



ICAO

International Civil Aviation Organization

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

Bangkok, Thailand, 18 – 21 March 2025

Agenda Item 2: Review Outcomes of Related Meetings

SOUTH CHINA SEA TRAFFIC FLOW REVIEW GROUP MEETING OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the key outcomes of the twelfth meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/12) for the review and action by SAIOSEACG.

1. INTRODUCTION

1.1 The South China Sea Traffic Flow Review Group (SCSTFRG) was established by SEACG to analyse the traffic flow 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 optimize airspace capacity and enhance flight safety in the long term.

2.1 The Twelfth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/12) was held at Bangkok Thailand, from 11 to 13 November 2024. 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. The relevant presentations and papers are available at [icao.int/APAC/Meetings/Pages/2024-SCSTFRG-12.aspx](https://www.icao.int/APAC/Meetings/Pages/2024-SCSTFRG-12.aspx)

2. DISCUSSION

List of Decisions and Draft Conclusions/Decisions

2.1 As a result of the discussion, the SCSTFRG/12 agreed and submitted ***Draft Decision SCSTFRG/12-1: Modifications on SCS Priority Areas.***

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

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

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

- a) **Priority Area 1: A1/A202** to reduce longitudinal spacing to at least 20 NM with planning for 10 NM and to develop a parallel route to A1.
- b) **Priority Area 2: L642/M771** to reduce longitudinal spacing to at least 20 NM with planning for 10 NM and to explore the possibility of implementing parallel routes for L642 and M771 afterwards.
- c) **Priority Area 3: A461/A583/L625/N892** to reduce longitudinal spacing to 30 NM at least 50 NM with planning for 30 NM or less.
- d) **Priority Area 4: Review of existing Flight Level Allocation Scheme (FLAS)/ Flight Level Orientation Scheme (FLOS) operating within the South China Sea (SCS).**

2.3 The meeting is invited to note the *Decision submitted by SCSTFRG/12*.

Review of the Existing Traffic Flow Route Structures in SCS Airspace

2.4 The Monitoring Agency for Asia Region updated visualisation of traffic flow over South China Sea airspace and the number of flights on routes A202, A1, L642, M771, N892, L625, M646, A583, A461, N884, A582, M767 and M758, based on Traffic Sample Data (TSD) from 2018 to 2023. The visualisation and the number of flights aim to assist the SCSTFRG in reviewing the route structure and traffic flow in this airspace.

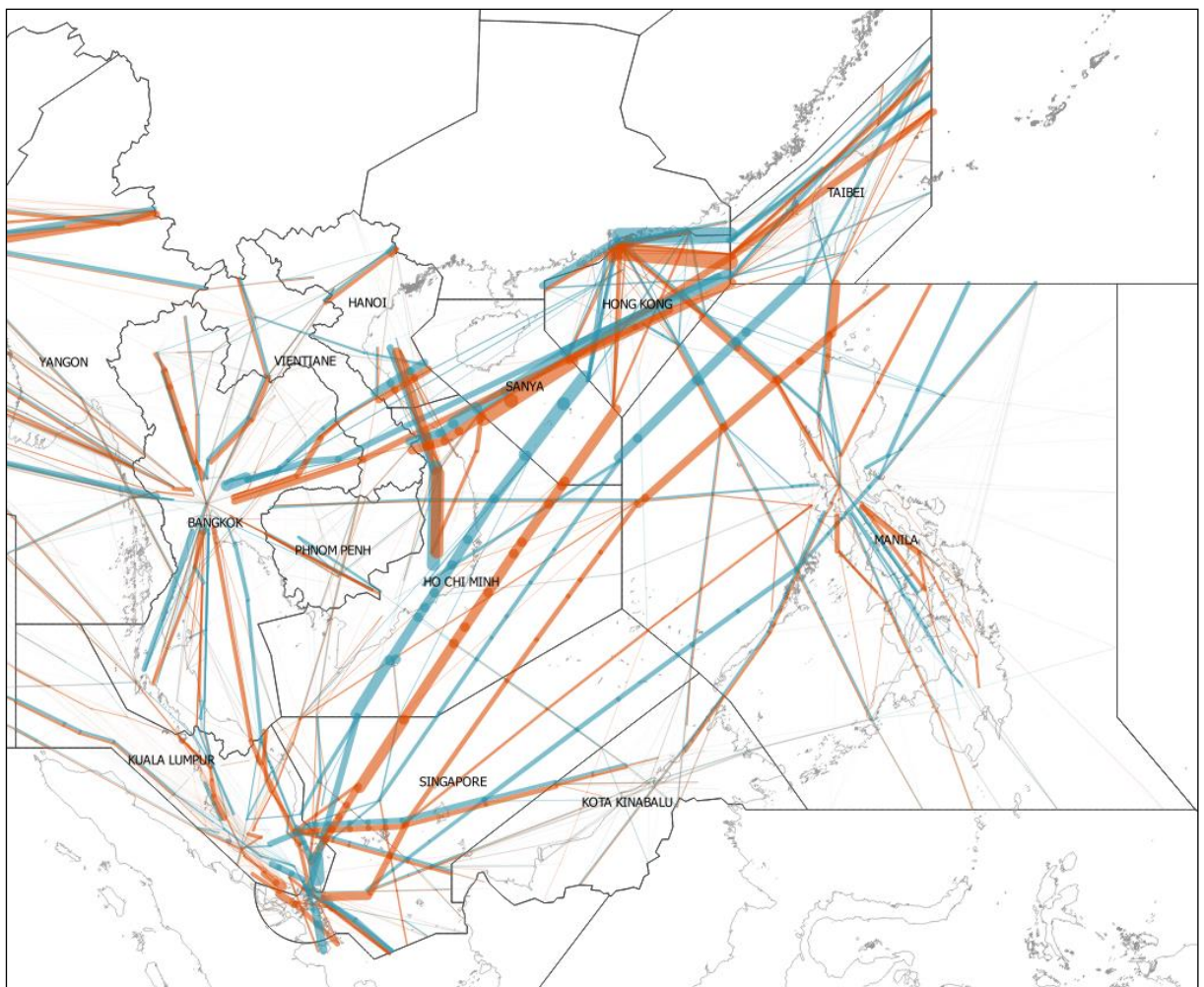


Figure 1: 2023 Traffic Flow from TSD in South China Sea Airspace

SCSTFRG Priority Areas

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

Priority Area 1: A1/A202

2.6 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.

- 20 NM longitudinal spacing has been implemented on ATS route A1 since 2020. *To be in line with ICAO Project 30/10, the relevant States should consider further reducing the separation to 10 NM.*
- More details were provided in **Attachment A** and **Attachment B**.

2.7 The development of a parallel route to A1 was stuck by the discussion on the direction of the routes. A timeline for the development of a parallel route to A1 was given in **Attachment C**. This topic will be further discussed in the WP16 & WP18 of this meeting.

