INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE THIRTEENTH MEETING OF THE SOUTH CHINA SEA TRAFFIC FLOW REVIEW GROUP (SCSTFRG/13)

BEIJING CHINA, 16 – 18 JULY 2025

The views expressed in this Report should be taken as those of the Meeting and not the Organization

Approved by the Meeting
and published by the ICAO Asia and Pacific Office, Bangkok

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APPENDIXES

INTRODUCTION

Meeting

1.1 The Thirteenth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/13) was held at Beijing China, from 16 to 18 July 2025.

Attendance

2.1 The meeting was attended by 45 participants from Cambodia, China, Hong Kong China, Indonesia, Lao PDR, Malaysia, Philippines, Singapore, Thailand, Viet Nam, IATA, ICCAIA, ICAO and online participants from Pakistan and IFATCA.

2.2 A list of participants is appended in **Appendix A** to this report.

Officers and Regional Office

3.1 Mr. FU Yongqiang, Director of Sanya Area Control Centre, Air Traffic Management Bureau, Civil Aviation Administration of China presided over the meeting throughout its duration as the Chair of SCSTFRG.

3.2 Mr. KWON Hyuk Jin, Regional Officer, Air Traffic Management (ATM), ICAO Asia-Pacific Regional Sub-Office (APAC RSO) acted as the Secretary for the Meeting, assisted by Ms. CHEN Yanru, Programme Assistant at the same office. Mr. Kwon informed about the key agenda items and expectations from the Meeting.

Opening of the Meeting

4.1 The Meeting was opened by Mr. Raphael GUILLET, Chief of ICAO APAC RSO. He welcomed participants to the meeting, and extended his appreciation and gratitude to all participants for their contributions. He emphasized the operational importance of the group in enhancing regional airspace efficiency through collaboration and dialogue, highlighting ICAO's role as a platform to support States in achieving common goals without necessarily relying on new technologies.

4.2 **DISCLAIMER:** The presentation of material in this report does not imply the expression of any opinion whatsoever on the part of ICAO, APANPIRG, the ATM Sub-Group of APANPIRG or SCSTFRG concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

Documentation and Working Language

5.1 The working language of the meeting and all documentation was English. There were sixteen Working Papers (WP), five Information Papers (IP) and six Flimsies were considered by the meeting.

5.2 A list of papers is included at **Appendix B** to this report.

Draft Conclusions, Draft Decisions and Decisions of SCSTFRG − Definition

6.1 SCSTFRG recorded their actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

a) **Draft Conclusions** deal with matters that, according to APANPIRG terms of reference, require the attention of States, or action by the ICAO in accordance with established procedures;

b) **Draft Decisions** deal with the matters of concern only to APANPIRG and its contributory bodies; and

c) **Decisions** of SCSTFRG that related solely to matters dealing with the internal working arrangements of these bodies.

List of Decisions and Draft Conclusions/Decisions

7.1 List of Draft Conclusions/Draft Decisions

Nil

7.2 List of Decisions

<table>
<tr><td colspan="3">Decision SCSTFRG/13-1 – FULL IMPLEMENTATION OF 20NM LONGITUDINAL SPACING ON AIR ROUTES L642 AND M771</td></tr>
<tr><td colspan="2">What: Concerned States/Administrations should consider a full 24-hour implementation of the 20NM longitudinal spacing on ATS routes L642/M771, with amendment and signing of the revised LOA to be completed by Q1 2026</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: The full implementation of 20NM longitudinal spacing on L642 and M771 is a crucial step towards optimising air traffic capacity within the APAC Regions. The full support of all concerned States/Administrations in SAIOSEACG/2 meeting marked a significant milestone to this initiative.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: Q1 - 2026</td><td colspan="2">Status: Adopted by SCSTFRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

REPORT ON AGENDA ITEMS

Agenda Item 1: Adoption of Agenda

Adoption of Agenda (WP/01)

1.1 The provisional agenda for the Meeting (WP/01) was adopted by the meeting. The List of Papers (IP/01) was noted.

Agenda Item 2: Review of the Current and Planned CNS/ATM Capabilities and Identifying Associated Reduced Horizontal Separation

The Outcome of the Relevant Meetings (WP/02)

2.1 Secretariat introduced the summary list of outcomes from The 4th South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/4), The Fourth Meeting of the APAC ANSP Committee (AAC/4), The Twenty Ninth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/29), and The Fifteenth Meeting of the FANS Interoperability Team-Asia (FIT-Asia/15) relevant to the SCSTFRG.

2.2 ICAO expressed that a survey is being conducted to gather data on separation minima used by different States. There is recognition that this area offers significant room for improvement in the region. So far, only twelve States have responded to the Asia-Pacific ANS survey. ICAO requested Member States that more input from other States is needed to get a full picture and drive improvements.

2.3 And ICAO also encouraged States/Administrations to further explore the application of reduced separation minima in the South China Sea airspace, particularly considering regional advancements in surveillance and communication capabilities.

Update on Addressing Capacity Constraints on ATS Routes L642 and M771 During Large-Scale Weather Deviation (LSWD) Events (WP/03)

2.4 At the SAIOSEACG/4 meeting in March 2025, Member States including China, Hong Kong China, Indonesia, Singapore, and IATA agreed to apply 30NM surveillance-based spacing during Large Scale Weather Deviations (LSWD) on routes L642 and M771, replacing the previous 50NM spacing where safely possible. This agreement, officially adopted as Decision SAIOSEACG/4-1, aimed to reduce delays caused by LSWD.

2.5 In May 2025, Singapore and Hong Kong China reported significant delay reductions on these routes. For instance, on M771 from Changi, average delays dropped from 10 to 6 minutes, and the longest delays decreased from 80 to 52 minutes. Similar improvements were observed on L642 from Hong Kong, where average delays fell from 8.9 to 7.3 minutes.

2.6 The involved States concluded that permanently applying 20NM spacing in normal conditions is a key step to support consistent 30NM spacing during LSWD events.

2.7 IATA expressed appreciation for the progress achieved in applying reduced separation and reiterated its support for continued collaboration to mitigate delays caused by LSWD. They emphasized the need to improve air-ground communication during LSWD, noting congestion between ATC and pilots can hinder efficiency, and encouraged stronger engagement between ANSPs and airlines to address this issue.

2.8 ICAO emphasized the importance of defining safety processes and identifying challenges encountered by States during implementation. And also encouraged standardization of procedures and a data-driven review of airline feedback.

2.9 IFATCA noted that while LSWD procedures were reasonable 20 years ago, there is a need to modernize these frameworks to reflect current capabilities.

2.10 China emphasized the technical efforts by the four States/Administrations to enable more flexible and reduced separation standards, facilitated by coordination between ATC and ATFM units.

2.11 Hong Kong China, Singapore, and IATA collectively pointed out that original LSWD procedures were based on RNAV 10 and procedural control. With advancements in CNS for ATS routes M771 and L642, it significantly enhanced safety and justify the move to tighter spacing.

Progress Update on the Operational Trial of 20NM Longitudinal Spacing on Air Routes L642 and M771(WP/04)

2.12 Hong Kong, China led a project to improve air traffic efficiency on major trunk routes L642 and M771 by reducing the minimum longitudinal spacing between aircraft to 20 nautical miles (NM). This operational trial began in May 2024 with support from regional States and IATA, aiming to test the new spacing standard, gather data, and evaluate its benefits.

2.13 The trial applied daily from 0200–1200 UTC for aircraft at FL290 or above, equipped with ADS-B. Over time, with mutual coordination, the trial duration was gradually extended up to 22 hours on some days. Although occasional suspensions occurred due to weather or ATC capacity issues, feedback was positive, showing improved route capacity, better fuel efficiency, and reduced environmental impact. No negative feedback was received.

2.14 Given the successful results and readiness among all parties, it is recommended that the 20NM spacing be fully implemented 24 hours a day by the end of 2025, with necessary agreements and Letters of Agreement (LOAs) updated accordingly.

2.15 Singapore strongly supported applying 20 nautical miles (NM) longitudinal spacing on routes L642 and M771, and commended the joint efforts of the involved States/Administrations. emphasizing it as essential for optimizing traffic capacity in the Asia-Pacific region.

2.16 Viet Nam also supported the initiative, confirming their intent to sign revised LOAs with neighbouring ACCs.

2.17 China supported the idea in principle but highlighted the need for a safety assessment, especially if the 20NM spacing is to be applied 24/7. Hong Kong China and IATA echoed China's view, stating that safety risk and capacity assessments are necessary, and IATA to offer airline operational data for this process.

2.18 Cambodia shared that they have flights operating on L642 and M771 and voiced support for the 20NM implementation.

2.19 IATA welcomed the progress made and emphasized the significance of this initiative for regional capacity enhancement.

2.20 The Meeting adopted Decision SCSTFRG/13-1 endorsing full implementation of 20NM longitudinal spacing on L642 and M771, while noting that further coordination is needed to finalize LOAs.

Post-Trial Assessment of 20NM Separation on Routes L642 and M771 (WP/05)

2.21 China revealed the post-trial assessment result on ATS routes L642 and M771. With flight traffic on L642 and M771 surpassing pre-pandemic levels, the existing 50NM separation was no longer efficient. In response, China, Hong Kong China, and Viet Nam began a trial in May 2024 using 20NM longitudinal separation to improve traffic flow.

2.22 **Key Results (Jan–Jun 2025):**

- 3,816 flights benefited, saving about 192 hours in total delay.
- Safety analysis showed that 20NM separation met ICAO standards and caused no incidents.
- 20NM separation was applied on 149 days during the 6-month period.

2.23 **Challenges:**

- Bad weather triggered Large Scale Weather Deviation (LSWD) procedures on 29 days, suspending the 20NM trial.
- When reverting to 50NM under LSWD, available flight levels were halved, reducing route capacity by about 75%.

2.24 **Recommendations:**

- Permanently implement 20NM separation under normal conditions.
- Improve LSWD procedures, including:
  a) Using 30NM instead of 50NM during weather events.
  b) Expanding available flight levels during LSWD.
  c) Adopting more flexible flight level use depending on which FIRs are affected.
  d) Implementing FLOW RATE traffic management instead of basic time restrictions.
  e) Allowing controllers to suggest deviation paths to improve safety and reduce confusion.
  f) Enhancing coordination between FIRs to avoid overlapping or conflicting restrictions.

2.25 Singapore is supportive of the approach to explore other ways of optimising capacity over the South China Sea region, and suggested for the parameters used to activate LSWD procedures to be reviewed and updated.

2.26 China reiterated its position to apply 20NM separation for transfer operations under normal conditions and 30NM during LSWD scenarios. However, the signing of the Letter of Agreement (LOA) would depend on the results of the ongoing full-day trial.

2.27 IATA supported the initiative and emphasized two key factors critical to implementation success: effective cross-FIR collaboration and improve pilot ATC communication to maintain safety and operational efficiency. And also IATA raised the point that weather deviations increase ATC workload, and thus, early communication of restrictions or preferences to pilots would help reduce uncertainty and improve flight planning.

Updates on the Implementation Plan for Reduced Longitudinal Spacing on Routes N892 and L625 within the Manila FIR (WP/06)

2.28 The Philippines originally planned to reduce longitudinal spacing on routes N892 and L625 in early 2020, but the COVID-19 pandemic and staffing shortages caused significant delays. A reassessment in 2021 highlighted critical challenges such as limited qualified controllers and technical personnel.

2.29 In 2024, Manila ACC renewed discussions with Singapore and Ho Chi Minh ACC to resume the project. Manila ACC aims to operationalize a new ATC sector by December 2025, with a trial implementation of 50NM spacing starting in March 2026. If the trial is successful, this could be reduced to 30NM later.

2.30 The trial will apply to aircraft at or above FL290 that meet advanced navigation and communication standards (e.g., RNP4, ADS-C/CPDLC, RCP240, RSP180). A “Best Equipped, Best Served” policy will prioritize better-equipped aircraft for more efficient flight levels. Spacing optimization will be suspended during weather deviations or other operational constraints.

2.31 IFATCA acknowledged that, according to their understanding, the Philippines had already deployed space-based ADS-B capability, and encouraged the sharing of related data to support enhanced surveillance and separation initiatives in the region.

2.32 The Philippines confirmed that space-based ADS-B infrastructure had been put in place. However, standard operational procedures and regulatory approvals are still pending before the system can be officially utilized for operational purposes. The Philippines advised that a tentative timeline for progress was shared: aiming for Q4 2025 or Q1 2026 and committed to providing a more detailed update at the next SCSTFRG meeting.

2.33 In addition, the Philippines emphasized the importance of CPDLC implementation to support efforts aimed at reducing longitudinal separation minima in the South China Sea.

Review of Large-Scale Weather Deviation Procedures (IP/02)

2.34 IFATCA highlighted the need to revise the current Large Scale Weather Deviation (LSWD) procedures, which were originally created in 2002 to manage air traffic during bad weather using older methods. These procedures now cause long delays, even when only small parts of the airspace are affected. With improved radar coverage and direct communication in many areas, some countries have started updating these procedures.

2.35 At the SAIOSEACG/4 meeting in March 2025, Singapore proposed reducing the separation between aircraft during LSWD from 50NM to 30NM on routes L642 and M771, thanks to better surveillance and communication. This would help reduce delays, and the group agreed in principle to use this shorter spacing whenever safe to do so.

2.36 Looking ahead, new weather services like the Hazardous Weather Information Service (HWIS), which uses AI, satellite data, and real-time observations, will help air traffic services plan ahead for bad weather. This shift from reacting to weather to planning proactively will reduce disruptions and delays.

2.37 Some routes like L625 and N892 can't be updated yet due to limited radar coverage, but planning for future improvements is encouraged. Since most aircraft using these routes already have advanced navigation and communication systems (RNP4 and CPDLC), it's possible to begin designing more efficient backup routes now.

2.38 Lastly, the paper emphasized the need to balance horizontal and vertical separation to avoid severe turbulence. IATA also introduced their Turbulence Aware Project, which collects real-time turbulence reports from aircraft worldwide. This data could help improve LSWD procedures by providing better insight into actual turbulence patterns.

2.39 IFATCA suggested that IATA could provide turbulence data to assist in checking LSWD procedures.

2.40 IATA agreed and noted that the turbulence data, originally collected for flight safety, could be repurposed for broader operational analysis. They committed to presenting more information at the next SCSTFRG meeting.

2.41 The meeting also explored potential mitigation mechanisms, including conditional route (CDR)-like structures during LSWD events, inspired by Eurocontrol practices.

Joint Initiative to Enhance Longitudinal Separation on ATS Routes Between Manila FIR and Kota Kinabalu FIR (IP/03)

2.42 The Philippines and Malaysia began a joint effort in 2020 to improve longitudinal spacing on routes M646 and A341, starting with a 50NM trial that led to full implementation. Further improvements were delayed due to the COVID-19 pandemic.

2.43 In 2025, both parties resumed discussions to enhance spacing on additional routes (M754/M522 and M646/A341). They are planning a new trial to reduce spacing from 50NM to 30NM on M646 and A341, likely starting later this year 2025. For M754/M522, a shift from 10-minute separation to 50NM is under consideration, with trials expected in 2026 and possible 30NM adoption later.

2.44 The Philippines also proposed removing a current restriction that limits 50NM spacing to flights landing within Kota Kinabalu FIR. Malaysia agreed, but believes that further coordination with Indonesia is essential to address potential impacts on the Jakarta FIR, particularly for traffic going beyond the Jakarta FIR.

2.45 The Philippines suggested that both eastbound and westbound flights should be allowed to operate on ATS routes M646 and A341.

2.46 Malaysia echoed the proposal, noting that the current arrangement offers differing separation standards, which affect seamless operations. Malaysia welcomes discussion between Indonesia, Malaysia, the Philippines, and Singapore to resolve these concerns.

2.47 ICAO encouraged the States/Administrations involved to consider the reasons for implementation intentions, analyse the complexity of such enhancements, and identify practical solutions. ICAO further referenced the approach used in PBN implementation—breaking down challenges into specific components and resolving them one by one—as a useful reference model.

Side Meeting on IP03 (Indonesia, Malaysia, Singapore, and Philippines)

2.48 The meeting was held as a follow-up on Malaysia and Philippines IP03 regarding the proposal for the enhancement of longitudinal separation on ATS routes between Manila FIR and Kota Kinabalu FIR.

2.49 The Philippines indicated its readiness this year to commence the operational trial implementation of 30NM longitudinal spacing minima on ATS routes M646 and A341.

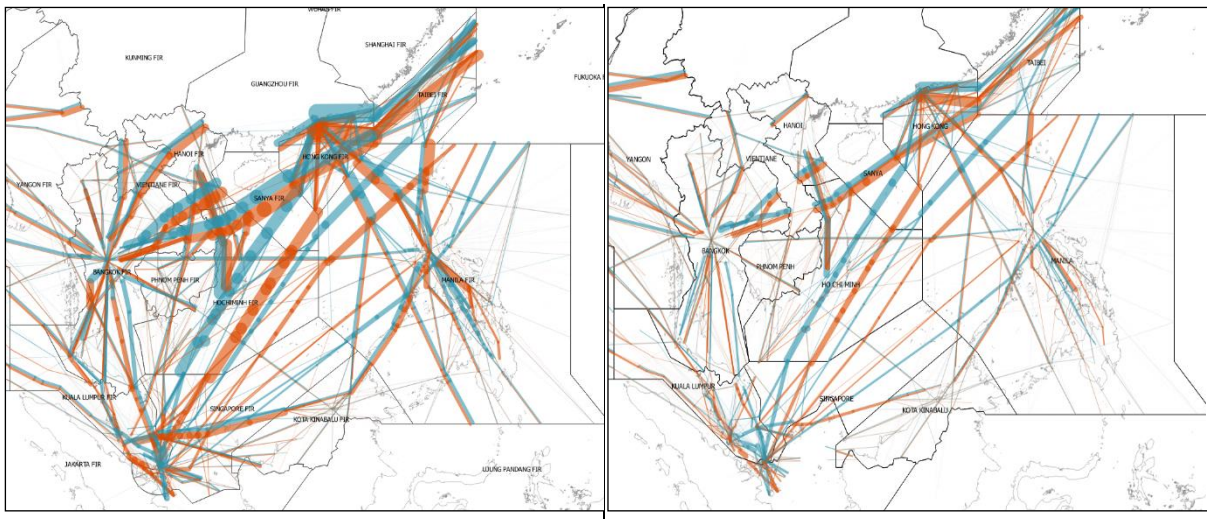
2.50 To maximize the benefit of the 30NM longitudinal separation on M646 and A341, Indonesia agreed to remove the restriction imposed on Kota Kinabalu ACC, thus allowing the separation to be used for traffic westbound going beyond Jakarta FIR. Operational trial implementation of 30NM longitudinal separation minima on M646 and A341 is expected in December 2025.

2.51 Philippines informed the plan for the trial implementation of 50 NM longitudinal spacing minima on routes M522/M754 to commence between the 2nd or 3rd quarter of 2026. All states noted and agreed to the proposal.

Agenda Item 3: Review of the Existing Traffic Flow Route Structures in SCS Airspace and Identifying Priorities

Traffic Sample Data Visualization Over South China Sea Airspace (WP/07)

3.1 The Monitoring Agency for Asia Region provided the updated statistic data and visualization of traffic flow over South China Sea airspace, based on Traffic Sample Data (TSD) from 2018 to 2024, as shown the Figure 1. ICAO gave a presentation on this material at the meeting. The visualization and the number of flights aims to assist the SCSTFRG in reviewing the route structure and traffic flow in this airspace.



