INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE ELEVENTH MEETING OF THE SOUTH CHINA SEA TRAFFIC FLOW REVIEW GROUP (SCSTFRG/11)

BANGKOK THAILAND, 04 – 06 JULY 2023

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

CONTENTS

APPENDIXES

INTRODUCTION

Meeting

1.1 The Eleventh Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/11) was held at Bangkok Thailand, from 04 to 06 July 2023.

Attendance

2.1 The meeting was attended by 40 participants from China, Hong Kong China, Indonesia, Lao PDR, Malaysia, Philippines, Singapore, Thailand, United States of America, Viet Nam, IATA, IFATCA and ICAO.

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

Officers and Regional Office

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

3.2 Mr. Kwon Hyuk Jin, Regional Officer, Air Traffic Management (ATM) and Mr. Xu Zhi Feng Regional Officer ATM, ICAO Asia and Pacific Regional Sub-Office were the Secretaries for the meeting.

Opening of the Meeting

4.1 Mr. Fu Yongqiang welcomed participants to the meeting.

4.2 On behalf of Mr. Tao Ma, Regional Director of ICAO Asia and Pacific Office, Mr Kwon Hyuk Jin and Mr. Xu Zhi Feng also welcomed participants to the meeting.

4.3 **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 thirteen Working Papers (WP), five Information Papers (IP) 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

Nil

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.

Election of Chairperson

1.2 Mr. Nasuruddin Bin Zainol Abidin, Director of Air Traffic Management Division, Civil Aviation Authority of Malaysia had vacated the Chair of SCSTFRG. The meeting acknowledged with gratitude his service to SCSTFRG.

1.3 Thailand nominated Mr. Fu Yongqiang, Director of Sanya Area Control Center, Air Traffic Management Bureau, Civil Aviation Administration of China, to Chair the Meeting. The nomination was seconded by Hong Kong China, Indonesia, Lao PDR, Malaysia, Philippines, and Singapore.

1.4 No further nominations were made. Mr. Fu Yongqiang was duly elected to the Chair of SCSTFRG.

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

SAIOSEACG/2 Meeting Outcomes (WP/02)

2.1 This paper presented outcomes from the Second Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/2), (Bangkok, Thailand, 20 – 24 March 2023). As SAIOSEACG is the parent body of SCSTFRG, relative outcomes were been selected for review and action by SCSTFRG.

Application of ATC Separation Minimums (WP/03)

2.2 This paper presented data on surveyed ATC separation standards that were being applied within the APAC Region compared to the provisions in the elements 7.34 and 7.35 of the *Asia/Pacific Seamless ANS Plan*. The survey questions circulated were expected to provide greater clarity on the separation minimums used in the region. The analysis in this WP was focused on SCSTFRG States/administrations.

2.3 As of June 2023, the total number of responses from APAC States/administrations to the latest survey has increased from 21 to 25 (compared to last reporting period). **Table 1** presents the list of submission by SCSTFRG States from 2017 to 2023.

State/Administration	2017	2018	2019	2020	2021	2022	2023
China			Yes				Yes
Hong Kong, China	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indonesia	Yes	Yes	Yes	Yes		Yes	Yes

State/Administration	2017	2018	2019	2020	2021	2022	2023
Lao PDR	Yes	Yes	Yes				
Macao, China				Yes	Yes	Yes	Yes
Malaysia			Yes		Yes	Yes	Yes
Philippines	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Singapore	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thailand	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Viet Nam			Yes	Yes	Yes	Yes	Yes

Table 1: Responses for ATC separation survey, 2017- 2023

2.4 In general, South China Sea area Category R airspace and interfaces complied with the expectations of the Asia/Pacific Seamless ANS Plan, however Category S and interfaces would require more efforts to comply with the expectations of the Asia/Pacific Seamless ANS Plan.

2.5 ICAO's latest analysis revealed the strong recovery in air passenger demand has resulted in 2022 passenger numbers reaching an estimated 74% of pre-pandemic levels. The number of passenger aircraft in service in 2022 mirrors the overall traffic recovery, with current estimates suggesting 75% of pre-pandemic levels. In addition, IATA expects full recovery of air travel in Asia Pacific in the 2024 - 2026 time period. ICAO urges all APAC States and Administrations to address this key aspect of capacity and efficiency within their National Air Navigation Plans.

Progress Update on Capacity Optimisation on Air Route L642 and M771 (WP/04)

2.6 This paper presented a progress update on the initiative raised by Hong Kong China in ATM/SG/9 in 2021 regarding capacity optimization on air routes L642 and M771. In the Second Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/2) conducted in 2023, all concerned States/Administrations, including China, Vietnam and Singapore expressed their full support in implementing reduced 20NM longitudinal spacing on L642 and M771.

2.7 Subsequent to the SAIOSEACG/2, States/Administrations concerned have worked diligently to progress the initiative. Meanwhile, Hong Kong China expressed their full readiness to implement the 20NM longitudinal spacing on L642 and M771. To speed up the progress of implementation in the APAC region, Hong Kong China had proposed to concerned States/Administrations, i.e. Sanya China, Singapore and Vietnam, to conduct a trial operation on L642 and M771 in Q3 2023. This trial implementation will allow concerned States/Administrations and IATA to gather valuable operational data and experience to assess the operational benefits and effectiveness of the proposed 20NM longitudinal spacing and provide valuable feedback with a view to determining the way forward.

2.8 According to the information contained in the **IP/05** ***PBN Route Development in Viet Nam***, Viet Nam stated their ability and willingness to optimization, and confirmed their support on trial proposed by Hong Kong China.

2.9 Singapore expressed their support for this proposal. They also noted in the meeting that a 20 NM separation had already been implemented on the routes L642 and M771 between Singapore and the Ho Chi Minh FIR boundary.

2.10 IATA also inquired about the details of the trial implementation plan. Hong Kong China explained that the plan was a half-day trial from 00:00 to 12:00 UTC daily and proposed to be commenced in late September 2023. The purpose of the trial is for the operators to become familiar with the procedure and gather useful operational data.

2.11 Viet Nam informed the meeting that a 10 NM separation was being implemented in Viet Nam's FIR internally, and the two Viet Nam's FIRs were fully covered by ADS-B. It was suggested that the trial should be started on L642 initially and extended to M771 at a later stage, while some details still need to be discussed.

2.12 Answering the inquiry from IATA regarding the ADS-B equipage requirements for aircraft to participate in that trial, Viet Nam responded that there was no such problem for Viet Nam, but it was subject to Singapore and Hong Kong China. Hong Kong China clarified that non-ADS-B aircraft could not fly above FL290 on M771.

2.13 In response to IATA, China commented on the uneven transfer at FL390 between Ho Chi Minh – Sanya, and Sanya – Hong Kong, which was an issue that needed to be harmonized before the separation reduction. And it was reaffirmed that Sanya ACC would carry out their best effort to reach the common goal.

The Implementation of 10 NM Spacing (or Closer to 5 NM Based on Surveillance Spacing) Within Jakarta and Ujung Pandang FIR Boundaries (WP/05)

2.14 The meeting noticed that Jakarta ACC and Ujung Pandang ACC have successfully reduced longitudinal spacing to 10NM since March 30th, 2021, due to the majority of airlines being equipped and approved for PBCS and RNP operations. Besides that, surveillance coverage analysis indicates that most of Indonesia's airspace was categorized as category S airspace, also enabling the effective implementation.

2.15 Indonesia encouraged neighboring FIRs with similar airspace categories to implement 10NM spacing or closer to 5NM based on surveillance spacing. Additionally, Indonesia extended an invitation for ADSB data sharing to neighbouring states concerned about surveillance coverage.

