**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

# REPORT OF THE TENTH MEETING OF THE SOUTH CHINA SEA TRAFFIC FLOW REVIEW GROUP (SCSTFRG/10)

VIDEO TELECONFERENCE, 31 MAY – 02 JUNE 2022

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 Tenth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/10) was held as a Video Teleconference (VTC), from 31 May to 02 June 2022.

## Attendance

2.1 The meeting was attended by 82 participants from China, Hong Kong China, Indonesia, Malaysia, Nepal, Philippines, Singapore, Thailand, United States, Viet Nam, CANSO, 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. Nasuruddin Bin Zainol Abidin, Director of Air Traffic Management Division, Civil Aviation Authority of Malaysia presided over the meeting throughout its duration as Chair of SCSTFRG.

3.2 Ms. Sunok Lee, Regional Officer, Air Traffic Management (ATM), ICAO Asia and Pacific Regional Sub-Office served as the Secretary for the meeting.

## Opening of the Meeting

4.1 Mr. Nasuruddin Bin Zainol Abidin welcomed participants to the meeting.

4.2 On behalf of Mr. Tao Ma, Regional Director of ICAO Asia and Pacific Office, Ms. Sunok Lee also welcomed participants to the meeting.

## Documentation and Working Language

5.1 The working language of the meeting and all documentation was English. There were ten Working Papers (WP), three Information Papers (IP) and one Flimsy 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="2">Decision SCSTFRG/10-1: Review of the existing South China Sea Flight Level Allocation Scheme (FLAS) and Flight Level Orientation Scheme (FLOS)</td></tr>
<tr><td>What: That, recognizing:<br>the need for high capacity traffic flow routes, and the effect of the existing modified single alternative Flight Level Orientation Scheme (FLOS) and the complimentary Flight Level Allocation Scheme (FLAS) that causes safety issues in conflictions at the transition points at the boundaries of SCS FLOS airspace, ATC human errors and workload in South China Sea airspace, all SCSTFRG States:<br>a) study and review the current SCS FLAS/FLOS operation with all neighboring FIRs with a view to enhancing efficiencies;<br>b) provide the current FLAS/FLOS and no-PDC Flight Level data in SCS FLAS/FLOS Chart (Appendix C to the Report) to the ICAO APAC Regional Sub-office (APAC-RSO@icao.int); and<br>c) report the review result including the possible improvement proposals to the SCSTFRG/11 meeting.</td><td>Expected impact:<br><br>☐ Political / Global<br>☒ Inter-regional<br>☒ Economic<br>☒ Environmental<br>☒ Ops/Technical</td></tr>
<tr><td>Why: To enhance SCS airspace capacity, efficiency and safety in accordance with ICAO APAC Seamless ANS Plan and SCS Operational Concept</td><td>Follow-up: ☒Required from States</td></tr>
<tr><td>When: 31-May-22</td><td>Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="2">Who: ☒Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☒Other: RSO</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.

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

Review of Regional ATM Requirements in ICAO APAC e-ANP and Seamless ANS Plan (WP/02)

2.1 ICAO presented ATM-related regional requirements based on ICAO APAC e-ANP and Seamless ANS Plan (Version 3.0, November 2019) to encourage SCSTFRG member States to review the data affecting their administration and provide feedback to ICAO on the data's accuracy.

2.2 The meeting noted the objectives of APAC e-ANP, which bridges the global provisions in the ICAO SARPs and the GANP, and the States' air navigation plans and implementation status.

2.3 ATM-related regional requirements were explained through the overview of structure of the e-ANP consisting or Volume I, II and III was explained. The e-ANP containing Volume I, II and III can be accessed at http://www.icao.int/APAC/Pages/APAC-eANP.aspx.

*APAC Seamless ANS Plan and its Regional Elements*

2.4 To be aligned with the 6th Edition of GANP, the current Version 3.0 of the APAC Seamless ANS Plan had been adopted by APANPIRG/30 in 2019 as APANPIRG Conclusion 30/5: Asia/Pacific Seamless ANS Plan. The Seamless ANS Plan (formerly known as Seamless ATM Plan) defines goals and the means of meeting State planning objectives for a Regional Seamless ANS Performance Framework, with a focus on technological and human performance. The Plans is available at https://www.icao.int/APAC/Documents/edocs/Asia%20Pacific%20Seamless%20ATM%20Plan%20V%203.0.pdf.

2.5 In the latest version 3.0 of the Plan, 16 Priority-1 [ASBU Block0 and 1 and Regional] Regional Seamless ANS Elements were identified, which were critical upgrade assignment based on whether the implementation of an element could bring most benefit to the region or regional upgrade by States and is essential to achieve the service level required globally. These 16 Elements are listed as follows with ATM-related element highlighted:

a) Aeronautical Meteorology: AMET-B0/1 – 4;

b) Aeronautical Information Management: DAIM-B1/1 – 6;

c) Airport CDM: ACDM-B0/1 – 2;

**d) ANSP human and simulator performance (Regional);**

e) ATS Inter-facility Datalink Communications: FICE-B0/1;

**f) Ballistic launches/space re-entry management (Regional);**

**g) Civil-Military Special Use Airspace (SUA) management (Regional);**

h) **Civil-Military strategic and tactical coordination (Regional);**

i) Core data communications: VDL Mode O/A and AMHS COMI-B0/3, 7;

**j) Direct and Free Route Operations: FRTO-B0/1 – 4;**

k) Enhanced SAR systems (Regional);

l) Ground-based Surveillance: ASUR-B0/1 – 3;

**m) Network Operations: NOPS-B0/1 – 5;**

n) Performance-based Navigation Approach Procedures: APTA-B0/1 – 2;

o) Runway Sequencing: RSEQ-B0/1 – 2; and

p) **Safety Nets SNET-B0/1 – 4**.

2.6 Details of ASBU elements could be referred on GANP portal (https://www4.icao.int/ganpportal/ASBU).

2.7 **Table 1** provides a summary of the regional Seamless ANS elements, and the expected priority for implementation within the Asia/pacific Region. The allocation of priority was based on factors including its importance in promoting Seamless ANS.

| **Functional Category** | **Regional Seamless ANS Element** | **Priority** |
|---|---|---|
| Operational | Aerodrome management and coordination (PARS 7.1) | 2 |
| | Optimization of runway capacity facilities (PARS 7.2) | 3 |
| | ADS-B, SSR Mode S and PBN Airspace (PARS 7.8, 7.9, 7.10) | 2 |
| | Flight Level Orientation Scheme (**FLOS**) (PARS 7.15) | 2 |
| | **Civil-Military SUA management** (PARS 7.16) | 1 |
| | Unmanned Aircraft Systems (PARS 7.17) | 2 |
| | Adjacent ATS sector coordination (PASL 7.24) | 2 |
| | Airspace classification (PASL 7.33) | 2 |
| | **ATC horizontal separation** (PASL 7.34) | 2 |
| | **Flight Level Allocation Schemes** (**FLAS**) (PASL 7.35) | 2 |
| | ATC sector capacity (PASL 7.37) | 2 |
| | Electronic Flight Progress Strips (PASL 7.39) | 2 |
| | Enhanced SAR systems (PASL 7.42) | 1 |
| | **ANSP human and simulator performance** (PASL 7.43) | 1 |
| | **Civil-Military strategic and tactical coordination** (PASL 7.44) | 1 |
| | Civil-Military common procedures and training (PASL 7.44) | 2 |
| | **Ballistic launches/space re-entry management** (PASL 7.45) | 1 |
| CNS Technology and Services | **ATS surveillance data sharing** (PASL 7.28) | 2 |
| | Civil-Military integrated systems and facilities (PASL 7.44) | 2 |
| | Departure Clearance (DCL) (PASL 7.49) | 2 |

**Table 1**: Asia/Pacific Seamless Regional Elements Priority *(Note. PARS: Preferred Aerodrome/Airspace and Route Specification, PASL: Preferred ANS Service Level)*

2.8 The review process of the Asia/Pacific Seamless ANS Plan had started for 2022.

2.9 All States/Administrations were invited to review all facilities listed and ATM requirements specified in the e-ANP to verify that the information provided for their States/Administration is up-to-date and correct. In case of updates of any information required, States should submit the updates to ICAO APAC Regional Office via PfA Process.

