Asia/Pacific Air Traffic Management Perspectives

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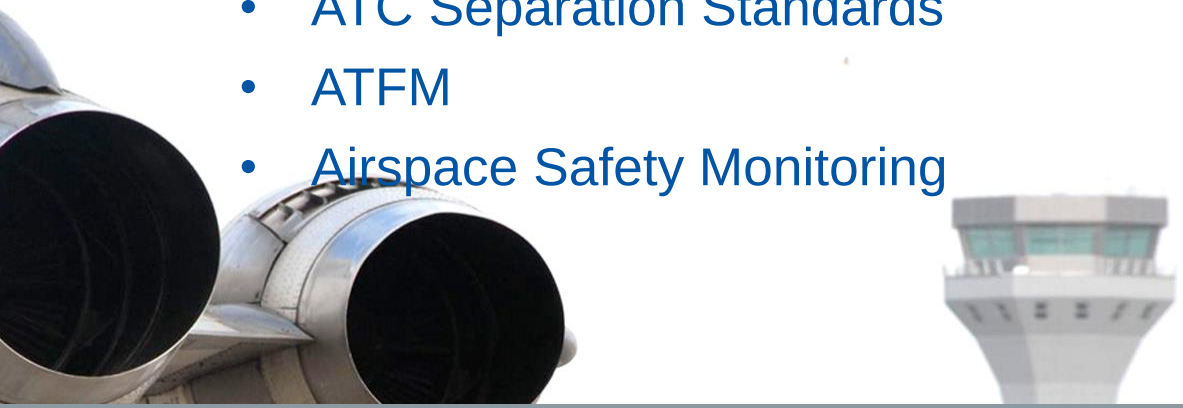


Asia/Pacific Region (APAC)

The Asia/Pacific Region administered from Bangkok has:

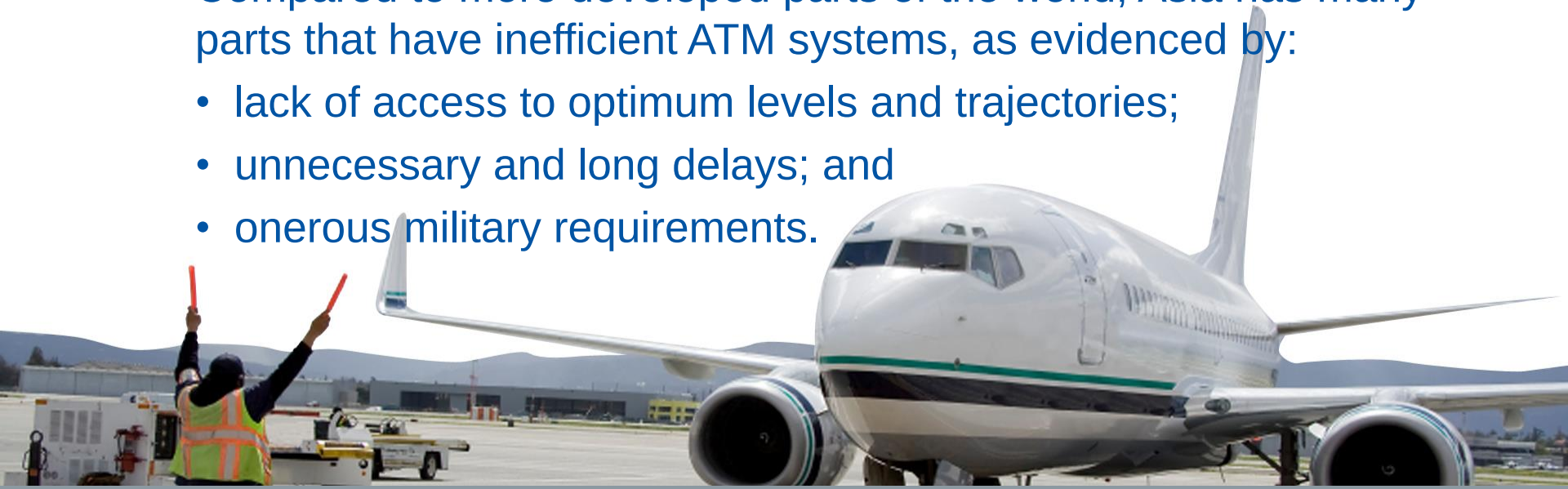
- 54 States/Administrations/Territories;
- more than half the world's population;
- 49 FIRs covering nearly half the globe, with 2 great oceans.