Priority Area 2: L642/M771

2.8 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.

- 20 NM separation has already been implemented on L642 and M771 between Singapore and the Ho Chi Minh FIR boundary.
- As Hong Kong, China reported to the ATM/SG/12 (Bangkok Thailand, 23-27 September 2024), The agreement during SAIOSEACG/3 stipulated that 20NM minimum longitudinal spacing would be applied on L642 and M771 from 0200 to 1200 UTC daily during the trial period.
- The group agreed that the discussion on the proposed implementation of parallel routes to L642 and M771 will be deferred, pending the results of the enhancement of longitudinal spacing.
- More details were provided in **Attachment D**.

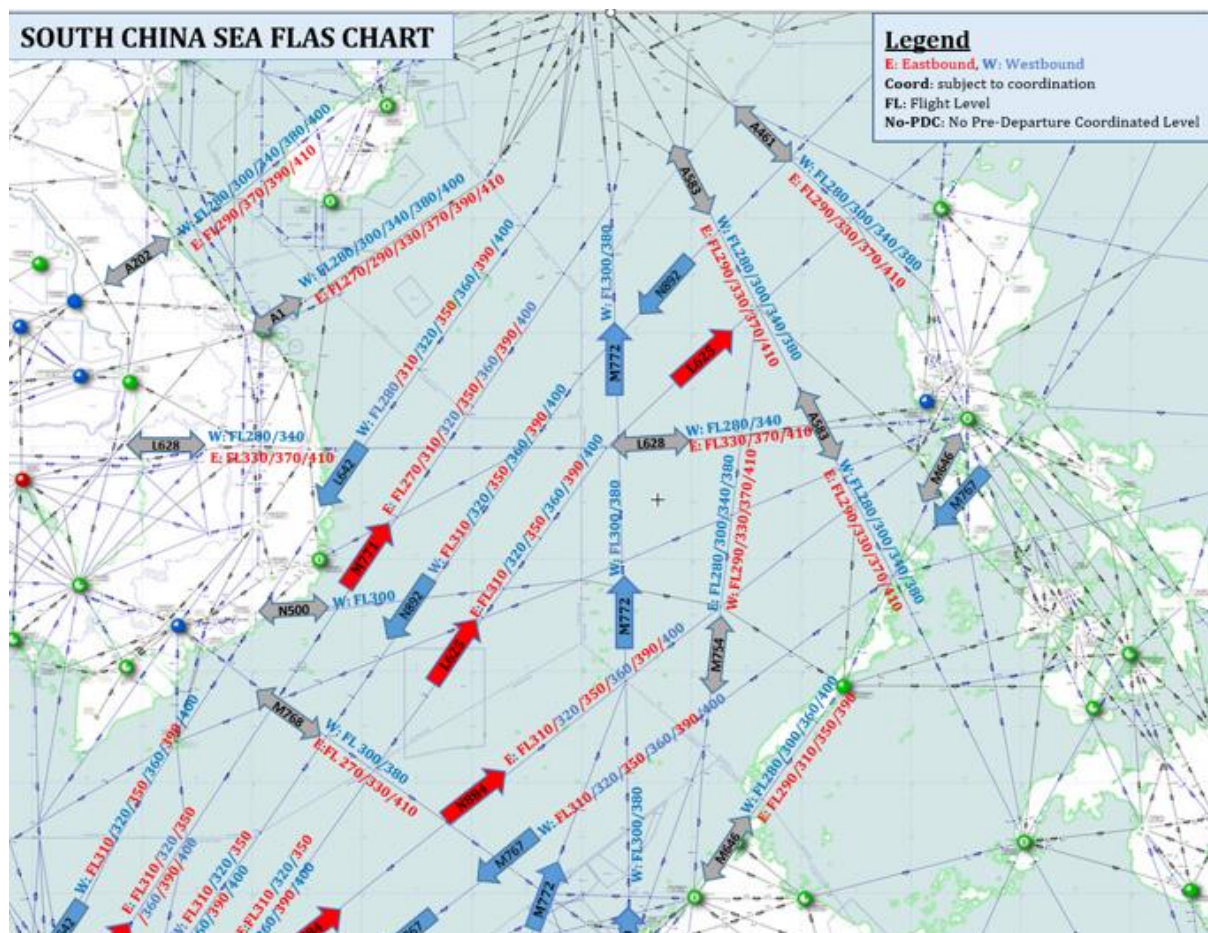
Priority Area 3: A461/A583/L625/N892

2.9 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.

- **A461 & M501**: Still in progress; details were provided in **Attachment E**.
- **A583**: Completed. Details were provided in **Attachment F**.
- **N892 & L625**: Still in progress; details were provided in **Attachment G**.

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

2.10 Through the updated data submitted by South China Sea States/Administrations to the SCSTFRG/12 (Bangkok, Thailand, 11 - 12 November 2024), 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**.



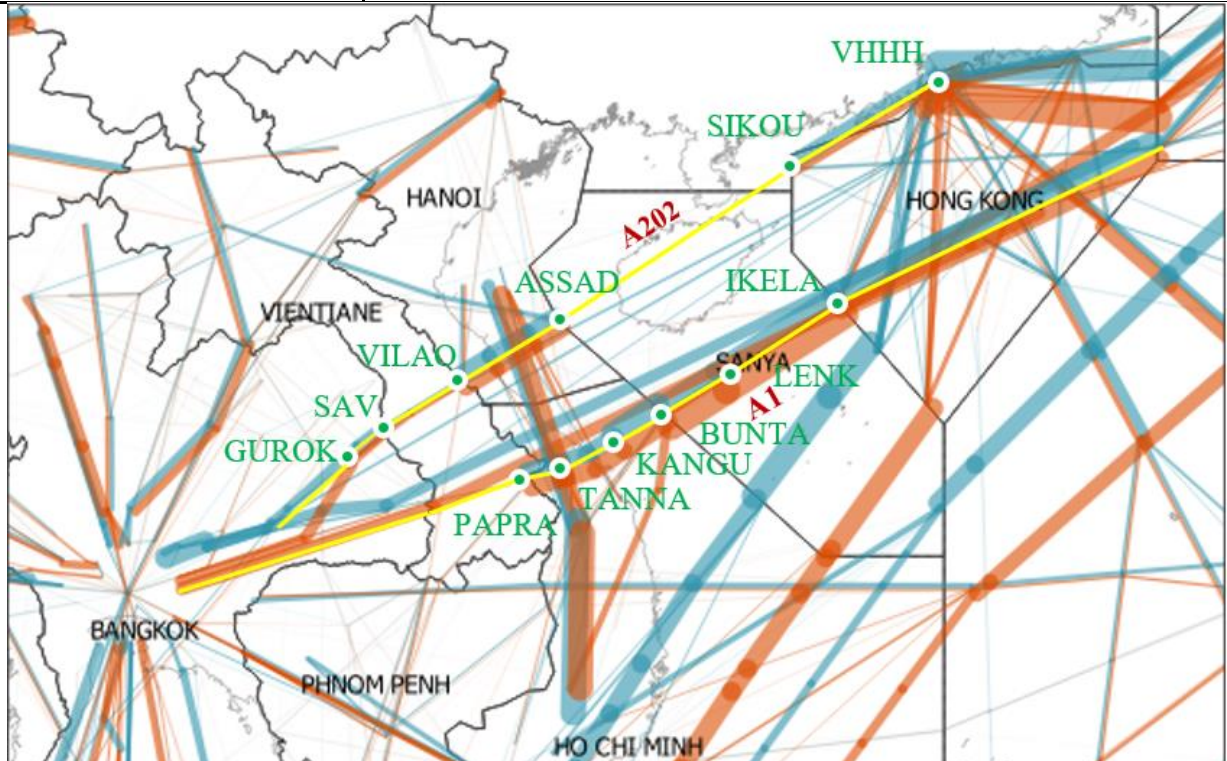
2.15 The ATS Routes listed in the SCSTFRG Task List, such as M761, M758, and M772, were also discussed; more details are provided in **Attachment I**.

