International Civil Aviation Organization

The Fourth Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/4)

Bangkok, Thailand, 18 – 21 March 2025

Agenda Item 2: Review Outcomes of Related Meetings

RELEVANT MEETING OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents brief outcomes from relevant high-level meetings that had been conducted in 2024.

1. INTRODUCTION

1.1 The 14th ICAO Air Navigation Conference (AN-Conf/14), held from August 26 to September 6, focused on advancing air navigation with an emphasis on efficiency, modernization, and safety. Key outcomes included frameworks for implementing initiatives like longitudinal separation and Free Route Airspace (FRA) in the near term. Delegates also addressed phasing out legacy systems in favor of advanced planning mechanisms, targeting a global transition by 2034. These initiatives aim to improve air traffic flow, reduce environmental impacts, and enhance operational efficiency. AN-Conf/14 conference, working papers, information papers, and other resources can be accessed at: https://www.icao.int/Meetings/anconf14/Pages/WP_Agenda.aspx.

1.2 The Twelfth Meeting of the Air Traffic Management Sub-Group (ATM/SG/12) of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) was held from 23 to 27 September 2024 at the Kotiate Wing of the ICAO Asia and Pacific Regional Office, Bangkok, Thailand. ATM/SG/12 meeting report, working papers, information papers, and other resources can be accessed at: https://www.icao.int/APAC/Meetings/Pages/2024-ATM-SG-12.aspx.

2. DISCUSSION

AN-CONF/14 Outcomes

2.1 The Conference supported for implementing air traffic management enhancements, particularly **Project 30/10** and **Free Route Airspace (FRA)**, aimed at optimizing longitudinal separation and improving airspace efficiency. The Conference emphasized the need for **States to collaborate through PIRGs** for the implementation of Project 30/10 and for ICAO to develop regional action plans to facilitate this transition.

2.2 Additionally, the Conference endorsed the **feasibility study of an ICAO air navigation efficiency audit programme**, encouraging the involvement of States and international organizations in evaluating air navigation performance improvements.

2.3 Regarding **phasing out legacy systems**, the Conference supported transitioning to

modern CNS/ATM systems, particularly the shift from the current flight planning mechanism to **Flight and Flow – Information for a Collaborative Environment (FF-ICE)**, with a **global transition target set for 2034**. States were urged to work through PIRGs to establish **regional focus groups** for planning and implementation, ensuring a coordinated approach. The recommendation also called for **ICAO to provide guidance and support** through PIRGs to assist States in achieving a smooth transition to FF-ICE services.

2.4 In reviewing AN-Conf/14-WP/75, Revision No. 1 presented by International Air Transport Association (IATA) and International Business Aviation Council (IBAC), supported by the International Federation of Air Traffic Controllers' Associations (IFATCA), the Committee noted that airspace disruptions have increased in recent years with airlines continuing to face challenges impacting efficient operations around airspace that are no longer available for civil aviation, sometimes for extended periods.

2.5 As a result of the discussion, the Committee agreed on the following recommendation:

Recommendation 1.1/2: Resilience of the air navigation system

That States:

a) implement airspace optimisation initiatives covered by ICAO provisions, such as air traffic flow management, flexible use of airspace and civil-military cooperation;

b) share advance information related to anticipated disruptions; and

that ICAO:

c) together with States and industry, develop global guidance on air traffic management contingency management, including the recovery phase, as well as regional frameworks, to support the implementation of Annex 11 – Air Traffic Services.

2.6 In considering the effects of Global Navigation Satellite System (GNSS) Radio Frequency Interference (RFI), the Committee:

a) expressed significant concerns with the recent escalation of harmful interference to GNSS, the risk it poses to civil aviation, and the critical impact this has had on global operations, particularly on areas surrounding conflict zones; and

b) agreed on the importance of maintaining a sufficient network of conventional navigation aids, supported by Very High Frequency Omnidirectional Radio Range (VOR), Distance Measuring Equipment (DME) and Instrument Landing System (ILS) facilities, to ensure operational safety as well as sufficient airspace capacity during times of GNSS interference.