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 (IP/02)

3.1 The Monitoring Agency for Asia Region presented the updated visualization of traffic flows in the South East Asia based on Traffic Sample Data (TSD) from 2018 - 2022 to assist the SCSTFRG in reviewing the existing route structures in this area.

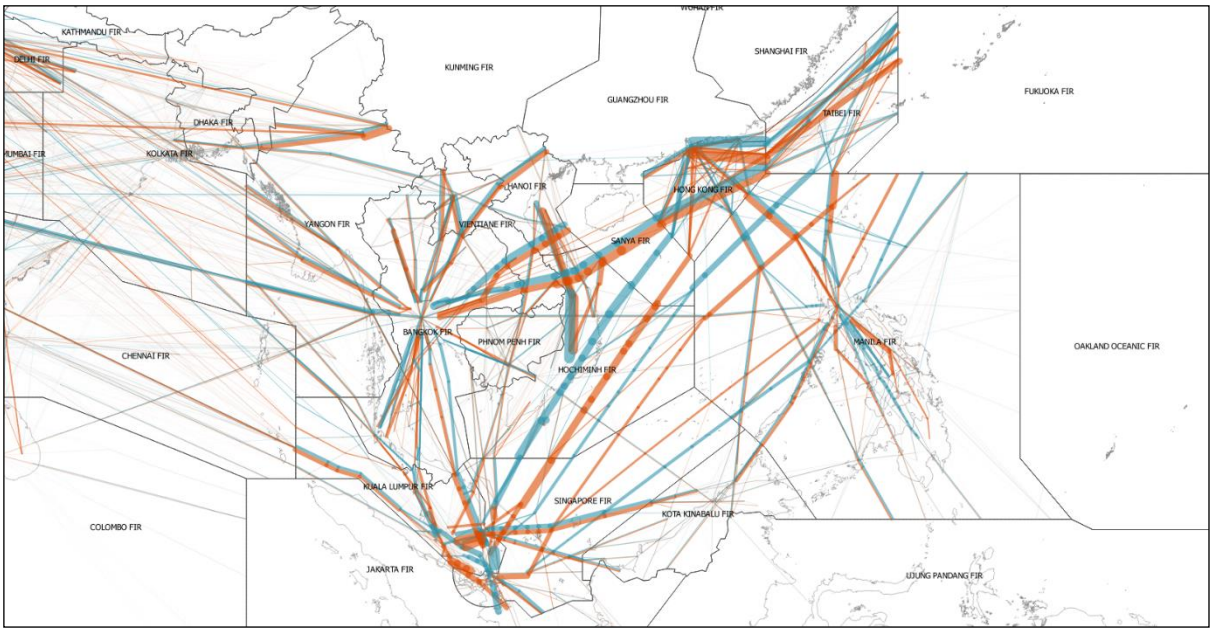

Figure 1: 2018 SEA Traffic Flow from TSD

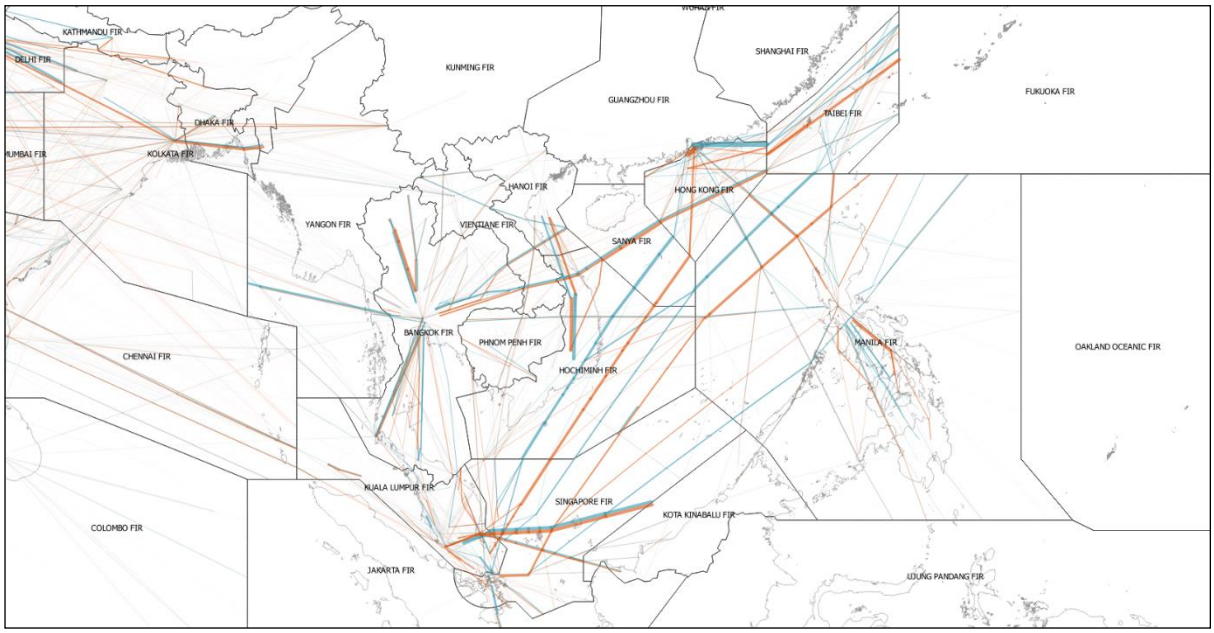

Figure 2: 2020 SEA Traffic Flow from TSD

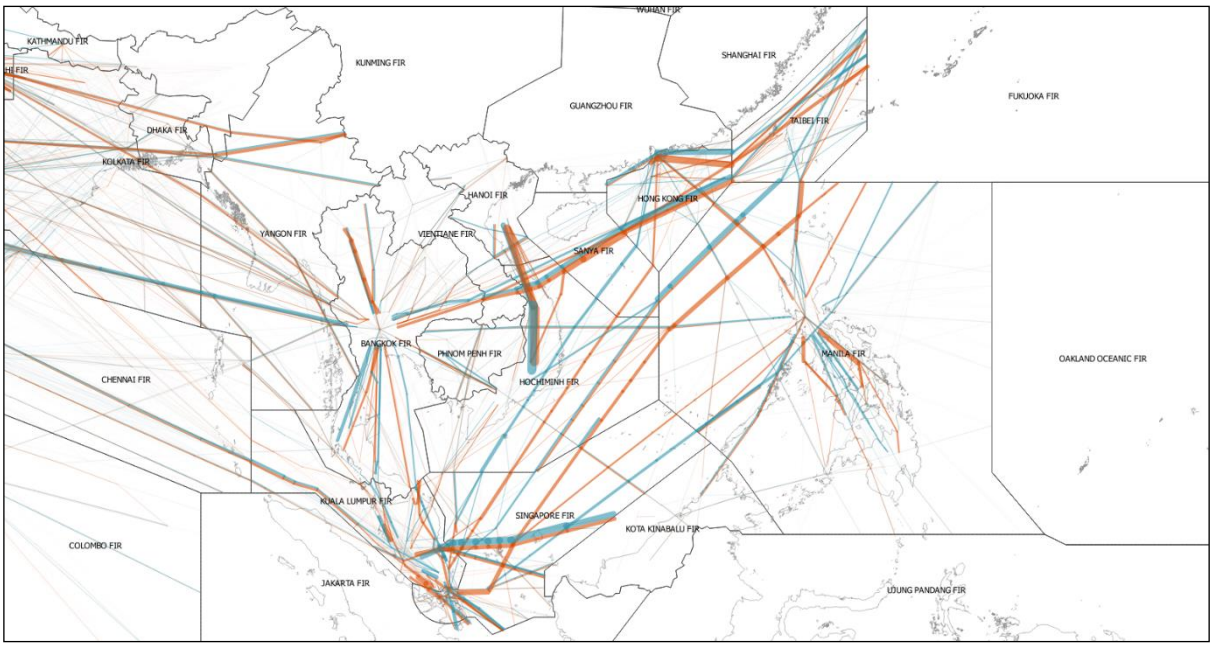

Figure 3: 2022 SEA Traffic Flow from TSD

3.2 The visualization of traffic flow vividly revealed that flight volume experienced a significant decrease during the pandemic years from 2020 to 2021, and gradually rebounded in 2022.