Implementation of 30 NM Spacing (or closer to 5 NM surveillance-based spacing) between

Indonesia and the Neighbouring FIR Boundaries (WP/03)

2.10 Indonesia presented its initiative to support seamless Air Navigation Services within South China Sea (SCS) Region by optimizing infrastructures in Ujung Pandang FIR and Jakarta FIR.

2.11 The meeting was informed that Ujung Pandang ACC and Jakarta ACC had successfully been reducing longitudinal spacing from 15/10 minute to Surveillance-based 10 NM within their boundaries since 30 March 2021.

2.12 Indonesia proposed to implement 30 NM spacing (or closer to 5 NM-based Surveillance spacing) at the common boundaries to its adjacent ACC units. The proposed tentative timeline was as below:

| Date | Event/Action |
|---|---|
| July 2022 | Confirm with **Australia, Philippine** and **Malaysia** on participation in the trial |
| August 2022 | Finalize and confirm AIP Supplement relevant to the trial to inform the aviation community of the trial |
| September 2022 | Commencement of one month trial |
| October 2022 | End of trial and gather feedback and evaluation |
| November 2022 | 30 NM spacing (or Closer to 5 NM Based on Surveillance Spacing) implementation date consultation and agreement |
| December 2022 | Finalize and issue AIP Supplement to implement 30 NM spacing (or Closer to 5 NM Based on Surveillance Spacing) |
| January 2023 | Implementation of 30NM spacing (or Closer to 5 NM Based on Surveillance Spacing) within Ujung Pandang FIR and Jakarta FIR boundaries |

**Table 2**: The proposed timeline for 30 NM longitudinal spacing at Indonesian boundaries with neighbouring ACCs

2.13 The Chair, Singapore, Malaysia and Philippines congratulated on Indonesia's successful implementation of 10 NM surveillance-based separation and fully supported the proposed initiative on reducing longitudinal spacing to 30 NM between the common boundary points. To discuss and materialize the proposal, all four States concerned agreed to have a side meeting in response to the suggestion by the Chair. Also they exchanged the Points of Contact (POC) for stable communication and effective discussion to follow as below:

| State / Administration | Name | Email |
|---|---|---|
| Indonesia | Mr. EKO NUGROHO | ecko.atc@gmail.com |
| Malaysia | Mr. Md. Nastain | mdnastain@caam.gov.my |
| Singapore | Mr. Tommy Tan Chee Han | Tommy_TAN@caas.gov.sg |
| Philippines | Mr. Joseph Tyrone rias | jtrakx06@gmail.com |

**Table 3**: POC for Implementation of 30 NM longitudinal spacing between Indonesia and its Neighbouring FIRs

2.14 In addition, in response to Malaysia, Indonesia clarified that in mid-2021, the FLAS for southbound traffic from Manila to Indonesia FIR had been removed, and likewise Malaysia welcomed the initiative of FLAS removal subject to the participating stakeholders and related operational agreement. An overall assessment of the FLAS/FLOS should be taken into consideration.

2.15 Thanking all relevant States, Indonesia also informed the meeting that there was no concerns and restrictions for aircraft entering Indonesian airspace since Indonesia started the trial on UPR in early 2021, so that Indonesia does not restrict traffic entering Indonesia in fixed point or to use

fixed routes anymore. Indonesia affirmed that all the routes connecting Ujung Pandang FIR and Kinabalu FIR could be implemented 30NM separation including the inner segment of ATS route M768.

2.16 IATA and ICAO thanked Indonesia for its efforts and initiative to enhance the airspace capacity by implementing surveillance based separation in accordance with the CAN/ATM capabilities and encouraged all States to consider the same. IATA particularly appreciated Indonesia's implementation of the UPR (User Preferred Routes) and would like to expect the same from other States in the region.

Side Meeting on WP03 (Indonesia, Malaysia, Singapore and Philippines)

2.17 The meeting was held as a follow-up on Indonesia's proposal regarding Implementation of 30 NM spacing (or closer to 5Nm surveillance based) within Indonesia (Jakarta ACC and Ujung Pandang ACC) and neighboring ACCs.

2.18 The meeting was attended by representatives from Indonesia, Malaysia, Philippines, and Singapore. Considering that Indonesia was the proponent of the initiative, Indonesia was asked to chair the meeting.

2.19 As the result of the meeting, all States involved in the meeting were supportive of the initiatives, with some notes as below:

1. Singapore and Malaysia were supportive of the initiative to review the longitudinal separation and flight level assignment for ATS route M772. States highlighted that the changes to M772 would impact traffic on the ATS route M768, as such, enhancement to M768 would have to be considered too. Given that the traffic on M772 and M768 traverses through many FIRs, the concerns of all affected States would need to be taken into account. As such, the meeting noted the need to engage all relevant stakeholders and holistically review the FLAS/FLOS for routes within the South China Sea area, particularly on M772 and M768 before implementation of 30NM separation could be materialised.
2. Philippines welcomed these initiatives by proposing 3 ATS routes (B472, A461, G578) because the routes run through Cat S airspace with reliable communication, surveillance, and navigation capability.
3. Answering Philippines' queries regarding Ujung Pandang that was still undergoing to get re-enlisted on Doc 7030, Indonesia stated that Ujung Pandang would have no constraint because this initiative started with surveillance-based capability. Both sides can just switch to RNP4-based capability anytime at their vaporable moment once the revision of Doc 7030 was issued.
4. At the moment, Philippines would be ready to carry the initiative to target on Q3 2023, but considering Indonesia's timeline in WP03, Philippines was ready to adjust their schedule to Q1 2023. Further coordination would be established between Ujung Pandang POC and Manila ACC POC.

Progress of Airspace Capacity Enhancement in Manila FIR (Flimsy/01)

2.20 Philippines provided progress update on airspace capacity enhancement in Manila FIR that included the implemented activities and those planned in the future.

2.21 Indonesia, Hong Kong China, Malaysia, Singapore and IATA congratulated Philippines on the progress of on-going projects and the relevant States would look forward to continue cooperating with Philippines on their own related projects.

2.22 The Philippines has provided updates on the meeting that, with the concurrence of Taibei

ACC, 30NM longitudinal spacing would be implemented on the route segment of M646 between Manila FIR and Taibei FIR in Q4 of 2022.

Training for the New Kuala Lumpur Airspace and New CNS/ATM Complex (IP/02)

2.23 Malaysia presented an update on the training for the New KL FIR airspace and migration to Kuala Lumpur new CNS-ATM Complex (KLATCC) that was done on 17th June 2021 and 31 August 2021 respectively. This paper elaborated steps taken into ensuring controllers are well-trained and competent to handle high traffic movement with the new airspace structure and system despite challenges amidst the COVID-19 pandemic.

2.24 Trainings comprised Train the Trainer including workshops, publication and notification, procedures and ATC validation starting 3 years prior to the implementation; Theoretical Training for the technical understanding of the new airspace structure, new CNS/STM system interface and usage; and Simulation Training with traffic scenarios that mirrored actual traffic pattern of pre-COVID with the expectation of capacity performance of 108 movement per hour for triple runway operations in Kuala Lumpur International Airport (KLIA).

2.25 Aside from trainings, to cater to operational requirement, new staff were placed at the new KLATCC to handle 6 En-route and 10 TMS sectors more compared to the past.

2.26 Despite all constraints and drastically reduced traffic posed by COVID-19, the lack of flight movement had somehow eased the transition from the old CNS/ATM system to the new CNS/ATM system and gave the controllers an advantage to get comfortable with the setup of the new airspace and CNS/ATM system.

2.27 In response to a query from Philippines, Malaysia stated the systems of Kota Kinabalu ACC had been already upgraded, and the plan for the new Kota Kinabalu ACC was in the stage of planning.

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

Progress Review of SCSTFRG Priority Areas (WP/04)

3.1 ICAO presented the progress review on SCSTFRG Priority Areas with the intention to seek progress, commitments and agreement to an implementation timeline for each of the Priority Area.

*Priority Area 1: A1/A202*

3.2 Action items under Priority Area 1 were to enhance the longitudinal spacing on ATS route A1 and A202 to 20 NM, and develop a parallel route to A1.

3.3 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.