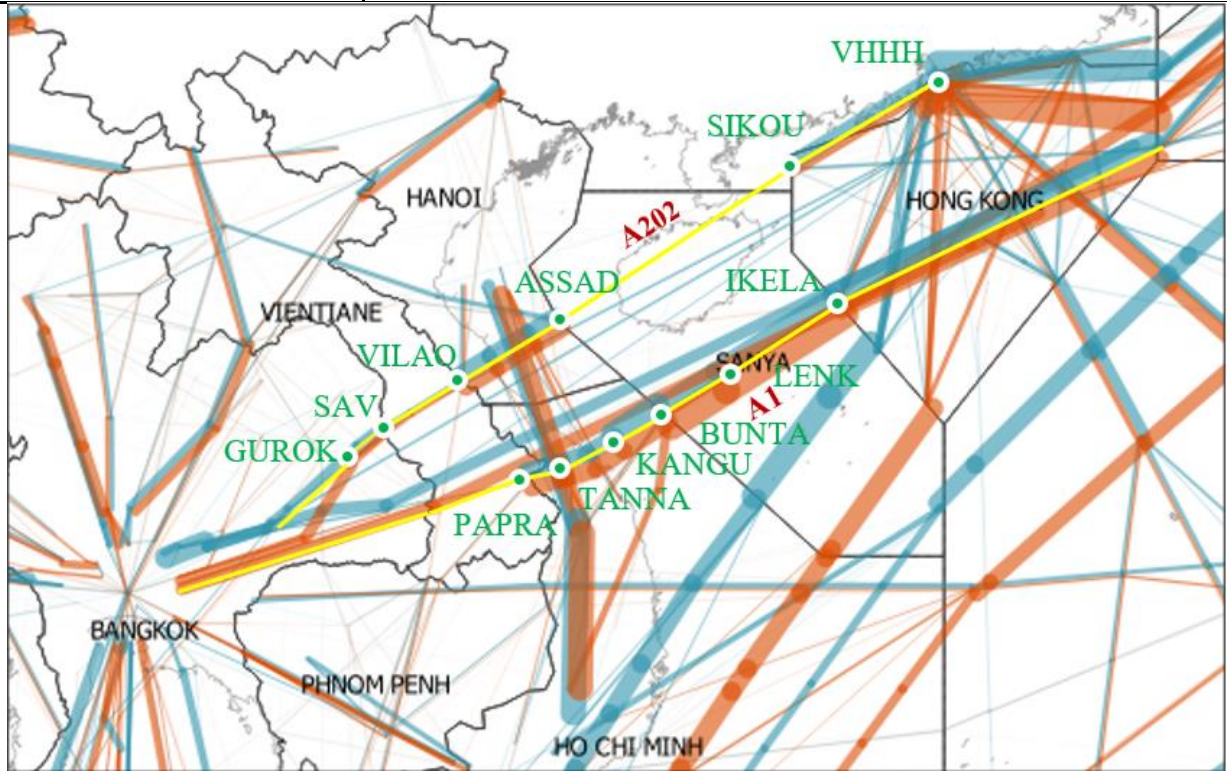
3. ACTION BY THE MEETING

3.1 The meeting is invited to:

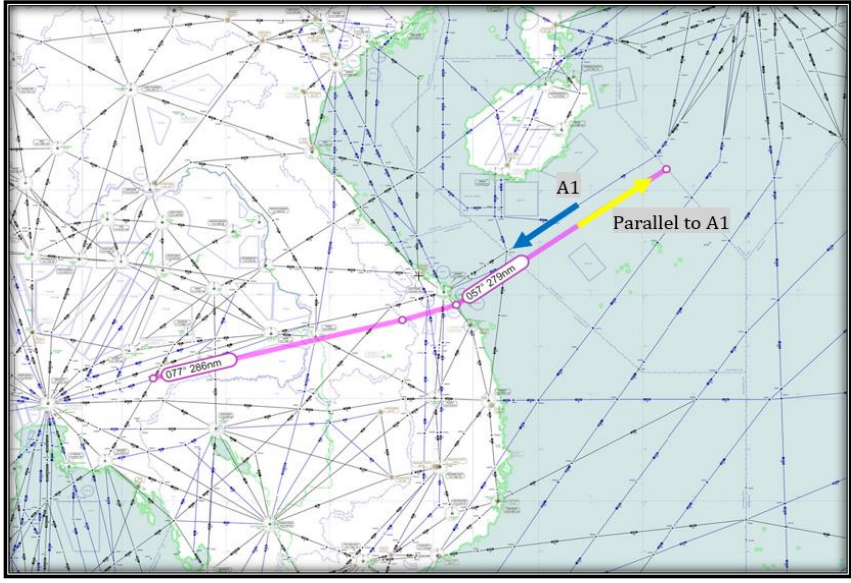
- a) note the information contained in this paper;
- b) note the *Decision SCSTFRG/12-1*;
- c) provide more details in the attachments for the route profiles;
- d) Relevant states to update the meeting with the latest progress on the Priority Areas of the SCSTFRG; and
- e) discuss any relevant matters as appropriate.