3.3 The United States and ICAO thanked MAAR for visualizing such useful and informative data. It was recommended that such visualized analyses should be extended to all of the APAC region and be widely used in other APAC meetings.

Progress review of SCSTFRG Priority Areas (WP/06)

Priority Area 1: A1/A202

3.4 Action items under this Priority Area were to enhance the longitudinal spacing on ATS route A1 and A202 to 20 NM, and develop a parallel route to A1.

3.5 The meeting was informed that 20 NM longitudinal spacing had been implemented on ATS route A1 (between Ho Chi Minh and Sanya ACCs; and Hong Kong ATCC and Sanya ACC), and ATS route A202 (between Ha Noi and Sanya ACCs; and Hong Kong ATCC and Sanya ACC), effective from 26 March 2020.

3.6 The Eighth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/8, Bangkok, Thailand, 03 – 05 September 2019) had agreed for ATS route A1 and the proposed parallel route to be designated as RNAV 2, which would involve modification on the existing ATS route A1 route alignment, subject to the concerned States agreement of the displacement of the entry and exit points at the FIR boundary.

3.7 Figure 4 illustrates the position of the proposed parallel route to ATS route A1, and the traffic flow orientation preferred by Hong Kong China, Lao PDR and Thailand (at SCSTFRG/5 meeting, China commented that they could accept the parallel uni-directional route in any direction).

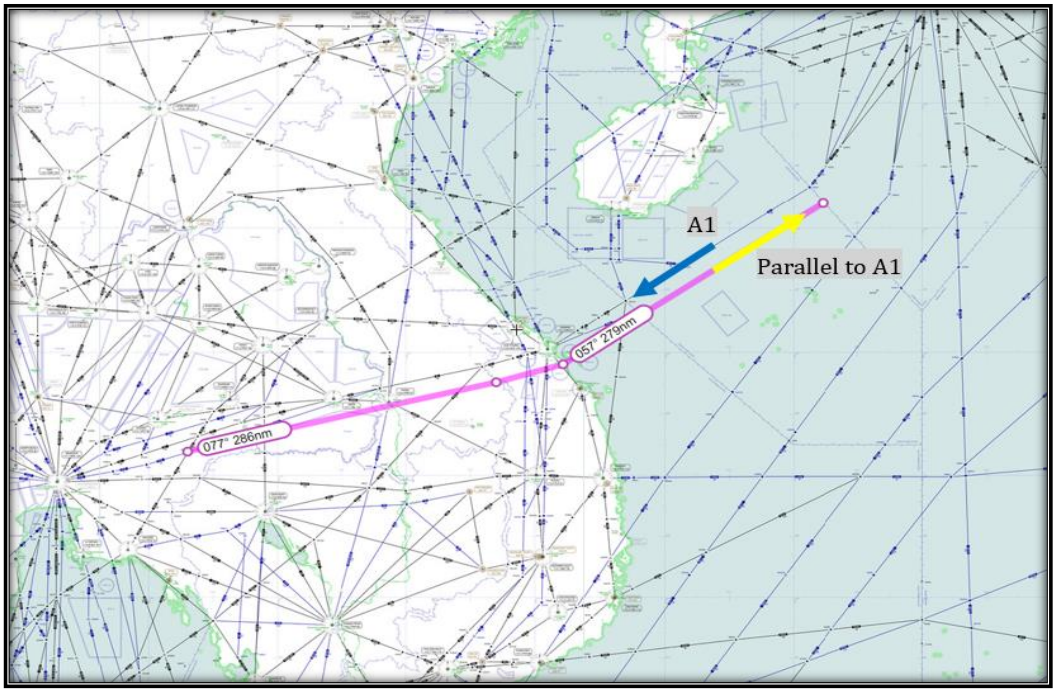

Figure4: Uni-directional Parallel Route to ATS Route A1

3.8 SCSTFRG/8 was informed of Viet Nam's preference that was on the reverse orientation, which could be more suitable for Da Nang International Airport operations.

3.9 This matter was also discussed at the Eighth Mekong Air Traffic Management Coordination Group Meeting (MK-ATM/CG/8, Da Lat, Viet Nam, 11 – 13 December 2019). Viet Nam commented that the proposed traffic flow orientation (**Figure 1**) would increase flight distance, time and crossing points between arriving and departing traffic from Da Nang International Airport to the Southeast Asia/beyond and vice versa. According to Viet Nam, implementing the route as in **Figure 1** would increase Air Traffic Control (ATC) workload, and therefore requested the States concerned to re-consider the traffic flow orientation.

3.10 At the MK-ATM/CG/8, Thailand had suggested that to minimise the impact on the existing Standard Instrument Departure (SID) and Standard Instrument Arrival (STAR) procedures for Da Nang International Airport, Viet Nam could consider implementing the route segment between Da Nang VOR and BUNTA as bi-directional. A transition route would need to be implemented to support this proposal.

3.11 ICAO conducted preliminary assessment on Da Nang International Airport SID and STAR procedures for Runway 35, in early January 2020. According to the assessment, minimal changes are required to support the implementation of these parallel uni-directional routes (Figure 5). This assessment was shared through emails; however, no reply was received from Viet Nam.

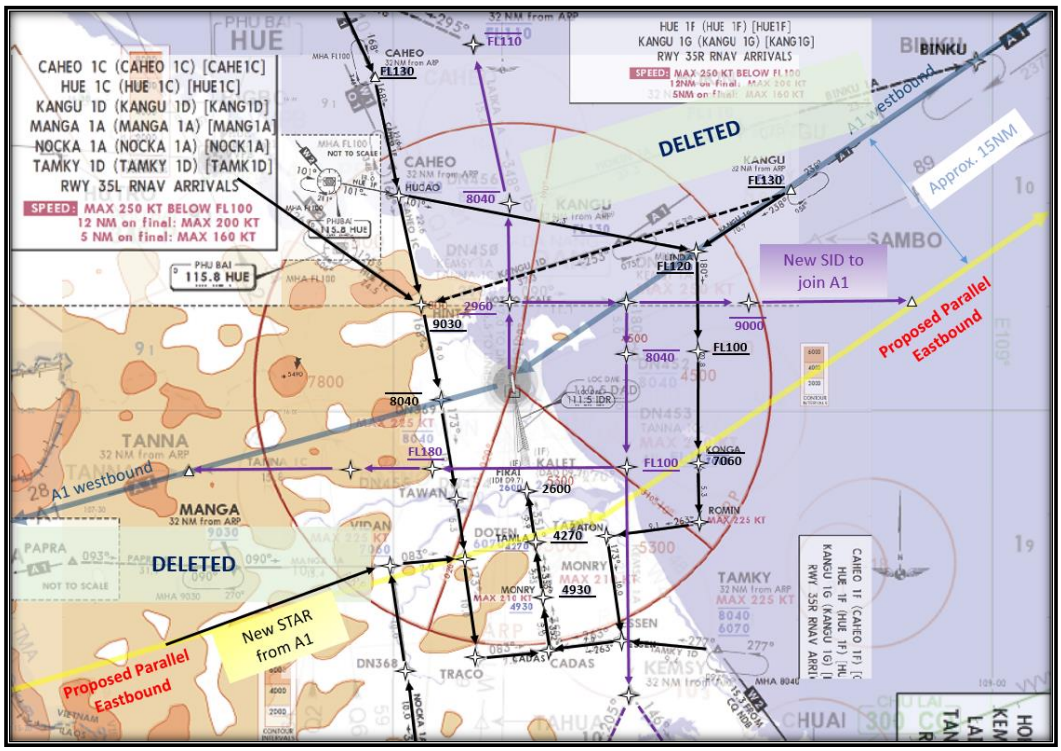

Figure 5: Preliminary Assessment done by Singapore

3.12 At the SCSTFRG/9, Viet Nam commented that they would conduct further assessment on the proposal suggested by Hong Kong China and Thailand.

