



*International Civil Aviation Organization*

ICAO

**Twelfth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/12)**

Bangkok, Thailand, 11 – 12 November 2024

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

**TRAFFIC SAMPLE DATA VISUALIZATION OVER THE SOUTH CHINA SEA AIRSPACE**

(Presented by Monitoring Agency for Asia Region)

**SUMMARY**

This paper presents the updated visualization 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 visualization and the number of flights aims to assist the SCSTFRG in reviewing the route structure and traffic flow in this airspace.

**1. INTRODUCTION**

1.1 MAAR has compiled the visualization of traffic flow based on the TSD collected in December every year. To assist SCSTFRG, visualizations were first presented in the Second Meeting of South China Sea Major Traffic Flow Review Group (SCS-MTFRG/2) meeting held in 2015 to illustrate the route structure and the traffic changes over the years. MAAR also presented the similar visualization to the Bay of Bengal Traffic Flow Review Group (BOBTFRG). During BOBTFRG/5 meeting, MAAR was asked to extent the TSD analysis to specific routes. In coordination with the ICAO Asia and Pacific Regional Sub-Office prior to SCSTFRG/12 meeting, it was agreed to demonstrate traffic on the routes A202, A1, L642, M771, N892, L625, M646, A583, A461, N884, A582, M767 and M758. Thus, this paper presents the updated visualization of traffic flow over the South China Sea airspace and the number of flights on the specified routes based on TSD from 2018 to 2023.

**2. DISCUSSION**

2.1 Data limitations of TSD, used to generate the visualization of traffic flow and the comparison of flight numbers presented in this paper, are:

- TSD from each State is generated differently. Data may be extracted from each ANSP's ATM system, prepared manually, processed from flight plans (FPLs), or submitted in raw FPL format. Consequently, the nature of each TSD varies; for instance, some datasets are based on actual flight trajectories, while others reflect only planned trajectories
- Some datasets may lack significant points inside the FIR, while others may be missing a significant portion of flights.

2.2        **Attachment 1** to this paper shows the visualization of traffic flow in South China Sea Airspace, where blue lines represent westbound movements and orange lines represent eastbound movements. The thickness of each line reflects the volume of traffic in December each year. Additionally, **Attachment 2** to this paper shows the comparison of flight numbers on the important routes, including A1, A202, L642, M771, N892, L625, M646, A583, A461, N884, A582, M767 and M758, based on TSD from 2018 to 2023.