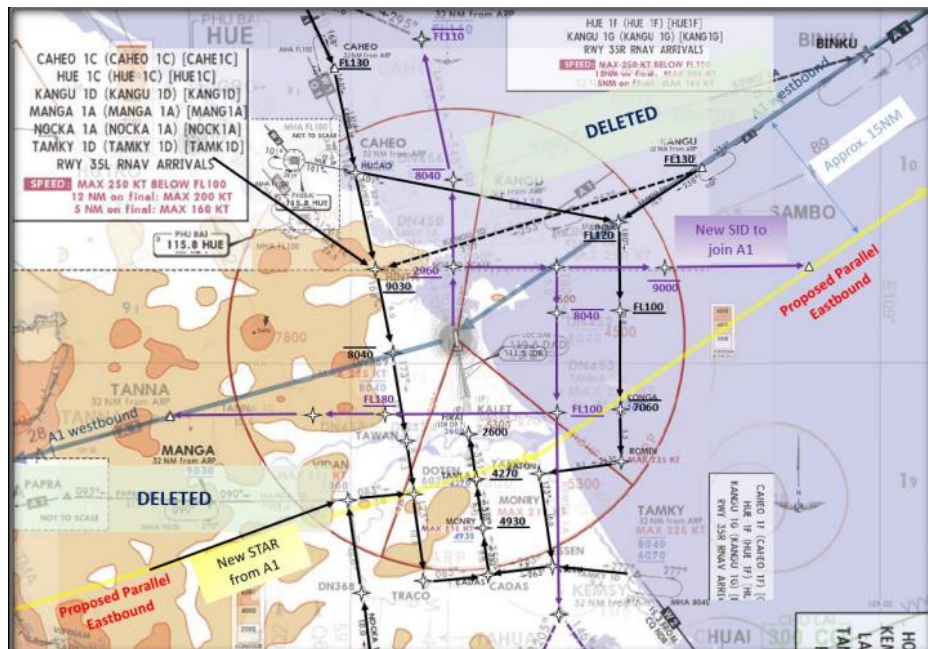
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A1								
AIRSPACE		S	PRIORITY	High	REFERENCE	SCSTFRG Priority Area 1		
RELEVANT FIRs		Hong Kong		Sanya	Ho Chi Minh	Vientiane Bangkok		
SEPARATION	USING	20NM		20NM	20NM	20NM		
	TARGET	10NM (Surveillance Based)						
PROGRESS TRACKING	2016	SCSTFRG agreed upon the Priority						
	2020	20 NM separation has already been implemented						
	2024	With a plan to reduce it to 10 NM.						
FLAS	Westbound	FL280/300/340/380/400						
	Easstbound	FL270/290/330/370/390/410						
IATA'S REMARK								
								
Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023
A1	PAPRA to TANNA	Eastbound	6675	4176	734	945	2078	2993
A1	KANGU to BUNTA	Eastbound	6705	4190	734	945	2075	2940
A1	LENKO to IKELA	Eastbound	9505	4833	1367	1602	3244	4550
A1	IKELA to LENKO	Westbound	8681	3448	1007	1088	2038	2943
A1	BANTA to KANGU	Westbound	7204	3758	849	964	2179	3796
A1	TANNA to PAPRA	Westbound	7198	3744	849	963	2157	2844

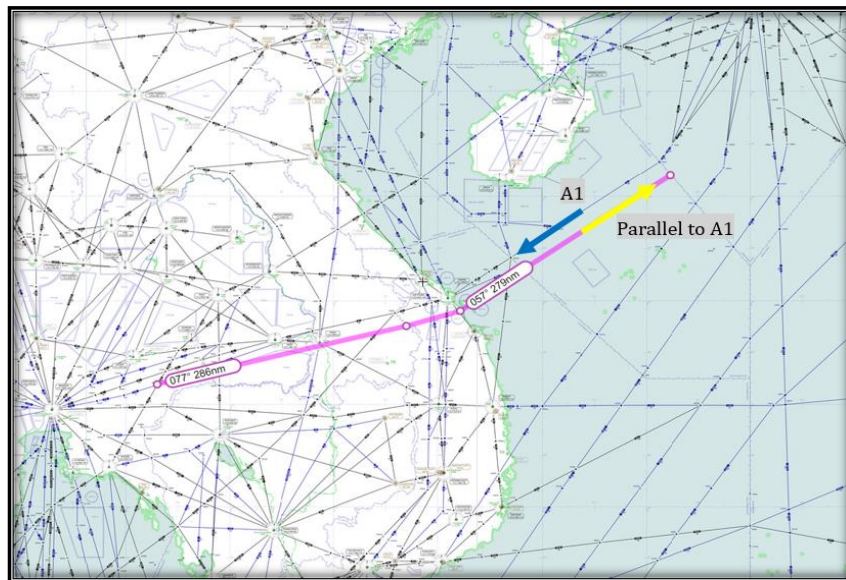
A202								
AIRSPACE		S	PRIORITY	High	REFERENCE	SCSTFRG Priority Area 1		
RELEVANT FIRs		Guangzhou		Sanya	Ha Noi	Vientiane	Bangkok	
SEPARATION	USING	20NM		20NM	20NM	20NM		
	TARGET	10NM (Surveillance Based)						
PROGRESS TRACKING	2016	SCSTFRG agreed upon the Priority						
	2020	20 NM separation has already been implemented						
	2024	With a plan to reduce it to 10 NM.						
FLAS	Westbound	FL280/300/340/380/400						
	Easstbound	FL290/370/390/410						
IATA'S REMARK								
								
Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023
A202	GUROK to SAV	Eastbound	5689	2453	282	531	226	1414
A202	VILAO to ASSAD	Eastbound	7143	3414	496	678	764	2499
A202	SIKOU to VHHH	Eastbound	3466	1435	431	492	649	1190
A202	VHHH to SIKOU	Westbound	4639	1942	1040	3	1443	2339
A202	ASSAD to VILAO	Westbound	6573	3371	527	688	893	2645
A202	SAV to GUROK	Westbound	6132	2887	410	681	148	1411

TIMELINE FOR THE DEVELOPMENT OF A PARALLEL ROUTE TO A1

<p>September 2019 (SCSTFRG/8, Bangkok, Thailand).</p>	<p>Stakeholders 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. Figure X 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. Viet Nam's preference was for the reverse orientation, which could be more suitable for Da Nang International Airport operations.</p> 
<p>December 2019 (MK-ATM/CG/8, Da Lat, Viet Nam).</p>	<p>Viet Nam commented that the proposed traffic flow orientation (Figure above) 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.</p>
<p>January 2020</p>	<p>ICAO conducted a preliminary assessment (supported by Singapore through the Air Traffic Management Research Institute (ATMRI)) on Da Nang International Airport SID and STAR procedures for Runway 35. According to the assessment, minimal changes are required to support the implementation of these parallel uni-directional routes.</p>



Viet Nam has provided feedback on the assessment of the proposed parallel uni-directional routes provided below, reaffirmed the previous comments and preferred the reverse orientation on the proposed parallel routes.



July 2023
(SCSTFRG/11,
Bangkok,
Thailand).