And many natural disasters…

Asia/Pacific Region (APAC)

Compared to more developed parts of the world, Asia has many parts that have inefficient ATM systems, as evidenced by:

- lack of access to optimum levels and trajectories;
- unnecessary and long delays; and
- onerous military requirements.



Asia/Pacific Region (APAC)

…yet the air traffic growth rate of the APAC Region is about 7% per annum so we now have approximately 34% of global operations, and traffic is forecast to be greater than North America and Europe combined within two decades.

Asia/Pacific Region (APAC)

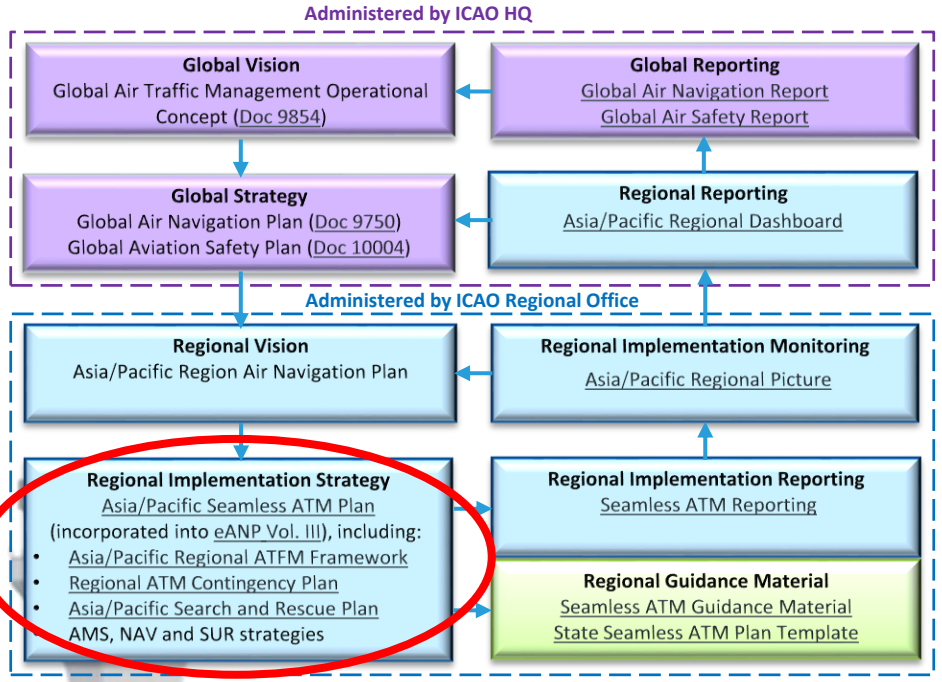
Key underlying ATM issues seem to include a lack of:

- a pan-regional body (other than ICAO), to drive convergence;
- customer-orientated approach by ANSPs;
- civil/military cooperation; and
- an ‘aviation culture’.

Asia/Pacific Seamless ATM Plan

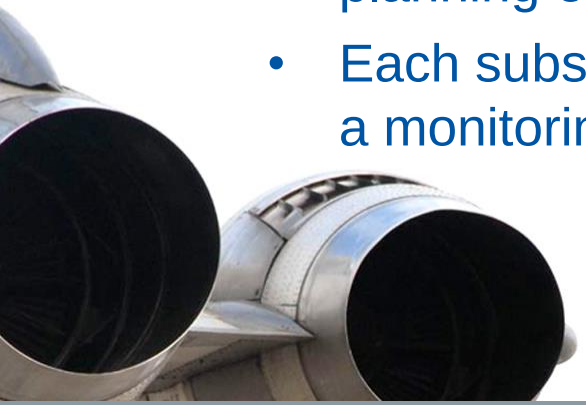
- Meshes with ICAO global planning (‘ASBU plus’).
- APAC Seamless ATM planning – a strategy for gate to gate regional implementation.