3.13 Singapore, through the Air Traffic Management Research Institute (ATMRI), offered its assistance to conduct modelling and simulation to facilitate the determination of most suitable traffic flow orientation for these parallel uni-directional routes, if needed, provided the scope of this activities were well defined by the meeting.

3.14 According to the information contained in the IP/05 *PBN Route Development in Viet Nam*, Viet Nam provided feedback on the assessment of the proposed parallel uni-directional routes provided by Singapore. It was pointed out that it would be better to retain reverse orientation on the parallel routes.

3.15 A side meeting was proposed by Thailand involving Lao PDR and Viet Nam to discuss the use of FL390 on ATS Route A1.

3.16 Further discussion on this topic was based on the WP/10, *Feasibility Study on Re-designation of ATS Route A1 to a Unidirectional Route***,** presented by China.

Priority Area 2: L642/M771

3.17 The discussion on this topic was covered under the WP04 *Progress Update on Capacity Optimisation on Air Routes L642 and M771* submitted by Hong Kong China in Agenda Item 2 of this meeting.

Priority Area 3: A461/A583/L625/N892

3.18 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: the phase 1 and Phase 2 of 30 NM longitudinal spacing implementation between Hong Kong China and the Philippines were completed.

- A583: The Philippines proposed a side meeting with Hong Kong China to discuss the details of Phase 3 Implementation which was planned to commence in Q4 2023.

- N892 & L625: the implementation of 50NM longitudinal spacing would be moved to a later date due to internal issues that need to be resolved first. However, the Philippines requested a side meeting with Vietnam to discuss matters pertaining to the implementation of planned optimized spacing and AIDC.

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

3.19 The discussion on this topic was covered under the WP09 Review of the existing FLAS/FLOS in the South China Sea Airspace in Agenda Item 4 of this meeting.

<u>The side meeting between Lao PDR, Thailand and Viet Nam regarding the use of FL390 on ATS Route A1.</u>

3.20 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.

<u>The side meeting between Hong Kong China and the Philippines regarding the optimization of ATS route A583</u>

3.21 As requested by the Philippines, a side meeting was conducted on 4th July 2023 at ICAO APAC regional office to discuss the proposal of the Phase 3 trial implementation of 30NM longitudinal spacing on ATS Routes A583. The meeting participants included representatives from the Philippines and Hong Kong China.

3.22 Details of the proposal were discussed during the side meeting including the requirements for routing, levels, aircraft RNP and communication specification, duration and commencement date of the trial, etc. Details of the requirement are listed as follows:

- Between turbojet aircraft only,
- Spacing between aircraft shall be constant or increasing (no closing speed),
- At or above FL330.
- Between a pair of RNP 4 compliant aircraft,
- Between a pair of ADS-C and CPDLC-equipped aircraft,
- For SE bound traffic, only applicable to a pair of aircraft both routing along A583, or either one routing M754 after AKOTA. Aircraft must be logged on to datalink at or before SABNO,
- There is no requirement for PBCS during the trial implementation.

3.23 The side meeting agreed that the trial implementation of 30NM longitudinal spacing on A583 should be commenced in November or December 2023 for 3 months tentatively, and to consider full implementation or refinement subject to trial result.

The side meeting between Philippines and Viet Nam

3.24 The Philippines mentioned the aircraft equipment requirements for the proposed application of 50NM longitudinal spacing on routes N892 and L625. These requirements include the RNP10, ADS-C/CPDLC, and PBCS RSP180 RCP240 since significant portions of these routes in Manila FIR are within the Category R airspace.

3.25 In principle, Viet Nam agreed with the optimization proposal however, they recommend reviewing each State's CNS-ATM capabilities to determine readiness for the implementation. Viet Nam requested a formal correspondence from the Philippines stating its preparedness for the proposed plan.

3.26 Coordination or collaboration will continue through email as POCs were identified for both States.

Progress Update to Enhance Traffic Flow on ATS Route M768 (WP/07)

3.27 Indonesia, Malaysia, Singapore, and Viet Nam jointly presented a progress update on efforts by States to enhance the traffic flow on ATS route M768 through reduction of longitudinal spacing and the associated implementation plan.

3.28 The meeting acknowledged that to move forward with the initiative to enhance longitudinal spacing on ATS route M768 to 50NM, Indonesia, Malaysia and Singapore have agreed to designate M768 as RNP10 for the segment of the route east of waypoint AKMON, for FL290 and above. For the route segment west of waypoint AKMON, there will be no change to the navigation specifications within Ho Chi Minh FIR and both Ho Chi Minh and Singapore ACCs will carry out ATC coordination to affect the 50NM longitudinal separation. The States concerned have agreed on the implementation timeline as shown in Table 2 below.

Date	**Event/Action**
Jun – Jul 2023	• Work out coordination process to implement 50NM longitudinal separation on M768. • Harmonized publication of draft AIC – Describe the trial to designate M768 as RNP10 for FL290 and above, for the segment of route east of AKMON
Aug – Sep 2023	• Commencement of 2-month trial
Oct 2023	• End of 2-month trial • Collect feedback from the trial. • Agree on the date to designate M768 route segment east of AKMON as RNP10
Nov – Dec 2023	• Circulate, finalize, and publish the harmonized AIP Supplement designating the route segment as an RNP10 route.
Jan – Feb 2024	• Implementation of 50NM longitudinal separation on ATS route M768 by formalizing the coordination process with adjacent FIR

Table 2. *Timeline for Implementation of 50NM longitudinal separation on ATS Route M768*

3.29 Viet Nam principally supported the reduction of the separation, but they have no plan to

implement RNP/RNAV10 route specification for the route. It was clarified that RNP4 or RNAV5 with 30 NM separation would be more suitable. Furthermore, they also suggested RNP2 or RNAV2 for possible consideration. Besides, Viet Nam confirmed that 50 NM separation could be used for the transfer on both sides, and 20 NM could also be accepted by Ho Chi Minh ACC to receive the transfer from Singapore.

3.30 Indonesia confirmed their full readiness to support Singapore's initiative, given that surveillance-based separation has already been used in Indonesia's airspace.

3.31 Malaysia has expressed their full support for the proposal to enhance the 50 NM on M768, and proposed the same enhancement on crossing airway M772 at waypoint ASISU between Singapore FIR and Kota Kinabalu FIR. This enhancement would require coordination with Indonesia, Malaysia, Singapore, Philippines, and Hong Kong China.

3.32 In response to Malaysia's proposal to also look into reducing the longitudinal separation on ATS route M772 to 50NM, Singapore responded that as ATS route M772 also goes through the Philippines' airspace, it is suggested to get the Philippines involved in this topic.

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 (WP/08)

4.1 Relevant ATS Route Proposals concerned by SCSTFRG were been selected from the Version 22.1 of the *Asia Pacific Region ATS Route Catalogue* for review and discussionwa by the meeting. The feedback and updates were recorded as follows:

- **Viet Nam 02:** 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 discuss it with Viet Nam during their upcoming bilateral meeting.