2.7 As a result of the discussion, the Committee agreed on the following recommendation:

Recommendation 2.2/2: Addressing global navigation satellite system interference and contingency planning

That States:

a) ensure that effective GNSS RFI mitigation measures are implemented, based on measures developed by ICAO and industry, including the need to maintain a sufficient network of conventional navigation aids to ensure operational safety as well as sufficient

airspace capacity during times of GNSS interference;

b) through the mechanism of the planning and implementation regional groups, develop regional or global navigation satellite system reporting mechanisms, as described in the Global Navigation Satellite System (GNSS) Manual (Doc 9849); and

c) work with industry to provide guidance on detecting global navigation satellite system jamming or spoofing and maintaining safe and efficient aircraft operation in case of GNSS anomalies;

that ICAO:

d) develop a standardised implementation package to assist and guide States in implementing effective GNSS RFI mitigation measures, including optimisation and rationalisation of conventional navigation aids, commensurate with their local conditions, to ensure continuity in the provision of ANS;

e) develop guidance on civil-military coordination in relation to harmful interference to GNSS(s) originated or detected by military authorities; and

f) review aircraft minimum equipage lists to ensure compatibility with States' implemented minimum operational networks.

2.8 The Committee reviewed AN-Conf/14-WP/10, presented by ICAO, regarding the proposed Project 30/10. This initiative aims to improve the operational efficiency of the global air navigation system by implementing longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere.

2.9 As a result of the discussion, the Committee approved the following recommendations:

Recommendation 3.1/1: Project 30/10 – Optimised implementation of longitudinal separation minima

That States:

a) within the processes of the planning and implementation regional groups, actively collaborate with neighbouring States to implement Project 30/10 – implementation of longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere;

that ICAO:

b) through the planning and implementation regional groups, develop regional action plans for the implementation of Project 30/10;

c) support inter-regional collaboration for a harmonized implementation of Project 30/10; and

d) consider other minimum service level procedures, via a framework, for implementation in oceanic and remote airspace.

2.10 In reviewing AN-Conf/14-WP/60, AN-Conf/14-WP/48 and AN-Conf/14-WP/70, the Committee noted the benefits of trajectory-based operations (TBO) in improving the predictability of aircraft movement and flight efficiency, as well as in increasing utilisation of available capacity and

operator flexibility. While acknowledging that there would be varying degrees of readiness to implement TBO in different States and regions, the Committee stressed the importance of a well prepared and coordinated implementation of TBO to accrue more substantial and immediate benefits.

2.11 As a result of the discussion, the Committee approved the following recommendations:

Recommendation 3.1/3: Enabling successful deployment of trajectory-based operations

That States:

a) and regions expedite the implementation of TBO enablers that are considered mature and relevant;

b) support ICAO in expediting its work programme on TBO and its enablers, including the development of a plan and timeline for their implementations;

that ICAO:

c) develop and maintain an ICAO work programme addressing the full scope of TBO;

d) develop ICAO provisions and guidance for automated air-ground trajectory synchronization; and

e) investigate the need for the evolution of service priority policy in support of TBO implementation.

2.12 The Committee, in recognising that expansion of Free Route Airspace (FRA) initiatives across airspace boundaries should increase operational efficiency and contribute to reduced fuel consumption, agreed that the question of whether additional ICAO provisions and guidance material were necessary to facilitate harmonised FRA implementation should be referred to the appropriate expert group(s) for further consideration.

2.13 As a result of the discussion, the Committee approved the following recommendations:

Recommendation 3.1/4: Free Route Airspace

That States:

a) actively collaborate with neighbouring States to implement FRA;

that ICAO:

b) consider the need for provisions and guidance material to support harmonized implementation of FRA, including implementation across airspace boundaries and regions.

