

**59th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS**

*Cebu, Philippines
14 to 18 October 2024*

AGENDA ITEM 4: AIR NAVIGATION

**STRENGTHENING REGIONAL COLLABORATION IN AIR
TRAFFIC MANAGEMENT**

(Presented by Singapore)

SUMMARY

This paper recognises the effectiveness of existing regional platforms such as the APANPIRG and its contributory bodies, and the Asia Pacific Air Navigation Service Providers (ANSP) Committee (AAC) to enable States and ANSPs to strengthen collaboration on ATM initiatives.

The Conference is invited to:

- a) Note the avenues of regional collaboration in ATM and the benefits of doing so;
- b) Call on States and ANSPs to participate in regional ATM projects through deepening engagement at APANPIRG and its contributory bodies and in the work of the AAC;
- c) Discuss any other matters to support implementation needs of the APAC region for ATM modernisation, as appropriate.

STRENGTHENING REGIONAL COLLABORATION IN AIR TRAFFIC MANAGEMENT

1. INTRODUCTION

1.1 International civil aviation in the Asia-Pacific (APAC) region is fast growing. Notwithstanding the severe set-back arising from the COVID-19 pandemic, air traffic growth is returning to – and in some cases have already surpassed – pre-pandemic levels. Looking into the future, aviation in APAC is expected to continue on the uptrend, given the region’s unique tourist attractions and business opportunities which would draw tourists and business travellers alike. The future is bright for aviation, benefiting economic growth and job opportunities in the region.

1.2 ICAO has projected that air passengers would reach 12.4 billion by 2050, up from the 4.6 billion today¹. Assuming flights increase by a similar order, the challenges facing air navigation service providers (ANSPs) would include congestion in airports, ATS airspaces and ATS routes, with adverse implications on safety, sustainability and inefficiencies concerns. There is imperative to ramp up airspace capacity and air traffic management (ATM) efficiency in a harmonised manner across the region, ensuring that we keep ahead of air traffic demands in the coming years. This is a crucial issue facing aviation around the world, not only in the APAC region.

1.3 The 14th Air Navigation Conference (AN-Conf/14) held in Montreal on 26 Aug – 6 Sep 2024 recognised the challenges to be tackled globally and the necessary actions which need to be taken today. Discussions covered a range of issues, including: Coordinated approach on updating the Global Air Navigation Plan (GANP) and the Global Aviation Safety Plan (GASP); standardised implementation of separation minima over high seas across Flight Information Regions (FIRs); modernisation of ATM and phasing out of legacy systems; planning considerations for Connected Aircraft and Hyperconnected ATM; enabling Trajectory Based Operations; future-readiness to handle new entrants (e.g. unmanned systems) and operations (e.g. High Altitude Operations and commercial space travels); cybersecurity and information system resilience; implementation support for States; etc.

1.4 AN-Conf/14 also noted information presented by States on regional collaborations in ATM. The following sections cover existing ATM forums and initiatives in the APAC region where States have the opportunity to participate and further strengthen the collaboration on ATM in this region.

2. DISCUSSION

Regional Forums for Collaboration on ATM

2.1 While ICAO establishes global standards and develops global aviation policies, the Planning and Implementation Regional Groups (PIRGs), including APANPIRG, are regional forums established to facilitate implementation at the regional level. This is accomplished through regional planning, implementation support, and fostering collaboration between States, stakeholders, and aviation organisations in the region. Following the 40th ICAO Assembly, the terms of reference of APANPIRG were updated to improve working efficiency, accountability to Council, and the involvement of States, international organisations, and industry in its work programme. AN-Conf/14 further highlighted the role played by PIRGs in implementation support for improvements to the air navigation system, including airspace optimisation, trajectory-based operations, and the optimisation or phasing out of legacy systems, including the cessation of FPL2012.

2.2 The Asia Pacific ANSP Committee (AAC) was formed to foster greater collaboration between ANSPs and their CAAs through adoption of a project-based methodology to address priority areas. Four priority areas have been identified with specific tasks planned within each workstream: (1) step up investments in ANS capacity and capabilities and share requirements and best practices in the

¹ ICAO. 2023-2025 Business Plan Reprioritisation and Strategic Plan. 14th Air Navigation Conference, Montreal, Canada. <https://www.icao.int/Meetings/anconf14/Documents/Informaion%20Sessions/PPT02.pdf>

procurement of ANS systems, (2) accelerate the development and implementation of Seamless ANS and collaborate on green initiatives to enhance ANS sustainability, (3) collaborate on business continuity and contingency planning, and (4) support the operations of oceanic ANSPs.

Reaping Operational Benefits through Regional Collaboration

2.3 This section covers recent regional collaboration in APAC to improve ATM.

2.3.1 **Collaborative Air Traffic Flow Management (ATFM) in the Region:** Pursued under the auspices of ICAO and APANPIRG, the Asia-Pacific Multi-Nodal Air Traffic Flow Management Collaboration (AMNAC) is an example of cross-border collaboration in the APAC region. Through this ATFM initiative, participating States and ANSPs are able to work with airlines to optimise air traffic flow through demand-capacity balancing. Since 2019, the post operations analysis of the AMNAC network (<https://bit.ly/amnac-poa>) estimated that the ATFM ground delays issued translated to a reduction of 18,000 tonnes of fuel burn, thus supporting environment protection. The ICAO *Asia-Pacific Regional Framework for Collaborative ATFM* provides a framework for regional implementation of ATFM and ICAO is facilitating coordination and operational integration between AMNAC and the sub-regional Northeast Asia Regional ATFM Harmonisation Group (NARAGH). Future adoption of newer communications systems and protocols would further support seamless operations and efficiency.

2.3.2 **South-East Asia-Oceania Free Route Operations (SEA-O FRTO):** Implemented as an initiative between four ANSPs of APAC States, viz. AirNav Indonesia, Airservices Australia, Airways New Zealand, and the Civil Aviation Authority of Singapore, the SEA-O FRTO operational trials recently commenced on 5 August 2024. This allows airlines to fly user-preferred trajectories along 38 ATS routes instead of along fixed airways, thus reducing flying time, fuel burn, and carbon emissions. Experiences in the trial may also prove invaluable in the future integration of free route and trajectory-based operation concepts.

2.3.3 **APAC Trajectory Based Operations (TBO) Pathfinder Project:** TBO would, in the medium to longer term, be a game changer which allows flights to fly their optimal flight profiles across FIRs. TBO requires key changes in processes and systems for real-time data and information exchange between ANSPs, airlines and cockpits. Building blocks are progressively being put in place under the leadership of ICAO and APANPIRG. Such building blocks include Flight and Flow Information for a Collaborative Environment (FF-ICE) services which define information requirements for flight planning, flow management and trajectory management, and System Wide Information Management (SWIM) infrastructure which enables seamless information access and interchange between all providers and users of ATM information and services. It is not too early for States / ANSPs to start sharing knowledge and pooling expertise to look into these provisions, given the typically long planning cycles for systems upgrades. The ‘Pathfinder Project’ could minimise duplication of efforts, synchronise timely modernisation of ATM systems for TBO, and ensure value-for-money on investments for future air traffic growth. This advances the *No Country Left Behind* vision while preparing for seamless ATM operations across the region.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

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