- **SCS11**: According to the **IP05** submitted by Viet Nam, Viet Nam commented that at the Tripartite Meeting (through video teleconference) between Malaysia, Viet Nam and Singapore on the ATS route and other relevant issues on 28 July 2022, Viet Nam in principle 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 that VKR–IPRIX should be used instead of VKR–BITOD to minimize the number of transfer points (IPRIX) and reduce the workload of ATC. Viet Nam also suggested RNAV 2/RNP 2 for both routes. The timeline depends on Malaysia and Singapore sides. Malaysia take note and informed the meeting that a subsequent Technical Coordination Meeting between Malaysia, Singapore and Viet Nam would be held to finalise the coordination procedure with regard to this matter.

- **SCS19/20/21/22/23**: Malaysia updated the meeting that process of engaging the internal stakeholders and adjacent states is ongoing.

Review of the existing FLAS/FLOS in South China Sea Airspace (WP/09)

4.2 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.

4.3 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) .***

4.4 Through the updated data submitted by South China Sea States/Administrations prior to 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**.

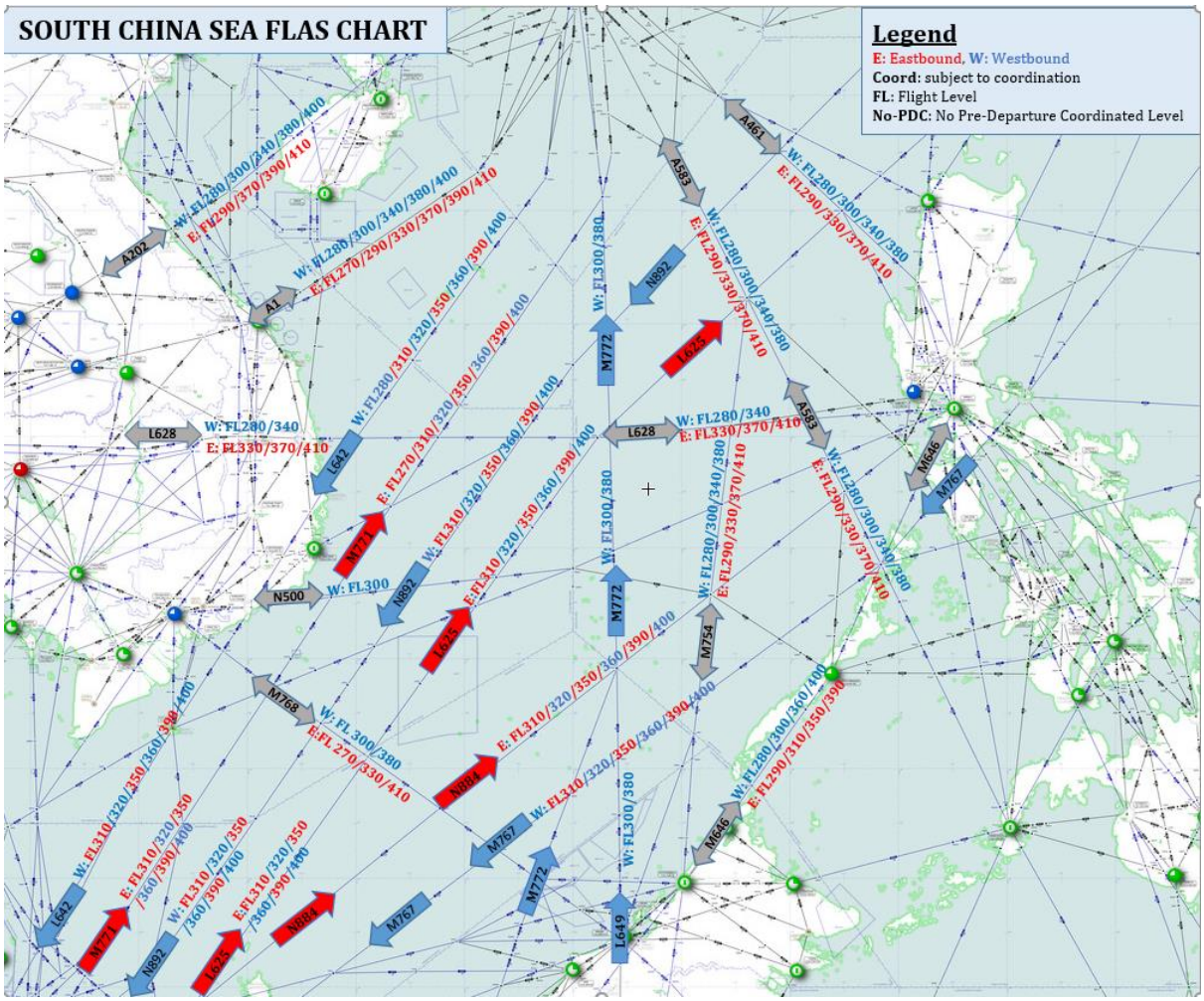

Chart 1: FLAS/FLOS among the ATS Routes

4.5 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.

4.6 The meeting was also recalled the Principles and Guidelines of the Optimisation of SCS FLAS/FLOS, below aspects should be taken into account when optimizing the existing SCS FLAS/FLOA such as:

- normalization of the SCS modified Single Alternative FLOS to the ICAO Standard Single Alternative FLOS as per Annex 2 Appendix 3a;
- service performance level commensurate with the CNS/ATM system capabilities in accordance with the expectations of the Asia/Pacific Seamless ANS Plan;
- harmonized and consistent service provision of separation and procedures across the SCS area to reduce human errors;
- removal of FLAS to allow more opportunities for better flight level allocation according to fleet capability;
- Recognition of the gap between current practice and best practice by senior management and its strong willingness and commitment to cooperate with States and ANSPs concerned; and
- airspace users' expectations and needs for improved capacity, efficiency and safety including economic and environmental considerations.

4.7 Possible breakthroughs 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*

4.8 Viet Nam expressed their full support for this WP and explained that VHF, Secondary Radar, CPDLC, and ADS-B were already put in place in Viet Nam's airspace. In terms of the FLAS, it was also suggested to reserve FL390 for ATS Route Q1 and Q2. In response, Thailand proposed concerned States may consider releasing FL390 to ATS Route A1, since ATS Route L642 has planned to enhance capacity by implementing 20 NM separation.

4.9 The Philippines commented on the suggestion by ICAO for *Phase 1: Revision of FLAS on selected ATS routes* that the minimum longitudinal spacing applicable on each route should be considered in the planning, citing particularly the N892/L625 and A461/A583. The Philippines pointed at the fact that the minimum spacing of aircraft on primary routes N892/L625 is 10 minutes while the minimum spacing of aircraft on secondary routes A461/A583 after Phase 3 is only 30NM. Re-allocation of flight level will be a huge disadvantage to users of primary routes while offering little benefit to users of secondary routes.

Feasibility Study on Re-designation of ATS Route A1 to Unidirectional Route (WP/10)

4.10 China presented the feasibility study of parallel uni-directional routes design based on A1 Which is the main transport hub of Northeast Asia and Southeast Asia and has been identified as the priority area 1 in the South China Sea area to promote the development of civil aviation in the Asia and Pacific Region.

4.11 It was stressed that A1 has become an important node of promoting the development of civil aviation in the core zone of the South China Sea. China reiterated the view that States/Administrations along route A1 are encouraged to be engaged in the research on the re-designation of parallel uni-directional routes and consequently give priority in order to manage the traffic flow concerned more effectively.