2.14 The Committee reviewed several working papers, including AN-Conf/14-WP/11, which outlined progress in developing global provisions for implementing flight and flow – information for a collaborative environment (FF-ICE) services and proposed 2034 as the target date to cease FPL2012 operations. To support this, the importance of an inclusive, coordinated approach at national and regional levels was emphasised, along with collaboration among States and guidance from ICAO.

2.15 As a result of the discussion, the Committee approved the following recommendations:

Recommendation 3.2/2: Transition to flight and flow – information for a collaborative environment services and cessation of ICAO 2012 flight plan by 2034

That States:

a) in support of the 2034 global cessation of the ICAO 2012 flight plan, commence the development of a national plan to transition FF-ICE services along with industry stakeholders;

b) include plans for the implementation of both minimum and optional FF-ICE services in the national air navigation plans;

c) share experience and resources for the implementation of FF-ICE services;

d) and planning and implementation regional groups, consider establishing regional focus groups for coordinating the planning and implementation of FF-ICE services and providing necessary support throughout the transition period;

e) support and contribute to the work of their respective planning and implementation regional group and their sub-groups to develop a regional plan to transition to FF-ICE services on the basis of the 2034 global cessation of the ICAO 2012 flight plan.

that ICAO:

f) amend relevant ICAO provisions and guidance material to enable the 2034 global cessation of the ICAO flight plan and associated air traffic services messages;

g) through planning and implementation regional groups, provide guidance and support for the development of regional plans to transition to FF-ICE to enable the 2034 global cessation of the ICAO 2012 flight plan;

h) support inter-regional collaboration for a harmonized implementation of and transition to FF-ICE services;

i) monitor and support the progress of FF-ICE services implementation and transition plan developments of States; and

j) conduct a periodic assessment and report on the readiness of the global air traffic management community for the 2034 global cessation of the ICAO 2012 flight plan.

ATM SG/12 Outcomes

Updating the Asia/Pacific Seamless ANS Plan (WP/04)

2.16 The Meeting reviewed Seamless ANS Plan V3.5. Following meeting discussion, the Secretariat had prepared Seamless ANS Plan V3.6 for review by 08 October 2024

2.17 The meeting adopted the following Draft Conclusion in order to update the Seamless ANS Plan, for APANPIRG/35's consideration.

Draft Conclusion ATM/SG/12-1: Asia/Pacific Seamless ANS Plan

That, given the urgency and priority of Air Navigation Service (ANS) planning and modernization, and the lack of progress in implementing the Aviation System Block

Upgrade (ASBU) Block 0, Asia/Pacific States are urged to review Version 4.0 of the Asia/Pacific Seamless ANS Plan.

Regional Air Navigation Plan Update (WP/10)

2.18 ICAO presented an update on the progress of incorporating coordinate data for Asia/Pacific FIRs and Search and Rescue Regions (SRRs) in the Regional Air Navigation Plan (ANP) Volume I. States should note that Doc 9673 did not provide a legal description of the FIRs in the first place, it was very important for States to understand that this process of checking, alignment and validation is crucial if they would like a formal basis for their FIRs.

Regional Supplementary Procedures Doc 7030 Update (WP/13)

2.19 The Secretariat informed the meeting that when New Zealand, jointly with several States, submitted a PfA to SUPPS for implementing ADS-B ITP and ADS-C CDP, ICAO Headquarters deemed parts of these proposals unnecessary. At the Tenth Meeting of the ATM Sub-Group of APANPIRG in October 2022, New Zealand sought clarification on separation minima requiring a supporting SUPPS procedure. Their Draft Conclusion was agreed upon and referred to ICAO for technical review.

Conclusion APANPIRG/33/5: Provide clear direction on Doc 7030 Regional SUPPs publication requirements

That, ICAO provides clear direction on which separation minima require Doc 7030 Regional SUPPS publication to provide consistency in the information published in the different regions.