3.4 Regarding the proposed implementation of parallel uni-directional route to A1, as 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 reiterated their concerns that the proposed traffic flow orientation (**Figure 1**) would adversely affect the ATM and flight procedures in

Da Nang Terminal Control Area (TMA), increase flight distance, time and crossing points between arriving and departing traffic from/to Da Nang International Airport, as well as increase in ATC workload, and therefore requested the States/Administration concerned to re-consider the traffic flow orientation.

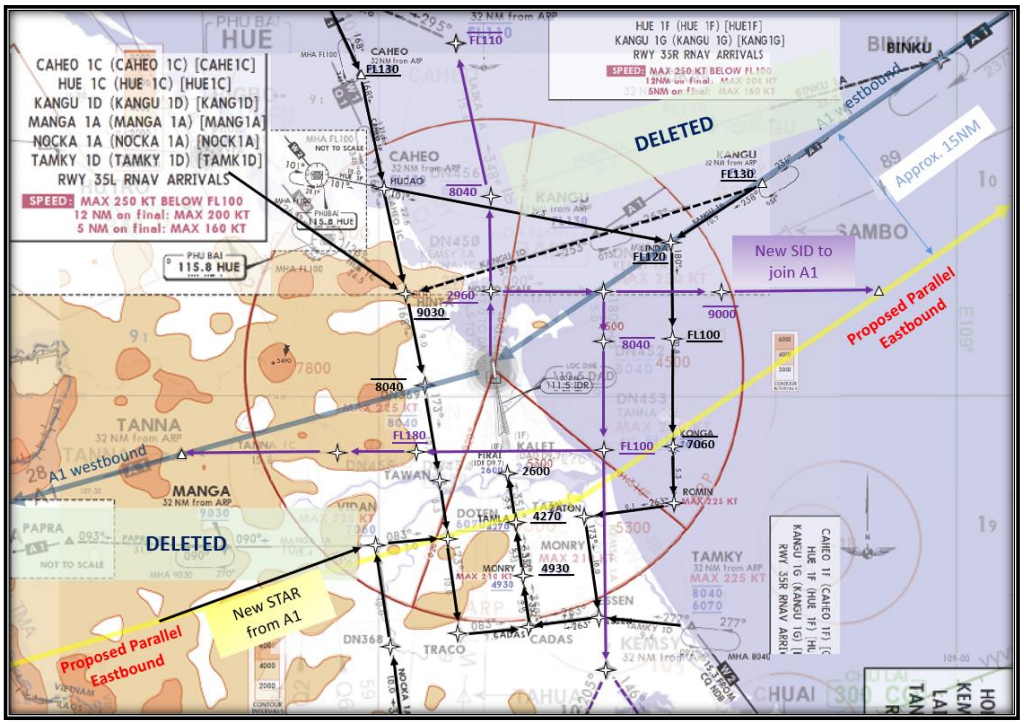


**Figure 1**: Proposed Parallel Uni-directional Route to A1

3.5 Thailand suggested that to minimise the impact on the existing Standard Instrument Departure (SID) and Standard Instrument Arrival (STAR) procedures for Da Nang International Airport, and concern related to additional flight distance, 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. Hong Kong China supported the suggestion from Thailand, and further suggested that Viet Nam would consider keeping the lower portion of ATS route A1 as bi-directional route and restructuring the upper portion of ATS route A1 as uni-directional parallel routes.

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

3.7 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.

3.8 Viet Nam was invited to provide feedback on the assessment on the proposed parallel uni-directional routes provided in **Figure 1** and the proposed offer by Singapore.

3.9 Viet Nam commented by email that it still wished to retain the current traffic flow direction to avoid effects to the ATM system, flight procedure in Da Nang TMA and workload of ATC. The assessment on the proposal in **Figure1** would continue and provide the assessment result to the meeting once finished.

*Priority Area 2: L642/M771*

3.10 Action items under Priority Area 2 were to enhance the longitudinal spacing on ATS route L642 and M771 to 20 NM, and investigate the possibility of implementing parallel routes to L642 and M771.

3.11 Although the implementation of 20 NM longitudinal spacing at the TOC points between Hong Kong and Sanya FIRs, on ATS routes L642 and M771 was expected to be implemented in the second quarter of 2021, it had not been implemented until now pending discussion and confirmation of the proposed changes amongst concerned States and Administrations along the routes.

3.12 At the SCSTFRG/9 meeting, China, Hong Kong China and Viet Nam supported the implementation of 20 NM longitudinal spacing, based on ATS surveillance, at the Transfer of Control (TOC) points, and within their Flight Information Region (FIRs). They also had agreed to work offline and exchange the Points of Contact (POC). Viet Nam provided its POC as below:

| State/Administration | Name | Email |
|---|---|---|
| China | Mr. Fu Yongqiang | hnsfyq@gmail.com; |
| Hong Kong China | Mr. Alex Ng | aktng@cad.gov.hk |
| Viet Nam | Mr. N.T Hung | hungand@caa.gov.vn<br>hungand_caav@yahoo.com |

**Table 4**: POC for Implementation of 20 NM longitudinal spacing on ATS Routes L642 and M771

3.13 China, Hong Kong China and Viet Nam were requested to provide the progress on the implementation of 20 NM longitudinal spacing at the TOC points between Hong Kong, Ho Chi Minh and Sanya FIRs.

3.14 In response to a query from ICAO, Hong Kong China commented that discussion was still on-going among States and Administrations concerned. As a lead Administration Hong Kong China reported ready for the implementation and encouraged active participation and discussion by all relevant parties and would report the progress to the next SCSTFRG meeting.

3.15 With regard to the side meeting arranged to further discuss the issue, Vietnam responded resources were currently engaged in pandemic recovery and they required more time for internal discussion and the proposed side meeting was cancelled.

3.16 Regarding the possibility of implementing parallel routes to L642 and M771, the Secretariat recalled the discussions from the Eighth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/8, Bangkok, Thailand, 03 – 05 September 2019). Hong Kong China commented that the enhancement of longitudinal spacing to 20 NM would be sufficient to cater for current and future traffic. SCSTFRG/8 had agreed for the discussion on proposed implementation of parallel routes to L642 and M771 to be deferred, pending the results of the enhancement of longitudinal spacing in Hong Kong and Sanya FIRs.

*Priority Area 3: A461/A583/L625/N892*

3.17 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.

3.18 With the successful implementation of 50 NM longitudinal spacing on ATS route A461 and A583 between Hong Kong ATCC and Manila ACC, effective 23 May and 15 August 2019 respectively, Hong Kong China and the Philippines had planned to further enhance the longitudinal spacing to 30 NM.

3.19 The Phase 1 trial implementations of 30 NM longitudinal spacing on ATS routes A461 for RNP4 compliant landing aircraft between Hong Kong ATCC and Manila ACC was conducted from 2

December to April 2022. With 3-phased approach, it would be extended to ATS route A583 for all RNP4 compliant pairs (targeted in Q4 2023).

3.20 Philippines informed the meeting the updated plan regarding the new Manila ATC sector to optimise the ATS route N892 and L625, which is the crucial element of this plan. Although delayed due to the constraints caused by the pandemic, it had been rescheduled to be completed in Q2 2023 with full implementation (refer to Flimsy01).

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

3.21 ICAO commented, as the SCSTFRG/7 had agreed that the discussion on Priority Area 4 would take place after the completion of Priority Areas 1, 2 and 3, and most of the action plans under Priority Areas 1, 2 and 3 are almost complete, States/Administrations concerned should be prepared to discuss and review Priority 4 from SCSTFRG/10 meeting.

3.22 China commented that the group should prepare a roadmap for the FLAS/FLOS task rather than piecemeal approach to it for the comprehensive review and optimization while considering the needs from States and ANSPs.

3.23 In response, IFATCA elaborated that the circumstances and scenarios of South China Sea had significantly changed in the last 20 years. Thus, all stakeholders should have long-term considerations on post-pandemic scenarios. It was essential to seize the window of flight reductions to make significant changes and be well prepared for the industry recovery. Therefore, IFATCA agreed with the proposal by China to prepare a comprehensive paln on future SCS airspace.

3.24 ICAO emphasised that to work out the comprehensive roadmap for FLAS/FLOS optimization, collective efforts and extensive discussion from all stakeholders would be needed. ICAO also reminded the meeting the APAC Seamless ANS Plan did contain milestones with Phased timeline. All stakeholders are urged to work together to move forward gradually, although it had been far behind, in the spirit of more collaborative manner.