2018 Traffic Flow | 2024 Traffic Flow

Figure 1: Comparison 2018 and 2024 Traffic Flow from TSD in South China Sea Airspace

3.2 In coordination with the ICAO Asia and Pacific Regional Sub-Office prior to SCSTFRG/13 meeting, MAAR also made efforts to make the comparison of flight numbers on the important routes, including A1, A202, L642, M771, N892, L625, M646, A583, A461, N884, A582, M767 and M758, based on TSD from 2018 to 2024.

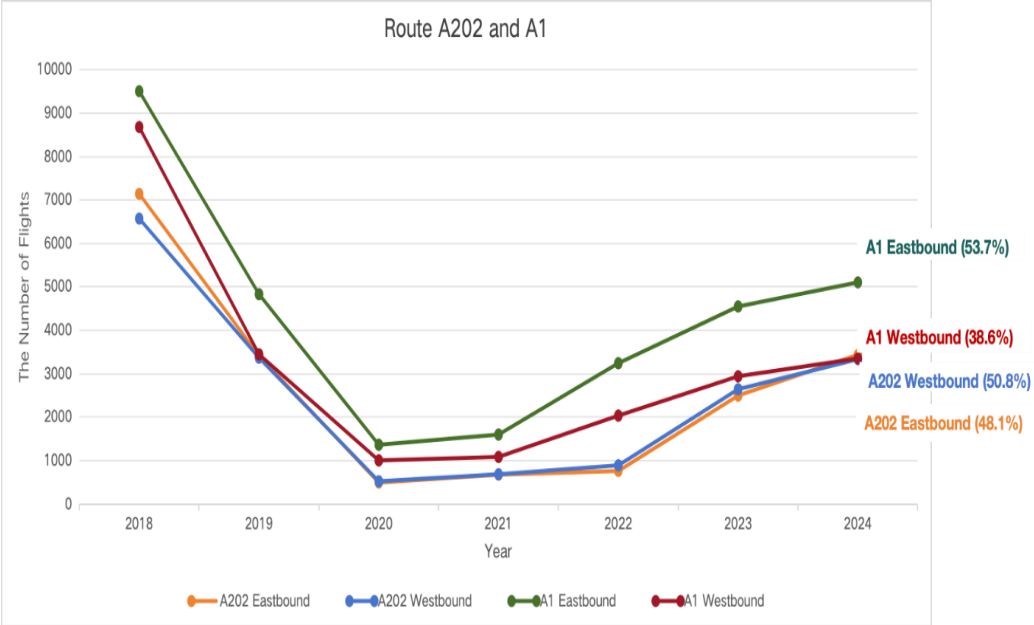


Figure 2: Example line graph for the ATS route A202 and A1

Route A202 and A1

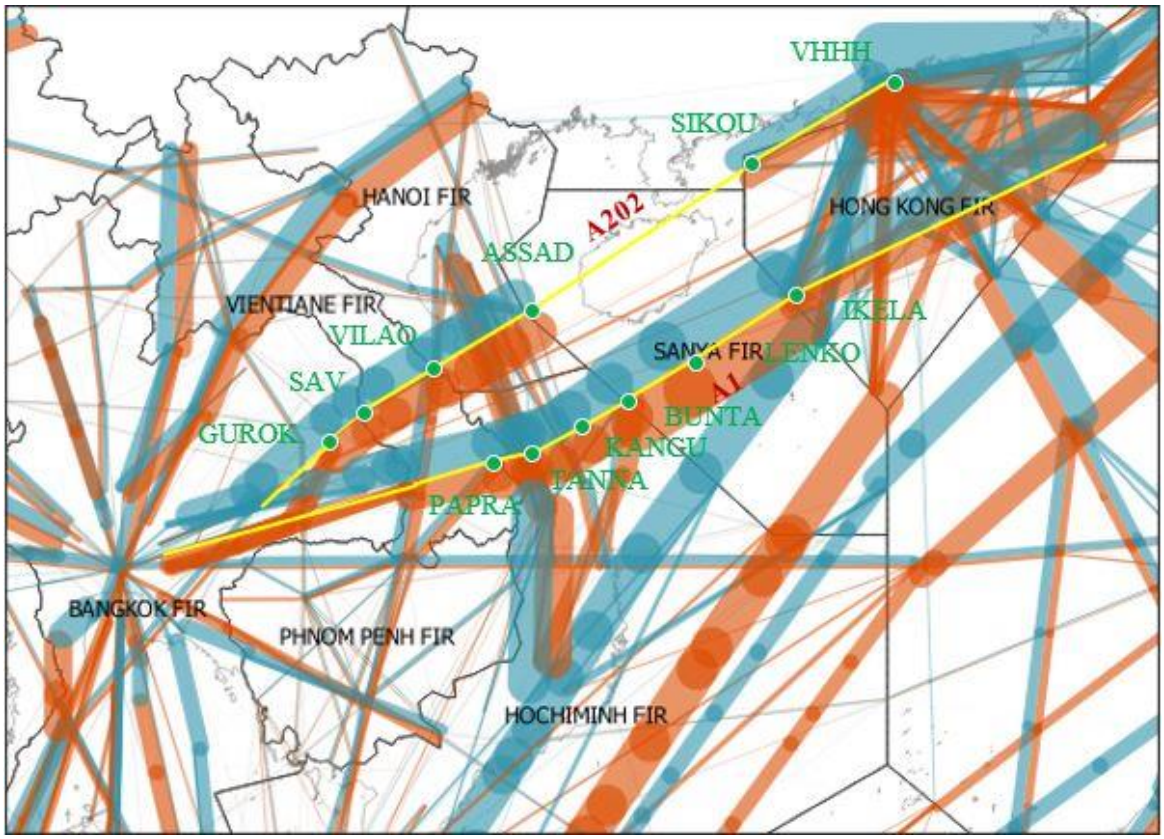


Figure 3: The number of flights in the South China Sea airspace based on Traffic Sample Data (TSD) from 2018 to 2024 Route A202 and A1

Route	Portion	Direction	The number of flights						
			2018	2019	2020	2021	2022	2023	2024
A202	GUROK to SAV	Eastbound	5689	2453	282	531	226	1414	3090
A202	VILAO to ASSAD	Eastbound	7143	3414	496	678	764	2499	3438
A202	SIKOU to VHHH	Eastbound	3466	1435	431	492	649	1190	1352
A202	VHHH to SIKOU	Westbound	4639	1942	1040	3	1443	2339	2504
A202	ASSAD to VILAO	Westbound	6573	3371	527	688	893	2645	3337
A202	SAV to GUROK	Westbound	6132	2887	410	681	148	1411	3400
A1	PAPRA to TANNA	Eastbound	6675	4176	734	945	2078	2993	3646
A1	KANGU to BUNTA	Eastbound	6705	4190	734	945	2075	2940	3635
A1	LENKO to IKELA	Eastbound	9505	4833	1367	1602	3244	4550	5105
A1	IKELA to LENKO	Westbound	8681	3448	1007	1088	2038	2943	3354
A1	BANTA to KANGU	Westbound	7204	3758	849	964	2179	3796	4241
A1	TANNA to PAPRA	Westbound	7198	3744	849	963	2157	2844	3150

Table 1: The number of flights of A202 and A1 from 2018 to 2024

3.3 The Group reiterated to thank MAAR for making an effort to provide valuable data analysis to support the meeting discussion.

3.4 This paper highlighted that the TSD was based on the December's data submitted by ANSPs, and for the annual data, it was too massive work to collect. MAAR has committed to optimize further the data analysis based on the suggestions and requirements from stakeholders. And because of time constrains, the TSD for 2025 would be able to present at the SCSTFRG/14.

3.5 The Meeting encouraged the relevant States/Administrations to maintain close cooperation with ICAO and the Monitoring Agency for Asia Region (MAAR) to ensure more timely and complete data updates. It was noted that certain route segments in the traffic data visualization remained empty, and States/Administrations were encouraged to submit the necessary Traffic Sample Data (TSD) to fill these gaps. The Meeting also recognized the importance of accurate and comprehensive data in supporting effective analysis of route structure and traffic flow in the South China Sea airspace.

Progress Review of SCSTFRG Priority Areas (WP/08)

Priority Area 1: A1/A202

3.6 To establish parallel routes for A1 the direction of the route is agreed by all the stakeholders. shown in the Figure 4 below.

Figure 4: China Proposed Parallel Uni-directional Routes (Within Sanya FIR) at the SCSTFRG/11.

3.7 Further discussion on this topic was based on the WP/11*, Proposal For Improving A1 Route Safety Margin Through Parallel Route Implementation***,** presented by China and Flimsy/05, Establishment of a parallel route ATS route A1 in Viet Nam, presented by Viet Nam.

Priority Area 2: L642/M771

3.8 Reference SAIOSEACG/2 and SCSTFRG/11 conducted in 2023, all concerned States/Administrations, i.e. China, Singapore, Vietnam and Hong Kong China expressed full support in implementing 20NM longitudinal spacing on L642 and M771. During SAIOSEACG/3 in April this year, the trial operation proposed by Hong Kong China for this initiative was agreed upon as a result. The trial operation was successfully launched on 7 May 2024 as scheduled.

3.9 As Hong Kong, China reported to the ATM/SG/12 (Bangkok Thailand, 23-27 September 2024), The agreement during SAIOSEACG/3 stipulated that 20NM minimum longitudinal spacing would be applied on L642 and M771 from 0200 to 1200 UTC daily during the trial period.

3.10 Further discussion on this topic was based on the WP/04*, Progress Update on the Operational Trial of 20NM Longitudinal Spacing on Air Routes L642 and M771* presented by Hong Kong China.

3.11 At the meeting, Hong Kong China presented that they led 20NM spacing trial on L642 and M771. Trial applied to ADS-B equipped aircraft at FL290 and above. Hong Kong China gained the positive results such as increased capacity, better fuel efficiency, lower environmental impact. They urged stakeholders to update Letters of Agreement (LOAs) to support permanent application. Please find the WP04 for more detailed information.

Priority Area 3: A461/A583/L625/N892

3.12 The action item was to enhance the longitudinal spacing on ATS routes A461, A583, L625, and N892 to at least 50 NM, with planning for 30 NM or less. Updates from SCSTFRG/11 was been recorded as following:

- A461 & M501: Phase 1 and 2 implementations of the 30NM minimum longitudinal spacing on A461 and M501 was completed in February 2023. The enhanced spacing applies to traffic pairs with RNP4 capability at FL290 or above when the longitudinal spacing is constant or increasing. If the succeeding aircraft is faster than the preceding

aircraft, 50NM/10MIN will be applied, depending on the aircraft destination aerodromes. The operation has been smooth since implementation. Not only has the capacity of ATS routes A461 and M501 significantly increased, but there have also been more aircraft assigned with optimum cruising levels.

- A583: With the satisfactory outcomes of Phases 1 and 2, Hong Kong ATCC and Manila ACC proceeded to the Phase 3 implementation for applying the 30NM minimum longitudinal spacing on ATS Route A583. The enhanced spacing applies to traffic pairs with RNP4 capability, CPDLC and ADS-C equipage at FL290 or above when the longitudinal spacing is constant or increasing. If the succeeding aircraft is faster than the preceding aircraft, 50NM/10MIN will be applied, depending on aircraft destination aerodromes. A new Letter of Agreement between Hong Kong ATCC and Manila ACC was signed in September 2024 to officially incorporate these enhancements into the Agreement.

- N892 & L625: The Philippines confirmed that the implementation of 50NM longitudinal spacing was under internal assessment and will be re-initiated soon. 30NM has also been taken into consideration.

Priority Area 4: Review of Existing FLAS/FLOS Operating within the South China Sea

3.13 The discussion on this topic was covered under the WP13 Review of the existing FLAS/FLOS in the South China Sea Airspace in Agenda Item 4 of this meeting.

3.14 As clear requirements and goals have been given by the AN-CONF/14, the *Project 30/10 – Optimised implementation of longitudinal separation minima (AN-CONF/14)*, which gives the SCSTFRG the necessity to re-consideration of the existing priority areas, especially the Priority Area 1, 2 and 3. The last meeting SCSTFRG/12 took the following Decistion for the modifications of SCS Priority Areas:

Decision SCSTFRG/12-1: Modifications on SCS Priority Areas

That, modify the SCS Priority Areas to align with the global expectations given by the AN-CONF/14, the Project 30/10 – Optimised implementation of longitudinal separation minima (AN-CONF/14).

a) Priority Area 1: A1/A202 to reduce longitudinal spacing to at least 20 NM **with planning for 10 NM** and to develop a parallel route to A1.

b) Priority Area 2: L642/M771 to reduce longitudinal spacing to at least 20 NM **with planning for 10 NM** and to explore the possibility of implementing parallel routes for L642 and M771 **afterwards.**

c) Priority Area 3: A461/A583/L625/N892 to reduce longitudinal spacing to **30 NM**.

d) Priority Area 4: Review of existing Flight Level Allocation Scheme (FLAS)/ Flight Level Orientation Scheme (FLOS) operating within the South China Sea (SCS).

3.15 ICAO pointed out that the priority areas identified for the South China Sea should be aligned with the Seamless ANS Plan. States/Administrations were encouraged to synchronize their progress with the regional development timeline and objectives. The group was reminded to follow the rhythm of the Seamless ANS Plan and ensure that work within the SCSTFRG remains consistent with ICAO's broader regional planning framework.

Optimising Capacity on ATS Route L644 (WP/09)

3.16 Singapore shared the latest updates on the ATS Route L644. This route is a southbound RNP10 route passing through the Ho Chi Minh, Singapore, and Jakarta FIRs. It was originally limited to traffic between Hong Kong China and Jakarta, but this restriction was lifted in September 2022. Since then, usage has increased by over 35%, with a significant rise in flights from Viet Nam to Australia.

3.17 To support this traffic growth, involved States (Singapore, Viet Nam, Indonesia) began applying reduced longitudinal spacing. A 20NM separation was introduced at the Singapore–Jakarta FIR boundary (LIGVU) in March 2024. Viet Nam and Singapore also launched a trial for 20NM spacing at their shared boundary (DUDIS) starting July 2025, aiming for full implementation by November 2025.

3.18 In order to enhance the optimising capacity on ATS route L644, Viet Nam proposed Singapore and Indonesia consider the possibility to change operational condition of the L644 airway to bi-directional route to support flights from Indonesia/Australia back to Viet Nam and further (i.e Hongkong).

3.19 The Chair suggested reviewing whether current tasks have been completed and if adjustments are necessary.

Strategic Implementation of Free Route Operation (FRTO) Framework in Kuala Lumpur FIR And Kota Kinabalu FIR (IP/04)

3.20 Malaysia is working to improve aviation efficiency and sustainability by implementing Free Route Operation (FRTO), in line with its mission to enhance safety and support a greener aviation industry. A national strategic framework with clear milestones has been published to guide this transition. Key progress includes as follow:

- **Flexible Use of Airspace (FUA):** Widely applied to balance military and civilian needs. Malaysia plans to introduce Airspace Management Cells (AMCs) for better coordination.
- **Direct Route Operation (DRO):** Ongoing DRO trial implementation in Kuala Lumpur FIR from June 2025 for three months, with plans to follow in Kota Kinabalu FIR by the end of 2025.
- **User-Preferred Routes (UPR):** Malaysia is exploring cross-border UPR with regional partners and reviewing air traffic flow to prepare for implementation.
- **Free Route Airspace (FRA):** Malaysia supports regional FRA efforts and stresses the need for close collaboration among APAC States to ensure smooth and safe implementation.

3.21 The Meeting expressed appreciation to Malaysia for presenting a comprehensive national strategy and roadmap for Free Route Operation (FRTO) implementation. The framework was recognized as a valuable reference for other States/Administrations planning similar initiatives.

3.22 ICAO highlighted the importance of applying the Flexible Use of Airspace (FUA) concept in the South China Sea area and encouraged States to make full use of FUA principles. ICAO also invited the relevant States/Administrations to update the meeting with their FUA-related progress in future meetings.

Agenda Item 4: Discussion on PBN Routes Development and FLAS/FLOS Optimisation

Review of Selected ATS Route Proposals from the Asia-Pacific Region ATS Route Catalogue (WP10)

4.1 ICAO shared the relevant ATS route proposals concerned by SCSTFRG. This had been selected from the Version 24.3 of the *Asia Pacific Region ATS Route Catalogue* for review and discussion by the meeting.

4.2 The key discussion among the ATS route proposals the latest meeting of SAIOSEACG/4 was addressed as follows:

- **SCS11:** IATA proposed deleting the additional proposal to further connect the IPRIX and VIGEN in order for the counter-proposal from Vietnam to be progressed without further delay.
- **SEA12**: As proposed by ICAO, IATA agreed to archive the proposal as the main focus is on the parallel routes to A1. IATA noted that in the absence of an A1 parallel route progressing, this proposal will be reactivated.
- **Mekong 01:** VPH – ROT – PNH Route Development (Cambodia –LAO PDR-Thailand – Viet Nam). The relevant States agreed to the design principle of the ATS route to be implemented as an RNAV2 CDR with the MFA of FL270 and would continue with implementation planning in due course.

4.3 New ATS Route Proposals to be included in the *APAC ATS Route Catalogue Version 24.3* were listed as follows:

- **Mekong 02**: Connecting NAN – SAGAG (Lao PDR – Thailand), is to be included in the *APAC ATS Route Catalogue* as requested by MKATMCG.
- **Mekong 03**: Connecting BASIT – UPNEP (Cambodia – Thailand – Viet Nam), is to be included in the *APAC ATS Route Catalogue* as requested by MKATMCG.

4.4 At the SCSTFRG/13 meeting, key feedback and updates were recorded as follows:

- For SCS01/SCS02, IATA advised that they will reassess the feasibility of the proposal and retain it in the ATS Route Catalogue list pending further review.
- For VIET NAM02, China stated that the parallel route to A1 remains the top priority. Viet Nam does support this priority.
- Regarding SCS20/SCS21, Indonesia noted that further coordination with Malaysia would be conducted.
- On MEKONG 02, China commented to ensure seamless coordination and timely implementation for ATS routes from LPB to ELASU, A technical coordination meeting will be convened between China, Lao PDR, Thailand to finalize operational arrangements, validate route design, and confirm implementation timelines on Q4 2026.
- For MEKONG 03, Cambodia reported ongoing cooperation with Thailand under Phase 1, and stated that this topic would be further addressed at the upcoming Mekong ATM Meeting later this year.
- For IATA 02, IATA and China agreed to archive the proposal and consider the potential of Conditional Route (CDR) when appropriate. IATA shared that discussions had taken place in a side meeting with China. As the route proposal aims to connect Europe with Southern China, due to safety concerns related to traffic conflicts, IATA proposed to support and facilitate the flight operations via Y1 and L888 as an alternate.

- Regarding SCS08, IATA explained that the proposal originated from member airlines wishing to connect Hong Kong China with north and southeast Asia. Prior to COVID-19, 42 flights per week were operated. IATA proposed extending the use of M771 to connect to KAPLI and ENVAR, noting that M771 is located very close to the FIR boundary, which raises safety concerns. IATA will continue to refine the proposal and provide updates in future meetings.