Rationalization of Navigation Infrastructure (WP/15)

2.20 Civil aviation had a high dependence on GNSS for communications, navigation and surveillance (CNS). The rising prevalence of GNSS RFI, spoofing and jamming posed a significant risk to aircraft safety and operational efficiency. According to IATA's analysis of data from over 370,000 flights, many current GNSS aircraft receivers would take 30 minutes to recover from RFI, and others required a ground maintenance reset to regain normal functionality.

2.21 IATA proposed that States and ANSPs consider current and future risks associated with GNSS RFI when developing and reviewing plans for decommissioning conventional navigation aids, as well as re-evaluate existing ground-based navigation aids (GBNA) and establish a minimum operating network (MON) of GBNA that could guarantee continued flight safety in the event that GNSS was unreliable or unavailable. This involved retaining some essential GBNA beyond 2030 and actively collaborating with airspace users to establish regional MONs that could mitigate GNSS RFI risks.

2.22 The Chair acknowledged the significance of GNSS interference and its major impact on ATS and airspace users. As a result, it was advised that States/Administrations develop standard operating procedures for air traffic controllers to manage GNSS interference, as well as reporting processes for airspace users to the relevant ATS.

Towards Harmonised Realisation of the ICAO Global Trajectory based Operations (TBO) Concept in the Asia and Pacific Regions (WP/17)

2.23 The paper provided an update on the APAC TBO Pathfinder Project, which was initiated by the Asia Pacific Air Navigation Service Provider (ANSP) Committee (AAC). The project's goal was to harmonise implementation planning for the ICAO global TBO concept in the APAC region. It aimed to accelerate the development and deployment of key TBO components like SWIM and FF-ICE/R1.

Additionally, the project sought to advance future releases of FF-ICE and the Connected Aircraft concept through discovery methods such as tabletop exercises, laboratory demonstrations, and trials.

2.24 A summary of the work done by the three out of four Workgroups (WGs):

WG1: Focused on effective communication with TBO stakeholders to modernise air navigation in the APAC region. They developed a draft education framework covering the TBO concept, benefits, implementation requirements, stakeholder discussions, the airline's perspective, and lessons from past trials.

WG2: Identified operational values for the APAC region in preparation for the FF-ICE/R1 lab demonstration in June 2025. They worked on operational scenarios, discussed tiered participation levels, and shared examples of SWIM connectivity and FF-ICE/R1 service implementation.

WG3: Discussed metrics for evaluating TBO benefits, agreeing to use and customise GANP KPIs. They decided to analyse historical data to identify inefficiencies and explore data sharing for end-to-end trajectory analysis, starting with a small sample from recent months.

2.25 In the APAC region, varying readiness levels were anticipated, with a key focus on managing air traffic in a mixed-mode environment. States and regions prioritised accelerating the planning and implementation of mature TBO technical enablers while ICAO continued work on harmonising these implementations at both regional and global levels.

2.26 Moreover, numerous participants underscored the critical need for a comprehensive regional roadmap for TBO. They strongly advocated for its integration into the 2026 update of the Seamless ANS Plan, emphasising that such a roadmap is essential for ensuring cohesive and efficient implementation across the region.

Cross-Border Direct Routing Operations (DRO) between Indonesia and Singapore (WP/18)

2.27 The paper detailed the joint efforts of Indonesia and Singapore in implementing cross border DRO based on the Free Route Operations (FRTO) concept. The goal was to improve flight efficiency and allow airspace users to choose preferred routes, marking an initial move towards TBO.

2.28 The development of FRTO was essential for achieving flexible trajectories in the ICAO ASBU. FRTO allowed airspace users to plan their own routes instead of following fixed ATS networks. With FF-ICE/R1 services starting in November 2024 and regional SWIM implementation expected by 2030, it was timely for APAC States/Administrations to consider FRTO to benefit from future ATM digitalisation and transformation.

2.29 Indonesia and Singapore collaborated on cross-border DRO on ATS route G579, conducting an operational trial from 21 March to 04 September 2024, which showed a 30% utilisation rate. Following the trial, the cross-border DRO was jointly implemented on 05 September 2024. Both States planned to enhance engagement with operators and explore further cross-border DRO opportunities.