3.25 More discussion on the optimization of the FLAS/FLOS had been carried out in papers under Agenda Item 4.

<u>Optimization of Air Traffic Operations on ATS route L644 (WP/05)</u>

3.26 As a feedback on WP/05 to the SCSTFRG/9 meeting, Indonesia provided its consideration and analysis that were conducted for the proposal to optimize flight routing and air traffic operation on L644. At the SCSTFRG/9 in 2021, Singapore proposed to review the existing city pair restriction on ATS route L644 to allow airliners to optimise flight routing, maximise route capacity and contribute towards reducing fuel burn.

3.27 In response, Indonesia had carried out further analysis to identity any operational benefits and/or issues as follow:

3.28 Currently, incoming traffic to Jakarta FIR via L642 would go through B470 at point ANITO, which is one of a busiest routes to connect Singapore and Jakarta or beyond (such as Australia, Bali, etc.). Therefore, rerouting L642 into L644 would reduce complexity and traffic density of route B470 at point ANITO from Vietnam and beyond into L644 at point KIKOR.

3.29 Rerouting flights from L642 into L644 for flights from Vietnam and beyond will share the traffic load for incoming traffic to Jakarta into 2 (two) different waypoints. Incoming from L642 via ANITO would join the STAR via BUNIK. Meanwhile, incoming from L644 via KIKOR would join the STAR via AMBOY. As a result, the traffic sharing will avoid the density of BUNIK. Finally, it

will reduce potential holding at BUNIK for arriving traffic.

3.30 Considering the imbalance of incoming traffic density between the STAR BUNIK via L642 and the STAR AMBOY via L644 to Jakarta (WIII), if all traffic from L642 would be rerouted to L644, then the traffic density of B470 would be reduced by 6.7% and L644 would be optimised effectively.

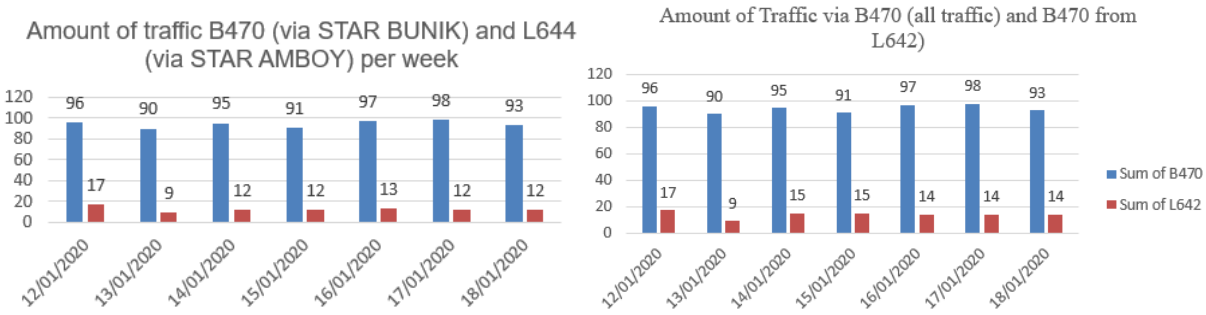


**Figure 2**: The analysis of traffic density comparison

3.31 Currently, 10- or 15-minute separation on L644 was being applied even though it was a RNP 10 published route with ATS surveillance and VHF direct communication coverage due to converging traffic coming through L644 and M635, which caused potential hazard traffic at waypoint GUKNO. As one of the major ATS Routes that connects Singapore to Australia, Bali and beyond, economic level might have not been achieved every single time in M635. Therefore, as a key consideration that should be taken into account, Singapore ACC should enhance longitudinal separation in M635 to provide economic level before entering and crossing the common boundaries at KIKOR and SURGA.

3.32 In Conclusion, Indonesia had no objection to Singapore's proposal to rerouting flights from Viet Nam and beyond via L642 into L644 in this global pandemic period to support airspace users in operational efficiency and its sustainable environmental aspect. Meanwhile, the coordination and cooperation between ANSPs should be improved to provide for safe and seamless operation. As a result, it would contribute to the improvement of Air Traffic Services provision where L644 is optimised and the traffic density L642 (connected to B470) effectively distributed.

3.33 Indonesia also stressed a comprehensive study to be arranged to finalize the concept of operation of the rerouting flights from L642 into L644 for flights from Vietnam and beyond in normal condition (not in pandemic condition).

3.34 IATA, ICAO and Singapore thanked Indonesia for its support and analysis with positive assessment on the proposal on ATS route L644. Singapore as the proposer of this initiative, volunteered to work with the States concerned to formulate a tentative timeline for implementation. Singapore would also engage Indonesia to enhance the longitudinal spacing and level assignment for traffic on ATS route M635 and would provide an update at the next meeting. In response, Indonesia confirmed its readiness.

3.35 With no objection by States concerned and acceptance by Indonesia on the proposal on L644, to remove the current flight planning restriction for ATS route L644, Singapore confirmed that it would require the amendment of AIP, which however would also require the agreement of all affected States to materialize this initiative.

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

Review of the existing FLAS/FLOS in South China Sea Airspace (WP/06)

4.1 ICAO presented the considerations that should be taken into account when reviewing the existing FLAS/FLOS operation and No-PDC FL in various FIRs of the South China Sea (SCS) area.

4.2 Since the inception of the SCS FLAS/FLOS operation in 2002 and revision in 2007, the circumstances in air traffic flow had been a lot changed over time, ranging from traffic flow demand increase in the secondary crossing routes to the improved CSN/ATM capabilities and advanced fleet equipage. The expectation of airspace users for the higher capacity and efficiency in airspace management had been getting higher as well.

4.3 Therefore ICAO requested all States/Administrations to take appropriate actions to review the existing FLAS/FLOS in SCS airspace as agreed at the SCSTFRG/7 meeting with a view to enhancing efficiency and safety, taking into account:

- FLAS/FLOS expectations in the APAC Seamless ANS Plan;
- ATC horizontal separation standard;
- South China Sea Operational Concept; and
- South China Sea ATS Surveillance and Communication coverage.

4.4 The meeting noted some aspects when optimising SCS FLAS/FLOS 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.

4.5 Mindful of the above aspects, the phased approach was restated, which was presented by IFATCA at the SCSTFRG/7 as one of the possible approaches for the meeting to consider:

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

  Re-allocation of two of the six flight levels on the primary routes M767, L625, N884 and 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 were currently imposed on traffic.

- *Phase 2: Revision of FLOS on selected ATS routes*

  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 at the Manila FIR boundary and thereby resolve the Large Height Deviation (LHD) safety issues.

- *Phase 3: Normalised SCS modified single alternate FLOS to standard FLOS (Annex 2, Appendix 3a) on all ATS routes*

4.6 States/Administrations were urged to review the ATS coordination Letters of Agreement (LOAs) with adjacent FIRs whenever there is an improvement in CNS/ATM systems. Periodic review and revision of separation standards minima and consequent appropriate procedures with adjacent FIRs based on technical and operational aspects were highly encouraged.

4.7 IFATCA thanked ICAO for presenting the paper and highlighted the safety concerns involved in non-standard FLOS operation. The transition from non-standard FLOS levels to standard FLOS levels at the TOC points had been causing serious safety issues and at the same time increasing the ATC and flight crew workload, which is particularly relevant to Taibei FIR and Manila FIR. IFATCA emphasised the most compelling task that should be taken care of regarding the optimization of FLAS/FLOS over SCS airspace was to revert non-standard FLOS to standard FLOS on the trunk primary routes for major safety reason.

4.8 ICAO agreed with IFATCA that the ICAO standard FLOS based on Annex 2, Appendix 3a should be considered first to be applied for safety reason over South China Sea airspace.

4.9 Regarding the 3-phased proposal at the SCSTFRG/7 meeting, IFATCA also added it was proposed 4 years ago and the SCS airspacehad changed again since then. Recognising it worked and was effective when it was introduced, now that with different traffic flows and enhanced infrastructure capabilities, the current FLAS/FLOS should be removed or optimised according to the current status.