Proposal for Improving A1 Route Safety Margin through Parallel Route Implementation (WP11)

4.5 China informed the meeting of the latest updates of A1 ATS route. This route is one of the busiest and most critical air routes in the South China Sea, connecting Southeast Asia and Northeast Asia. Due to rapid traffic recovery in 2025, flight volume has returned to and is expected to exceed pre-2019 levels, reaching over 600 daily movements. Increasing demand, especially during night-time peak hours, is causing severe congestion, workload strain, and flight level conflicts.

4.6 To address these issues, a proposal has been made to implement two parallel, one-way routes to replace the current bidirectional A1. This would help ease congestion, improve flight efficiency, and reduce controller workload. Technical readiness is high—over 98% of aircraft are RNAV2 compliant, and radar and communication coverage are sufficient.

4.7 China (ATMB) and Viet Nam (VATM) have already made progress through bilateral coordination. The proposed routes—one for northeast-bound traffic and one for southwest-bound—are being evaluated for safe lateral spacing.

4.8 Hong Kong China emphasized that the A1 parallel route initiative aims not only to increase capacity, but also to enhance operational safety. The proposal is listed in the SCSTFRG task list, and Hong Kong China expressed hope for tangible progress.

4.9 Participants acknowledged the value of continued collaboration and open dialogue, inviting all interested States—including those not directly managing the routes—to join discussions and share input.

SCS 11 - New ATS Routes Parallel to R208 Update and Progress (WP12)

4.10 Malaysia, Singapore, and Viet Nam are currently discussing updates to the ATS route R208, including realignment of route and the addition of a new route running parallel to it. The plan also includes the use of RNAV2/RNP4 navigation standards, which have already been agreed upon by the involved parties.

4.11 The discussions cover key points such as coordination procedures, separation standards. More work and close cooperation are needed to set a clear timeline and complete the technical and approval processes for this proposal. Malaysia, Singapore, and Viet Nam have agreed for new parallel routes northbound to IPRIX.

4.12 Additionally, the states are exploring the idea of using Direct Route Operation (DRO) across boundaries instead of creating new routes. This idea supports the *ICAO APAC Seamless ANS Plan* and may reduce the need for extra ATS routes. However, DRO is still under early discussion and needs more careful study to ensure safety and efficiency.

Side Meeting on WP12 (Malaysia, Singapore, and Viet Nam)

4.13 The meeting was held as a follow-up on the joint paper by Malaysia, Singapore and Viet Nam (WP12) on the update of realignment and a new ATS route parallel to R208. The States noted that

IATA had no objections to not establishing a direct route between IPRIX – VIGEN during SAIOSEACG/4.

4.14 Malaysia, Singapore, and Viet Nam have agreed to use existing waypoints IGARI and IPRIX for the parallel routes and will engage in technical discussions to review the coordination procedures and pertinent details associated with them.

Establishment of a Parallel Route ATS Route A1 in Viet Nam (Flimsy 05)

4.15 Viet Nam unveiled their decision on A1 parallel route. To handle growing air traffic and improve efficiency in South China Sea airspace, Viet Nam, with ICAO and regional partners, designed a new west-to-east RNAV2 route parallel to A1 as a unidirectional each route. It uses odd flight levels and matches Sanya ACC's earlier proposal.

4.16 As the new route passes through multiple FIRs, Viet Nam suggested that further meetings are needed to finalize the route name, agree on navigation specs, and set an implementation date.

4.17 China acknowledged Viet Nam's support for the A1 parallel route and expressed its intention to continue close cooperation to finalize the route framework.

4.18 Cambodia raised concerns about how the proposed eastbound red-colored new route would connect with Phnom Penh FIR, as the original A1 route connects to PAPRA while the proposed route would connect both to P01 and PAPRA. This raised new challenges for Cambodia in determining whether to implement a parallel structure or maintain bidirectional connections.

4.19 ICAO encouraged a structured task-based coordination approach and suggested compiling a list of specific issues and resolving them sequentially.

4.20 A side meeting was conducted among Hong Kong China, China, Viet Nam, Lao PDR, Cambodia, and Thailand. China volunteered to record and monitor the outcomes of this coordination effort.

The Side meeting between China, Hong Kong China, Lao PDR, Thailand, Viet Nam and Cambodia on the Proposed Redesignation of A Parallel Route to A1

4.21 A side meeting was conducted between China, Hong Kong China, Lao DPR, Thailand, Viet Nam and Cambodia, focusing on the A1 parallelization and connecting route from Cambodia. All relevant stakeholders reviewed current A1 ATS route structure and parallel route proposal. The meeting conducted in-depth discussions on relevant technical issues, like navigation specification, route structure, traffic flow organization, FLAS or FLOS, FIR boundary points, route spacing and other issues. The following things had been reached consensus. Route structure would be two unidirectional route, northern route is westbound, southern route is eastbound. ICAO expressed concerns on the timeline for trial implementation. All States/Administrations agreed to expedite the process on discussion and preparation. Tentatively the commencement of trial implementation is aimed in 2027.

4.22 All relevant stakeholders agreed that they would continue to maintain close contact on this proposal via ICAO APAC RSO.

Review of the Existing FLAS FLOS in South China Sea Airspace (WP/13)

4.23 This paper presented the considerations when reviewing the existing FLAS/FLOS operation and No-PDC FL in various FIRs of the South China Sea area. All Member States/Administrations were invited to review the data and provide feedback on their current FLAS/FLOS operations to the ICAO Secretariat to improve the capacity, efficiency and safety.

4.24 The meeting was recalled At SCSTFRG/10 meeting, to facilitate the discussion on the existing FLAS/FLOS to promote the long-term consideration of post-pandemic scenarios, the group agreed to the ***Decision SCSTFRG/10-1: Review of the existing South China Sea Flight Level Allocation Scheme (FLAS) and Flight Level Orientation Scheme (FLOS) .***

4.25 Through the updated data submitted by South China Sea States/Administrations prior to the meeting and updated by the Philippines at the meeting, the ICAO APAC Regional Sub-Office has corrected the data from the previous version of the Chart to provide an overview of the FLAS currently operating in the South China Sea airspace among the major routes, as illustrated in **Chart 1**.

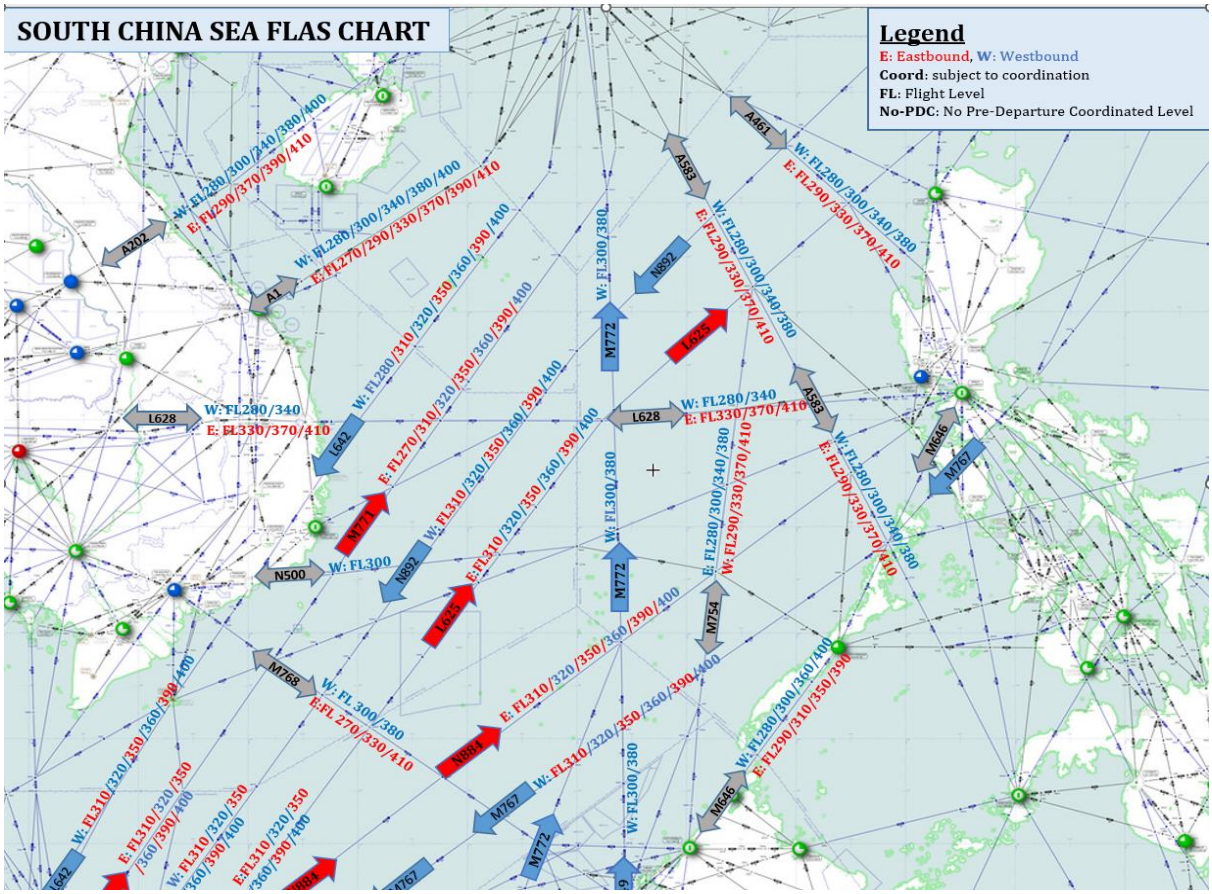


Chart 1: FLAS/FLOS among the ATS Routes (updated July 2025)

4.26 This group have noted the interconnectivity of the airspace structure and FLAS/FLOS system. In years of operation, ACCs have become accustomed to this FLAS system, and derived to relatively mature risk response plan, such as the Large Scale Weather Contingency Plan and flexible temporary coordination mechanism. In fact, the current FLAS system has been proven to be reliable, but the following drawbacks should be taken into consideration:

- The reduction of fuel efficiency and increment of carbon emission because of the unavailability of the optimal cruising level, especially on the secondary routes.
- Frequent flight-level changes to accommodate the FLAS requirements among different route segments.
- High demands of extra coordination, causing an increase in the ATCOs' workload, especially in adverse weather conditions.
- Lack of flexibility, some of the secondary crossing routes are now busier than the primary routes compared with the original concept, timely adjustment is necessary.

- Human factors issues. Systemic risks resulting from the switching from normal FLAS to Large-Scale Detour Procedure, lead to the high possibility of coordination errors in the ATC-to-ATC transfer of control responsibility.
- Safety issues caused by the transition from non-standard FLOS levels to standard FLOS levels at the TOC points, especially at the boundary of the SCS area.
- Excessive longitudinal separation increased the reliance on vertical separation to separate the traffic, leading to insufficient use of limited flight Levels, significantly contributing to the shortage of flight-level resources.
- The capability and efficiency of current FLAS might be insufficient to cope with future traffic growth.

4.27 In view of the above-mentioned facts, the goal for the SCSTFRG should be the removal of FLAS in the SCS area to meet the *APAC Seamless ANS Plan*'s expectations. This cannot be achieved without a systematic and holistic roadmap supported by all stakeholders. Optimisation of FLAS/FLOS operation) cannot be considered an isolated project; it has significant interconnectivity with the SCSTFRG Priority 1, 2 and 3 (reduction of longitudinal separation on primary routes). Horizontal efficiency and vertical efficiency are highly correlated and relevant to one another.

4.28 A possible roadmap of the SCS FLAS dilemma were suggested by ICAO, mindful of the above aspects, some thoughts based on IFATCA's original proposal at the SCSTFRG/7, the review of existing FLAS and FLOS operating within the SCS could be conducted in six phases:

- *Phase 1: Revision of FLAS on selected ATS routes*

  Re-allocation of two of the six flight levels on the primary routes M767/N884, L625/N892 (one eastbound and one westbound flight levels) to the secondary crossing routes A461, A583, M758 and M761. The remaining four flight levels on the primary routes would provide adequate capacity under normal circumstances to satisfy the traffic demand. The additional capacity that one flight level in each direction on the secondary crossing routes would relieve some of the delays and restrictions that are currently imposed on traffic.

- *Phase 2: Reduction of longitudinal separation*

  Reduce longitudinal separation (operationalization of 5-10NM ATC separation, 10-20 NM separation at Transfer of Control Points (TOC)) among ATS routes, especially for primary routes, which occupy the majority of flight level resources as soon as possible. As a result, the capacity of the ATS route will be significantly increased, and the demands of flight level will be released by such an increase.

- *Phase 3: Release flight level on selected ATS routes and revision of non-standard FLOS*

  Release flight levels on selected ATS routes, which are supported by the aforementioned capacity increment. Revision of the FLOS on the primary routes L625/N892 and M767/N884, from the SCS modified single alternate FLOS to the standard FLOS (Annex 2, Appendix 3a) would serve the purpose of removing the need to transition flights in the Manila FIR.

- *Phase 4: Reshuffle the FLAS or flexibly use FLAS*

  Dynamically adjust the FLAS system in a scientific method.

- *Phase 5: Partial removal of FLAS*

  Gradually reducing dependence on FLAS systems. Suspended the FLAS operating in normal situations, and only activated it in adverse weather or contingency conditions.

- *Phase 6: Re-structure the SCS Route Network and Removal of FLAS*

  Re-structure the South China Sea Airspace using RNAV 2/ RNP 2 – near parallel or parallel routes. Explore the possibility of cross-border FRA (Free Route Airspace) Operation.

4.29 The Meeting acknowledged that while current separation standards may have been reasonable 20 years ago, evolving traffic demand and advances in CNS capabilities now require progressive updates. Participants supported taking a step-by-step approach to update procedures in line with current operational environments.

Harmonization of Performance-Based Navigation (PBN) Routes in the South China Sea Region, Particularly Within and Surrounding the Ujung Pandang FIR (WP/14)

4.30 To support *the ICAO Asia-Pacific Seamless ATM Plan* and respond to rising air traffic in the South China Sea, Indonesia is improving its airspace structure. This includes replacing old ATS routes with modern Performance-Based Navigation (PBN) routes like RNAV and RNP. The goal is to make air traffic safer, more efficient, and better connected with neighboring countries.

4.31 A local working group in Indonesia is reviewing and redesigning several conventional routes (like A461, B472, R590) based on PBN principles. They are also working with nearby FIRs such as Manila and Kota Kinabalu to align cross-border User Preferred Routes (UPRs). One key route, M768, has been improved but still needs final documentation (LOCA) to make the change official.

4.32 Indonesia also supports reducing the distance between aircraft (to 30NM) using radar and surveillance systems. To do this, updates to agreements with the Philippines and Malaysia are needed. Indonesia has already set up radar and ADS-B coverage across key airspace areas, making these changes possible. These efforts will reduce delays, save fuel, and support long-term traffic growth.

4.33 The Philippines expressed appreciation for Indonesia's efforts and confirmed its support for the implementation of 30NM longitudinal separation standards on routes A461, B472, and G578. The Philippines also expressed willingness to further discuss the implementation timeline with Indonesia.

4.34 Indonesia confirmed their openness to discuss timeline and regional requirements.

Result of Side Meeting Between Philippines and Indonesia.

4.35 Indonesia and the Philippines agreed to a phased approach for implementing enhanced longitudinal separation to improve airspace efficiency and safety between Manila FIR and Ujung Pandang FIR. Phase 1 will introduce 30NM longitudinal spacing minima on routes A461, B472, and G578, with R590 under consideration pending further safety assessment by Manila ACC. Indonesia confirmed Ujung Pandang ACC's readiness to apply 30NM spacing on R590, contingent on Manila ACC's operational preparedness. The tentative timeline for Phase 1 trial implementation is Q1 2026,

with operational requirements to be finalized in future

4.36 Phase 2 will apply 50NM longitudinal spacing minima on routes B473, B462, and A339, requiring aircraft to be equipped with RNP10, ADS-C/CPDLC, and PBCS capabilities meeting RCP240 and RSP180 standards. Further technical criteria will be discussed bilaterally. Implementation is tentatively scheduled for Q3–Q4

4.37 Both parties reaffirmed their commitment to ongoing coordination, technical harmonization, and the establishment of working groups to support successful implementation.

Introduction of the Approved New ATS Route by Government of LAO PDR (Flimsy/06)

4.38 The newly established ATS routes portion between SKN–IDOTA and LPB–ELASU were initially submitted by the Department Civil Aviation of Lao (DCAL) to the Ministry of Public Works and Transport (MPWT) via report No.679/DCAL, dated 27 February 2024. Following this, the MPWT issued proposal letter No.183/MPWT, dated 29 March 2024, to the Ministry of Defense and the Prime Minister Office (PMO). The Government of Lao PDR has been approved and officially acknowledged the proposal for new ATS routes under official Reference No. 1434/PMO, dated 24 July 2024

4.39 To ensure seamless coordination and timely implementation of the newly approved ATS routes from SKN to IDOTA and from LPB to ELASU, the following technical measures are planned:

- A technical coordination meeting will be convened between Lao PDR, Thailand, Viet Nam and China to finalize operational arrangements, validate route design, and confirm implementation timelines.
- The meeting will address airspace management procedures, flight validation requirements, AIP publication schedules, ATC coordination protocols and implementing.

4.40 The Meeting appreciated the efforts involved in the proposed VPH–ROT RNAV route, noting that it is categorized as an RNAV 2 Conditional Route. And also emphasized the need for close coordination among Lao PDR, Thailand, Viet Nam, and China for the development of additional routes, specifically from SKN to IDOTA and from LPB to ELASU.

Agenda Item 5: Review of SCSTFRG Task List

SCSTFRG Terms of Reference and Task List (WP/15)

5.1 ICAO presented WP/15, which contained the SCSTFRG Terms of Reference for review and the SCSTFRG Task List for updating (**Appendix C**).

Agenda Item 6: Decisions/Recommendations to SAIOSEACG

Update: Reduced Spacing on L642 & M771 During LSWD (WP03)

6.1 China, Hong Kong China, Indonesia, Singapore, and IATA agreed to reduce spacing from 50NM to 30NM during LSWD where surveillance allows through the Decision SAIOSEACG/4-1. Singapore and Hong Kong China reported shorter delays—M771 average delays cut from 10 to 6 mins, max from 80 to 52 mins; L642 delays dropped from 8.9 to 7.3 mins.

6.2 States agreed the permanent application of 20NM spacing in normal conditions helps to ensure the consistent 30NM spacing under LSWD.

Agenda Item 7: Any Other Business

Upcoming the Free Route Airspace Implementation Webinar (IP/05)

7.1 This paper provided information on the upcoming ICAO Free Route Airspace (FRA) Implementation Webinar for member States/Administrations in the APAC Region, aimed at drawing from international best practices and regional case studies. This two-day webinar will address key procedural and technical elements essential to effective FRA implementation and cross-border coordination. The event will also feature interactive Q&A sessions to engage with audiences.

7.2 The SCSTFRG meeting participants were invited to publicize the FRA Webinar among member States/Administrations in the APAC region, and encourage active participation of relevant representatives.

