to determine the minimum requirements for seamless **gate-to-gate** ATM operations – an efficiency focus for passengers and aircraft.



# APSAPG

- APSAPG agreed that The Seamless ATM Plan is expected to be implemented in two phases. Neither phase, nor any element is binding on any State, but should be considered as a planning framework. The Seamless ATM Plan itself is therefore guidance material.
  - It was important to note that the Plan's Phase commencement dates were planning targets, and should not be treated like a 'hard' implementation date with penalties.
- APSAPG established the principle for the Seamless ATM Plan to categorise airspace by reference to its CNS (Communications, Navigation and Surveillance) capability as R (Remote), S (Surveilled) or T (Terminal airspace) – not its geographical description.
- APSAPG agreed that the Plan needed to be updated periodically (at least every three years) to take into account ASBU Block 1, 2 and 3 modules.

# Conclusion

- Seamless ATM is designed to improve ATC tools and ensure harmonised and interoperable systems with a clear focus on human performance; thus it would be beneficial to managers and staff in delivering services.
- The promotion of ATS surveillance-based separations instead of procedural standards should reduce ATC workload; however...

ANSPs need to train controllers to use ATS surveillance in an optimal manner, such as the application of positive control techniques when the spacing between aircraft reduced towards minimum separation.

- An important factor will be the application of 'Just Culture' and an open ('no blame') reporting culture, so that human error was managed in a modern context.

# Conclusion

- ICAO seeks high level political support that in the medium and long term may mean a much closer integration of systems where possible, if the Seamless ATM Plan was to ultimately succeed.
- There would be little to gain from a bold and visionary plan if there was a lack of political support for collaboration in areas such as research and system design, enhancement of CNS systems, reduction of airspace and ATM complexity, and civil/military cooperation.
- States, ANSPs and aircraft operators (civil and military) all need to start Seamless ATM Planning now, in order to align objectives and milestones with other States in the region.
- Without effective regional Seamless ATM implementation, there will be a significant economic and environmental penalty, as well as safety implications.

# Questions