4.10 China reiterated the necessity and the importance of joint work collaboration with stepped approach considering proposals and suggestions from all States in SCS area to reach visible achievements. Alternative ideas to push the task move forward could be encouraged to be considered, such as flexible use of FLAS to resolve the current or short-term challenges in SCS region.

4.11 IATA commented that all stakeholders of aviation industry should work together to ensure the improvement of environmental protection and economic efficiency without compromising safety.

4.12 After extensive discussion, the meeting agreed with the **Decision SCSTFRG/10-1: Review of the existing South China Sea Flight Level Allocation Scheme (FLAS) and Flight Level Orientation Scheme (FLOS)**.

Analysis of Flight Level Usage of ATS Route M772 (WP/07)

4.13 Noting the importance of getting optimum flight level for aircraft and its consequences in economic and environmental impacts, Indonesia analysed the flight level usage on ATS route M772 to identify the issues and considerations in the current optimal cruising flight levels for overflights in this area in its continuous efforts and initiatives to improve ATS provision and airspace efficiency.

4.14 Despite very low volume of traffic on M772 due to the pandemic for the recent years, the allocation of flight level was also limited as well. Only FL300 and FL380 were available.

4.15 There were two major factors for the fuel consumption, which is cruise speed and altitude or flight level, analysis showed the correct selection of the cruise parameters is fundamental in

minimizing fuel or operation cost. Aircraft consumed less fuel when flown slower or higher in the normal condition, flying lower than the maximum range speed would increase the fuel as will flying higher than an optimum altitude.

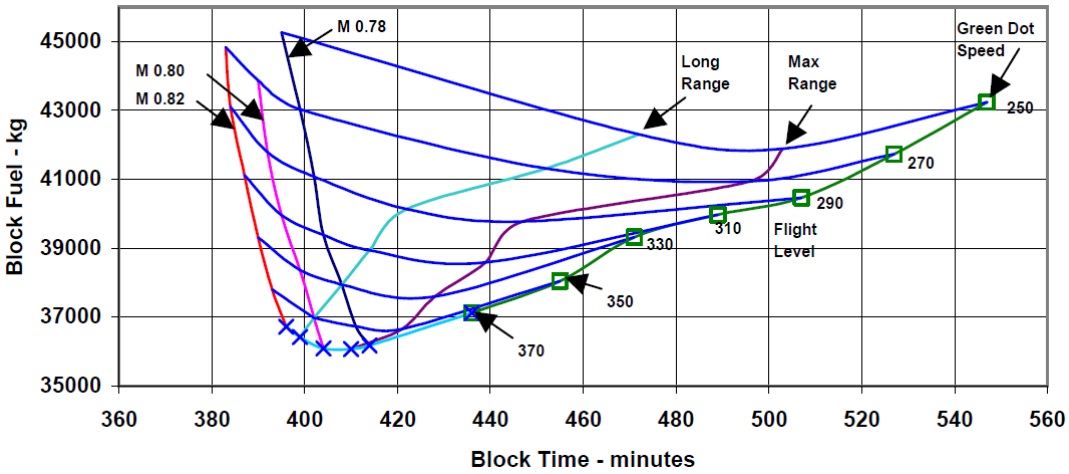


**Figure 3**: Block Fuel and Time for various Flight Levels and Mach numbers
**A330**-223 ISA 3000nm Payload 30000kg JAR Reserves

4.16 The analysis showed even flying at crossover altitude increased the fuel burn significantly for a relatively small reduction in block time. In case of M772, in comparison between FL300 on flight level restriction and FL350 as an optimum level for A330 type, flying 5000ft below the fuel optimum level could increase fuel burn by up to 4.2% fuel on FL300.

4.17 As suggestions based on the analysis of the usage of M772 routes in Jakarta FIR, the operational efficiency of the major traffic flow in the South China Sea region could be further optimized by:

a) *Harmonizing the optimum level.* The aircrafts with some particular levels such as FL300 and FL380 on M772 have to further change their flight level to optimum levels to meet the transfer requirement of downstream FIR. This not only increases the ATC workload and risk, but also is harmful for the aircraft flight to maintain preferable flight level during the cruise phase. Harmonized handover flight levels will be one of the most important measures to optimize the efficiency of ATC operation.

b) *Optimizing the route structure.* With the sustained and rapid growth of flights, frequent flight level changes lead to the potential conflict point increasing, and the ATC operation risk is intensified. Optimizing the route structure of M772 and other routes which are listed as the busiest route in the South China Sea to cope with the future continued growth of flights.

4.18 IATA and IFALPA thanked Indonesia for its efforts to analyse the economic and environmental effects from the inefficient flight level allocation and requested for kind considerations likewise in a way to improve the flight efficiency over SCS airspace as well.

4.19 Singapore commented that it was ready to work with Indonesia and other States concerned to look into the level assignment of ATS route M772 with the objective of enhancing the route capacity.

4.20 IFALPA stressed FLAS operation would significantly decrease the utilization of the airspace. Moreover, limited flight levels in use could cause huge inefficiency of fuel economy and increase carbon emission as shown in the analysis by Indonesia on M772.

4.21 ICAO reminded the meeting the non-standard FLAS levels set in M772 when it should be

odd flight levels for eastbound traffic in accordance with ICAO Standard Single Alternative FLOS in Annex 2, Appendix 3a with very limited and inefficient flight level options (FL300, FL380) for airspace users. ICAO reiterated that standard FLOS operation should be applied on M772.

4.22 China opined all ANSPs should allocate more efficient flight levels to benefit air operators.

FLAS Restrictions on P629 (WP/08)

4.23 IATA presented a proposal to to amend or remove unnecessary FLAS restrictions from flight planning westbound flights on P629 in Bangkok FIR (VTBB).

4.24 Airline feedback had reported that there were current FLAS restrictions westbound on P629 within Bangkok FIR that unnecessarily limited a flight's options for flight levels that provide fuel and environmental efficiencies, and did not appear to align with the restrictions (or absence of restrictions) in neighbouring FIRs.

4.25 According to Thailand AIP (02Dec21) ENR 1.8, para 10.7, for the route TSH R468 ELMOP P629 BKK:

- Vietnam's (Ho Chi Minh FIR – VVHM) published "no-PDC" levels for AWY R468 are L320/FL340/FL360/FL380/FL400;
- Cambodia (Phnom Penh FIR – VDPF) had no limitations;
- However, Thailand imposed FL300 and FL380 limitation westbound which didn't appear to be in sync with the flow and was solely in Bangkok FIR and where the route terminates.

**10.7 *Flight Level Allocation Scheme (FLAS) For South China Sea Area***

10.7.1 The following flight levels on the routes listed below can be used without pre-departure clearances from the downstream ATS units (no-PDC levels):

| ATS Route | No-Pre-Departure Coordination (No-PDC) Flight Levels<br>Other levels available with prior approval |
|---|---|
| L880 / L628 (EB)<br>L628 / M633 (WB) | EB – FL330, FL370, FL410<br>WB – FL280, FL340 |
| N891 | SB – FL330<br>NB – FL260, FL300, FL380 |
| A1 | EB – FL290, FL330, FL370, FL390, FL410<br>WB – FL280, FL300, FL340, FL380, FL400 |
| N506 / M768 (EB)<br>M768 / P629 (WB) | EB – FL270, FL330, FL410<br>WB – FL300, FL380 |
| A202 | EB – FL290, FL330, FL370, FL390, FL410<br>WB – FL280, FL300, FL340, FL380, FL400 |

**Figure 4**: Copy of Thailand AIP (02Dec21) ENR 1.8, para 10.7

4.26 If an aircraft was operationally unable to climb to FL380, then the only other flight plannable option westbound was a descent to FL300, which was very inefficient and not preferred for cruise.

4.27 The following were the potential impacts based on an example B777 flight SGN-DXB:

- If required to follow the FLAS the flight can unnecessarily produce at least 1500kg of extra CO2;
- If allowed to maintain the cruise flight level (e.g. FL340/360) the flight still produces 450Kg of CO2 as the aircraft would have been fuelled for the expectation of the lower level.

4.28 Given that the preceding FIR had no restrictions and the FIR prior to that had several more options for flight levels, IATA requested that the meeting agrees that Thailand may amend or remove the limited options for flight planning westbound on P629 within Bangkok FIR (VTBB) to provide

more choices for flight levels and promote fuel and environment efficiencies.