Asia-Pacific Plan for Collaborative AIM



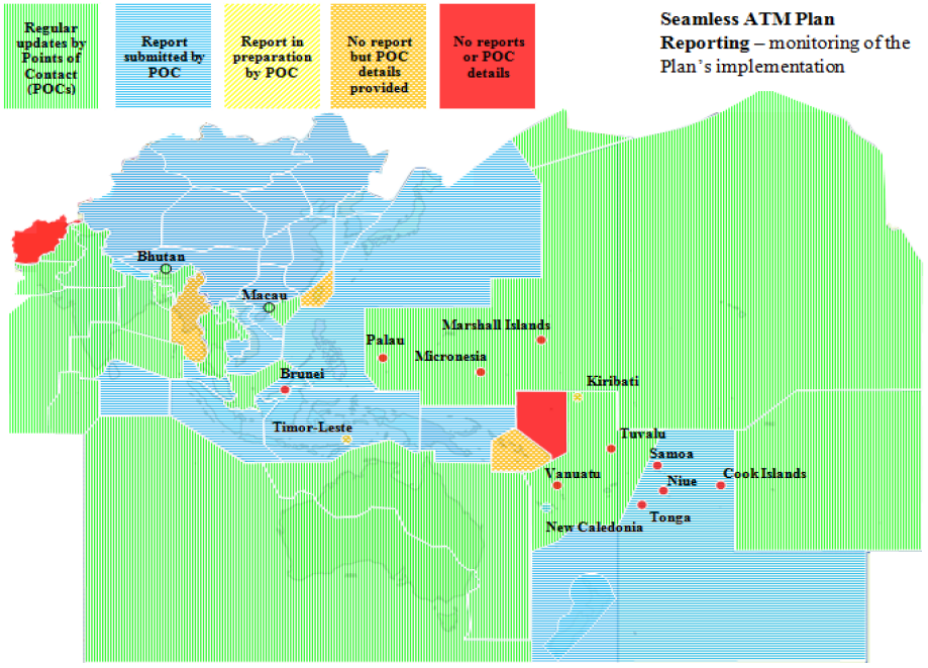
Asia/Pacific Seamless ATM Plan

- The Asia/Pacific Seamless ATM Plan includes the regional PBN Plan's key planning elements.
- Each subsidiary plan has a monitoring scheme.