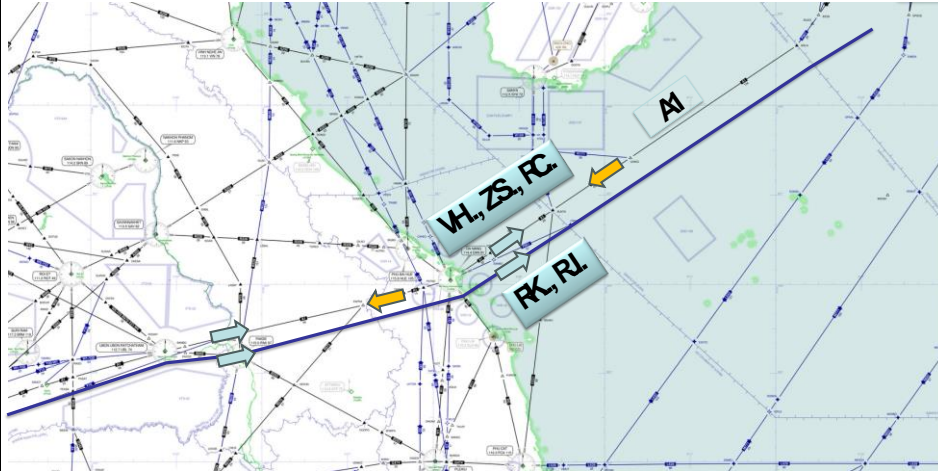
China suggested a South-westbound parallel uni-directional route in Sanya FIR IGLEG-SYT13-BUNTA, and the suggested North-eastbound parallel uni-directional route in Sanya FIR was ITBAM-IKELA. The conventional ATS route A1 will be replaced by the new parallel uni-directional routes as designed. China recommended RNAV2 navigation specification on this proposed parallel route.

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.

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.



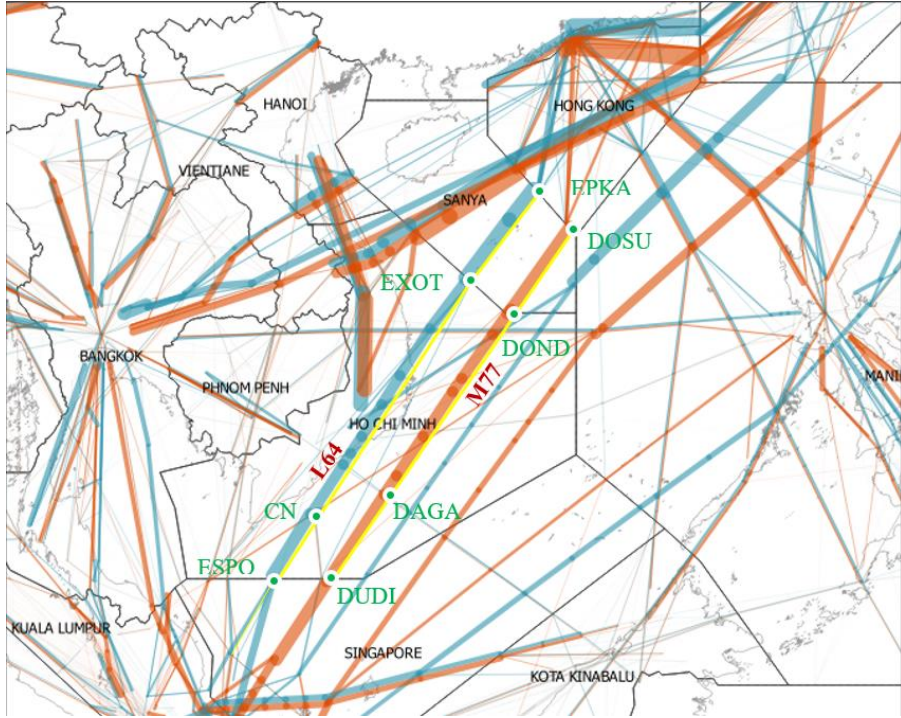
Thailand propose the following alternate route direction usage:

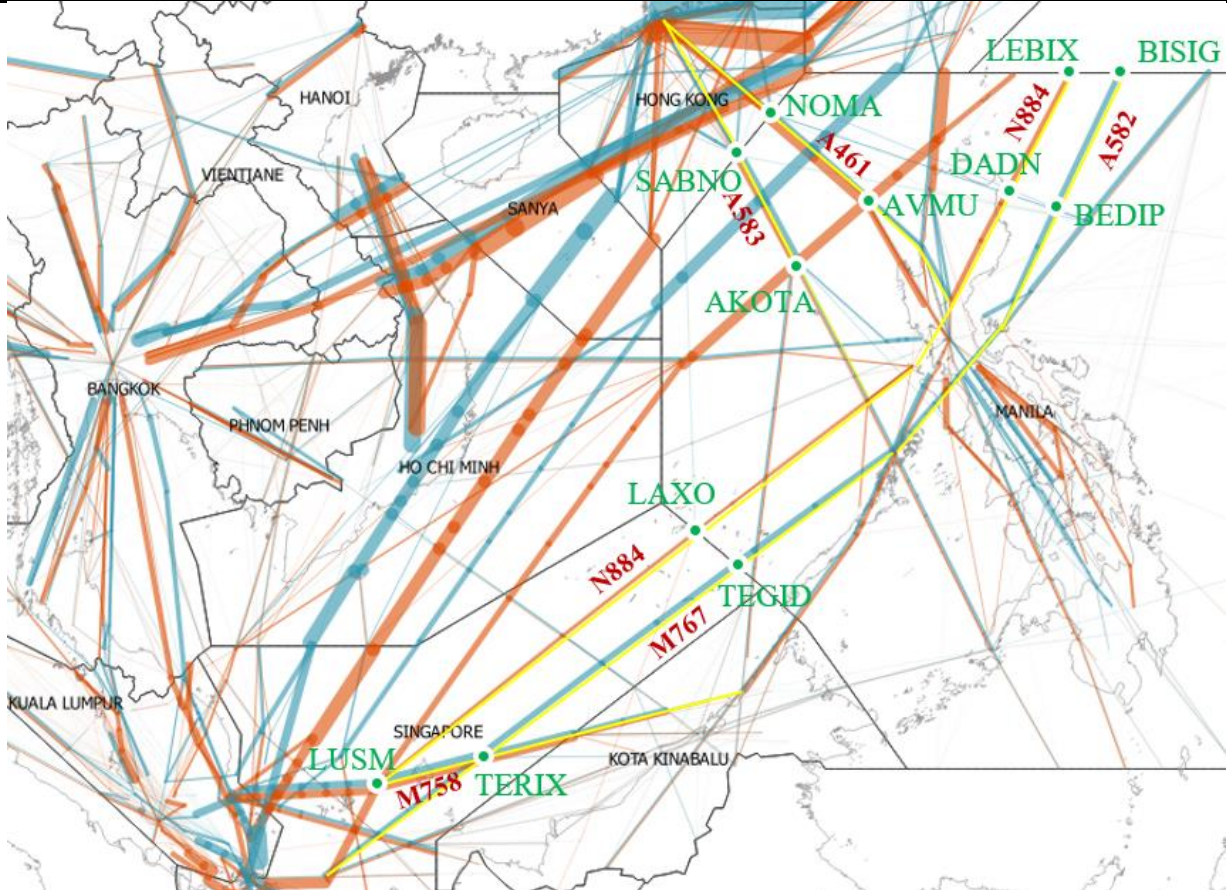


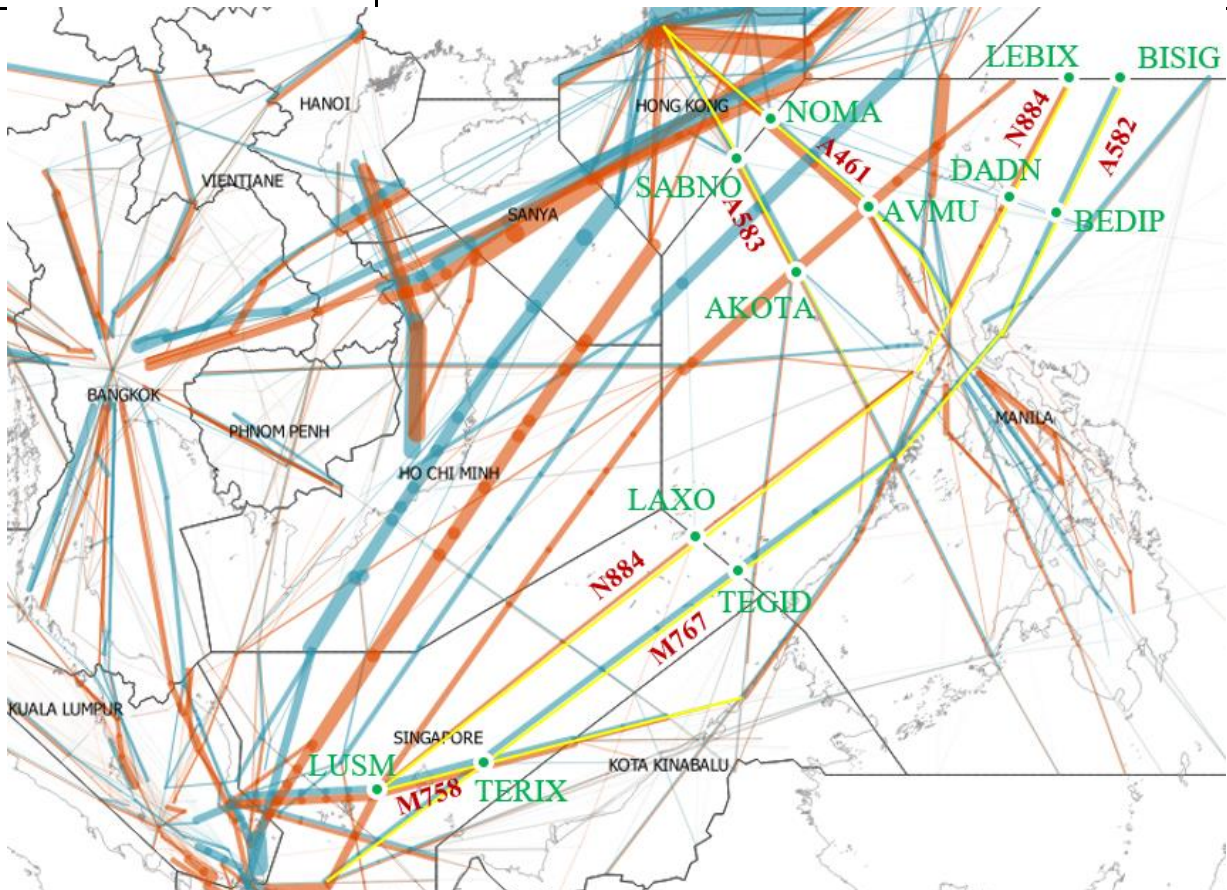
Hong Kong China prefer to retain its previous opinions on the orientation of the proposed parallel routes, which is also supported by China. Thailand emphasised that the original proposal was the optimal choice, but the new proposal was a compromise solution based on the current situation.

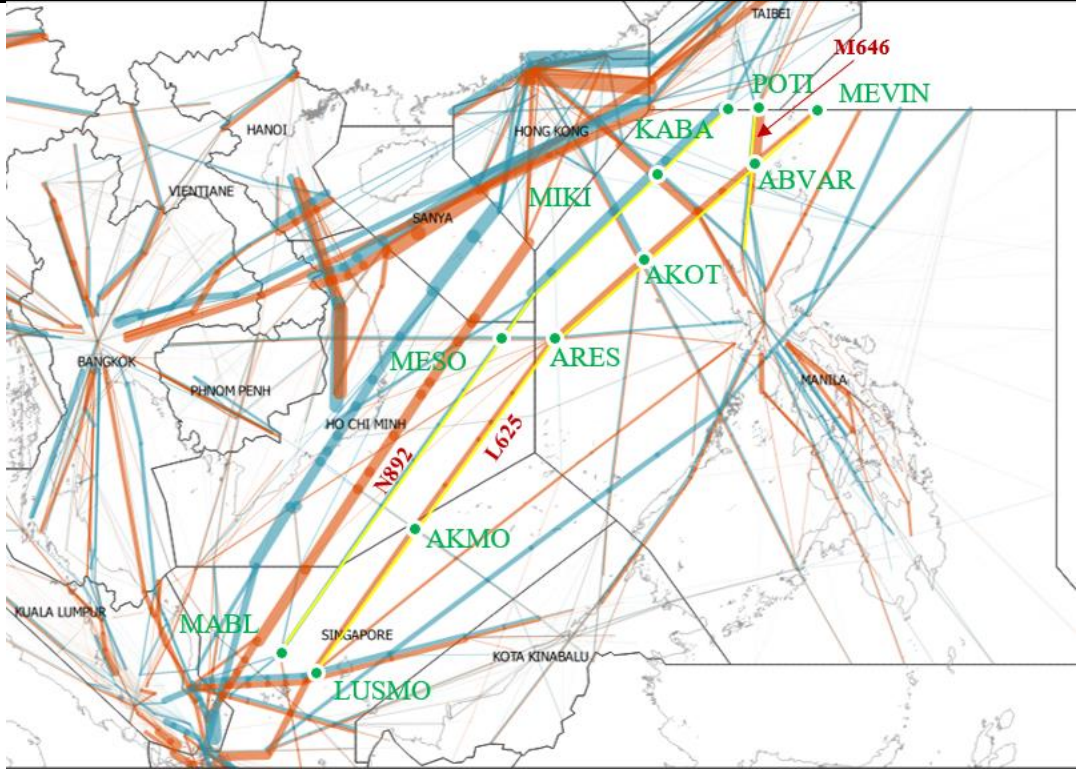
Viet Nam reiterated the impact of the original proposal (seconded by China, Hong Kong China and Thailand) on the traffic patterns of Da Nang airports.