4.12 According to traffic analysis by China, From 2015 to 2019, the annual average growth rate of flights on A1 in Sanya FIR is 9.92% of which the highest growth rate was 23.78% in 2018. With the

end of the pandemic, traffic on route A1 is expected to fully recover to 2019 levels in 2024. If the growth rate of 9% is calculated from 2025, by 2030, the A1 route will have 264,120 flights, or 725 daily flights, which is 2.3 times compared to the current 2023 traffic volume.

4.13 Taking into account the existing route structure, China suggested South-westbound parallel uni-directional route in Sanya FIR IGLEG-SYT13-BUNTA, and the suggested North-eastbound parallel uni-directional route in Sanya FIR was ITBAM-IKELA. The conventional ATS route A1 will be replaced by the new parallel uni-directional routes as designed. Shown in the below Figure 6.

Figure 6: Proposed parallel uni-directional routes (Within Sanya FIR)

4.14 Considering the CNS/ATM capabilities, anticipated traffic flow density, airspace capacity requirements, aircraft performance requirements that are available to aircraft, China recommend RNAV2 navigation specification on this proposed parallel route group.

4.15 Viet Nam suggested that China consider the use of reversed orientation on these two proposed parallel routes. In response to Viet Nam's suggestion, Hong Kong China and Thailand supported China's original proposal.

4.16 Hong Kong China also informed the meeting that Hong Kong China has already implemented a pair of parallel routes within Hong Kong FIR between KAPLI and IKELA. The traffic flow orientation aligns with China's proposal and the suggestion provided by Thailand. There is no room for Hong Kong China to reverse the orientation.

4.17 China stated that Viet Nam's suggestion could be further discussed at the upcoming bilateral meeting and emphasized that the plan needs to be harmonized by all the States/Administrations concerned.

Concept Review of South China Sea Airspace Structure (WP/11)

4.18 Following the Preliminary Introduction at SAIOSEACG/2 on the same topic, IFATCA presented the concept for the phased introduction of a number of significant upgrades to the South China Sea airspace through the implementation of established ICAO Standards and Recommended Practices (SARPS) and Procedures to this group for further discussion.

4.19 The meeting recalled that the current South China Sea (SCS) airspace structure was introduced in 2002 as part of the major airspace revision associated with the implementation of RVSM in the region, Showing in Figure 7 below. It was based on a parallel route network based on RNAV10 principals linking major city pairs. It has been stressed that the airspace structure used a non-standard Flight Level Orientation System (FLOS) and a complex Flight Level Allocation System (FLAS) providing vertical separation between the major routes and the less-busy crossing routes to overcome lengthy pre-departure coordination procedures.

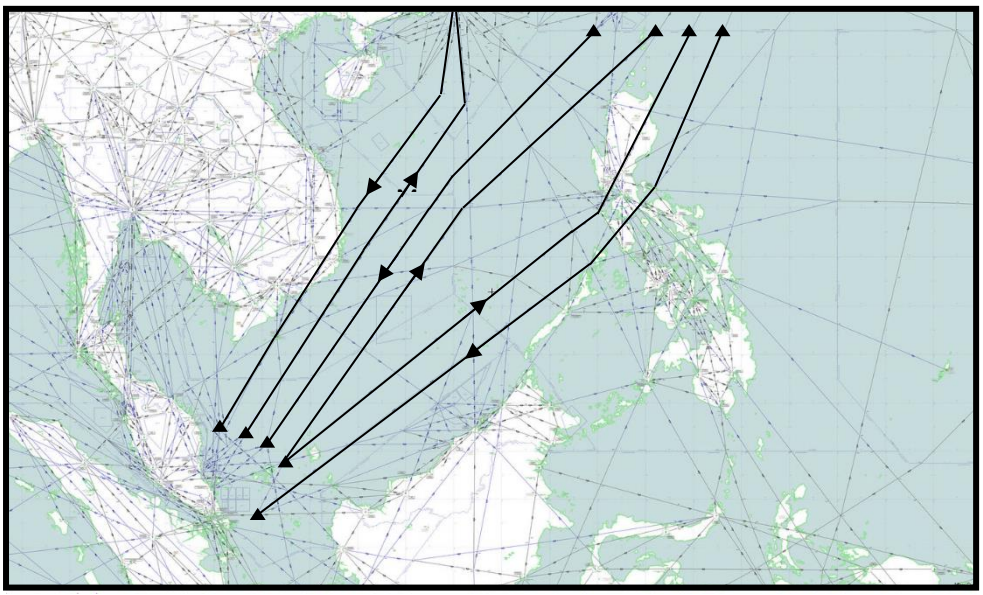

Figure 7: 2002 South China Sea Three Primary Parallel RNAV 10 Routes

4.20 With the understanding that any change to the FLAS/FLOS procedures of the current route structure in one area could have a 'ripple' effect throughout the whole SCS area and involve extensive coordination between a number of parties. IFATCA proposed a phased approach for a review of the FLOS, the SCS route structure (Shown in Figure 8) and the FLAS for one set of parallel routes at a time. The proposed phases were:

(a) Phase 1 Tokyo - Singapore, also serving Manila

(b) Phase 2 Seoul - Singapore, also serving Taipei

(c) Phase 3 Hong Kong – Singapore

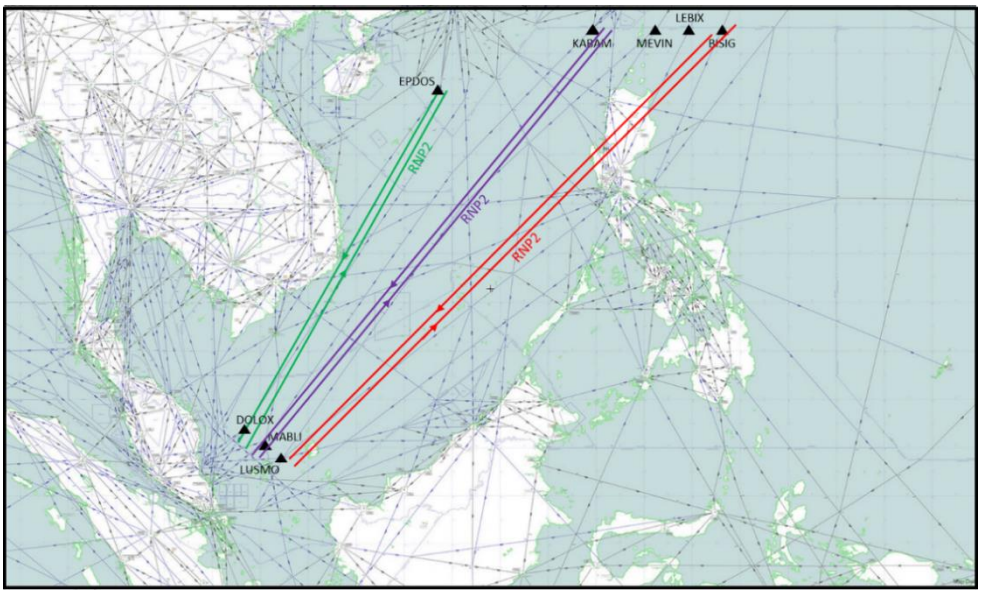

Figure 8: 2030 Concept of South China Sea Three Parallel RNP2 Routes

4.21 IFATCA described how the ICAO schedule for the introduction of TBO, SWIM and FF-ICE would impact ATM in the coming years. It is considered that the current South China Sea airspace structure with FLOS and FLAS will not be incompatible with these new procedures and systems.

4.22 IFATCA stated that the concept was offered as a basis for further constructive thoughts and positive discussions on a complex subject that must be addressed to comply with the Asia/Pacific Seamless ANS Plan that all States had signed up to. It was also pointed out that this year could be the last opportunity to address the issue before the inevitable resurgence in traffic throughout the region and a return to the holding, ground delays and work overload of 2019. These proposals could be implemented by the States adopting established ICAO procedures and practices to provide a safe and effective ANS service beneficial to both ANSPs and air space users.