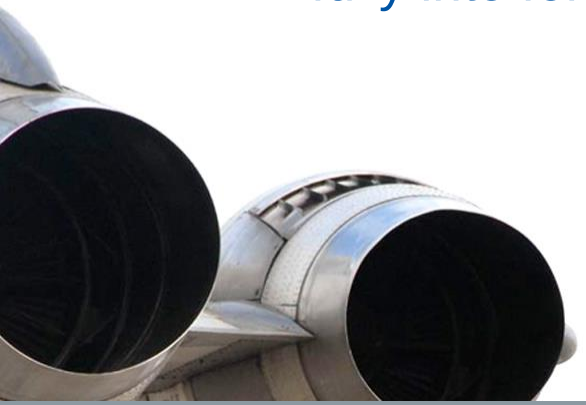
Asia/Pacific Seamless ATM Plan

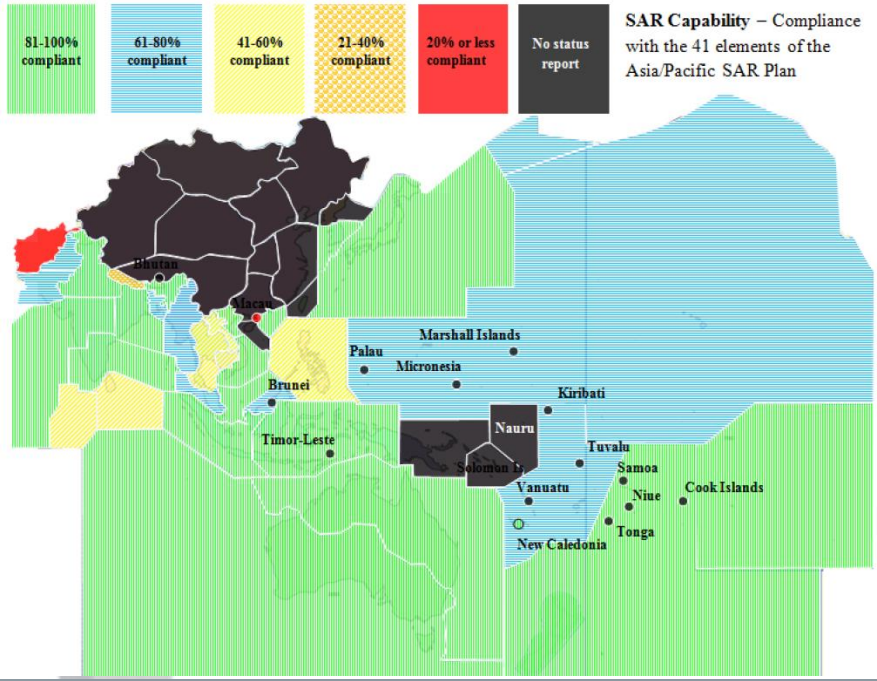
- As at 2 March 2018, 67% of Asia/Pacific administrations had submitted a Seamless ATM report.



Asia/Pacific SAR Plan

- This is the implementation status of the Asia/Pacific SAR Plan, which comes fully into force in 2019.





Civil/Military Cooperation

Civil/military cooperation issues include:

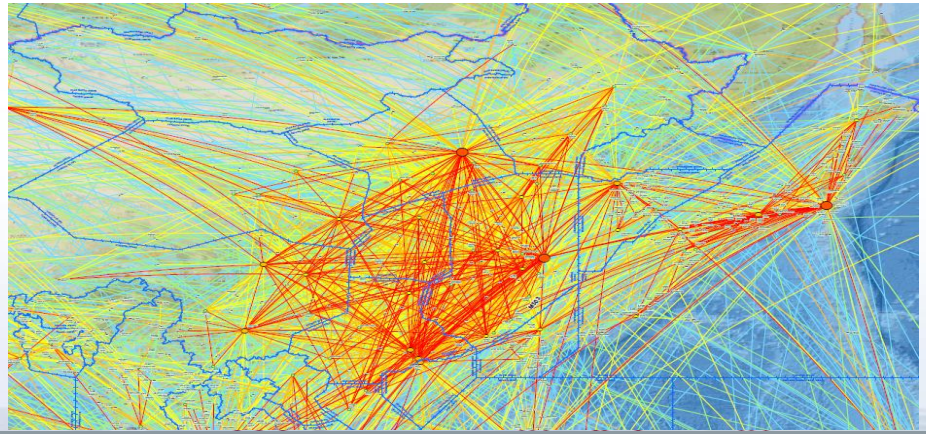
- Ballistic launch (Pakistan, India, China, DPRK, Japan, USA, etc… even New Zealand) and space re-entry activity (Pacific);
- Major ATM delays related to East Asia;
- Lack of access to Chinese airspace and routes; and
- Conflict or potential conflict zones.

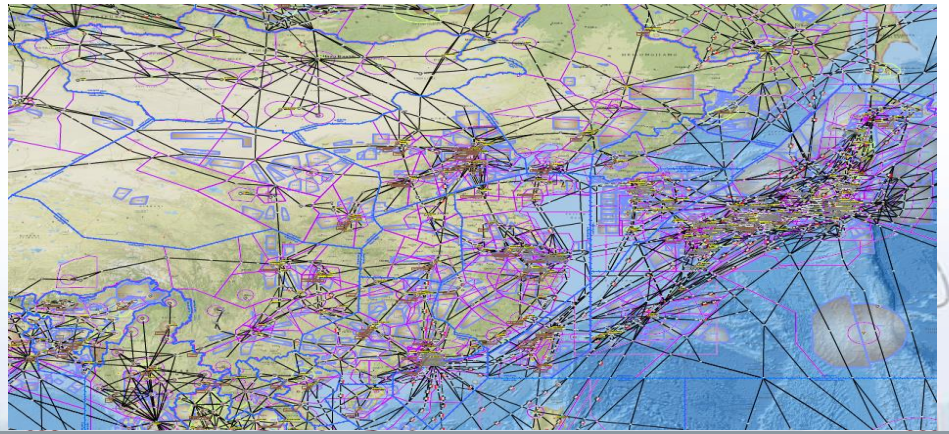
Civil/Military Cooperation

- One major civil/military cooperation issue in the APAC Region is the lack of compliance with the Annex 15 notice requirements for SUA, or even issuing NOTAM for new military-affected airspace, so operators cannot plan properly.
- Some States are using the EUR ‘work-around’ by using Temporary Reserved and Segregated Areas (TRAs/TSAs) without having ATFM and Network Manager capabilities – this will lead to future APANPIRG deficiencies.