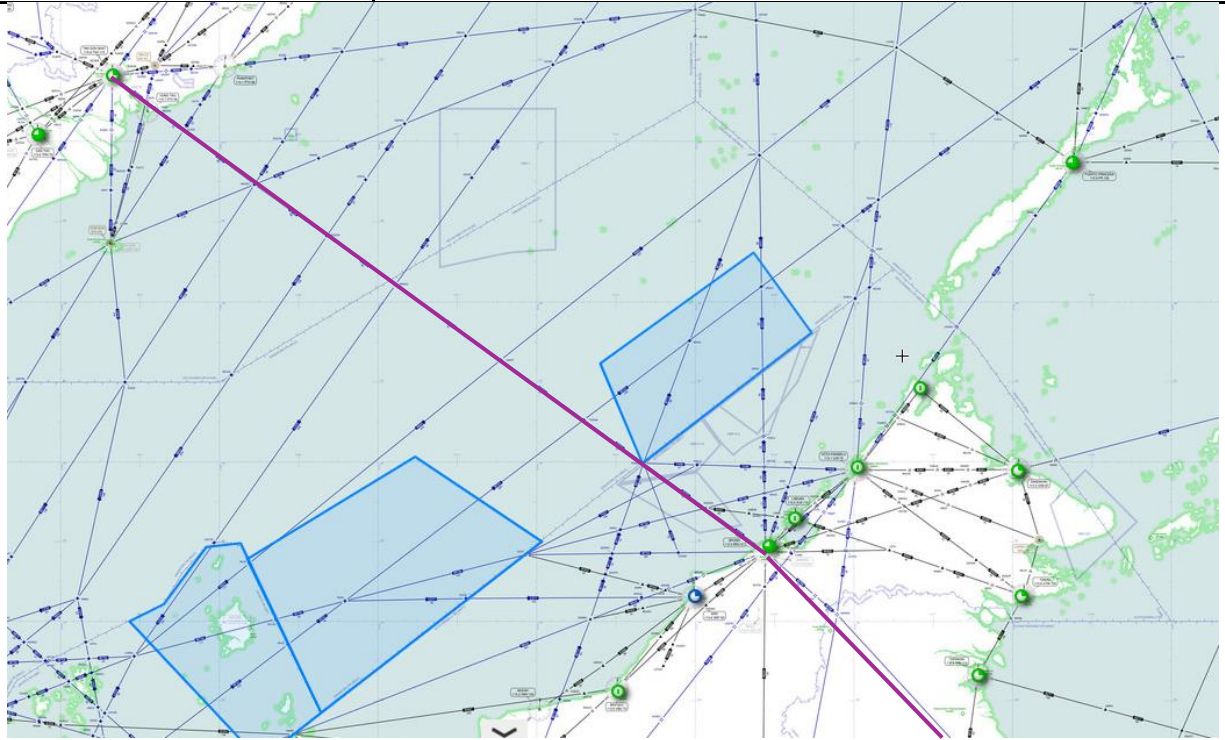
November
2024
(SCSTFRG/12,
Bangkok,
Thailand)

L642/M771								
AIRSPACE	S	PRIORITY	High	REFERENCE	SCSTFRG Priority Area 2			
RELEVANT FIRs	Hong Kong		Sanya		Ho Chi Minh	Singapore		
SEPARATION	USING	50NM (20NM on trial)		50NM	20NM			
	TARGET	20NM (Surveillance Based)						
PROGRESS TRACKING	2016	SCSTFRG agreed upon the Priority						
	2020	20 NM separation has already been implemented between Singapore and the Ho Chi Minh FIR boundary						
	2024	20NM on Trial between Sanya & HK from 0200 to 1200 UTC daily.						
FLAS	L642	Westbound FL280/310/320/350/360/390/400						
	M771	Easstbound FL270/310/320/350/360/390/400						
IATA'S REMARK								
								
Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023
L642	EPKAL to EXOTO	Westbound	7771	3233	1541	1590	1576	4249
L642	CN to ESPOB	Westbound	7438	4146	1267	1384	1786	3510
M771	DUDIS to DAGAC	Eastbound	7224	3517	1199	1262	1295	3179
M771	DONDA to DOSUT	Eastbound	6711	2608	1265	1332	1281	3367

A461								
AIRSPACE		R	PRIORITY	High	REFERENCE		SCSTFRG Priority Area 3	
RELEVANT FIRs		Hong Kong			Manila		Ujung Pandang	
SEPARATION	USING	30 NM (PBCS-Based)						
	TARGET	30 NM (PBCS-Based)						
PROGRESS TRACKING	2016	SCSTFRG agreed upon the Priority						
	2023	Phases 1 and 2, 30NM minimum longitudinal spacing between HK and Manila, were completed. <i>Notes: 30NM spacing applies to traffic pairs with RNP4 capability at FL290 or above when the longitudinal spacing is constant or increasing. If the succeeding aircraft is faster than the preceding aircraft, 50NM/10MIN will be applied, depending on the aircraft's destination aerodromes.</i>						
FLAS	Westbound	FL280/300/340/380						
	Easstbound	FL290/330/370/410						
IATA'S REMARK								
								
Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023
A461	NOMAN to AVMUP	Eastbound	5894	3171	914	946	1413	2362
A461	AVMUP to NOMAN	Westbound	4033	1984	483	440	642	1085