7.3 Malaysia expressed its support for the initiative and confirmed that it would participate in the upcoming FRA webinar.

Optimizing Airspace Utilization through Integrated Flow and Capacity Management in the SCS (Flimsy/01)

7.4 The SCSTFRG has mainly focused on increasing airspace capacity through route changes and flight level adjustments. However, flow management—how traffic is controlled and balanced—is equally important and currently not included in SCSTFRG efforts. With high traffic on busy routes like A1, A202, and M771, there is growing need for integrated traffic flow and capacity management in the South China Sea region.

7.5 At the meeting China explained that why change Is needed, and what's proposed. At the end of the day, China suggested that for example, on the route A1, Member States manage traffic based on their own systems. A unified SCSTFRG-led plan could improve predictability, use capacity better, and become a model for other routes.

7.6 Singapore emphasized the critical role of ATFM and suggest for any expansion to the SCSTFRG TOR should be specific to the SCS context, and not duplicated work with other platform focusing on ATFM.

7.7 IATA supported China's proposal and stressed the importance of integrating FLAS and FLOS management, noting that traffic bottlenecks during morning peak hours may cause a ripple effect and ATFM delays due to limited flight level availability.

7.8 ICAO reiterated that while they are not opposed to updating the TOR, the group's focus should remain on clearly defined operational tasks to avoid duplication with other groups.

7.9 China noted that ATFM is a key topic, and that China, Hong Kong China, and Singapore are members of AAC WS2, which is tasked with developing regional ATFM. An ad-hoc group under ATFMSG is also working on next-generation ATFM concepts. China may consider submitting a proposal to update the TOR at the next SCSTFRG meeting.

7.10 ICAO appreciated the intent but stressed the need to avoid overlapping responsibilities with other working groups, especially the ATM Subgroup (ATM SG) which already manages ATFM initiatives.

7.11 ICAO suggested the proponents clearly define tasks and responsibilities in a Terms of Reference (TOR) document to ensure clarity.

7.12 ICAO will internally discuss the integration feasibility with the ATFM coordination body.

Towards Seamless ATM through Operational Harmonization in the South China Sea Region (Flimsy/02)

7.13 Many ATC units in the South China Sea use different procedures based on their local needs. These differences such as in handover timing, flight level use, or weather response create problems for cross-border flights, causing delays and safety concerns.

7.14 **China explained the main issues and suggested recommendations as follows:**

- **AIDC Handover Timing:** Inconsistent AIDC message timing (e.g., TOC/AOC) delays handovers.
  → *Standardize AIDC timing near FIR boundaries to smooth coordination.*
- **Route Offset & Frequency Transfer:** Unclear offset rules and frequency mismatches near handovers cause confusion and overlapping radar targets.
  → *Improve coordination and standardize frequency procedures.*
- **Flight Level Restrictions:** Limited access to optimal flight levels during busy times reduces efficiency and increases controller workload.
  → *Use more flexible or non-standard flight levels to maximize space and fuel efficiency.*
- **Weather Deviation (LSWDCP):** Severe weather limits altitude and spacing flexibility, causing congestion.
  → *Adjust LSWDCP rules to allow more usable flight levels and reduced separation when safe.*
- **Transfer Separation for Heavy Aircraft:** Current spacing rules force slower speeds or holding for big aircraft.
  → *Use flexible handover spacing based on aircraft type to improve flow and fuel use.*
- **General Aviation & Offshore Flights:** Different notification systems and limited radar offshore lead to delays and risks.
  → *Unify notification procedures and improve offshore communication coverage.*
- **Uncontrolled/Low Coverage Areas:** Weather-deviating flights often enter poorly monitored zones without clear control.
  → *Create shared contingency procedures and invest in technologies (e.g., ADS-B) to ensure safety in these areas.*

7.15 Singapore pointed out that each State/Administration has different challenges and operational requirements and suggest for States/Administrations involved to discuss bilaterally to achieve the desired inter-ATS unit coordination procedures..

7.16 ICAO raised two key questions: first, whether there is a need to harmonize procedures in the region; and second, how such harmonization should be carried out. ICAO also suggested the possibility of submitting this topic to the upcoming ATMSG meeting in Singapore in August. It was emphasized that operational matters should not be explored too deeply for ICAO, and that States/Administrations should work together collaboratively.

7.17 The meeting recommended considering a joint paper as a more effective way to move forward after coordination with the relevant stakeholders.

Collaborative Efforts to Improve Air Traffic Flow Efficiency in the South China Sea Region (Flimsy/03)

7.18 The South China Sea is one of the busiest airspaces in the world. As more flights cross different FIR boundaries every day, there is a strong need for unified and efficient air traffic management. Traffic in this region has bounced back strongly since 2024, with over 2,000 daily flights in the Sanya FIR alone. To handle this growing traffic safely and smoothly, Sanya FIR proposes working closely with neighboring FIRs to improve coordination and efficiency.

7.19 **Key Areas of Focus and Proposals:**

- **Faster Rerouting:** Flights often need to reroute due to weather or airspace issues, but current approvals take too long. A new "notification-based" system using pre-agreed rerouting paths is proposed to speed up the process.
- **AIDC Expansion:** AIDC automation between FIRs reduces phone calls and errors. Its use between Sanya and Hanoi saved 4 hours of coordination daily. Expanding AIDC to more FIRs, like Ho Chi Minh, is encouraged.
- **Managing Unidentified Aircraft:** With over 500 sightings in 2024, there is a growing need to share real-time data and create standard emergency and avoidance procedures for handling unknown aircraft safely.
- **CPDLC Rollout:** CPDLC digital messaging helps reduce voice congestion and errors. Sanya FIR recommends expanding its use to busy routes like L642 and M771 in cooperation with neighboring FIRs.
- **Better Traffic Flow Management (ATFM):** Emphasis is placed on monitoring CTOT (Calculated Take-Off Time) compliance and applying standardized delay management strategies (like ground delay programs) to reduce congestion.
- **Joint Emergency Response:** Proposals include rapid info-sharing tools, standard rerouting during emergencies, and setting holding areas near FIR boundaries to manage crises efficiently.
- **Congestion Relief on Route A1:** Lateral offset procedures and future parallel routes are suggested to reduce pressure on congested segments and maintain flight safety.
- **Training and Staff Exchanges:** Reviving joint training programs and staff exchanges, like the successful pre-pandemic Four ACC initiative, would strengthen teamwork and ensure consistent procedures across FIRs.

7.20 ICAO proposed that this topic also be brought to the upcoming ATMSG meeting. It was recommended that a brainstorming session and further internal discussions be held among the relevant States/Administrations. Such sessions could help identify the future direction of the group and determine appropriate TOR for the next SCSTFRG meeting.

Two of the Most Unsafe Diversionary Routes in Manila FIR during Adverse Weather (Flimsy/04)

7.21 During large-scale weather events (LSWD) in the South China Sea, many aircraft reroute

through Manila FIR to avoid bad weather and congestion in nearby FIRs like Hong Kong and Ho Chi Minh. However, two frequently used diversionary routes are considered unsafe and create challenges for Manila's air traffic control, especially during the rainy season when these reroutings happen more often.

7.22 The first route, *SABNO A583 DALRA N892 MIGUG*, causes problems due to sudden flight level changes, high traffic density, and poor communication in parts of the route. The second route, *ARESI L625 AKOTA A583 SABNO*, faces similar issues, including timing pressure for altitude changes and risk of conflicts with other traffic. In both cases, communication gaps and blocked flight levels make it harder for ATC to safely manage traffic.

7.23 Manila ACC has suggested safer alternative routes that pass through areas with better radar and communication coverage. These recommended paths reduce the need for urgent changes and make it easier for controllers to guide flights safely. The Philippines is currently working on updating their official route information (AIP) to reflect these recommendations and improve overall safety.

7.24 The Meeting invited IATA to share the relevant information with its member airlines. This would assist airlines in selecting more efficient alternate or diversionary routes within Manila FIR, thereby improving operational planning and flexibility.

7.25 The meeting also highlighted a need to improve regional awareness and share information more transparently among states.

ATM Points of Contact for the SCSTFRG Meeting (WP/16)

7.26 The Secretariat presented the need for the new Member States' Points of Contact (POC) for the efficient communication among the stakeholders, and requested that States/Administrations provide an update as required. New *ATM Points of Contact List for the SCSTFRG meeting* was attached as **Appendix D** to this meeting report and after this meeting.

South China Sea ATS Route Operational Overview

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

ATS Route	Horizontal Separation	Horizontal Challenges	Vertical Management	Vertical Challenges
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	1: Crossing route conflicts 2: ATC Workload 3: Sector configuration
L642 / M771 S	20 NM (Trial, not 24hr) →10 NM	1: Not fully implemented 2: LOAs pending 3: Limited ATC workload	FLAS→FLOS 310/320/350/360/390/410 310/320/350/360/390/410	1: Crossing route conflicts 2: Reduced FL availability during LSWD
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
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
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

Table 2: Overview of ATS Route Visualization in the South China Sea

7.27 Inspired by ICAO's regional planning principles, the Meeting initiated an effort to develop a consolidated visual representation of the current operational landscape across major ATS routes in the South China Sea. This overview as **Table 2** captures the present status, target objectives, and existing challenges along both the horizontal and vertical dimensions of route management. By presenting a

structured comparison, the Table 2 aims to provide all stakeholders with a clear and intuitive understanding of the current situation, operational gaps, and transformation goals across key routes such as A1, L642, A461, and others.

7.28 In addition to visualizing the status, the initiative also serves as a practical framework to systematically address route-specific challenges. By identifying key issues such as ranging from sector design limitations and inter-FIR coordination to ADS-B coverage gaps and inconsistent flight level allocations, the group hopes to encourage collaborative resolution, including cases where support from other States/Administrations may be necessary. Tackling challenges individually, yet collectively, will support a more structured, transparent, and effective path toward seamless operations in the region.

7.29 The current table above is intended as an initial reference sample. It is recognized that some data points may be incomplete or indicative, and that the list of challenges may not be exhaustive. Furthermore, the presentation format may benefit from further refinement. The Meeting encouraged all stakeholders to contribute to improving the accuracy, completeness, and utility of this tool, so that it may serve as a shared platform for tracking progress and guiding future planning.

Agenda Item 8: Date and Venue of the Next Meeting

8.1 The SCSTFRG/14 was tentatively planned in June or July 2026 at the APAC Regional Office in Bangkok Thailand.

Closing of the Meeting

The Chair thanked the meeting participants for their significant work during a busy meeting program.

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International Civil Aviation Organization

The Thirteenth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/13)

Beijing China, 16 – 18 July 2025

PROVISIONAL LIST OF WORKING AND INFORMATION PAPERS AND TENTATIVE ODER OF DICUSSION

(Presented by the Secretariat)

WORKING PAPERS

Number	Agenda	WORKING PAPERS	Presented By
WP01	1	Provisional Agenda	Secretariat
WP02	2	Review of Relevant Meeting Outcomes	Secretariat
WP03	2	Update on Addressing Capacity Constraints on ATS Routes L642 and M771 During Large-Scale Weather Deviation (LSWD) Events	Hong Kong China / Singapore / Viet Nam
WP04	2	Progress Update on the Operational Trial of 20NM Longitudinal Spacing on Air Routes L642 and M771	Hong Kong China
WP05	2	Post-Trial Assessment of 20NM Separation on Routes L642 and M771	China
WP06	2	Updates on the Implementation Plan for Reduced Longitudinal Spacing on Routes N892 and L625 within the Manila FIR	Philippines
WP07	3	Traffic Sample Data Visualization over The South China Sea Airspace	Secretariat (Supported by MAAR)
WP08	3	Progress Review of SCSTFRG Priority Areas	Secretariat
WP09	3	Optimising Capacity on ATS Route L644	Singapore / Indonesia / Viet Nam
WP10	4	Review of Selected ATS Route Proposals from the Asia-Pacific Region ATS Route Catalogue	Secretariat
WP11	4	Proposal For Improving A1 Route Safety Margin Through Parallel Route Implementation	China
WP12	4	SCS 11 - New ATS Routes Parallel to R208 Update and Progress	Malaysia/Singapore/ Viet Nam
WP13	4	Review of the Existing FLAS/FLOS in South China Sea Airspace	Secretariat
WP14	4	Harmonization of Performance-Based Navigation (PBN) Routes in the South China Sea Region, Particularly Within and Surrounding the Ujung Pandang FIR	Indonesia
WP15	5	Review of The SCSTFRG Terms of Reference & Task List	Secretariat

Number	Agenda	WORKING PAPERS	Presented By
WP16	7	ATM Points of Contact for the SCSTFRG Meeting	Secretariat

INFORMATION PAPERS

Number	Agenda	INFORMATION PAPERS	Presented By
IP01	1	Provisional List of Working and Information Papers	Secretariat
IP02	2	Review of Large-Scale Weather Deviation Procedures	IFATCA
IP03	2	Joint Initiative to Enhance Longitudinal Separation on ATS Routes Between Manila FIR and Kota Kinabalu FIR.	**Philippines** /Malaysia
IP04	3	Strategic Implementation of Free Route Operation (FRTO) Framework in Kuala Lumpur FIR And Kota Kinabalu FIR	Malaysia
IP05	7	Upcoming the Free Route Airspace Implementation Webinar	Secretariat

FLIMSIES

Number	Agenda	FLIMSIES	Presented By
Flimsy 01	7	Optimizing Airspace Utilization through Integrated Flow and Capacity Management in the SCS	China
Flimsy 02	7	Towards Seamless ATM through Operational Harmonization in the South China Sea Region	China
Flimsy 03	7	Collaborative Efforts to Improve Air Traffic Flow Efficiency in the South China Sea Region	China
Flimsy 04	7	Two of the Most Unsafe Diversionary Routes in Manila FIR during Adverse Weather	Philippines
Flimsy 05	4	Establishment of a Parallel ATS Route A1 in Viet Nam	Viet Nam
Flimsy 06	4	Introduction of the Approved New ATS Route by Government of LAO PDR	LAO PDR

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Appendix C

TERMS OF REFERENCE

SOUTH CHINA SEA TRAFFIC FLOW REVIEW GROUP (SCSTFRG)

1.1 Objective

The objective of the SCSTFRG is:

a) to analyse the traffic flows in the overall South China Sea airspace, ATS routes and the suitability of the Flight Level Allocation Scheme (FLAS) and Flight Level Orientation Scheme (FLOS) to optimise airspace capacity and enhance flight safety in the long term; and

b) to report outcomes of the review and recommendations to the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSAEACG).

1.2 Tasks

To meet this objective, with reference to *the Asia/Pacific Region Seamless ANS Plan* and expected traffic growth, the SCSTFRG shall:

a) Review the existing route structures in the South China Sea airspace to establish priorities;

b) Identify current and planned CNS/ATM capabilities and implementation timelines of States concerned;

c) Identify the most efficient horizontal separation to be utilised, based on the current and planned CNS/ATM capabilities, taking into account aircraft approval status of the traffic operating on the relevant routes as well as the new CNS capabilities available;

d) Review the existing FLAS/FLOS operating within the South China Sea with a view to enhancing efficiencies;

e) Establish appropriate timelines/milestones/dependencies for activities planned under this Group; and

f) Make recommendations to SAIOSEACG on implementation plans for route structures, airspace, FLOS and separation solutions to meet the expectations of *the Asia/Pacific Seamless ANS Plan*.

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
2/3	Coordination of activities involving A1:				
	a) Parallel routes	~~SAIOSEACG/3~~ ~~SAIOSEACG/4~~ SAIOSEACG/6	China, Hong Kong China, Laos, Thailand, Viet Nam	Open	SCSTFRG/6 – It was agreed that discussion related to the establishment of parallel route to A1 should take place after the successful implementation of reduce longitudinal spacing from 30NM to 20NM on A1. SCSTFRG/8 – Further discussion on this matter was planned during the upcoming MK-ATM/CG/8, to be hosted by Viet Nam. SCSTFRG/9 Report re: WP/03. SCSTFRG/10 Report re: WP/04. SCSTFRG/11 Report re:WP/06 & WP/10 SCSTFRG/12 Refers: WP13 SCSTFRG/13 Refers: WP11: China and Viet Nam have already made progress through bilateral coordination. The proposed northeast and southwest bound traffic routes are being evaluated for safe lateral spacing.
	b) Direct communication link between Da Nang APP and Sanya ACC	~~SAIOSEACG/3~~ SCSTFRG/13	China, Viet Nam	~~Open~~ Closed	SCSTFRG/9 – China updated that the direct communication link had not been established and requested Viet Nam to provide their POC. SCSTFRG/10 – DCPC btw Sanya and Da Nang not yet implemented. POC of Viet Nam (Da Nang APP) will be provide by the end of June 2022 SCSTFRG/11 IP05-China updated this topic would be further discussed at their bilateral meeting between China and Viet Nam. SCSTFRG/13 – Viet Nam suggested deferring the consideration of establishing a direct communication link in the short term.

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
	c) AIDC between Sanya ACC, Ho Chi Minh ACC, ~~Ha Noi ACC~~	~~SAIOSEACG/3~~ ~~SCSTFRG/13~~ SCSTFRG/14	China, Viet Nam	Open	SCSTFRG/9 – China updated that the AIDC between Sanya and Ha Noi ACCs, and Ho Chi Minh ACCs, had not been established, and requested Viet Nam to provide the updated POC. SCSTFRG/10 – China would like to facilitate the AIDS with Viet Nam ASAP. VATM POC was provide during the meeting. SCSTFRG/11 IP05-China updated this topic would be further discussed at their bilateral meeting between China and Viet Nam. SCSTFRG/13 Viet Nam updated AIDC between Sanya ACC and Ha Noi ACC has been implemented. The AIDC between Sanya ACC and Ho Chi Minh ACC is planned to be implemented in 2026.
	d) Modelling and simulation of A1 parallel routes	~~SAIOSEACG/3~~ SAIOSEACG/5	Viet Nam	~~Open~~ Closed	SCSTFRG/9 Report re: WP/03. Viet Nam to confirm if they require assistance in conducting the simulation. SCSTFRG/10 Report re: WP/04 Viet Nam to continue assessment and study on the proposal. SCSTFRG/11 re: IP/05. SCSTFRG/13 re: WP/11 and Flimsy/05

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
2/4	Enhancement of longitudinal spacing on ATS route M758 ~~and M761~~	~~SCSTFRG/12~~ ~~SCSTFRG/13~~ SCSTFRG/14	Indonesia, Malaysia, **Singapore**	Open	SCSTFRG/6 – Bilateral discussion between Malaysia and Singapore is ongoing. Reduction of longitudinal spacing from 80NM to 40NM was targeted for first half of 2020. SCSTFRG/9 – Discussion between Indonesia, Malaysia and Singapore was expected when COVID-19 situation improved and face-to-face meeting become possible. SCSTFRG/10 – When COCID-19 situation improved, face-to-face meeting will be held to discuss 50NM. Now 10 min separation between a pair of RNAV capable aircraft on the same level. M758 (Cat R/S airspace to Cat R FIR TOC point) M761 (Cat S airspace to Cat S FIR TOC point) Refer to SCSTFRG/12 IP03 20NM has been implemented on M761.

