International Civil Aviation Organization

Thirteenth Meeting of the Air Traffic Management Sub-Group (ATM/SG/13) of APANPIRG

Singapore, 25 – 29 August 2025

Agenda Item 6: ATM Coordination (Meetings, Route Development, Contingency Planning)

SAIOSEACG MEETING OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the key meeting outcomes of the Fourth Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/4).

1. INTRODUCTION

1.1 The South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG) was established through Decision APANPIRG/32/5. Its purpose is to identify, plan and implement Air Traffic Management (ATM) improvements within the airspace that serves the South Asian, Indian Ocean and Southeast Asian regions.

1.2 The SAIOSEACG/4 was held in Bangkok Thailand, from 18 to 21 March 2025. The meeting was attended by 59 participants from 15 States/Administration and two International Organizations. The relevant presentations and papers are available at https://www.icao.int/APAC/meetingdocs?fid=551.

1.3 The South China Sea Traffic Flow Review Group (SCSTFRG) and the Bay of Bengal Traffic Flow Review Group (BOBTFRG) are the two Small Working Groups (SWGs), subordinated to the SAIOSEACG. The key outcomes of the two SWGs are also reflected in this paper. The achievements from both SWGs are in **Appendix A**. It will be able to enable States/Administrations to gain an overview of the current status of major ATS route improvements in the Asia/Pacific Region, the areas requiring further enhancement, and the key priorities for future focus.

2. DISCUSSION

2.1 SAIOSEACG/4 meeting reviewed related global and regional outcomes, current operations and deficiencies, CNS/ATM implementation status, ATS route developments, and other businesses to support seamless, safe and efficient operations in the Asia/Pacific Region.

2.2 **Global and regional direction (AN-Conf/14; ATM/SG/12):** The meeting reinforced efficiency, safety and modernization priorities: implementation of Project 30/10 to optimize longitudinal separation; expansion of Free Route Airspace (FRA); transition planning to FF-ICE by 2034; resilience/contingency planning amid conflicts and GNSS interference; and acceleration of Trajectory-Based Operations (TBO). IATA reiterated applying the minimum separation that aircraft and ATM systems permit.

2.3 **SCSTFRG priorities:** SCSTFRG/12 revised SCS Priority Areas in line with Project 30/10. SAIOSEACG/4 focused on reduced horizontal separation and CNS/ATM capabilities on key ATS routes (A1/A202/L642/M771, etc.) and updated route profiles. Persistent implementation challenges include multi-FIR coordination, large-scale weather deviations (LSWD), and daily ATFM measures. The meeting recorded a comprehensive discussion on establishing a parallel ATS route to A1.

2.4 **BOBTFRG updates:** BOBTFRG addressed phased PBCS implementation, space-based ADS-B trials, and optimization of FLAS. States discussed reactivating BOBCAT ATFM by 2025 to manage South Asia–Europe flows. A readiness snapshot showed uneven PBCS preparedness across BOB FIRs. Malaysia indicated intention to commence a 30 NM PBCS trial by August 2025, while India reported varying ATM automation readiness among FIRs.

2.5 **Safety monitoring and deficiencies (FIT-Asia; RASMAG; APANPIRG):** Relevant States were urged to formalize service agreement with the Central Reporting Agency (CRA) and submit data link and PBCS performance data. RASMAG noted that Asia Region met TLS for both horizontal and vertical risks; the Pacific Region vertical risk exceeded TLS. APANPIRG deficiency areas remain in AIM, Data Responsibility, Restricted Areas, Airspace Classification, ATS Messages/Flight Planning, SAR, ATS Data Link and Safety Reporting. China updated progress on airspace classification alignment with Annex 11. India outlined actions to close several deficiencies and committed to submit required datasets in 2025.

2.6 **USOAP CMA Protocol Questions (2024 edition):** ICAO briefed that new PQs would take effect from 1 July 2025 (SSP-related PQs phased later). APAC ANS average EI stands at 65.42% (Feb 2025). Access to PQs is via States' NCMCs. The 2020 PQs continue to apply for activities starting before 1 July 2025.

2.7 **Application of ATC separation minima (Seamless ANS Surveys):** 2025 survey participation decreased; only 17 of 44 APAC States fully met separation requirements across remote, surveilled, and terminal categories. Inefficiencies persist in surveilled and terminal airspace where separations exceed the ICAO 5 NM standard at TOC points. The meeting emphasized adopting Project 30/10, revising LOAs to enforce 5–10 NM at FIR boundaries, and strengthening controller training.