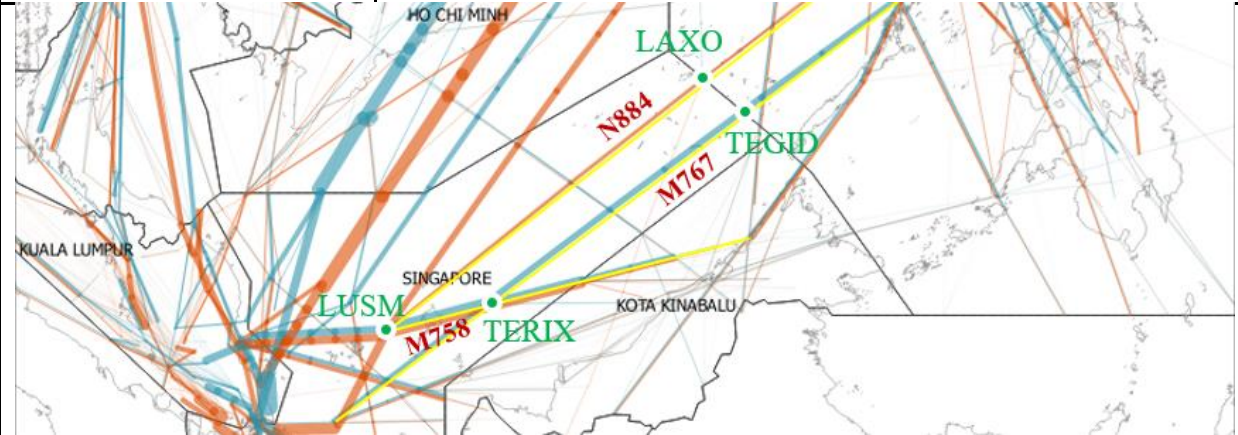
A583								
AIRSPACE		R	PRIORITY	High	REFERENCE	SCSTFRG Priority Area 3		
RELEVANT FIRs		Hong Kong			Manila			
SEPARATION	USING	30 NM (PBCS-Based)						
	TARGET	30 NM (PBCS-Based)						
PROGRESS TRACKING	2016	SCSTFRG agreed upon the Priority						
	2023	Phases 1 and 2, 30NM minimum longitudinal spacing between HK and Manila, were completed.						
	2024	Phases 3, 30NM minimum longitudinal spacing between HK and Manila, were completed. <i>Notes: 30NM spacing applies to traffic pairs with RNP4 capability at FL290 or above when the longitudinal spacing is constant or increasing. If the succeeding aircraft is faster than the preceding aircraft, 50NM/10MIN will be applied, depending on the aircraft's destination aerodromes.</i>						
FLAS	Westbound	FL280/300/340/380						
	Easstbound	FL290/330/370/410						
IATA'S REMARK								
Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023
A583	SABNO to AKOTA	Eastbound	3560	1576	314	346	284	1027
A583	AKOTA to SABNO	Westbound	5001	2585	670	776	673	1752

N892 & L625									
AIRSPACE		R	PRIORITY	High	REFERENCE		SCSTFRG Priority Area 3		
RELEVANT FIRs		Manila			Ho Chi Minh			Singapore	
SEPARATION	USING	10 mins? (to be confirm)							
	TARGET	30 NM (PBCS-Based)							
PROGRESS TRACKING	2016	SCSTFRG agreed upon the Priority							
	2024	The Philippines confirmed that the implementation of 50 NM longitudinal spacing was under internal assessment and will be re-initiated soon. 30NM has also been taken into consideration..							
FLAS	W-N892	FL310/320/350/360/390/400							
	E-L625	FL310/320/350/360/390/400							
IATA'S REMARK									
									
Route	Portion	Direction	The number of flights						
			2018	2019	2020	2021	2022	2023	
N892	KABAM to MIKIN	Westbound	5087	2918	902	1357	2403	3051	
N892	MESOX to MABLI	Westbound	3111	1560	467	673	1073	1359	
L625	LUSMO to AKMON	Eastbound	2780	1423	456	710	1522	1581	
L625	ARESI to AKOTA	Eastbound	4600	2334	830	1277	2138	2587	
L625	ABVAR to MEVIN	Eastbound	2209	1215	291	606	1112	1337	

M768								
AIRSPACE		S/R	PRIORITY	High	REFERENCE		SCSTFRG task list 2/6	
RELEVANT FIRs		Ho Chi Minh		Singapore	Kata Kinabalu		Ujung Pandang	
SEPARATION	USING	50NM (Surveillance-based)		50NM(PBCS-based)	50NM(PBCS-based)			
	TARGET	30 NM (PBCS-based)						
PROGRESS TRACKING	2018	Indonesia proposed for the enhancement of horizontal separation on ATS route M768 from 80NM to 50NM, based on RNP 10 operations.						
	2022	At the regular ATS Coordination Meeting between Singapore and Viet Nam in Jun 2022, Viet Nam agreed to support the implementation of 50NM longitudinal spacing on ATS route M768 through the application of surveillance separation. A timeline for Implementation of 50NM longitudinal separation on ATS Route M768(SCSTFRG/11-WP07)						
	2023	Trial on reduction of longitudinal separation from 80NM to 50NM (PBCS-based)						
	2024	Implementation of 50NM longitudinal separation between the ATS units of Ho Chi Minh, Kota Kinabalu, Singapore and Ujung Pandang FIRs.						
FLAS	Westbound	FL300/380						
	Easstbound	FL270/330/410						
IATA'S REMARK								
								
Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023

M761					
AIRSPACE		S	PRIORITY	High	REFERENCE
RELEVANT FIRs		Singapore		Jakarta	Kata Kinabalu
SEPARATION	USING	20 NM (Surveillance-based)			
	TARGET	10 NM (Surveillance-based)			
PROGRESS TRACKING	2020	Reduction of longitudinal spacing from 80NM to 40NM was targeted for first half of 2020.			
	2022	COVID-19 stopped progress, and 10-minute separation was applied.			
	2024	The realigned Jakarta FIR has been effective from March 21st 2024. Separation reduced from 10 minutes RNAV separation into 20 NM surveillance spacing			
FLAS	Westbound	FL280/300/340/380			
	Easstbound	FL290/330/370/410			
IATA'S REMARK					

The map illustrates the M761 ATS Route, which is highlighted in blue. The route starts near BOPVA, passes through OSERU, and continues towards AGOBA. The map shows the boundaries of the Singapore FIR, Jakarta FIR, and Kota Kinabalu FIR. A green shaded area within the Jakarta FIR indicates the segment where the provision of ANS is delegated to Singapore for FL370 and below.

M758								
AIRSPACE			R	PRIORITY	High	REFERENCE		SCSTFRG task list 2/4
RELEVANT FIRs			Jakarta			Singapore		Kata Kinabalu
SEPARATION	USING	10 Mins (Time-based)						
	TARGET	30 NM (PBCS-based)						
PROGRESS TRACKING	2020	Reduction of longitudinal spacing from 80NM to 40NM was targeted for first half of 2020.						
	2022	COVID-19 stopped progress, and 10-minute separation was applied.						
	2024							
FLAS	Westbound							
	Easstbound							
IATA'S REMARK								
Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023
M758	LUSMO to TERIX	Eastbound	3898	2029	543	1572	1767	1641
M758	TERIX to LUSMO	Westbound	2207	2315	559	1616	3430	1900

M772									
AIRSPACE		R	PRIORITY	High	REFERENCE	SCSTFRG task list 9/3			
RELEVANT FIRs		Hong Kong		Manila	Singapore	Kata Kinabalu		Jakarta	
SEPARATION	USING								
	TARGET	50 NM (PBCS-based)							
PROGRESS TRACKING	2021	SCSTFRG/9, Indonesia proposed to implement a 50 NM separation.							
	2022	HK China has no objection, Singapore supports, and the Philippines would consider it at a later stage.							
	2024								
FLAS	Westbound	FL300/380							
	Easstbound								
IATA'S REMARK									