Civil/Military Cooperation

Below are images of the theoretical city pair operations in East Asia on the left, compared to the route network available for international operations on the right – indicating high levels of military restrictions in some parts compared to others.





Civil/Military Cooperation

What solutions does APAC have?

- The Asia/Pacific Seamless ATM Plan has 11 civil/military cooperation elements, many of which have been incorporated into the new ICAO Doc 10088.
- The Asia/Pacific SAR Plan also has civil/military cooperation elements.

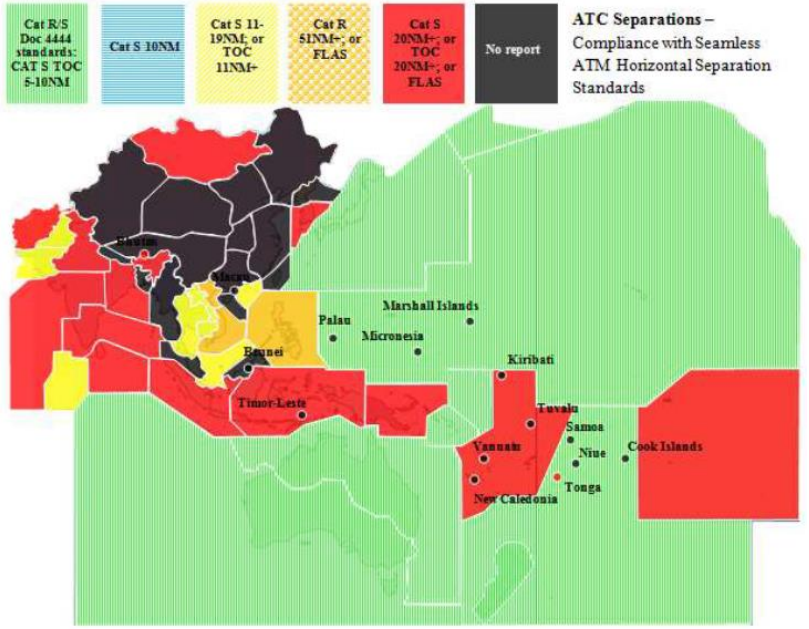
Civil/Military Cooperation

What solutions does APAC have?

- Flexible Use Airspace (FUA) is recognized as not being the most important element in the Asia/Pacific Seamless ATM Plan – strategic and tactical cooperation, and Special Use Airspace are!
- A Seamless ATM Plan Ballistic Launch/Space Re-entry element.
- ‘Focused’ (single State) civil/military cooperation workshops.

ATC Separation Standards

- Many Asian States impose:
  - a Flight Level Allocation Scheme (FLAS), even in surveillance environments; and
  - restrictive Transfer of Control (TOC) measures of 30-80 NM.



ATC Separation Standards

- The major issues for establishment of efficient ATC separation standards are:
  - using the wrong PBN specifications:
    - RNAV10 50NM should be eliminated by 2019 in oceanic airspace and never used elsewhere;
    - RNAV5 is not recommended in APAC because of a lack of DMEs, and the lack of waypoint sequencing and database mean it should not be used without surveillance;

ATC Separation Standards

- The major issues for establishment of efficient ATC separation standards are:
  - use of procedural separations in ATS surveillance airspace:
    - mindsets requiring multiple surveillance system and treating ICAO standards as being unsafe – and extreme conservatism resulting in increased controller workload managing larger separations = more conflicts); and
    - lack of trust in controllers, and a punitive environment for incident reporting.