2.30 The cross-border DRO between Indonesia and Singapore was a key step in improving regional air traffic management. This initiative, along with multilateral projects like the Southeast Asia Oceania Free Route Airspace, aims to enhance safety and efficiency. Active collaboration could help the Asia/Pacific region to achieve the ICAO's vision of TBO and support the goal of net-zero carbon emissions by 2050.

2.31 The Chair advocated for enhanced collaboration with neighbouring FIRs. He emphasised the importance of learning from successful cross-border initiatives, particularly citing the cooperation between Indonesia and Singapore. This example served as a powerful reminder of the benefits that could be achieved through effective partnership and coordination across borders.

Updates on ATM Activities in Vietnam (IP/14)

2.32 This information paper presented an overview of recent developments in the field ATM in

2.33 Viet Nam including areas of modernisation of ATM systems, infrastructure development, airspace, ATS routes and flight procedure optimisation, human resource development, cooperation on ATFM and revision of ATC Letter of Agreements (LOAs), cooperation on ATFM and operational trial with Level 3 nodes, revision of ATC LOAs and separation standards, AIM and Viet Nam's preliminary USOAP audit results.

Progress Update on Capacity Optimisation of Air Routes L642 and M771 (WP/25)

2.34 This paper presented the progress update on the enhancement of longitudinal spacing on ATS routes L642 and M771 to follow up on one of the action items agreed as Priority Area 2 in the region.

2.35 An operational trial was conducted between all concerned States and Administrations to adopt 20 NM minimum longitudinal spacing for L642 and M771 between 0200 and 1200 UTC on daily basis for aircraft pair cruising at or above FL290; equipped with serviceable ADS-B; and with constant or increasing longitudinal spacing.

2.36 During the trial period, aircraft without serviceable ADS-B shall cruise at FL280 or below unless prior approval was sought from receiving ATCC/ACC.

2.37 ICAO APAC Regional Sub-Office queried on the expected trial period. Hong Kong China claimed that the trial would continue until further notice since large scale weather deviation in South China Sea often prohibit the operation with reduced longitudinal separation. China agreed with Hong Kong China's view and encouraged neighbouring FIRs work together to make more progress.Singapore expressed that they would share the experience in dealing weather deviation with Viet Nam in the upcoming SCSTFRG meeting.

Optimisation of ATS Routes A461, M501 and A583 (WP/26)

2.38 This paper presented the outcome of enhancing the minimum longitudinal spacing on ATS routes A461, M501 and A583 between the Philippines and Hong Kong China. 30 NM minimum longitudinal spacing would be implemented in three phases.

2.39 Phase 1 and Phase 2 implementation was completed in February 2023. 30 NM minimum longitudinal spacing was applicable to traffic pair on ATS routes A461 and M501with RNP 4 capability at FL290 or above under constant or increasing longitudinal spacing. Smooth implementation, increased capacity and enhanced efficiency were noted.

2.40 In Phase 3 implementation, 30 NM minimum longitudinal spacing would be applicable to traffic pair on ATS route A583 with RNP 4 capability, CPDLC and ADS-C equipage at FL290 or above under constant or increasing longitudinal spacing.

Optimisation and Enhancement of Air Traffic Management over the Bay of Bengal Area (IP/05)

2.41 The meeting was informed of Malaysia's implementation of default 50 NM longitudinal separation in the Bay of Bengal area and the additional flight level allocation scheme (FLAS) of flight level (FL) 360 for ATS routes L510, N571, P574 and P628. In collaboration with India, this initiative significantly enhanced flight capacity over the Bay of Bengal area and optimised air traffic management efficiency in the Kuala Lumpur FIR. The conference concluded with high-level recommendations in air navigation and safety, which will be submitted to the Council for approval and, where appropriate, for endorsement by the 42nd Assembly in 2025.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the outcomes of relevant meetings and take any necessary follow-up actions; and

b) discuss any relevant matters as appropriate.

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