4.23 Singapore thanked IFATCA for the proposal which would require further analysis and study given that it would involve several States and significant changes to the traffic management of the 6 major ATS routes. It would be necessary for the States involved to establish and study the benefits case for this proposal together with the proposal in WP/09 on the review of flight level assignment on the 6 major ATS routes, with emphasis on potential enhancements to the safety and efficiency of flights, as well as route capacities. It was also highlighted that the various routes mentioned were not dedicated city-pair routes but served major hubs in the region; there are waypoints on these routes that serve as a confluence point for several ATS routes serving flights to other airports that are not in Singapore. In addition, the waypoints mentioned in paragraphs 2.3.2 and 2.4.2 in the paper are not within the Singapore TMA.

4.24 IFATCA reiterated that this paper was just a concept, not a master plan, and was an open idea for the stakeholders to discuss.

Introduction to the Roadmap for ATS Recovery in Sanya (IP/04)

4.25 This information paper presented the forecast of civil aviation recovery from COVID-19 pandemic in Sanya FIR. In order to provide better air traffic services for airspace users, and promote ATS safely and efficiently during the recovery, Sanya FIR formulates detailed ATS Roadmap during the period from 2023 to 2025.

4.26 Base on the analysis by China, between 2012 and 2019, the traffic volume on oceanic sectors in Sanya FIR (routes A1/L642/M771) grew annually by 9.93%. However, there was a significant decline in traffic in 2020-2022 due to the pandemic. Predictions indicate a recovery starting in 2023, with traffic volumes returning to 2019 levels by 2024.

4.27 According to China, The roadmap for air traffic services from 2023 to 2025 consists of three phases: Phase 1 focuses on foundational preparations in response to the expected high growth rate in 2023, Phase 2 in 2024 centers on recovery and necessary implementations for flight development, and Phase 3 (2025 onwards) emphasizes on airspace structure adjustment, new technology applications, and increasing airspace capacity. Key areas of work include harmonizing plans for A1 parallel route, adjusting navigation performance specifications and handover intervals for routes L642/M771, implementing Automatic Dependent Surveillance-Broadcast (ADS-B) and Controller–Pilot Data Link Communication (CPDLC), and enhancing safety redundancy in ATC services.

PBN Route Development in Viet Nam (IP/05)

4.28 Viet Nam analyzed their current PBN routes and disclosed the intended PBN routes plan, and appealed to close coordination with ICAO and the States concerned in Southeast Asia.

4.29 And below action items in the *SCSTFRG Task List* that Viet Nam has participated in were been updated, this part was covered in WP 12, *Review of SCSTFRG Task List*, under Agenda Item 5.

- Establishment of parallel routes to A1, R208.
- Direct communication link between Da Nang APP and Sanya ACC.
- AIDC between Sanya ACC, Ho Chi Minh ACC, Ha Noi ACC.
- Optimising routing into China to allow more options for aircraft going beyond Pearl River Delta (Cat Bi - Nankang).
- Enhancement of longitudinal spacing on ATS routes L642, M771, M768, L625, N892...
- FL390 that is currently a FLAS level on ATS route A1 to be assigned to ATS route Q1/Q2.
- Removal of flight planning restrictions on ATS route L644.

4.30 China, Hong Kong China, Singapore, Thailand, IATA and ICAO thanked Viet Nam for providing such an informative and progressive information paper to facilitate the discussion on various SCSTFRG tasks.

4.31 Singapore further indicated that they looked forward to working closely with Vietnam on the implementation plans for relevant PBN requirements for the parallel routes within Ho Chi Minh FIR joining ATS route M768. This is to ensure that any complexity associated with managing flights that do not meet the PBN requirements can be managed safely and effectively. On the parallel route to ATS route R208, Singapore shared that they looked forward to continuing the discussions with both Malaysia and Vietnam to determine the appropriate timeline for implementation.

4.32 China commented that all the matters concerned would be further discussed with Viet Nam at their upcoming bilateral meeting.

Agenda Item 5: Review of SCSTFRG Task List

SCSTFRG Terms of Reference and Task List (WP/12)

5.1 ICAO presented WP/12, which contained the SCSTFRG Terms of Reference for review and the SCSTFRG Task List for updating (**Appendix C**).

A Side Meeting Between Indonesia and the Untied States regarding the Action Item SEACG 26/7

5.2 Indonesia and the United States agreed to keep the Action Item 26/7 SEACG regarding a publication of an ANP PfA for SCS bypass route north from Biak in the SCSTFRG Task List until Indonesia completes an analysis of air carrier limitations with fulfilling Indonesia's UPR requirement and opportunities to increase use of UPR over the boundary between Ujung Pandang FIR and Oakland FIR. The United States would assist the analysis as needed. The States agreed to prioritize use of UPRs in this region and, pending the findings, will discuss the best way to close the Action Item 26/7 SEACG in time for closing the Action Item at the SAIOSEACG/4 in 2025.

Agenda Item 6: Decisions/Recommendations to SAIOSEACG

6.1 None.

Agenda Item 7: Any Other Business

Progress of User-Preferred Route (UPR) Implementation in Indonesia (WP/12)

7.1 At the discussion in SAIOSEACG/2 Meeting, Indonesia presented the initiative of Indonesia and the United States on the implementation of cross-border UPR and also reported the progress of UPR implementation in Indonesia. In this IP, updated information regarding the User Preferred Route (UPR) implementation progress within the Indonesian airspace was been provided.

7.2 The last trial began on January 25th, 2023- November 25th, 2023. At this fourth phase of the trial period, applied conditions are as follows:

PARAMETER	PROCEDURES
Users	International flight
Level	F310 - F600
Entry and Exit	▪ Published Waypoint ▪ Designated point (latitude/longitude)
Intermediary point	▪ Published Waypoint (including navaid & ATS route) ▪ Designated point (latitude/longitude)
Proposal submission procedures	No time restriction
Usage	7 (25 Jan-24 Feb 2023)

7.3 An evaluation was held on June 9th, 2023 by Indonesia. During the evaluation, it was revealed that:

- Current Hajj flights from Makassar, Balikpapan, Surabaya, and Jakarta filed UPR flight plan. It contributed to the significant growth of UPR flights over Indonesian airspace.
- Some airlines reported their difficulties when they must input intermediary points in the form of latitude/longitude when filling FPL item 15, unless, the intermediary point is a published waypoint.
- Most UPR flights proposed their intended level at around FL 340 and above.
- Slowly but surely, traffic is recovering. Both UPR and non-UPR flights are safely handled and the ATCs have been more experienced as well as having more confidence.

7.4 Following the evaluation result, DGCA Indonesia and AirNav Indonesia agreed to proceed to full implementation. The current publication of the last trial phase will be incorporated in the amendment of AIP ENR 1.8 (will be published on 24th August 2023 to be effective on 5th October 2023). The full implementation of UPR is planned to be arranged as follows:

PARAMETER	PROCEDURES
Users	International flight
Level	F330 - F600
Entry and Exit	▪ Published Waypoint ▪ Designated point (latitude/longitude)
Intermediary point	▪ Published Waypoint (including navaid & ATS route) ▪ Designated point (latitude/longitude) (do not oblige to input on item 15.
Proposal submission procedures	▪ At least 3 hours before EOBT; ▪ Responded by AirNav within 2 hours after submission
Usage	To be informed at the next occasion.

Free Route Airspace (FRA) Webinar (IP/03)

7.5 This paper provided information on the upcoming ICAO Free Route Airspace (FRA) Webinar for member States/Administrations in the APAC Region, aimed at introducing the concept, sharing successful implementations, and fostering dialogue.