4.29 In response, Thailand explained about the confusion regarding the Thailand AIP ENR 1.8, which was published for reference on FLAS according to the regional supplement procedure, not to intend to impose restrictions. In the AIP ENR 1.9, there were no requirements for westbound traffic on P629.

4.30 On IATA's suggestion to have a bilateral discussion with Thailand on this matter, Thailand agreed and expressed its full support to remove FLAS/FLOS with its neighbouring FIRs

Review of Malaysia (Kuala Lumpur and Kota Kinabalu FIRs) FLAS/FLOS (WP/09)

4.31 Malaysia provided its review on FLAS/FLOS operation surrounding Malaysian airspace based on FLAS/FLOS agreement/arrangement between Malaysian and it neighbouring FIRs. This paper could give the group a good opportunity to review the current operation over SCS airspace as Malaysia was facing with multiple FIRs such as Kuala Lumpur with Bangkok, Chennai, Ho Chi Minh, Jakarta and Singapore FIRs, and Kota Kinabalu FIR with Jakarta, Manila, Singapore and Ujung Pandang FIRs for enhancement of airspace efficiency and safety.

4.32 Malaysia also welcomed the initiative to review the FLAS in SCS area, adding that Malaysian airspace in relation to SCS area was fully surveillance covered. Malaysia supported the reduction of longitudinal separation and revision of FLAS in SCS area subject to the effected States involved.

4.33 ICAO thanked Malaysia for its provision of an overall review on its FLAS/FLOS operation and full support for the removal of FLAS/FLOS. The meeting was urged to review the current usage of FLAS/FLOS and any discrepancy in LOAs with the neighbouring ACCs, preferably in periodical manner and whenever CNS/ATM improvement made in an effort to sustain the performance-based provision of ATM service.

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**Agenda Item 5: Review of SCSTFRG Task List**

SCSTFRG Terms of Reference and Task List (WP/10)

5.1 ICAO presented WP/10, which contained the SCSTFRG Terms of Reference for review by the meeting and the SCSTFRG Task List for updating (**Appendix D and E**).

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**Agenda Item 6: Decisions/Recommendations to SAIOSEACG**

6.1 None.

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**Agenda Item 7: Any Other Business**

ICAO APAC ATM Safety Culture & Just Culture Survey (IP/03)

7.1 ICAO informed the meeting of the survey on APAC ATM Safety Culture & Just Culture,

which had been conducted to identify areas for improvement in ATM safety management activities based on better understanding on the current status of ATM Safety Culture & Just Culture in the APAC region.

7.2 The meeting was highly encouraged to respond to the online survey as ANSPs at: https://forms.office.com/r/y3t9K8tGsL and as CAAs by sending the paper questionnaire (**Attachment A to the State Letter: AP069-22-RSO ICAO APAC ATM Safety Culture and Just Culture Survey)** to APAC-RSO@icao.int with a copy to sqyang@icao.int.

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**Agenda Item 8: Date and Venue of the Next Meeting**

8.1 The SCSTFRG/11 was tentatively planned in June 2023 at a location to be determined. States/Administration considering hosting the SCSTFRG/11 were invited to contact the Secretariat.

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**Closing of the Meeting**

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

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# THE LIST OF WORKING AND INFORMATION PAPERS

## WORKING PAPERS

| Number | Agenda | WORKING PAPERS | Presented By |
|---|---|---|---|
| WP01 | 1 | Provisional Agenda | Chair |
| WP02 | 2 | Review of Regional ATM Requirements in ICAO APAC e-ANP and Seamless ANS Plan | Secretariat |
| WP03 | 2 | Implementation of 30 NM Spacing (or Closer to 5 NM Surveillance-Based Spacing) between Indonesia and the neighboring FIR Boundaries | Indonesia |
| WP04 | 3 | Progress Review of SCSTFRG Priority Areas | Secretariat |
| WP05 | 3 | Optimization of Air Traffic Operations on ATS Route L644 | Indonesia |
| WP06 | 4 | Review of the existing FLAS/FLOS in South China Sea Airspace | Secretariat |
| WP07 | 4 | Analysis of Flight Level Usage of ATS Route M772 | Indonesia |
| WP08 | 4 | FLAS Restrictions on P629 | IATA |
| WP09 | 4 | Review of Malaysia FLAS and FLOS | Malaysia |
| WP10 | 5 | SCSTFRG Terms of Reference and Task List | Secretariat |

## INFORMATION PAPERS

| Number | Agenda | INFORMATION PAPERS | Presented By |
|---|---|---|---|
| IP01 | 1 | Provisional List of Working and Information Papers | Secretariat |
| IP02 | 2 | Training for the New Kuala Lumpur Airspace and New CNS/ATM Complex | Malaysia |
| IP03 | 7 | ICAO APAC ATM Safety Culture & Just Culture Survey | Secretariat |

## FLIMSIES

| Number | Agenda | FLIMSIES | Presented By |
|---|---|---|---|
| Flimsy01 | 2 | Progress of Airspace Capacity Enhancement in Manila FIR | Philippines |

## PRESENTATIONS

| Number | Agenda | PRESENTATIONS | Presented By |
|---|---|---|---|
| PR01 | | | |

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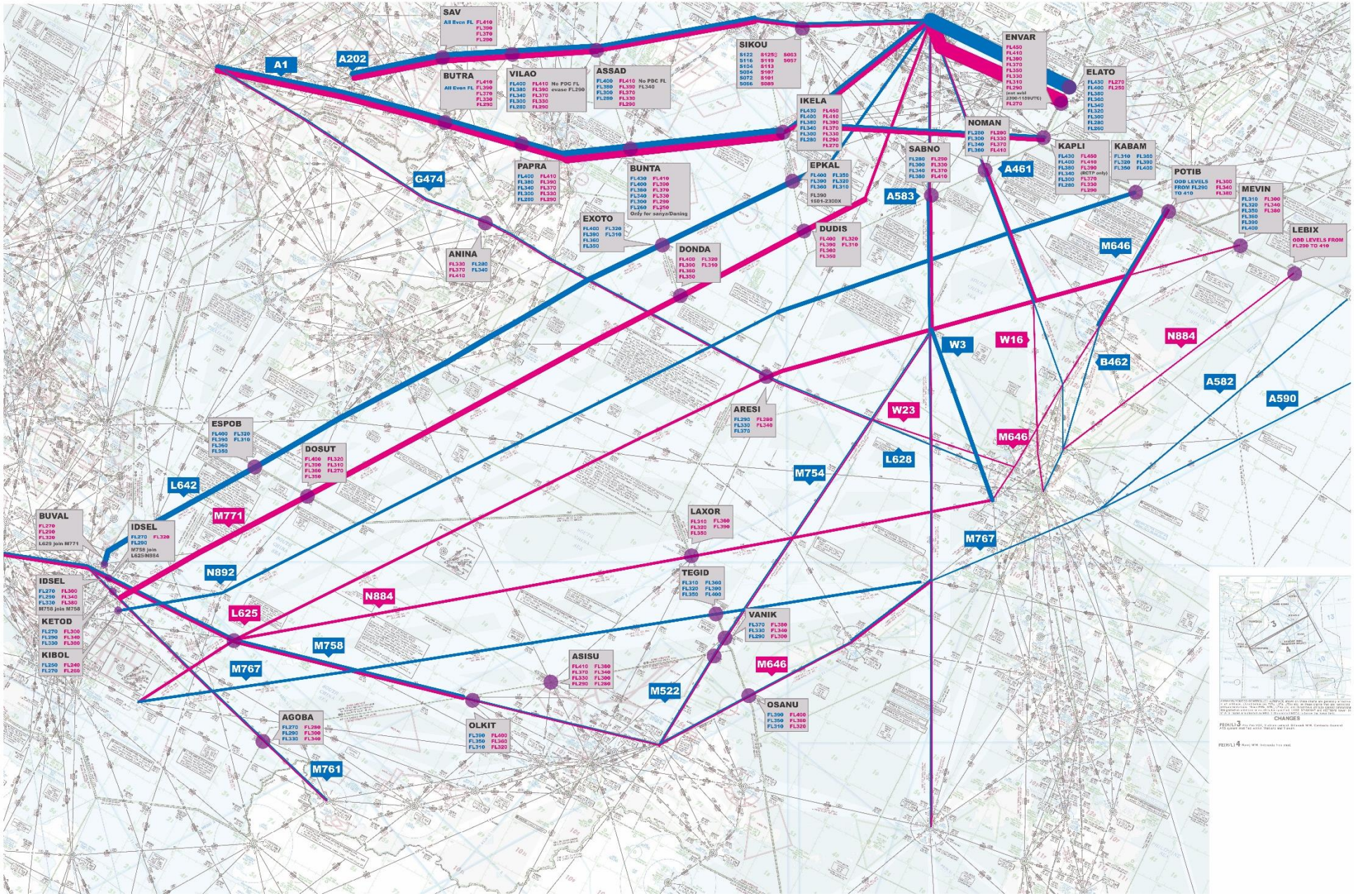
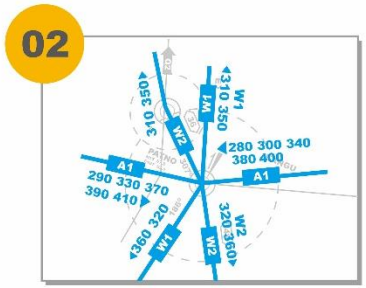
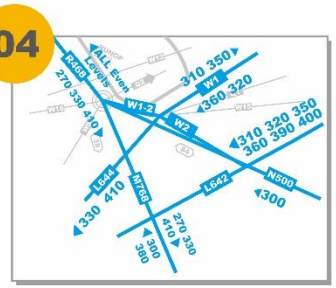
# South China Sea FLAS/FLOS Chart