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
4/4	New ATS routes parallel to R208 Viet Nam's feedback: Currently, Viet Nam is studying to establish 02 new PBN routes as follow: The first one is PBN route from Tan Son Nhut Intl airport to Phuket Intl Airport of Thailand (from DVOR/DME TSH to DVOR/DME PUT) and the second one is from DVOR/DME PQU to IGARI to serve flight between Phu Quoc Intl Airport to Malaysia/Singapore. These routes are intended application of PBN specification RNP4/RNAV5 or RNP2/RNAV2 (for Non-PBN aircraft could be consider to fly at lower flight level or is assigned by concerning ATS). Viet Nam will conduct internal cooperation with relevant authority of Viet Nam and discuss with Thailand, Cambodia and Malaysia as well.	~~SAIOSEACG/3~~ ~~SAIOSEACG/4~~ SAIOSEACG/5	**Malaysia,** Singapore, Viet Nam	Open	SCSTFRG/8 – Refer Side Meeting summary. SCSTFRG/9 Report re: IP/05. Proposed Tri-lateral meeting: July 26, 27 or 28, 2022 Confirmation by Viet Nam: By the end of June 2022 SCSTFRG/11 re:WP/08 & IP/05 updated by Viet Nam: at the Tripartite Meeting (through a video teleconference) between Malaysia, Viet Nam and Singapore on ATS route and other relevant issues on 28 July 2022, Viet Nam in principle agreed to the proposal for the establishment of new ATS route as requested by IATA. Viet Nam suggested a minor adjustment to the proposal that VKR–IPRIX should be used instead of VKR–BITOD to minimize the number of transfer point (IPRIX) and reduce the workload of ATC. Viet Nam also suggested RNAV 2/RNP 2 for both routes. The timeline is depending on Malaysia and Singapore sides. Refers to SCSTFRG/12 WP09. SCSTFRG/13 Refers: WP12: Malaysia, Singapore, and Viet Nam reported that they are currently discussing updates to the ATS route R208. More work and close cooperation are needed to set a clear timeline and complete the technical and approval processes for the proposal.
7/4	Optimising routing into China to allow more options for aircraft going beyond Pearl River Delta	SCSTFRG/12	**China,** Hong Kong China, Laos, Thailand, Viet Nam, IATA	~~Open~~ Close	Discussion regarding this matter will only take place after the completion of the 3 priority areas agreed in SCSTFRG/3. SCSTFRG/9 – Current route proposals related to this Action Item are SCS 18, SEA 12, and VIET NAM 02. On Stand-by: It's linked to A1 enhancement (20NM and parallel routes)

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
2/5	Enhancement of longitudinal spacing on ATS route L642 and M771 Viet Nam's feedback: Viet Nam has discussed via email with Hong Kong China about the implementation of 20NM longitudinal spacing at TOC on ATS routes L642 and M771. Viet Nam also informed that ATS surveillance minima separation within area of responsibility of Ho Chi Minh ACC is 10 NM. (It is planned to reduce to 5 NM in coming time).	~~SAIOSEACG/3~~ ~~SAIOSEACG/4~~ SAIOSEACG/5	China, **Hong Kong China**, Singapore, Viet Nam	Open	SCSTFRG/8 - Subject to the agreement of Sanya ACC, implementation of 30 NM longitudinal spacing between Hong Kong and Sanya ACCs was expected at first quarter of 2020. SCSTFRG/9 Report re: WP/02. SCSTFRG/10 Report re: WP/04 NM longitudinal spacing btw Hong Kong and Sanya ACCs had not been implemented (now 50 NM spacing in place) SCSTFRG/10 Report re: WP04. Updated by Hong Kong China. SCSTFRG/13 Report re: WP04. Updated by Hong Kong China, trial operation of reducing 20NM separation has been successful. It's planning to gradually extend operating time and be fully implemented by the end of 2025, encouraging concerned States to renew their LOA accordingly. SCSTFRG/13 Report re: WP05. China updated that it's about post-trial assessment of 20NM separation which includes the key results, challenges, and recommendations.
3/5	Review of FLAS/FLOS operating within the South China Sea airspace: a) study and review the current SCS FLAS/FLOS operation with all neighboring FIRs with a view to enhancing efficiencies; b) provide the current FLAS/FLOS and no-PDC Flight Level data in SCS FLAS/FLOS Chart (**Appendix A to the Report**) to the ICAO APAC Regional Sub-office (APAC-RSO@icao.int); and c) report the review result including the possible improvement proposals to the SCSTFRG/11 meeting.	~~SAIOSEACG/3~~ ~~SAIOSEACG/4~~ SAIOSEACG/5	All Member States	Open	SCSTFRG/7 – The meeting agreed for the review of existing FLAS/FLOS operating within the South China Sea with a view to enhancing efficiencies, to be accorded as Priority Area 4 of the SCSTFRG. SCSTFRG/9 Report re: WP/03. Discussion on Priority Area 4 would begin at SCSTFRG/10. SCSTFRG/10 Report re: WP/06 **(Decision SCSTFRG/10-1)** SCSTFRG/11 Report re: WP/09. SCSTFRG/12 WP07

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
1/6	FL390 that is currently a FLAS level on ATS route A1 to be assigned to ATS route Q1/Q2	SAIOSEACG/3	China, Hong Kong China, Thailand, **Viet Nam**	~~Open~~ Completed	SCSTFRG/5 – WP02 conclusion. SCSTFRG/6 – Should take place simultaneously with the implementation of reduce longitudinal spacing from 30 NM to 20 NM on A1. SCSTFRG/10 – Viet Nam still required FL390 to be assigned as FLAS on Q1 and Q2. China commented there would be more altitude transition points with reallocation increasing more conflict points. SCSTFRG/11 Report re: WP/06. a side meeting between Lao PDR, Thailand and Viet Nam regarding the use of FL390 on ATS Route A1, all parties agreed to retain FL390 as No-PDC FL for route Q2 and will be PDC FL for ATS Route A1, the availability will depend on Hanoi ACC approval.
2/6	Enhancement of longitudinal spacing on ATS route M768 to 50 NM	SAIOSEACG/3	Indonesia, Malaysia, **Singapore,** Viet Nam	~~Open~~ Competed	SCSTFRG/7 – Indonesia, Malaysia, Singapore and Thailand agreed to this proposal. Due to the absence of Cambodia and Viet Nam, offline discussion lead by Singapore would be carried-out. SCSTFRG/8 – Refer Side Meeting summary. SCSTFRG/9 Report re: WP/04. SCSTFRG/10 – Singapore informed on the bi-lateral meeting with Viet Nam will take place at the end of June 2022. In the meantime, discussion btw Indonesai and Malaysia will be carried out. SCSTFRG/11Report re: WP/07: The States concerned have agreed on the implementation timeline. SCSTFRG/12 WP04

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
8/2	Enhancement of longitudinal spacing on ATS route L625 and N892 to 50 NM	~~SCSTFRG/12~~ ~~SAIOSEACG/4~~ SAIOSEACG/5	~~China,~~ Singapore, Philippines, Viet Nam	Open	SCSTFRG/8 Report FL/02. SCSTFRG/9 Report re: IP/02. Expected to be implemented in Q4 2021 (coordi and agreement with HoCHi Minh and Taibei ACCs) Seek info from Philippines SCSTFRG/10 Flimsy01 – update from Philippines This implementation requires the operation of a new ACC sector in the SCS as already mentioned in the previous meetings. Due to several constraints during the pandemic, relevant activities pertaining to this implementation have been rescheduled: Operation of the new sector -- Q4 2022 Collaboration for optimization -- Q1 2023 Proposed Implementation -- Q2 2023 Refers to the SCSTFRG/12 WP06 SCSTFRG/13 Report re: WP06. Updated by Philippines, it's planning to operationalize a new ATC sector by Dec 2025, with a trial implementation of 50NM spacing starting in Mar 2026.
9/3	a) Enhancement of longitudinal spacing on ATS route N875, M904 and N891 to 50NM.	~~SCSTFRG/12~~ ~~SCSTFRG/13~~ SCSTFRG/14	Malaysia, Indonesia, Singapore, Thailand, Viet Nam	Open	SCSTFRG/9 Report re: WP/06. Currently 10 min at the TOC points
	b) Enhancement of longitudinal spacing on ATS route M772 to 50NM. As well as the optimization of flight level usage on M772 with a view to FLAS optimization	~~SCSTFRG/12~~ ~~SCSTFRG/13~~ SCSTFRG/14	Hong Kong China, Malaysia, Indonesia, Philippines, Singapore	Open	SCSTFRG/9 Report re: WP/06. SCSTFRG/10 HK China no objection, Singapore supports, Philippines would consider at a later stage
	c) Enhancement of longitudinal spacing on ATS route P648 to 50NM	SCSTFRG/12	Indonesia, Malaysia,	~~Open~~ Completed	SCSTFRG/9 Report re: WP/06. SCSTFRG/10 Malaysia supports and no objection for FLAS removal.

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
9/4	Enhancement of longitudinal spacing on ATS routes A583 to 30 NM	~~SAIOSEACG/3~~ SCSTFRG/13	Hong Kong China, Philippines	~~Open~~ Completed	SCSTFRG/9 Report re: IP/02. SAIOSEACG/1 IP07. A461: Phase 1 trial of 30NM until Apr 2022 for RNP4 equipped traffic at above F290, at least one destined for HK or MNL FIRs. Phase2: after a joint review in Q2 2022 for all RNP4 a/s incl. overflights. Phase 3: extend to all RNP4 a/c on A461 and A583 SCSTFRG/11 Report re: WP/06 - the Philippines proposed a side meeting with Hong Kong China to discuss the details of Phase 3 Implementation SCSTFRG/13 Report re: WP/08 (2.24/2.26) – Hong Kong China and Philippines reported this task has been successfully completed.
10/1	30 NM longitudinal spacing between Indonesia and its neighbouring FIRs Indonesia also suggested that 10-20 NM surveillance-based separation should be taken into consideration.	~~SCSTFRG/12~~ ~~SCSTFRG/13~~ SCSTFRG/14	Indonesia, Malaysia, Philippines, Singapore	Open	SCSTFRG/10 Report re: WP03 (ref: side meeting discussion) SCSTFRG/11 Report re: WP05.
12/1	Phase review of the priority areas and assess the progress of the task list.	March 2025	**ICAO** and All SCSTFRG Members	Open	In preparation for the SAIOSEACG/4 meeting, through an online meeting organized by ICAO
12/2	Report the outcomes of the trial implementation of 20 NM separation on L642/M771.	SAIOSEACG/4	**Hong Kong China**, China, Viet Nam, Singapore	Open	Refers to: SCSTFRG/12 WP06 SCSTFRG/13 Report re: WP/04
12/3	Asses the possibility to implement 30NM separation on M768.	SCSTFRG/13	**Singapore**, Indonesia, Malaysia and Viet Nam	~~Open~~ Closed	Refers to：SCSTFRG/12 WP/04 SCSTFRG/13 – the meeting noted that only approximately 33% of the flights on M768 filed both RSP180 and RCP240 and agreed to close the action item. closed.

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
12/4	Implementation 50NM separation on the routes connected to P648 (M646 and M522/M754)	~~SCSTFRG/13~~ SAIOSEACG/5	**Philippines,** Malaysia, and Singapore	Open	Refers to: SCSTFRG/12 WP/03 SCSTFRG/13 Report re: IP/03 – The Philippines and Malaysia reported on progressing longitudinal 50NM spacing on routes M646 and A341. They are planning a new trial from 50NM to 30NM on M646 and A341, likely starting later this year 2025. For M754/M522, a shift from 10-minute separation to 50NM is under consideration, with trials expected in 2026 and possible 30NM adoption later. The Philippines also proposed removing a current restriction that limits 50NM spacing to flights landing within Kota Kinabalu FIR. Malaysia agreed, but further coordination with Indonesia is needed due to potential impacts on Jakarta FIR.
12/5	Finalize the *South China Sea Operational Concept* for endorsed by SCSTFRG Members.	~~SAIOSEACG/3~~ SCSTFRG/14	ICAO and SCSTFRG Members	Open	Refers to SCSTFRG/12 WP/11
12/6	Conduct research on advanced ATM systems (FRA, TBO, FF-ICE and SWIM) and report to the SCSTFRG to support operations in the South China Sea traffic flow.	~~SCSTFRG/13~~ SCSTFRG/14	ICAO and IFATCA	Open	Refers to SCSTFRG/12 WP/08 ICAO to coordinate the SCSTFRG Member States to provide updates on advanced ATM implementation to the meeting.
13/1	Research on the alternative routes under LSWD event	SCSTFRG/14	China, Hong Kong China, Viet Nam, Singapore, Cambodia	Open	Refer to SCSTFRG/13-IP/02 ICAO to coordinate the SCSTFRG Member States to provide updates on alternative routes.
13/2	Research on the data-driven approach to support the operation in SCS.	SCSTFRG/14	IATA and All Member States	Open	Refer to SCSTFRG/13-IP/02 ICAO to coordinate the SCSTFRG Member States to provide updates on advanced ATM implementation to the meeting.

International Civil Aviation Organization

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(last update August 2025))

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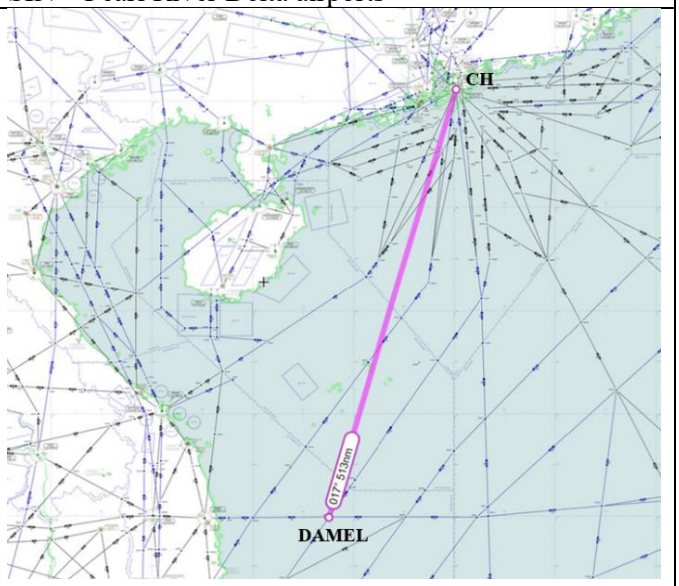
8.	Mr. Khorn vannak	Senior Manager of Air Traffic Management The Civil Aviation Authority of Thailand	Vannakk@cats.com.kh
	IATA (1)		
9.	Mr. Bin HU	Manager Safety ATFM Liaison & Flight Operations DGS-NASIA-Regional Operations, Safety and Security IATA	hub@iata.org

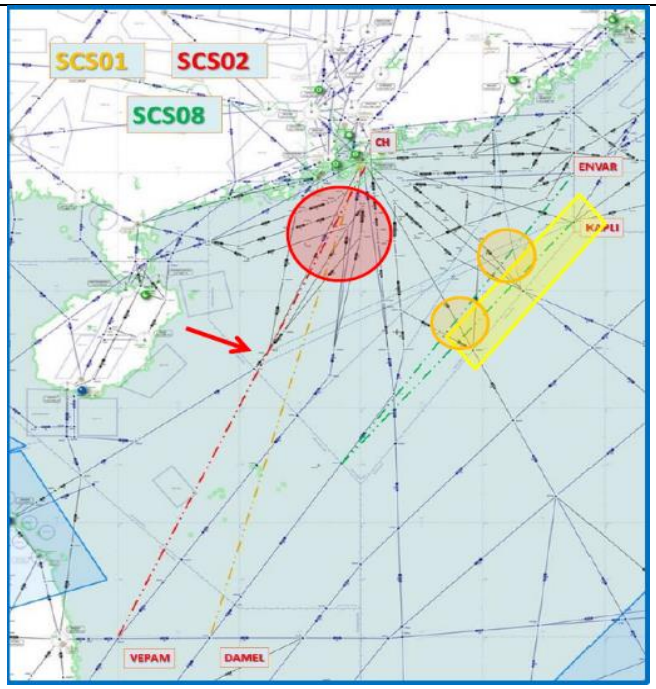
Appendix E

The ATS Routes in South China Sea region from the APAC

ATS Route Catalogue

Chapter 2: Southeast Asia
(referred to SEACG for review)

ATS Route Name	SCS 01
State Priority	**D**
IATA Priority	**HIGH**
Requested by (when)	IATA (01/09/2018)
States/Administrations Involved	Viet Nam, China, Hong Kong China (Ho Chi Minh, Sanya, Hong Kong FIRs)
Route Description	DAMEL 1358.7N 11130.6E – Cheung Chau (CH) 2213.2N 11401.8E
Flight Level Band	28,000 – 46,000 ft
Benefit (fuel, environmental)	23 NM / 4 minutes, 300 kg fuel per flight, 1,560 tonnes fuel, 4,914 tonnes CO_2 annually
Operational Information (potential airlines, flight frequency, potential city pairs)	CX, KA, MH, SQ More than 100 flights per week SIN – Pearl River Delta airports
Remarks: Proposed route shortening for M771 into the Pearl River Delta area. During SEACG/19 in WP09 Hong Kong China advised they had studied the proposal for track shortening and advised the proposed change would reduce capacity of A1/P901. It would also require an extensive change in the flight route system and ATC sectors in Hong Kong FIR. However, Hong Kong China would continue to study this proposal for the implementation of RNP4/2. At SEACG/26: Hong Kong China commented they would need to review the integration of this route proposal with its planned airspace enhancement projects. Update from Viet Nam on 22/07/2019: Viet Nam has no objection, subject to agreement from China and Hong Kong China. 23/10/2020: China commented the proposal was under consideration. 30/10/2020: Hong Kong China commented SCS 01 and SCS 02 were conflicting with each other (see the red circle in the figure below). **The two**	

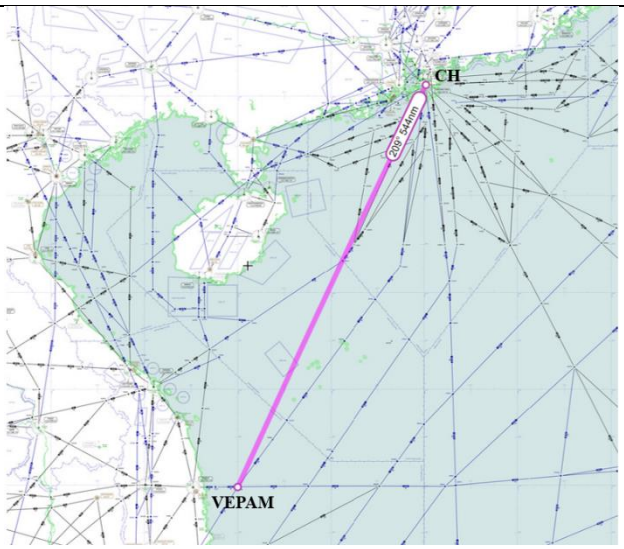
routes would create additional confliction points in the most congested ATC sector and ATS route segment in the Hong Kong FIR (see the red circle and arrow in the figure below). **Therefore, these two routes were not recommended**. At ATMSG/8: IATA provided updates on IATA priority; implementation benefits; and operational information. 29/09/2021: China commented SCS 01 would create conflict with existing ATS routes A1, L642 and M771, and therefore not recommended for implementation. At ATM/SG/9: IATA provided update on the route operational information. At the SCSTFRG/13 meeting in 2025, Hong Kong China suggested to archive SCS01 to focus on the discussion to other feasible routes. IATA advised that they will reassess the feasibility of the proposal and retain it in the ATS Route Catalogue list pending further review.	