2.8 **Operational impacts of Kabul FIR contingency:** Pakistan reported increased westbound transit via Kabul FIR has raised ATC workload and delays. Recommended mitigations include making lower levels available on selected points, airlines planning for delays and vertical restrictions, and resuming BOBCAT procedures at all Kabul FIR entry points.

2.9 **CNS/ATM implementation trials and guidance:**

a) **Chennai FIR (N571)**: Trial application of PBCS-based 30 NM/5-minute separation began on 04 February 2025; approximately 60% fleet equipage observed. Malaysia and Oman participation is encouraged; CRA arrangements remain a constraint.

b) **Mumbai FIR (L301/L639)**: Since January 2024, trials applying 20 NM longitudinal separation using space-based ADS-B and CPDLC (where VHF unavailable) reported no safety occurrences; ~52–53% aircraft eligible. AAI seeks to make 20 NM permanent and extend to other FIRs.

c) **PANS-ATM amendments**: ICAO presented surveillance-based minima enabling deviations from fixed routes to simplify weather management; guidance in Doc 10116 is expected by Q2 2025.

2.10 **ATS route developments and discussions:**

a) **LSWD on L642/M771**: SAIOSEACG/4 agreed the use of 30 NM spacing (with an initial 10 NM buffer) during LSWD in surveillance environments, with potential removal of the buffer to retain 20 NM where sustainable. China proposed extending current 20 NM handover spacing trials to 24-hour operations before SCSTFRG/13.

b) **Asia/Pacific Region ATS Route Catalogue (Version 24.3)**: Prioritization of high-benefit proposals; archiving of infeasible cases; new entries include MEKONG 02, MEKONG 03, BOB 03 (BIMT Phase 2b) and several EUR/APAC interface transfers.

c) **EUR/APAC interface (RDGE-SCM/2024)**: SAIOSEACG/4 agreed to coordinate new high-priority routes involving China, Mongolia, Kazakhstan, Kyrgyzstan and Uzbekistan to alleviate congestion and workload.

d) **A1 parallelization**: China proposed an ICAO-guided roadmap (consensus by 2025; safety evaluations/trials in 2027; formal operations in 2027) for unidirectional RNAV 2 parallel routes within Sanya FIR; supported by Hong Kong China, Lao PDR and Thailand.

e) **BIMT/Mekong initiatives**: BIMT Phase 2b (Myanmar–Thailand) to be tracked as BOB 03; Mekong 01 design principle agreed as RNAV2 CDR (MFA FL270); NAN–SAGAG added as MEKONG 02; BASIT–UPNEP added as MEKONG 03.

f) **Mumbai oceanic decongestion**: Options include diversions from P751 and a new route south of BIBGO; cross-regional coordination (MID/APAC) will follow ICAO route-catalogue processes.

2.11 **Contingency planning and SAR (AAC WS3):** WS3 finalized baseline operational contingency guidance, a regional "How-To" for coordination, and integrated oceanic ANSP continuity plans into a draft APAC contingency framework. Table-top exercises are planned for 2025. An electronic platform for plan-sharing is under consideration (ICAO APAC platform being explored).

2.12 **Civil–Military Cooperation in ATM (CMAC) and cross-FIR collaboration:** Seamless ANS Reporting Portal is in use; 17 States/Administrations updated CMAC status by 1 March 2025. Overall progress on priority CMAC elements remains uneven. ICAO Asia and Pacific Regional Sub-Office (RSO) plans a regional CMAC/FUA workshop in Q3 2025. China proposed measures to strengthen cross-FIR operations in Southeast Asia (harmonized procedures, reduced handover separations, AIDC roll-out, optimized ATFM).

2.13 Regarding the achievements of ATS route enhancement from both SCSTFRG and BOBTFRG, ICAO seeks to present a consolidated overview of the discussions and outcomes related to enhancing airspace capacity, improving operational efficiency through reduced separation minima, and strengthening CNS infrastructure to support these improvements. This information is summarized in **Appendix A**.

2.14 The table categorizes the primary routes under discussion and the associated topics — including Horizontal Separation, Horizontal Challenges, Vertical Management, Vertical Challenges, Concerning States (Lead), Improvement Project Timelines, and CNS Infrastructure — based on Working Papers, Information Papers, and meeting outcomes from previous sessions. For detailed information, States/Administrations are invited to refer to **Appendix A**.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) encourage States/Administrations to provide timely updates and feedback on proposals requiring further coordination;

c) support continued collaborative engagement to advance priority route enhancement across Asia/Pacific Region; and

d) discuss any relevant matters as appropriate.