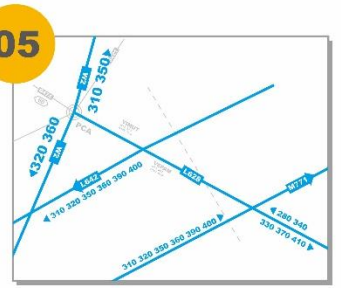


# South China Sea FLAS/FLOS Chart with details

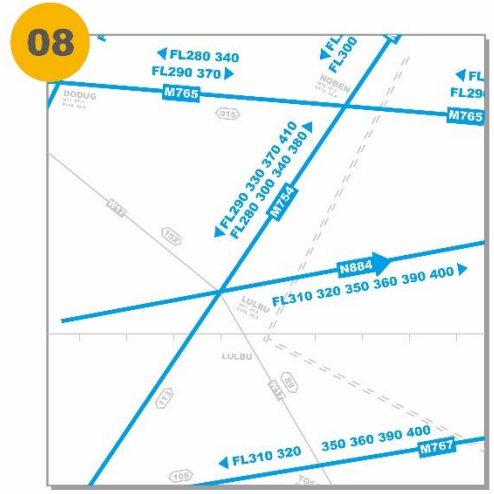



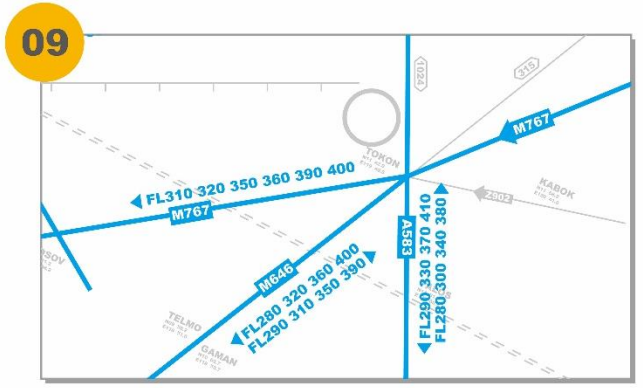


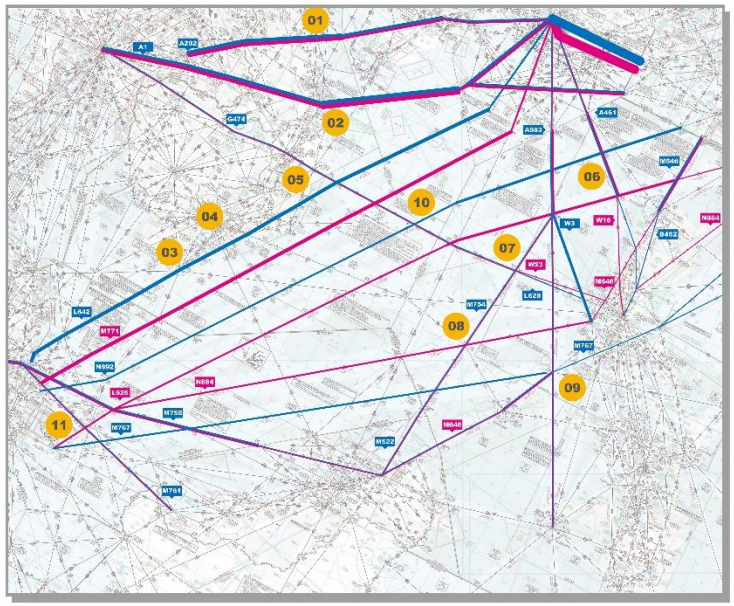


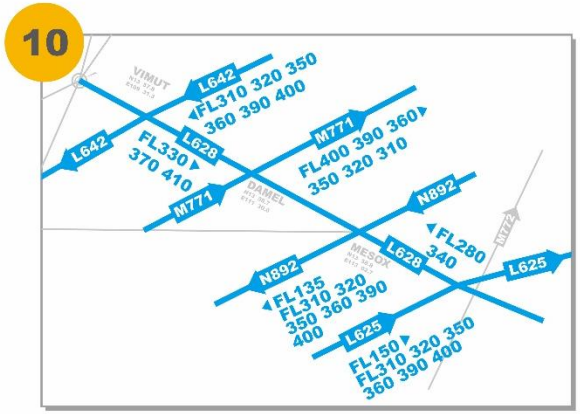



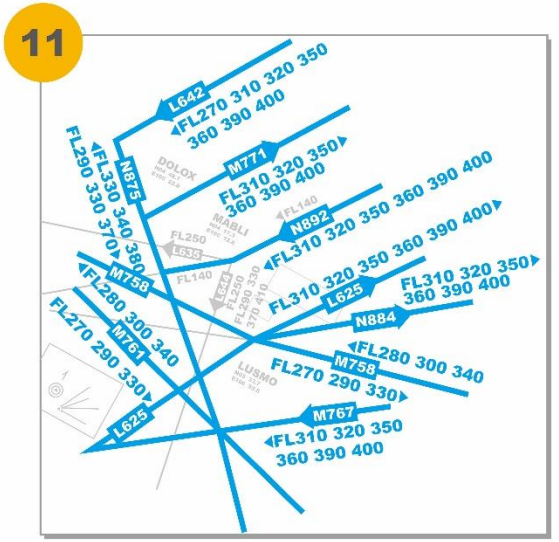


## Person of Contact (POC) of the South China Sea FLAS/FLOS Review

Updated in 2017 except for grey shaded

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| 9 | | | | |

**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 (SAIOSEACG).

## 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.*

# SCSTFRG TASK LIST

***(Last updated SCSTFRG/10)***

| 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.<br>SCSTFRG/9 Report re: WP/03. |
| | b) Parallel routes | ~~SCSTFRG/10~~ SCSTFRG/11 | 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.<br>SCSTFRG/8 – Further discussion on this matter was planned during the upcoming MK-ATM/CG/8, to be hosted by Viet Nam.<br>SCSTFRG/9 Report re: WP/03.<br>SCSTFRG/10 Report re: WP/04. |
| | c) Coordination on the operation near FIR boundary | SCSTFRG/10 | China, Hong Kong China, Viet Nam | ~~Open~~ 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:<br>• the need for traffic overflying Hong Kong FIR to Da Nang International Airport, to be transferred to Sanya ACC at FL320 or below;<br>• Hong Kong China and Viet Nam to consider establishing en-route holding areas 20 NM away from the FIR boundaries; and<br>• updating of LOAs.<br><br>At the SCSTFRG/10 – HK China proposed it to be closed |
| | d) Direct communication link between Da Nang APP and Sanya ACC | ~~SCSTFRG/10~~ SCSTFRG/11 | 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. |