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

Agenda Item 8: Date and Venue of the Next Meeting

8.1 The SCSTFRG/12 was tentatively planned in June 2024 at a location to be determined. States/Administration considering hosting the SCSTFRG/12 were invited to contact the Secretariat.

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

Eleventh Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/11)

Bangkok Thailand, 04 – 06 July 2023

PROVISIONAL LIST OF WORKING AND INFORMATION PAPERS

(Presented by the Secretariat)

WORKING PAPERS

Number	Agenda	WORKING PAPERS	Presented By
WP01	1	Provisional Agenda	Secretariat
WP02	2	SAIOSEACG/2 Meeting Outcomes	Secretariat
WP03	2	Application of ATC Separation Minimums	Secretariat
WP04	2	Progress Update on Capacity Optimisation on Air Route L642 and M771	Hong Kong China
WP05	2	The Implementation of 10 NM Spacing (or Closer to 5 NM Based on Surveillance Spacing) Within Jakarta and Ujung Pandang FIR Boundaries	Indonesia
WP06	3	Progress of SCSTFRG Priority Areas	Secretariat
WP07	3	Progress Update to Enhance Traffic Flow on ATS Route M768	Indonesia, Malaysia, Singapore, and Viet Nam
WP08	4	Review of Selected ATS Route Proposals from the Asia Pacific Region ATS Route Catalogue	Secretariat
WP09	4	Review of the existing FLAS/FLOS in South China Sea Airspace	Secretariat
WP10	4	Feasibility Study on Re-designation of ATS Route A1 to Unidirectional Route	China
WP11	4	Concept Review of South China Sea Airspace Structure	IFATCA
WP12	5	SCSTFRG Task List	Secretariat
WP13	7	Progress of User-Preferred Route (UPR) Implementation in Indonesia	Indonesia

INFORMATION PAPERS

Number	Agenda	INFORMATION PAPERS	Presented By
IP01	1	Provisional List of Working and Information Papers	Secretariat
IP02	2	Traffic Sample Data Visualization Over South China Sea	MAAR
IP03	7	Free Route Airspace (FRA) Webinar	Secretariat
IP04	3	Introduction to the Roadmap for ATS Recovery in Sanya FIR	China
IP05	4	PBN Route Development in Viet Nam	Viet Nam

FLIMSIES

Number	Agenda	FLIMSIES	Presented By
Flimsy01			

PRESENTATIONS

Number	Agenda	PRESENTATIONS	Presented By
PR01	3	Progress of SCSTFRG Priority Areas	Secretariat
PR02	4	Review of the existing FLAS/FLOS in South China Sea Airspace	Secretariat
PR03	3	Introduction to the Roadmap for ATS Recovery in Sanya FIR	China
PR04	4	Feasibility Study on Re-designation of ATS Route A1 to Unidirectional Route	China

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SCSTFRG TASK LIST

(Last updated SCSTFRG/11)

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
2/3	Coordination of activities involving A1:				
	~~a) Application of 20 NM longitudinal spacing~~	~~By end of 2019~~	~~China, Hong Kong China~~	~~Completed~~	~~SCSTFRG/8 – Expected to be implemented by end of 2019.~~ ~~SCSTFRG/9 Report re: WP/03.~~
	b) Parallel routes	~~SCSTFRG/11~~ SAIOSEACG/3	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
	~~c) Coordination on the operation near FIR boundary~~	~~SCSTFRG/10~~	~~China, Hong Kong China, Viet Nam~~	~~Closed~~	~~SCSTFRG/9 – The Secretariat recalled the discussion from the SCSTFRG/6 (WP04) that coordination between China, Hong Kong China and Viet Nam was required, to discuss:~~ ~~• the need for traffic overflying Hong Kong FIR to Da Nang International Airport, to be transferred to Sanya ACC at FL320 or below;~~ ~~• Hong Kong China and Viet Nam to consider establishing en-route holding areas 20 NM away from the FIR boundaries; and~~ ~~• updating of LOAs.~~ ~~At the SCSTFRG/10 – HK China proposed it to be closed~~

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
	d) Direct communication link between Da Nang APP and Sanya ACC	~~SCSTFRG/11~~ SAIOSEACG/3	China, Viet Nam	Open	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.
	e) AIDC between Sanya ACC, Ho Chi Minh ACC, Ha Noi ACC	~~SCSTFRG/11~~ SAIOSEACG/3	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.
	f) Modelling and simulation of A1 parallel routes	~~SCSTFRG/11~~ SAIOSEACG/3	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.

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
2/4	Enhancement of longitudinal spacing on ATS route M758 and M761	~~SCSTFRG/11~~ SCSTFRG/12	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)

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/RNAV 5 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.	~~SCSTFRG/11~~ SAIOSEACG/3	**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.
7/4	Optimising routing into China to allow more options for aircraft going beyond Pearl River Delta	~~SCSTFRG/11~~ SCSTFRG/12	**China,** Hong Kong China, Laos, Thailand, Viet Nam, IATA	Open	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 planed to reduce to 5 NM in coming time).	~~SCSTFRG/11~~ SAIOSEACG/3	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.
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.	~~SCSTFRG/11~~ SAIOSEACG/3	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.
1/6	FL390 that is currently a FLAS level on ATS route A1 to be assigned to ATS route Q1/Q2	~~SCSTFRG/11~~ SAIOSEACG/3	China, Hong Kong China, Thailand, **Viet Nam**	Open	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

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
					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	~~SCSTFRC/11~~ SAIOSEACG/3	Indonesia, Malaysia, **Singapore,** Viet Nam	Open	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.
8/2	Enhancement of longitudinal spacing on ATS route L625 and N892 to 50 NM	~~SCSTFRG/11~~ SCSTFRG/12	~~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

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBE PARTY	STATUS	REMARKS
9/2	Removal of flight planning restrictions on ATS route L644	SCSTFRG/11	Indonesia, **Singapore**, Viet Nam	~~Open~~ Completed	SCSTFRG/9 Report re: WP/05. SCSTFRG/10 Report re: WP/05 – Indonesia accepted the proposal SCSTFRG/10 – Singapore commented this item is included in the bi-lateral meeting with Viet Nam at the end of June 2022. ATM/SG 10 Report.
9/3	a) Enhancement of longitudinal spacing on ATS route ~~M875~~N875, M904 and N891 to 50NM	~~SCSTFRG/11~~ SCSTFRG/12	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/11~~ SCSTFRG/12	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/11~~ SCSTFRG/12	Indonesia, Malaysia,	Open	SCSTFRG/9 Report re: WP/06. SCSTFRG/10 Malaysia supports and no objection for FLAS removal.
9/4	Enhancement of longitudinal spacing on ATS routes A583 to 30 NM	~~SCSTFRG/11~~ SAIOSEACG/3	Hong Kong China, Philippines	Open	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

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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/11	Indonesia, Malaysia, Philippines, Singapore	Open	SCSTFRG/10 Report re: WP03 (ref: side meeting discussion) SCSTFRG/11 Report re: WP05.
~~10/2~~	~~Optimization of flight level usage on M772 with a view to FLAS optimization~~	~~SCSTFRG/11~~	~~Hong Kong China,~~ **~~Indonesia,~~** ~~Malaysia, Philippines, Singapore~~	~~Open~~	~~SCSTFRG/10 Report re: WP03~~
10/3	Optimization of ATS route M646 between Manila ACC and Taipei ACC: 30NM longitudinal spacing only to aircraft pairs destined for either Manila FIR or Taipei FIR.	SCSTFRG/11	Philippines, Taipei ACC	~~Open~~ Completed.	SCSTFRG/9 Report re: IP/02. SCSTFRG/10 Flimsy01