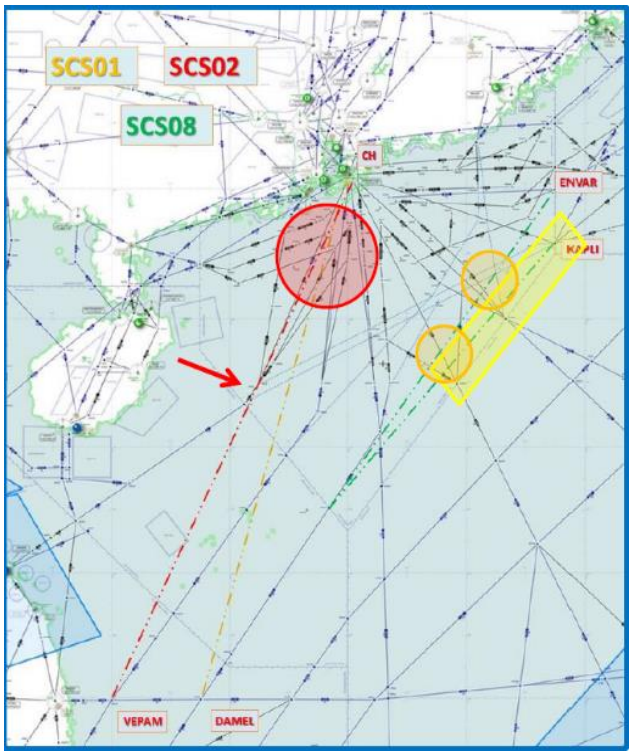
ATS Route Name	**SCS 02**
State Priority	**D**
IATA Priority	**HIGH**
Requested by (when)	IATA (01/09/2018)
States/Administrations Involved	Viet Nam, China, Hong Kong China (Ho Chi Minh, Sanya, Hong Kong FIRs)
Route Description	VEPAM 1358.0N 11000.0E – Cheung Chau (CH) 2213.2N 11401.8E
Flight Level Band	28,000 – 46,000 ft
Benefit (Environmental)	12 NM / 1 minutes, 200 kg fuel per flight, 2,080 tonnes fuel, 8,580 tonnes CO_2 annually
Operational Information (potential airlines, flight frequency, potential city pairs)	CX, KA, MH, SQ More than 200 flights per week SIN – Pearl River Delta airports

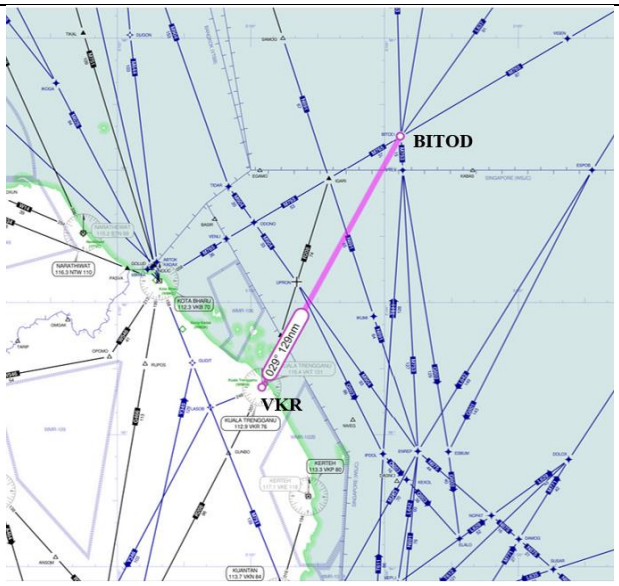
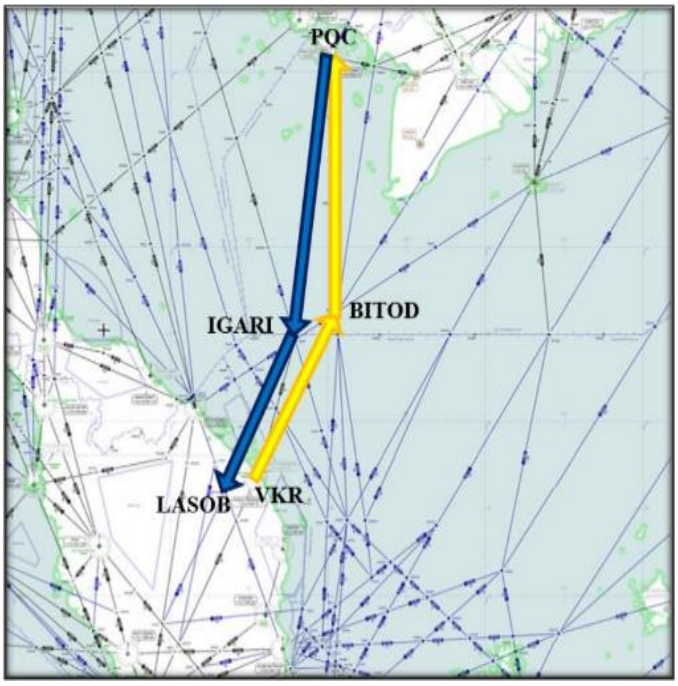
Remarks: Proposed route shortening for L642 out of the Pearl River Delta area. During SEACG/19 in WP09 Hong Kong China advised they had studied the proposal for track shortening and advised the proposed change would reduce capacity of A1/P901. It would also require an extensive change in the flight route system and ATC sectors in Hong Kong FIR. However Hong Kong, China would continue to study this proposal for the implementation of RNP4/2. At SEACG/26: Hong Kong China commented they would need to review the integration of this route proposal with its planned airspace enhancement projects. Update from Viet Nam on 22/07/2019: Viet Nam has no objection, subject to agreement from China and Hong Kong China. 23/10/2020: China commented the proposal was under consideration. 30/10/2020: Hong Kong China commented SCS 01 and SCS 02 were conflicting with each other (see the red circle in the figure below). **The two routes would create additional confliction points in the most congested ATC sector and ATS route segment in the Hong Kong FIR** (see the red circle and arrow in the figure below). **Therefore, these two routes were not recommended**.

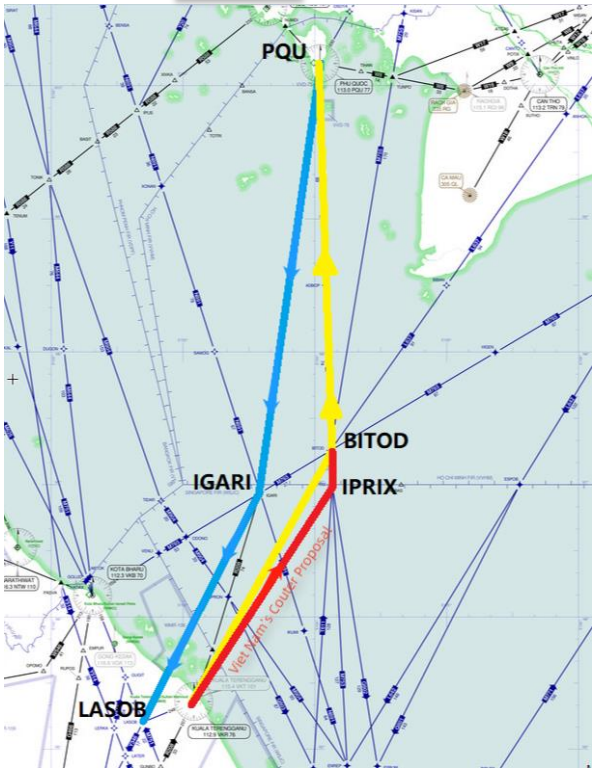
At ATMSG/8: IATA provided updates on implementation benefits; and operational information. 29/09/2021: China commented SCS 02 would create conflict with existing ATS routes A1, L642 and M771, and therefore not recommended for implementation. At ATM/SG/9: IATA provided update on the route operational information.

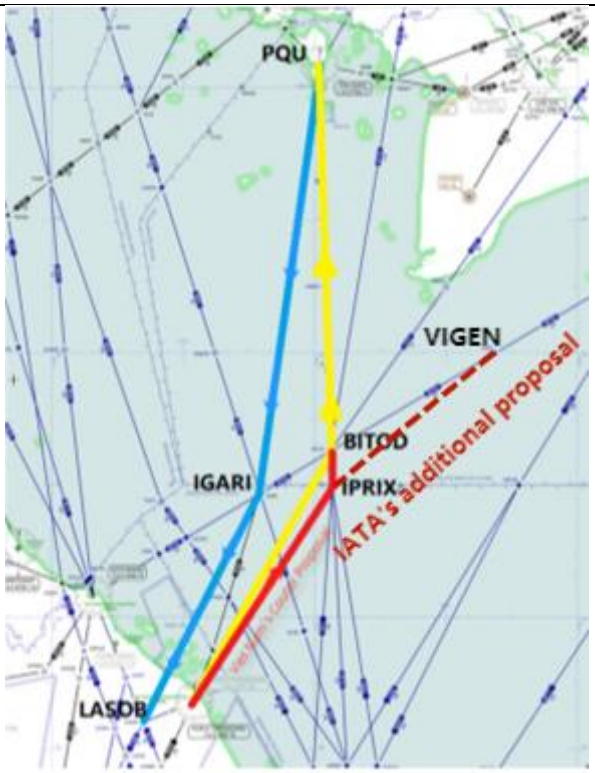
At the SCSTFRG/13 meeting in 2025, Hong Kong China suggested to archive SCS02 to focus on the discussion to other feasible routes.
IATA advised that they will reassess the feasibility of the proposal and retain it in the ATS Route Catalogue list pending further review.

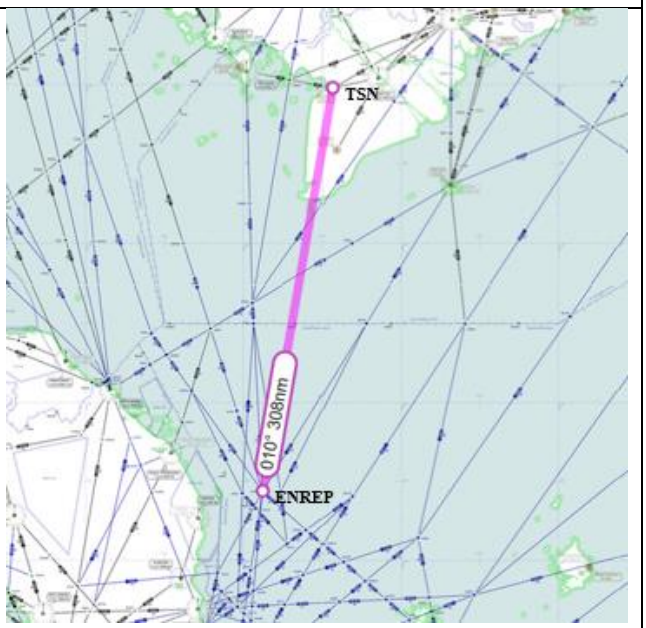


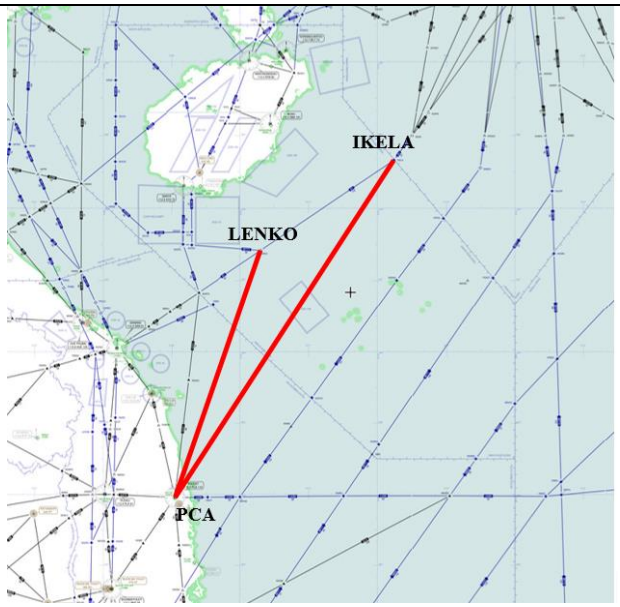


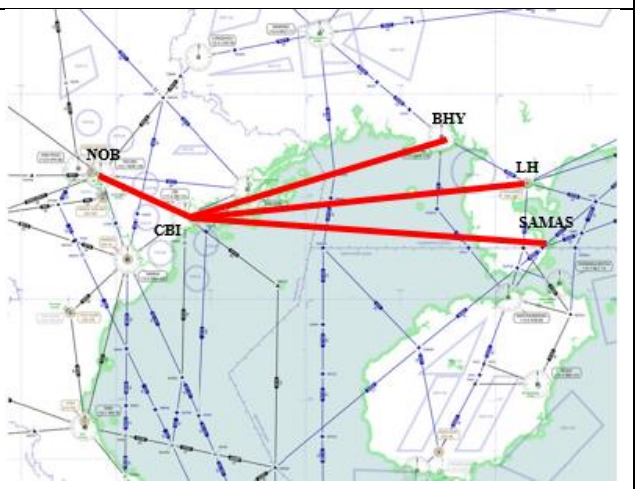
ATS Route Name	SCS 11
State Priority	B
IATA Priority	LOW
Requested by (when)	IATA (10/03/2015: SEACG/22)
States/Administrations Involved	Viet Nam, Singapore, Malaysia (Ho Chi Minh, Singapore, Kuala Lumpur FIRs)
Route Description	Kuala Terengganu (VKR) 0521.6N 10304.9E – BITOD 0715.4N 10407.1E
Flight Level Band	
Benefit (fuel, environmental)	6 NM / 0 minutes, 23 kg fuel per flight, 167 tonnes fuel, 527 tonnes CO_2 annually
Operational Information (potential airlines, flight frequency, potential city pairs)	MH, VN At least 20 flights per week KUL – HAN/PNH/SGN
Remarks: At SEACG/26: Malaysia, Singapore and Viet Nam had agreed in principle the feasibility of the route proposal. The States concerned would meet to further discuss the proposal in due time, and Malaysia agreed to become the lead coordinator. Update from Viet Nam on 22/07/2019: Viet Nam proposed the following route proposals for consideration by Malaysia and Singapore: Uni-directional eastbound route VKR – BITOD – PQC; and uni-directional westbound route PQC – IGARI – LASOB. At ATMSG/7: Malaysia would lead the tripartite meeting, expected during the SCSTFRG/8 in September 2019. At ATMSG/8: This route proposal was under consideration by Viet Nam; and IATA provided updates on IATA priority, implementation benefits and operational information. 08/10/2021: Malaysia commented they would host the meeting between Malaysia, Singapore and Viet Nam in Q4 2021 or Q1 2022. 22/2/2022: the tripartite meeting btw Malaysia, Singapore and Viet Nam was canceled and will be rescheduled to report the discussion outcome to SCSTFRG/10 meeting (scheduled 31/5 – 1/6 2022) In the tripartite meeting in Sept 2022, Viet Nam proposed the following route proposals: unidirectional Eastbound: VKR-IPRIX-BITOD-PQU; and	 

unidirectional Westbound: PQU-IGARI-LASOB. Upon agreement by States concerned (Malaysia and Viet Nam), IATA proposed an extention from IPRIX to VIGEN to this proposal for smooth joining to M765 saving 5-6 NM for eastbound flights. Before SAIOSEACG/2, Malaysia indicated that Malaysia, Singapore and Vietnam have broadly agreed to the proposal. Malaysia's proposal for the Coordination Procedure has been agreed by Singapore pending Viet Nam acknowledgement. At SAIOSEACG/2, regarding the additional proposal by IATA to further line up the IPRIX to VIGEN, Viet Nam declined based on their safety and efficiency evaluation. At SCSTFRG/11, Viet Nam submitted the IP05 that commented at the Tripartite Meeting (through a video teleconference) between Malaysia, Viet Nam, and Singapore on the ATS route, and other relevant issues on 28 July 2022. Viet Nam principally agreed to the proposal for the establishment of a new ATS route as requested by IATA. Viet Nam suggested a minor adjustment to the proposal, stating that VKR–IPRIX should be used instead of VKR–BITOD to minimize the number of transfer points at IPRIX and reduce the workload of ATC. Viet Nam also suggested RNAV 2/RNP 2 for both routes. The timeline depends on the Malaysia and Singapore sides. At the SAIOSEACG/3 meeting, Malaysia suggested to apply RNP10 route specification on the proposed routes. Singapore had no objections to either RNP2 or RNP10 navigation specifications for the proposed routes but highlighted that there are some operational details that need to be further discussed between the three States involved. In line with the APAC Seamless ANS Plan, ICAO	Counter-proposal by Viet Nam:  Suggested by IATA:

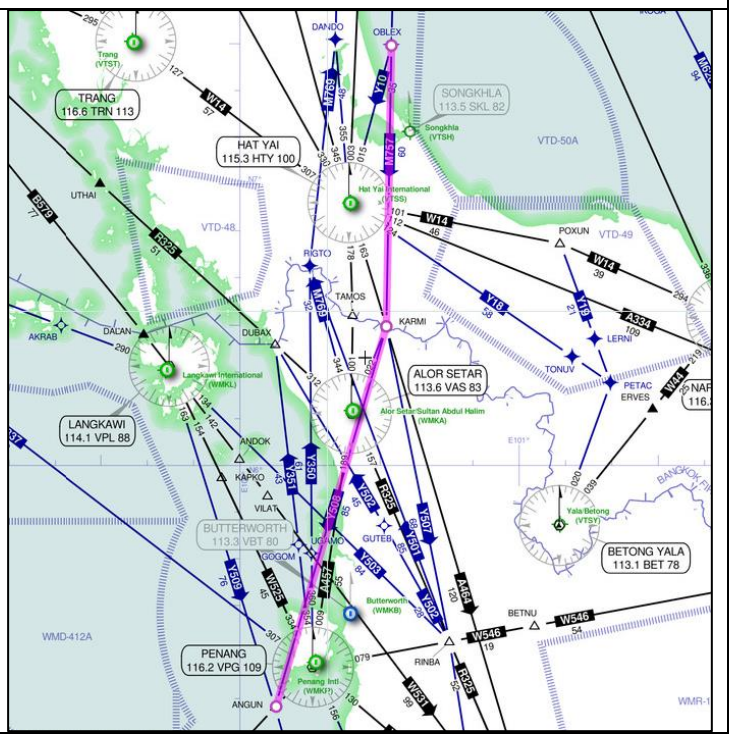
recommended RNAV2 and RNP 4 as preferable options for future air navigation, and the suggestion was echoed by Viet Nam. As requested by Malaysia, IATA agreed to investigate the fleet equipage operating in the area. At the SCSTFRG/12 meeting, Malaysia has engaged with local airlines operating in the area and confirmed that they are ready for RNAV2/RNP4. Further discussions with the relevant states are scheduled to take place in Q1 2025. Before the SAIOSEACG/4 meeting, Malaysia updated through email that technical discussion between CAAM and CAAS was conducted on 18/2/25. Tripartite discussion is proposed in Q2/3 subject to states availability. At the SAIOSEACG/4 meeting, IATA proposed deleting the additional proposal to further connect the IPRIX and VIGEN in order for the counter-proposal from Vietnam to be progressed without further delay.	