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South China Sea ATS Route Operational Overview – Where We Are & Key Challenges

ATS Routes (Categories)	Horizontal Separation	Horizontal Challenges	Vertical Management	Vertical Challenges	Concerning States (**Leading**)	Timelines	CNS Infrastructures
A1 / A202 S	20 NM→10 NM LSWD→30→10 NM	1: Sector configuration 2: Limited controller capacity 3: limited harmonization procedure	FLAS→FLOS 270/290/330/370/410 280/300/340/380/400 Preferred cruise levels (FL290, FL330, FL370)	1: Crossing route conflicts (Limited optimum level availability during congestion) 2: ATC Workload (ATFM measures, level restrictions, MIT) 3: Sector configuration	China (Sanya ACC – Lead), Viet Nam (Hanoi ACC), Hong Kong China, possible involvement of Ho Chi Minh ACC and other Bay of Bengal-connected FIRs (Lao PDR, Thailand)	1. Consensus on parallel routes 2. Route design readiness high 3. Preferred configuration decision by end 2025 4. Safety assessments & limited trials in 2026 5. Full implementation targeted 2027	1. AIDC between Sanya–Hanoi operational 2. planned expansion to Ho Chi Minh ACC 3. Robust radar & VHF coverage above 4,500m; >98% RNAV2 compliance on current A1 traffic
L642 / M771 S	20 NM (Trial, not 24hr) →10 NM	1: Not fully implemented (Occasional suspension due to LSWDCP) 2: LOAs pending 3: Limited ATC workload	FLAS→FLOS 310/320/350/360/390/410 310/320/350/360/390/410 ⨯ FL290+ for ADS-B equipped aircraft; FL280 or below for non-ADS-B unless prior approval	1: Crossing route conflicts 2: Reduced FL availability during LSWD 3. Constraints during adverse weather and capacity reduction (LSWDCP periods)	China, Hong Kong China, Viet Nam (joint lead); Viet Nam, Singapore, Cambodia	1. Trial began May 2024 2. observed gradual extension of hours Jan–Apr 2025 recommendation for full 24-hour implementation with revised LOA by Dec 2025	ADS-B required for reduced separation; *confirmation required from member States* for detailed CNS infrastructure status
A461 / A583 R	30 NM (Partial) →20 NM	1: Inter-FIR coordination 2: Incomplete RNP4 equipage	FLAS→FLOS 290/330/370/410 280/300/340/380	1: Level use overlaps with M767/M758 2: Lack of flexibility	Hong Kong China(lead); Philippines, Malaysia	*confirmation required from member States*	*confirmation required from member States*
N892 / L625 R	50 NM (Under planning) →30 NM	1: Staffing shortage 2: Technical readiness 3: No full ADS-B coverage	FLAS→FLOS 310/320/350/360/390/400 310/320/350/360/390/400	1: Rigid level allocation 2: Poor level usage efficiency	Philippines (Manila ACC – lead), Singapore	1. New ATC operational sector target: Dec 2025	FANS 1/A ADS-C/CPDLC (J5/J6/J7); RCP240; RSP180.

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					ACC, Ho Chi Minh ACC	2. Trial starts: Mar 2026 (6+ months) at 50 NM 3. Possible shift to 30 NM after trial evaluation	
M646 / A341 R	50 NM (Planning 30 NM) →30 NM	1: Sector design ongoing 2: Transfer inconsistencies	FLAS→FLOS 290/310/330/350/370 320/360/400	1: Lack of harmonized transition 2: No flexible FL policy yet	Philippines (Manila ACC – lead), Malaysia (Kota Kinabalu ACC); Indonesia involved for restriction removal	Trial 30 NM start: Dec 2025	*confirmation required from member States*
M754, M522	Current: 10-minute MNT; Planned trial: 50 NM minima (later possible 30 NM after evaluation)	Internal Manila ACC preparations needed; procedure development and readiness checks; harmonization with Malaysia	*confirmation required from member States*	*confirmation required from member States*	Philippines (Manila ACC – lead), Malaysia (Kota Kinabalu ACC)	Trial 50 NM start: Q2–Q3 2026; possible 30 NM later	*confirmation required from member States*
L644 (RNP10)	Previously 10 min MNT; now 20 NM at LIGVU (Jakarta–Singapore boundary); trial of 20 NM at DUDIS (Viet Nam–Singapore boundary)	Coordination across 3 FIRs; need to maintain safety and efficiency with increased traffic; trial results pending	*confirmation required from member States*	*confirmation required from member States*	Indonesia, Viet Nam, Singapore (joint)	20 NM at LIGVU applied since 21 Mar 2024; trial 20 NM at DUDIS from 1 Jul 2025; full implementation targeted 1 Nov 2025	Improved CNS and regional data sharing enabling reduced separation