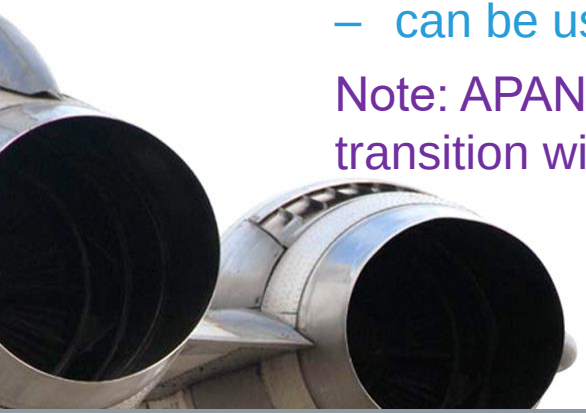
ATC Separation Standards

- The Asia/Pacific Seamless ATM Plan includes extensive material on:
  - human performance (including use of surveillance-based separations and avoidance of FLAS); and
  - the establishment of an ‘Aviation Culture’.

ATC Separation Standards

- A word on why RNP2 is important to APAC:
  - allows much tighter route spacing and separation standards, and has much greater track-keeping assurance in our busy airspace;
  - can be used in both continental and oceanic environments.

Note: APANPIRG has approved an ‘equivalence’ for RNP2 as we transition with more approvals: RNP1 + RNAV2 + GNSS = RNP2.



ATC Separation Standards

It is recommended that RNP2 be applied in the MID Region too, in particular at the interface with APAC.

APAC is willing to share their experience in this respect.

ATFM

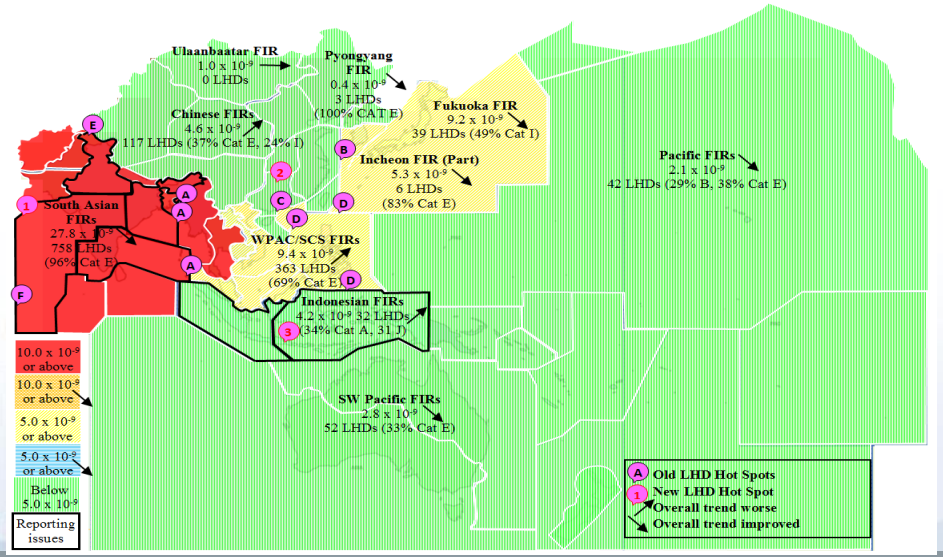
- APAC ATFM development is currently focused on the multi-nodal (‘virtual ATFM’) concept, and developments in China (some regions), India (C-ATFM), and in East Asia (NARAHG):
  - there is some progress in the exchange of Daily ATFM Plans and the in-principle agreement on ATFM information exchange;
  - at present, the multi-nodal trial is only at the Ground Delay Programme (GDP) stage but communications systems have been tested;

ATFM

- APAC ATFM development is currently focused on the multi-nodal (‘virtual ATFM’) concept, and developments in China (some regions), India (C-ATFM), and in East Asia (NARAHG):
  - a State is signaling that they would like to ‘use’ the future ATFM system’s Calculated Time Over (CTO) for fixes as a means of proceduralising what should be tactical (surveillance) airspace; and
  - there has been an effort to consider the interface of A-CDM and ATFM systems.

Airspace Safety Monitoring

- APAC has had major airspace safety compliance issues in:
  - West Indian Ocean interfaces with African and MID airspace; and
  - East Indian Ocean interfaces (Bay of Bengal).



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THANK YOU