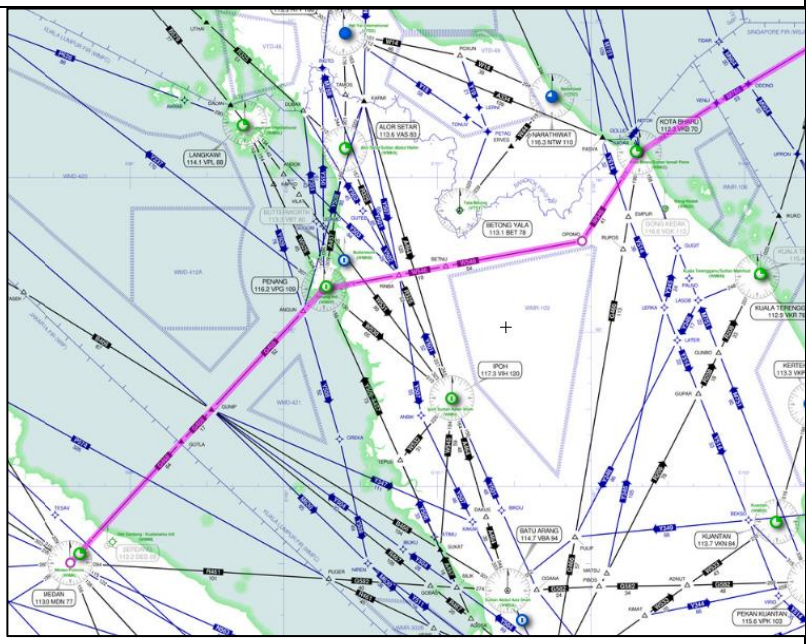
ATS Route Name	SCS 16
State Priority	C
IATA Priority	MEDIUM
Requested by (when)	Viet Nam (01/04/2019: SEACG/26)
States/Administrations Involved	Singapore, Viet Nam (Singapore, Ho Chi Minh FIRs)
Route Description	Implementation of new uni-directional northbound ATS route: ENREP 045223.88N 1041442.00E – New Waypoint (FIR BDRY between Singapore and Ho Chi Minh) – Tan Son Nhat (TSN) 104859.20N 1063844.10E
Flight Level Band	
Benefit (fuel, environmental)	48 NM / 6 minutes, 252 kg fuel, 794 kg CO_2 per flight, 576,576 kg fuel, 1,816 tonnes CO_2 annually Reduction in Distance/Time/Fuel/CO2 by 19NM/2MIN/600LBS/860KGS per flight with B744ERF for SIN/SGN portion on the basis of annual average wind conditions.
Operational Information (potential airlines, flight frequency, potential city pairs)	SIN – SGN
Remarks: Update from Viet Nam on 22/07/2019: Due to crossing routes, this route proposal would be possible subject to the enhancement of surveillance and ATFM capabilities in the concerned area. At ATMSG/8: Viet Nam commented this route proposal was under consideration; and IATA assigned "**MEDIUM**" priority. 11/2/2022: Singapore commented the concerned area is fully covered by ADS-B to support the proposal and ready to discuss on the implementation. 11/02/2022: Viet Nam commented they will continue to assess a necessity of this ATS/PBN route requirement adding ATS surveillance (SSR and ADS-B) capability has been enhanced by cooperation btw Viet Nam and Singapore, and new ATM aoutomation/AFTM capability will be enhanced with a long-term plan	

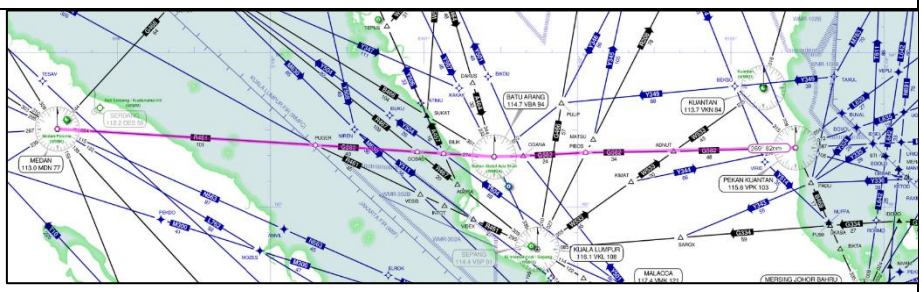
ATS Route Name	SCS 18
State Priority	C
IATA Priority	LOW
Requested by (when)	Viet Nam (01/04/2019: SEACG/26)
States/Administrations Involved	Viet Nam, China, Hong Kong China (Ho Chi Minh, Sanya, Hong Kong FIRs)
Route Description	Phu Cat (PCA) 135726.00N 1090233.60E – IKELA 183942.00N 1121442.00E or Phu Cat (PCA) 135726.00N 1090233.60E – LENKO 172456.88N 1101800.00E
Flight Level Band	
Benefit (fuel, environmental)	52 NM / 5 minutes, 220 kg fuel per flight, 435 tonnes fuel, 1,370 tonnes CO_2 annually
Operational Information (potential airlines, flight frequency, potential city pairs)	KA, MH At least 30 flights per week KUL – SGN – East Asia
Remarks: At ATMSG/7: China proposed to concentrate on the implementation of parallel route to A1 (SCSTFRG Priority Area 1). This route proposal may not be needed, if the parallel route to A1 is implemented. 23/10/2020: No update (SCSTFRG/9 postponed to 2021). At ATMSG/8: IATA provided updates on IATA priority; implementation benefits; and operational information. At ATM/SG/9: No update (discussion on planned implementation of parallel route to A1 was still ongoing at the SCSTFRG meeting). At the SCSTFRG/13 meeting, Hong Kong China agrees with the remark made by China to focus on the implementation of parallel routes on A1. It is suggested to be archived SCS08 to focus on the discussion to other feasible routes.	

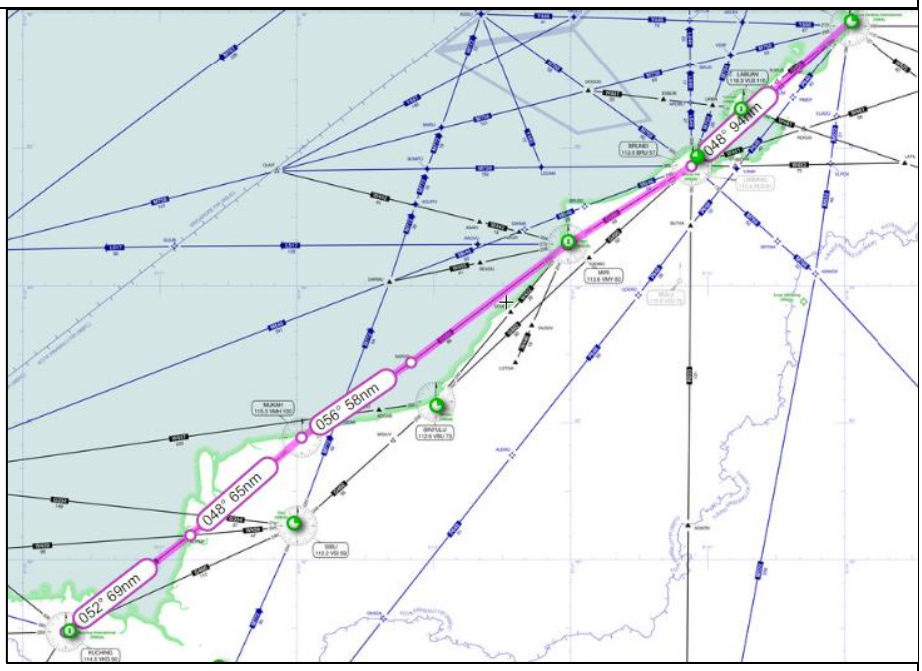
ATS Route Name	VIET NAM 02
State Priority	**D**
IATA Priority	**HIGH**
Requested by (when)	Viet Nam (01/09/2018)
States/Administrations Involved	Viet Nam, China (Hanoi, Sanya, Guangzhou FIRs)
Route Description	Noi Bai (NOB) 2112.8N 10550.1E – Cat Bi (CBI) 2049.1N 10642.5E – SAMAS 2030.3N 11029.7E or Noi Bai (NOB) 2112.8N 10550.1E – Cat Bi (CBI) 2049.1N 10642.5E – Huguang (LH) 2107.9N 11020.2E or Noi Bai (NOB) 2112.8N 10550.1E – Cat Bi (CBI) 2049.1N 10642.5E – Nankang (BHY) 2135.2N 10925.9E
Flight Level Band	28,000 – 46,000 ft
Benefit (fuel, environmental)	48 NM / 6 minutes, 252 kg fuel, 794 kg CO_2 per flight, 576,576 kg fuel, 1,816 tonnes CO_2 annually For ZGGG-VVNB with B789, Vietnam02 can reduce the flight distance by 73NM, reduce the flight time by 9 minutes, and save 700Kg of fuel.
Operational Information (potential airlines, flight frequency, potential city pairs)	CX 44 flights per week
Remarks: Because of small traffic demand and cost/benefit considerations, this route is impossible and cannot be implemented at present. Retain proposal for long-term planing (Viet Nam). Retention discussed at SEACG/22. At SEACG/26: China commented that this route proposal was very unlikely to be implemented, and recommended for this route proposal to be deleted from the Catalogue; and Viet Nam proposed alternate option: Noi Bai (NOB) 2112.8N 10550.1E – Cat Bi (CBI) 2049.1N 10642.5E – Nankang (BHY) 2135.2N 10925.9E to serve traffic between Ha Noi/Cat Bi/Van Don (new international airport in Viet Nam) and destinations in China and beyond. 23/10/2020: China commented the proposal was under consideration. At ATMSG/8: IATA preferred this route proposal to be retained in the Catalogue. 29/09/2021: China commented the proposal was still under consideration. 1/3/2022:IATA preferred this route proposal to be retained in the Catalogue. Despite currently low traffic due to the epidemic, as traffic returns this proposed route can give airlines more flight route options between China and Vietnam and beyond.	

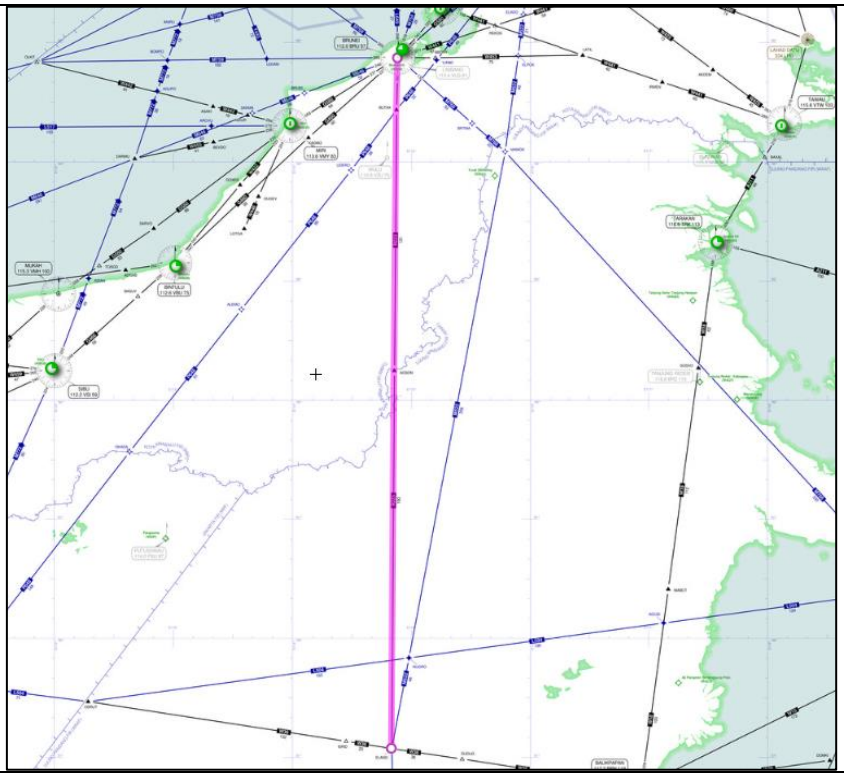
3/3/2022: China proposed for deletion due to inconsistency with overall flight flow. At SCSTFRG/11, Viet Nam suggested this route proposal be retained in the APAC Route Catalogue and wished that China would reconsider the feasibility of this new route. It was also supported by IATA. In response, China confirmed that they would further assess this route proposal internally and discuss it with Viet Nam during their upcoming bilateral meeting. At SCSTFRG/12 meeting, Viet Nam said that they have been continuously discussing the implementation of this route with China. At SCSTFRG/13 meeting, China stated that the parallel route to A1 remains the top priority. Viet Nam does support this priority.	

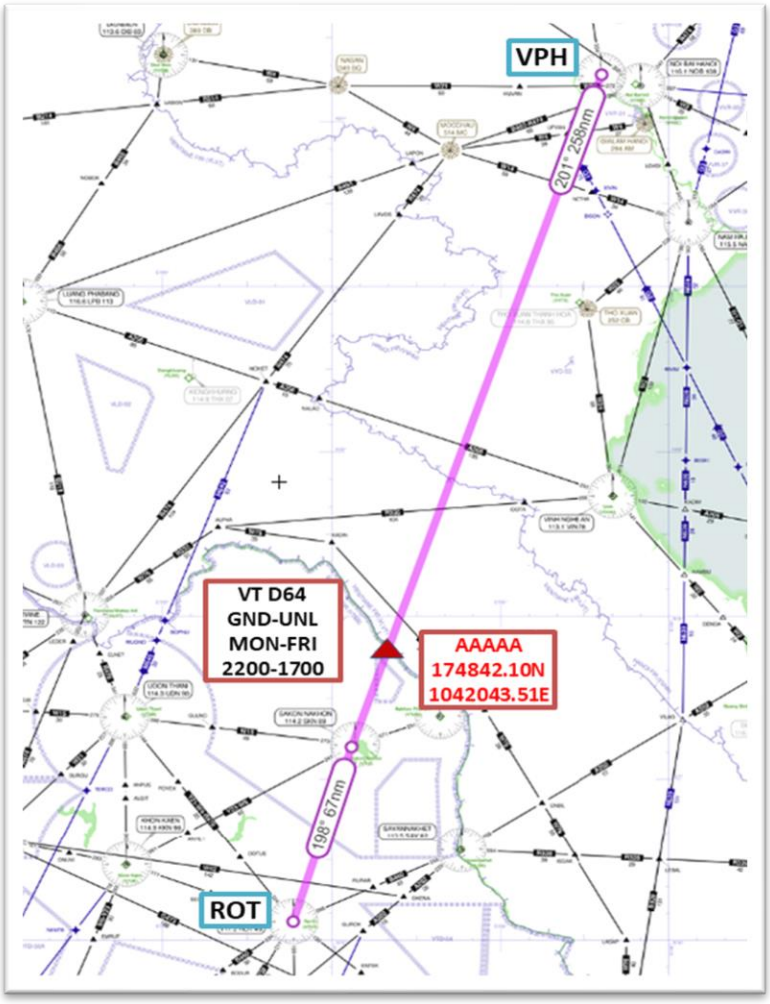
ATS Route Name	SCS19
State Priority	**A**
IATA Priority	MEDIUM
Requested by (when)	Malaysia (20/Mar/2023)
States/Administrations Involved	Malaysia, Thailand
Route Description	This proposal essentially focuses on extending M757 to replace the conventional route Y508
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace and to simplify FPL in Kuala Lumpur FIR.
Operational Information (potential airlines, flight frequency)	
Remarks: At SAIOSEACG/2, Thailand indicated its full support for the extension of M757. At SCSTFRG/12 meeting, Thailand said that they already submitted PfA to ICAO.	

ATS Route Name	**SCS20**
State Priority	**B**
IATA Priority	MEDIUM
Requested by (when)	Malaysia (20/Mar/2023)
States/Administrations Involved	Malaysia,Singapore, Indonesia, Viet Nam
Route Description	This proposal essentially focuses on extending M765 to replace the conventional routes W546 and G468.
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace and to simplify FPL in Kuala Lumpur FIR.
Operational Information (potential airlines, flight frequency)	
Remarks: At SAIOSEACG/2, Indonesia expressed its favourable consideration on this proposal, further assessment was needed. At SCSTFRG/12 meeting, Malaysia has informed that the proposals are currently under review by Indonesia. Malaysia has proposed bilateral discussions on these proposals, and the outcomes of these discussions will be communicated to ICAO. Before the SAIOSEACG/4 meeting, Malaysia updated through email that a draft PfA for the proposal has been circulated to states involved for their review and consideration. At SCSTFRG/13 meeting, Indonesia noted that further coordination with Malaysia would be conducted.	

ATS Route Name	SCS21
State Priority	B
IATA Priority	MEDIUM
Requested by (when)	Malaysia (20/Mar/2023)
States/Administrations Involved	Malaysia,Singapore, Indonesia
Route Description	This proposal essentially focuses on extending M758 to replace the conventional routes G582 and R461 (PUGER to MDN).
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace and to simplify FPL in Kuala Lumpur FIR.
Operational Information (potential airlines, flight frequency)	
Remarks: At SAIOSEACG/2, Indonesia expressed its favourable consideration on this proposal, further assessment was needed. At SCSTFRG/12 meeting, Malaysia has informed that the proposals are currently under review by Indonesia. Malaysia has proposed bilateral discussions on these proposals, and the outcomes of these discussions will be communicated to ICAO. At SCSTFRG/13 meeting, Indonesia noted that further coordination with Malaysia would be conducted.	

ATS Route Name	SCS22
State Priority	**B**
IATA Priority	MEDIUM
Requested by (when)	Malaysia (20/Mar/2023)
States/Administrations Involved	Malaysia, Singapore, Indonesia
Route Description	Upgrade a portion of conventional ATS routes G580 (VKG to VJN) to PBN Route
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace.
Operational Information (potential airlines, flight frequency)	
Remarks: At SAIOSEACG/2, Indonesia expressed its favourable consideration on this proposal, further assessment was needed. At SCSTFRG/12 meeting, Malaysia has informed that the proposals are currently under review by Indonesia. Malaysia has proposed bilateral discussions on these proposals, and the outcomes of these discussions will be communicated to ICAO.	

ATS Route Name	SCS23
State Priority	B
IATA Priority	MEDIUM
Requested by (when)	Malaysia (20/Mar/2023)
States/Administrations Involved	Malaysia, Singapore, Indonesia
Route Description	Upgrade from conventional ATS routes R223 to PBN Route
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace.
Operational Information (potential airlines, flight frequency)	
Remarks: At SCSTFRG/12 meeting, Malaysia has informed that the proposals are currently under review by Indonesia. Malaysia has proposed bilateral discussions on these proposals, and the outcomes of these discussions will be communicated to ICAO.	