Bay of Bengal ATS Route Operational Overview – Where We Are & Key Challenges

ATS Routes (Categories)	Horizontal Separation	Horizontal Challenges	Vertical Management	Vertical Challenges	Concerning States (**Leading**)	Timelines	CNS Infrastructures
L510, P574, P628 (RNAV 10 / RNP 10)	Phase 1: 50 NM longitudinal separation; Phase 2/3 planned: 30 NM longitudinal / 23 NM lateral (RNP 4 or RNP 2 with ADS-C/CPDLC, RCP 240, RSP 180)	Lack of harmonized separation minimum across FIR boundaries; limited RNP 2/RNP 4 implementation; varied ANSP readiness; dependency on ADS-C/CPDLC mandates	FLAS includes FL280, FL300, FL340, FL360, FL380, FL400 (westbound)	Need for harmonized vertical separation and allocation; weather deviations (LSWD) require reverting to 10-minute separation	Malaysia (lead for L510, N571, P574, P628 implementation with India); India (Chennai/Kolkata FIRs); Singapore (implementation from 28 Aug 2024)	**Phase 1**: 50 NM (implemented 1 July 2024) **Phase 2**: Trial 30 NM/23 NM (start ASAP) **Phase 3**: Full 30 NM/23 NM by 1 Mar 2026	ADS-C/CPDLC available in some FIRs; varied readiness — some FIRs lack automation; some under upgrade (Indonesia, Sri Lanka); Malaysia monitoring ADS-C/CPDLC only
N571 (Chennai FIR – Oceanic)	Trial use of PBCS-based 30 NM & 5-minute separation (opportunity basis)	Limited benefits due to restricted segment (AGELA–IGOGU); lack of participation from Malaysia and Oman; some aircraft excluded due to non-PBCS compliance or boundary sector not in trial	RVSM band	Limited vertical optimization until Malaysia, exit boundary constraints	India (lead); Malaysia, (encouraged to join)	Trials commenced 4 Feb 2025, 0300–1300 UTC daily; 3-month trial; possible H24 extension and expansion to other RNAV/RNP 10 routes pending regulatory approval. India implemented trial operation of 30NM/5min PBCS separation on N71 on H24 based with effect from 03 Jun 2020.	ATM automation with PBCS compliance alerts; ADS-C; CPDLC
L301 and L639; N571 (Mumbai FIR, international oceanic routes to/from Muscat FIR)	20 NM longitudinal separation between eligible aircraft	Limited eligible aircraft pairs (~53% L639, ~52% L301); intermittent drop of ADS-B targets; need for neighboring FIR participation (Muscat joined Aug 2024)	Confirmation required from member States	Confirmation required from member States	India (Airports Authority of India, DGCA) – Lead; Oman (Muscat FIR) – participant since Aug 2024	15 Jan 2024: trial start eastbound only; 14 Aug 2024: Oman joined (east/west bound); 1 Jan 2025: 24-hr trial; safety assessment done Dec 2024; permanent implementation since 21st May 2025; 20NM Trials commenced	Space-Based ADS-B (Aireon, 1090ES, 8-sec update), CPDLC, HF/SAT phone backup; terrestrial ADS-B & VHF in U5V sector

ATS Routes (Categories)	Horizontal Separation	Horizontal Challenges	Vertical Management	Vertical Challenges	Concerning States (**Leading**)	Timelines	CNS Infrastructures
						from 20th Aug in Muscat Mumbai-Chennai FIR; phased expansion planned to other Mumbai FIR routes, then Chennai & Kolkata FIRs. Trials commenced on 20th Aug 2025 for route N571 in Oman and India FIRs.	
P570 (Chennai–Muscat flow)	Confirmation required from member States	Crossing conflicts at KITAL between P570, and P751; decreased availability of optimum levels	Confirmation required from member States	Inefficient use of available flight levels due to crossing points and route convergence	India (Airports Authority of India, Mumbai ACC) – Lead; coordination with Oman (Muscat FIR), Maldives (Male FIR), and possibly Chennai FIR	Jan 2025: Proposal discussed with airlines and IATA; feedback awaited; UPR implementation in southern Mumbai Oceanic airspace under consideration; new route south of BIBGO proposed to decongest KITAL India proposal to create a new route from ESLAV to ASPUX is being discussed. Airlines from AFI region are encouraged to FPL UPRs through ASIO UPR zone for Southeast Asian destinations.	Confirmation required from member States