| ACTION ITEM | DESCRIPTION | TIME FRAME | RESPONSIBE PARTY | STATUS | REMARKS |
|---|---|---|---|---|---|
| | | | | | 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 |
| | e) AIDC between Sanya ACC, Ho Chi Minh ACC, Ha Noi ACC | ~~SCSTFRG/10~~ SCSTFRG/11 | 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.<br>SCSTFRG/10 – China would like to facilitate the AIDS with Viet Nam ASAP. VATM POC was provide during the meeting. |
| | f) Modelling and simulation of A1 parallel routes | ~~SCSTFRG/10~~ SCSTFRG/11 | Viet Nam | Open | SCSTFRG/9 Report re: WP/03. Viet Nam to confirm if they require assistance in conducting the simulation.<br>SCSTFRG/10 Report re: WP/04 Viet Nam to continue assessment and study on the proposal. |
| 2/4 | Enhancement of longitudinal spacing on ATS route M758 and M761 | ~~SCSTFRG/10~~ SCSTFRG/11 | 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.<br>SCSTFRG/9 – Discussion between Indonesia, Malaysia and Singapore was expected when COVID-19 situation improved and face-to-face meeting become possible.<br>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.<br>M758 (Cat R/S airspace to Cat R FIR TOC point)<br>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<br>Viet Nam's feedback:<br>Currently, Viet Nam is studying to establish 02 new PBN routes as follow:<br>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).<br>Viet Nam will conduct internal cooperation with relevant authority of Viet Nam and discuss with Thailand, Cambodia and Malaysia as well. | ~~SCSTFRG/10~~<br>SCSTFRG/11 | **Malaysia,**<br>Singapore,<br>Viet Nam | Open | SCSTFRG/8 – Refer Side Meeting summary.<br>SCSTFRG/9 Report re: IP/05.<br><br>Proposed Tri-lateral meeting: July 26, 27 or 28, 2022<br>Confirmation by Viet Nam: By the end of June 2022 |
| 7/4 | Optimising routing into China to allow more options for aircraft going beyond Pearl River Delta | ~~SCSTFRG/10~~<br>SCSTFRG/11 | 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.<br>SCSTFRG/9 – Current route proposals related to this Action Item are SCS 18, SEA 12, and VIET NAM 02.<br><br>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<br>Viet Nam's feedback:<br>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/10~~<br>SCSTFRG/11 | China, **Hong Kong China**, 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.<br>SCSTFRG/9 Report re: WP/02.<br>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) |
| 3/5 | Review of FLAS/FLOS operating within the South China Sea airspace:<br>a) study and review the current SCS FLAS/FLOS operation with all neighboring FIRs with a view to enhancing efficiencies;<br>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<br>c) report the review result including the possible improvement proposals to the SCSTFRG/11 meeting. | ~~SCSTFRG/10~~<br>SCSTFRG/11 | 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.<br>SCSTFRG/9 Report re: WP/03. Discussion on Priority Area 4 would begin at SCSTFRG/10.<br>SCSTFRG/10 Report re: WP/06 **(Decision SCSTFRG/10-1)** |
| 1/6 | FL390 that is currently a FLAS level on ATS route A1 to be assigned to ATS route Q1/Q2 | ~~SCSTFRG/10~~<br>SCSTFRG/11 | China, Hong Kong China, Thailand, **Viet Nam** | Open | SCSTFRG/5 – WP02 conclusion.<br>SCSTFRG/6 – Should take place simultaneously with the implementation of reduce longitudinal spacing from 30 NM to 20 NM on A1.<br>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. |

| ACTION ITEM | DESCRIPTION | TIME FRAME | RESPONSIBE PARTY | STATUS | REMARKS |
|---|---|---|---|---|---|
| 2/6 | Enhancement of longitudinal spacing on ATS route M768 to 50 NM | ~~SCSTFRG/10~~ SCSTFRG/11 | 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.<br>SCSTFRG/8 – Refer Side Meeting summary.<br>SCSTFRG/9 Report re: WP/04.<br>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. |
| 8/2 | Enhancement of longitudinal spacing on ATS route L625 and N892 to 50 NM | ~~SCSTFRG/10~~ SCSTFRG/11 | China, Singapore, Philippines, Viet Nam | Open | SCSTFRG/8 Report FL/02.<br>SCSTFRG/9 Report re: IP/02.<br>Expected to be implemented in Q4 2021 (coordi and agreement with HoCHi Minh and Taibei ACCs)<br>Seek info from Philippines<br>SCSTFRG/10 Flimsy01 – update from Philippines<br>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:<br>Operation of the new sector -- Q4 2022<br>Collaboration for optimization -- Q1 2023<br>Proposed Implementation -- Q2 2023 |
| 8/3 | Implementation of RNP 4 specification and 30 NM longitudinal spacing on ATS route M767 and N884 | SCSTFRG/10 | Philippines, Singapore | ~~Open~~ Completed | SCSTFRG/8 Report FL/02.<br>Manila and Singapore ACCs currently applied 50 NM longitudinal spacing on these routes.<br>SCSTFRG/9 Report re: IP/02.<br>SAIOSEACG/1 IP06 on RNP4 with 30NM spacing as of on 21 Apr 2022 |

| ACTION ITEM | DESCRIPTION | TIME FRAME | RESPONSIBE PARTY | STATUS | REMARKS |
|---|---|---|---|---|---|
| 9/1 | States that were planning to implement performance-based separation minima in the high seas airspace within their FIRs, or had already done so without the necessary Doc 7030 – *Regional Supplementary Procedures* support, were requested to notify the ICAO Asia and Pacific Regional Office, through official letter, so that a coordinated Proposal for Amendment (PfA) may be prepared | FIT-Asia/11 | Indonesia, Philippines, Singapore | ~~Open~~ Completed | SCSTFRG/9 Report re: IP/02.<br><br>Indonesia, Philippines, Singapore and Sri Lanka PfAs drafted : FIT-Asia/11 Report |
| 9/2 | Removal of flight planning restrictions on ATS route L644 | ~~SCSTFRG/10~~ SCSTFRG/11 | Indonesia, **Singapore**, Viet Nam | Open | SCSTFRG/9 Report re: WP/05.<br>SCSTFRG/10 Report re: WP/05 – Indonesia accepted the proposal<br><br>SCSTFRG/10 – Singapore commented this item is included in the bi-lateral meeting with Viet Nam at the end of June 2022. |
| 9/3 | ~~Enhancement of longitudinal spacing on ATS routes M772, M904, N875, N891 and P648 to 50 NM~~ | ~~SCSTFRG/10~~ | ~~Hong Kong China, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam,~~ | ~~Open~~ Revised | ~~SCSTFRG/9 Report re: WP/06.~~ |
| | a) Enhancement of longitudinal spacing on ATS route M875, M904 and N891 to 50NM | SCSTFRG/11 | Malaysia, Indonesia, Singapore, Thailand, Viet Nam | Open | SCSTFRG/9 Report re: WP/06.<br>Currently 10 min at the TOC points |
| | b) Enhancement of longitudinal spacing on ATS route M772 to 50NM | SCSTFRG/11 | Hong Kong China, Malaysia, Indonesia, Philippines, Singapore | Open | SCSTFRG/9 Report re: WP/06.<br>SCSTFRG/10 HK China no objection, Singapore supports, Philippines would consider at a later stage |

| ACTION ITEM | DESCRIPTION | TIME FRAME | RESPONSIBE PARTY | STATUS | REMARKS |
|---|---|---|---|---|---|
| | c) Enhancement of longitudinal spacing on ATS route P648 to 50NM | SCSTFRG/11 | 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 ~~A461 and~~ A583 to 30 NM | ~~SCSTFRG/10~~ SCSTFRG/11 | 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 |
| 10/1 | 30 NM longitudinal spacing between Indonesia and its neighbouring FIRs | SCSTFRG/11 | Indonesia, Malaysia, Philippines, Singapore | Open | SCSTFRG/10 Report re: WP03 (ref: side meeting discussion) |
| 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 and Taibei: 30NM longitudinal spacing only to aircraft pairs destined for either Manila FIR or Taipei FIR. | SCSTFRG/11 | Philippines, Taibei ACC | Open | SCSTFRG/9 Report re: IP/02. SCSTFRG/10 Flimsy01 |