ATS Route Name	MEKONG 01
State Priority	B
IATA Priority	MEDIUM
Requested by (when)	Thailand /Vietnam (21/Mar/2023)
States/Administrations Involved	Thailand, Lao PDR, Vietnam (Bangkok, Vientiane, Hanoi) Cambodia, Thailand, Lao PDR, Viet Nam (Phnom Penh FIR, Bangkok FIR, Vientiane FIR, Hanoi FIR)
Route Description	VINH PHUC (VPH) (211634N 1053604E) – BISON (2026.20N 10538.01E) – CB (1952.58N 10530.98E) – IDOTA (Ha Noi/Vientiane FIR Boundary) (1841.23N 1058.35E) – New Bangkok/Vientiane FIR Boundary (174842.10N 1042043.51E) – ROI-ET (ROT) (160700.59N 1034619.45E) – BIDEM (Bangkok/Phnom Penh FIR Boundary) (1423.06N 10347.27E) – REP (1321.62N 10413.42E) – PNH (1135.69N 10445.85E)
Flight Level Band	
Benefit (fuel, environmental)	Potential to save 12 minutes and 750 kilograms of fuel per flight (VVNB – VDSR)
Operational Information (potential airlines, flight frequency)	Allow flights from Guangzhou FIR and beyond on the ATS route R474 to fly shorter distance into Bangkok FIR (VTBS) and further South into Phnom Penh FIR (VDSA & VDPP)
Remarks: This route was proposed as Conditional Route (CDR) to promote international CDR arrangement among the Mekong states. The route availability will be subject to civil-military coordination in pre-tactical and tactical level. At SAIOSEACG/2, Viet Nam supported the initiative by Thailand, and added that the new route would be further realigned with the existing primary routes within Hanoi FIR. For the update, the approval procedure of the route proposal by its higher authority is in progress, and which expected to be completed soon. It is suggested that Thailand organize a tripartite meeting involving all States concerned to further discuss the detail. At SCSTFRG/12 meeting, Further information will be provided after Mekong-	 **Figure 1** – VPH – ROT Route

ATMCG meeting (27-28 November 2024).

At the SAIOSEACG/4 meeting, the relevant States agreed to the design principle of the ATS route to be implemented as an RNAV2 CDR with the MFA of FL270 and would continue with implementation planning in due course. Vietnam and Thailand informed the meeting of the following points through WP17 derived from MK-ATM/CG/10 meeting. Hanoi FIR, Viet Nam and Bangkok FIR, Thailand agreed to the design principle of ATS route serving traffic **as Fig-2** between VPH – ROT – PNH to be implemented as an RNAV2 CDR with the MFA of FL270 and would continue with implementation planning in due course.

And Hanoi FIR (Viet Nam) and Bangkok FIR (Thailand) agreed to the design principle of ATS route serving traffic between VPH – ROT – PNH to be implemented as an RNAV2 CDR with the MFA of FL270 **as depicted Fig-3** and would continue with implementation planning in due course.

Thailand added remarks regarding the Fig-3 as follow; Relevant States discussed the design of the route which had been altered to align with requirements within Hanoi FIR, Vientiane FIR, and Bangkok FIR as well as the route specification and Minimum Flight Altitude (MFA) for the route, at the MK-ATM/CG/10 (Nov 2024). It was agreed that the route would be designated an

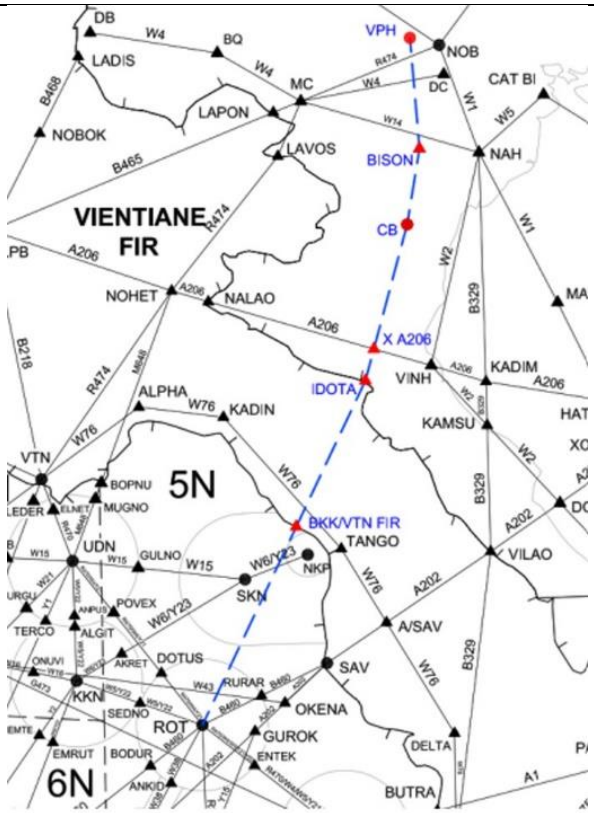


Figure 2 - Proposed VPH - ROT Route

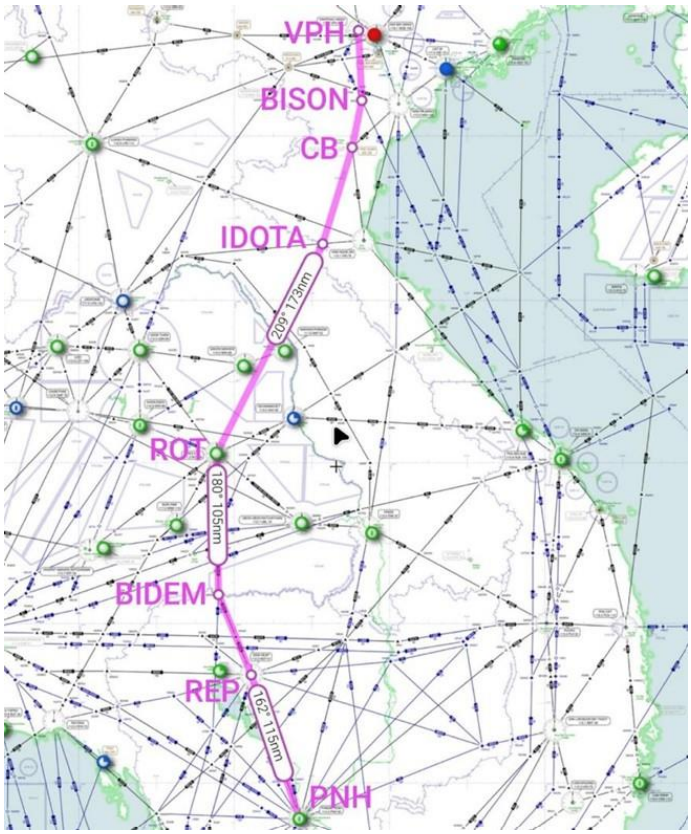
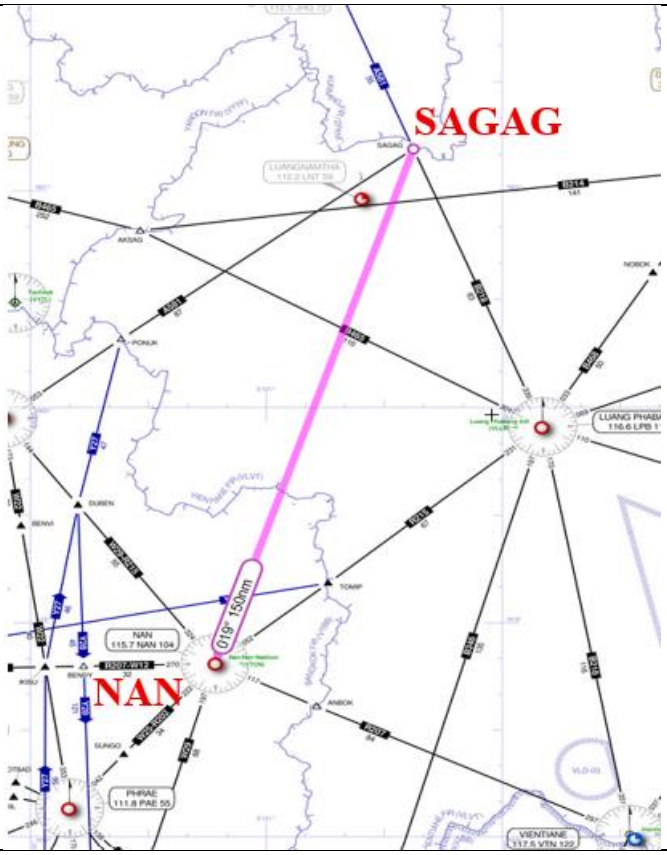
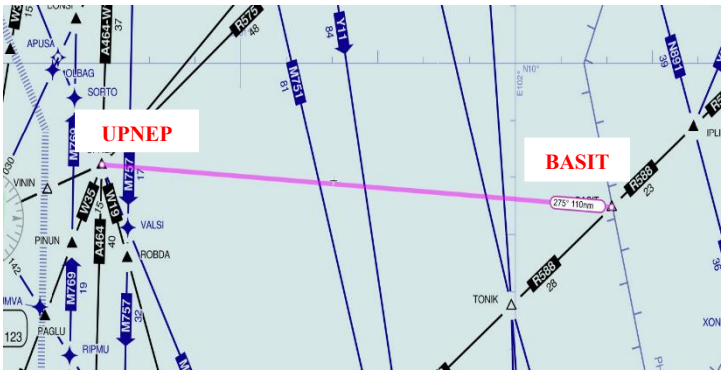


Figure 3 - Proposed VPH - ROT - PNH Route

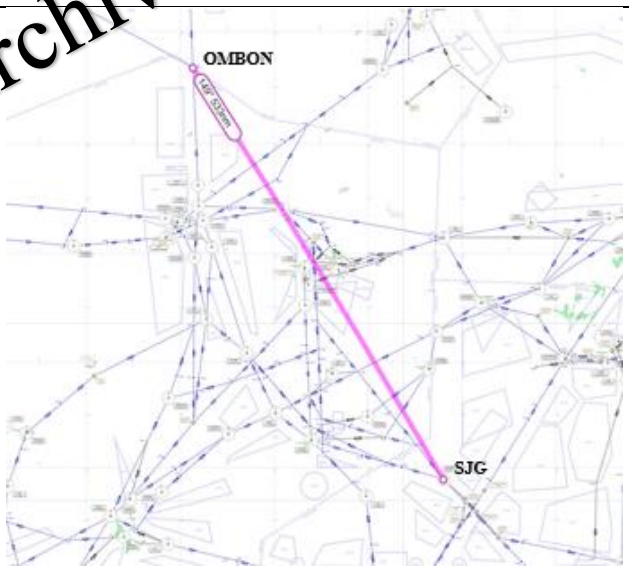
RNAV2 Conditional Route (CDR) with the minimum flight altitude of FL270. Moreover, the route was further extended into Phnom Penh FIR, connecting to Phnom Penh (VDPP) and Siem Reap (VDSA) by overlaying existing conventional route R345 (ROT – BIDEM – REP) and VD W1/Y13 (REP – PNH)	

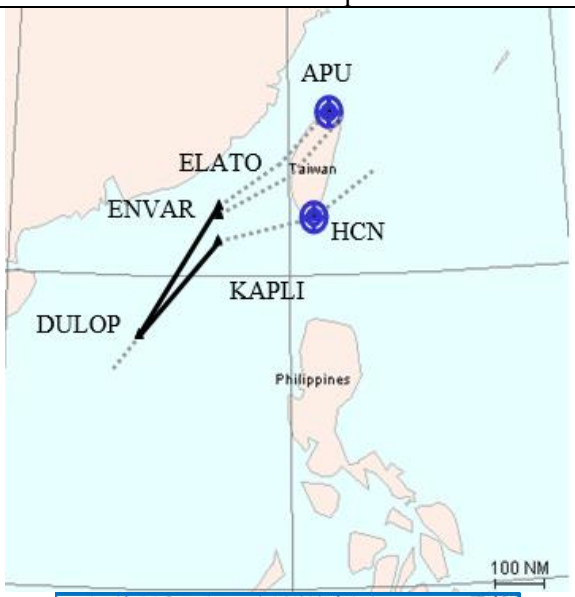
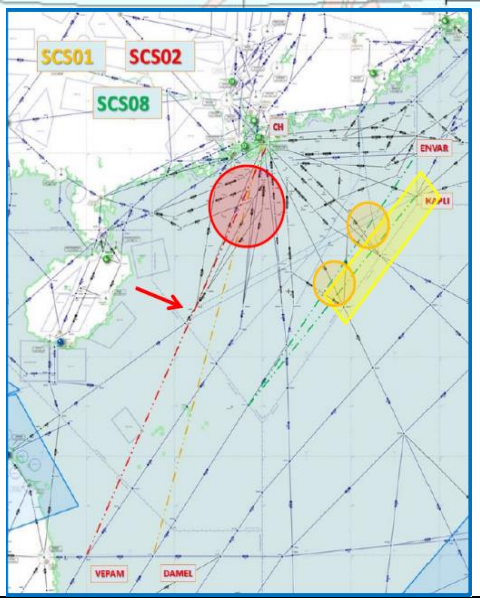
ATS Route Name	MEKONG 02 (NAN – SAGAG)
State Priority	**B**
IATA Priority	**HIGH/MEDIUM/LOW** *(Need IATA assessment)*
Requested by (when)	Lao PDR and Thailand (June 2024)
States/Administrations Involved	China, Lao PDR, Thailand (Kunming, Vientaine, Bangkok FIRs)
Route Description	NAN (1848.61N 10047.28E) – New Bangkok/Vientiane FIR Boundary (coordinate TBC) – SAGAG (2112.91N 10137.05E)
Flight Level Band	FL270 – FL460
Benefit (fuel, environmental)	Reduce NAN – SAGAG flight distance by 35 NM
Operational Information (potential airlines, flight frequency)	FD, TG, MF, MU *(Need further traffic count from IATA)*
Remarks: At the SAIOSEACG/4 meetings, this proposal is newly incorporated. The proposed route were design to enhance airspace capacity between NAN (Bangkok FIR) – SAGAG (Vientiane FIR) into Kunming FIR in southwestern China which the route design principle has been agreed through the tri-lateral discussion between China, Lao PDR and Thailand on 24 – 25 June 2024. At the SCSTFRG/13 meetings, China commented to ensure seamless coordination and timely implementation for ATS routes from LPB to ELASU, A technical coordination meeting will be convened between China, Lao PDR, Thailand to finalize operational arrangements, validate route design, and confirm implementation timelines on Q4 2026.	

ATS Route Name	MEKONG 03 (BASIT-UPNEP)
State Priority	**B**
IATA Priority	**HIGH/MEDIUM/LOW** *(Need IATA assessment)*
Requested by (when)	Cambodia and Thailand (2015)
States/Administrations Involved	Cambodia, Thailand (Phnom Penh and Bangkok FIRs)
Route Description	UPNEP (942.26N 10029.60E) – BASIT (Bangkok/Phnom Penh FIR Boundary) (934.95N 10221.12E)
Flight Level Band	
Benefit (fuel, environmental)	
Operational Information (potential airlines, flight frequency)	VN
Remarks: At the SAIOSEACG/4 meeting, this proposal is newly incorporated. The development of a direct ATS route serving traffic between VVTS (Viet Nam), VDSV (Cambodia) and VTSM/VTSP (Thailand) was discussed during the MK-ATM/CG/10 (Nov 2024), the design principle of the route was agreed among relevant States. With a 2-phase implementation plan, this agreement was captured as Conclusion MK-ATM/CG/10-3 from the meeting. **Phase 1** of the initiative would be the implementation of BASIT – UPNEP, which were agreed upon by Cambodia and Thailand. Both States were ready to begin the implementation. **Phase 2** of the initiative would be the implementation of TUNPO – BASIT by Cambodia and Viet Nam. This route segment would be added into ATS Route Catalogue later as Viet Nam need to conduct internal assessment before developing an implementation plan. At the SCSTFRG/13 meeting, Cambodia reported ongoing cooperation with Thailand under Phase 1, and stated that this topic would be further addressed at the upcoming Mekong ATM Meeting later this year.	

Chapter 3: East Asia

(referred to: States or EATMCG as appropriate for review)

ATS Route Name	IATA 02
State Priority	**D**
IATA Priority	**HIGH**
Requested by (when)	IATA (01/09/2018)
States/Administrations Involved	China (Kunming, Guangzhou FIRs)
Route Description	OMBON 3321.4N 10416.3E – Sanjiang (SJG) 2546.6N 10936.6E
Flight Level Band	8,400 – 15,000 meters
Benefit (fuel, environmental)	14 minutes, 6,657 tones fuel, 20,636 tonnes CO_2 annually
Operational Information (potential airlines, flight frequency, potential city pairs)	56 flights per week Europe – Pearl River Delta airports
Remarks: China comments: There are existing routes between OMBON and RO. Direct route is impossible at present. 23/10/2020: China proposed for deletion. At ATMSG/8: IATA preferred this route proposal to be retained in the Catalogue. At the SCSTFRG/13 meeting, IATA and China agreed to archive the proposal and consider the potential of Conditional Route (CDR) when appropriate. IATA shared that discussions had taken place in a side meeting with China. As the route proposal aims to connect Europe with Southern China, due to safety concerns related to traffic conflicts, IATA proposed to support and facilitate the flight operations via Y1 and L888 as an alternate.	

ATS Route Name	SCS 08
State Priority	**D**
IATA Priority	**HIGH**
Requested by (when)	IATA (01/09/2018)
States/Administrations Involved	Hong Kong China, Taibei ACC (Hong Kong, Taibei FIRs)
Route Description	DULOP 1814.2N 11432.6E – ELATO 2220.0N 11730.0E – A1 or DULOP 1814.2N 11432.6E – ENVAR 2159.5N 11730.0E – M750 or DULOP 1814.2N 11432.6E – KAPLI 2110.0N 11730.0E – G86
Flight Level Band	28,000 – 46,000 ft
Benefit (fuel, environmental)	6 minutes, 850 kg fuel, 2,687 kg CO_2 per flight, 1,863 tonnes fuel, 5,868 tonnes CO_2 annually Note: Savings based on DULOP – ENVAR.
Operational Information (potential airlines, flight frequency, potential city pairs)	BR, CI At least 42 flights per week Southeast Asia – North Asia airports
Remarks: Supports traffic Northeast Asia – Southeast Asia. Potentially problematic as will impact South China Sea's traffic arrangements (IATA to review). During SEACG/19 in WP09, Hong Kong China advised they had studied the proposal for track shortening and advised that allowing flights to proceed from M771 DUMOL to ELATO/ENVAR/KAPLI will likely create a bottle neck at these points and result in flights not getting optimum levels or increase ground delay to departures from Hong Kong and Macao to East Asia. However, Hong Kong China would continue to study this proposal. Most preferred: DULOP – ENVAR. 30/10/2020: **Hong Kong China commented these two routes are too close to the Hong Kong and Manila FIR boundary** (see the yellow shaded areas in the figure below). **New confliction points would be created and the distance/time available for traffic resolution is not sufficient. There are safety concerns and these proposed routes were not recommended. Therefore, the two routes are not recommended.** At ATMSG/8: IATA preferred this route proposal to be retained in the Catalogue. At the SCSTFRG/13 meeting, Hong Kong China suggested to archive SCS08 to focus on the discussion to other feasible routes.	 

IATA explained that the proposal originated from member airlines wishing to connect Hong Kong China with north and southeast Asia. Prior to COVID-19, 42 flights per week were operated. IATA proposed extending the use of M771 to connect to KAPLI and ENVAR, noting that M771 is located very close to the FIR boundary, which raises safety concerns. IATA will continue to refine the proposal and provide updates in future meetings.	