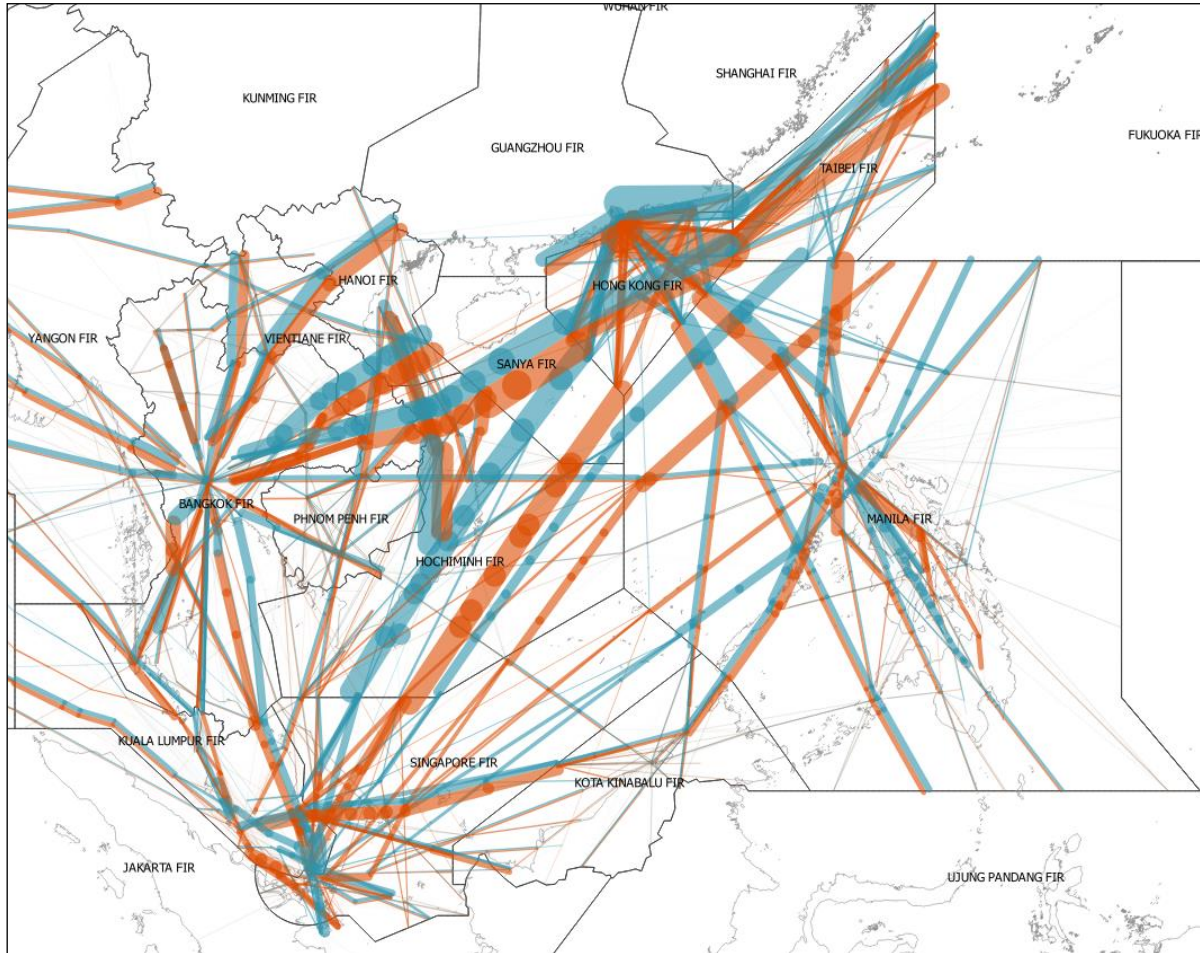
### **3.        ACTION BY THE MEETING**

- 3.1        The meeting is invited to:
- a) note the information contained in this paper; and
  - b) discuss any relevant matters as appropriate.

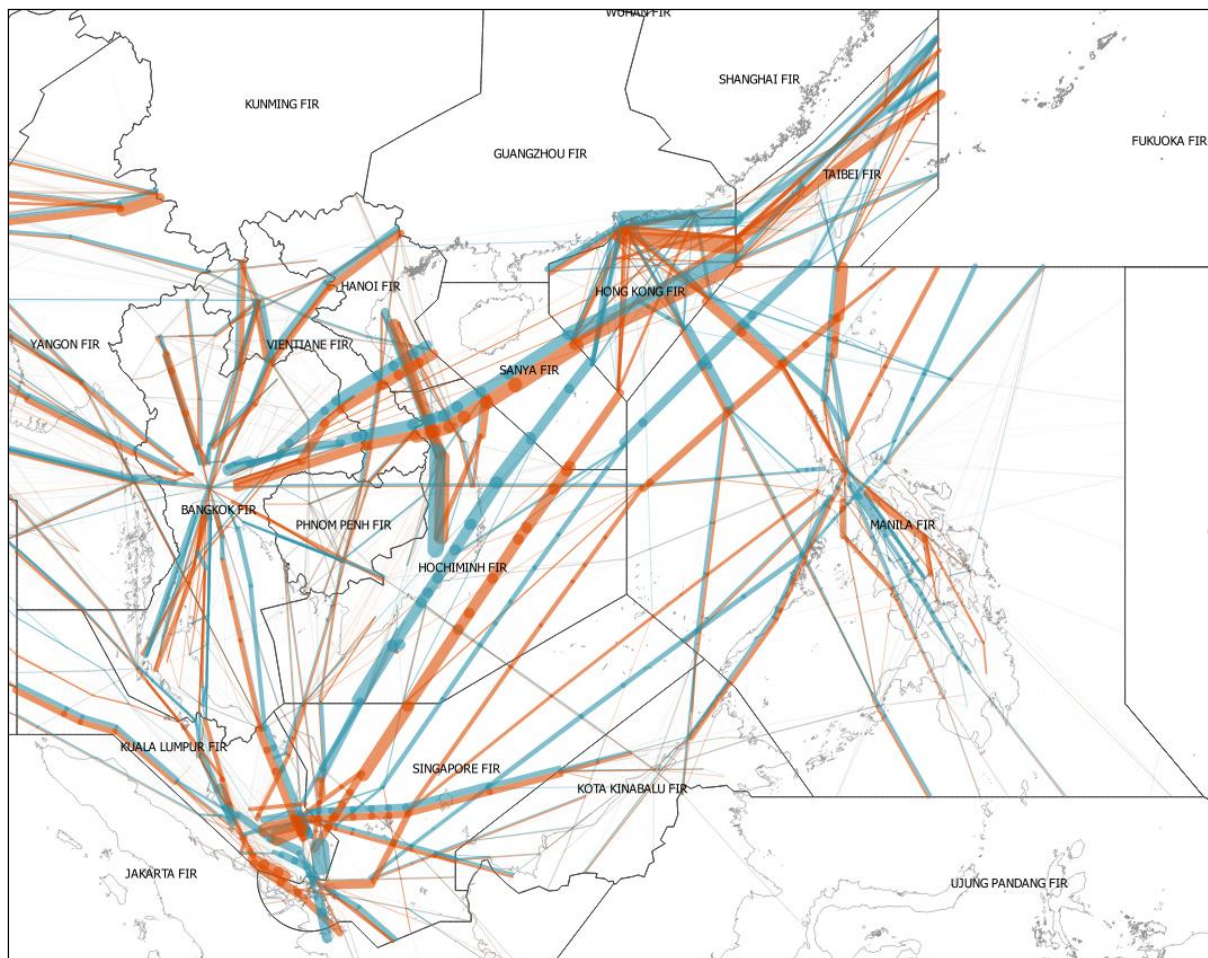
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**Attachment 1**

**The visualization of traffic flow in South China Sea Airspace based on  
Traffic Sample Data (TSD) from 2018 to 2023.**

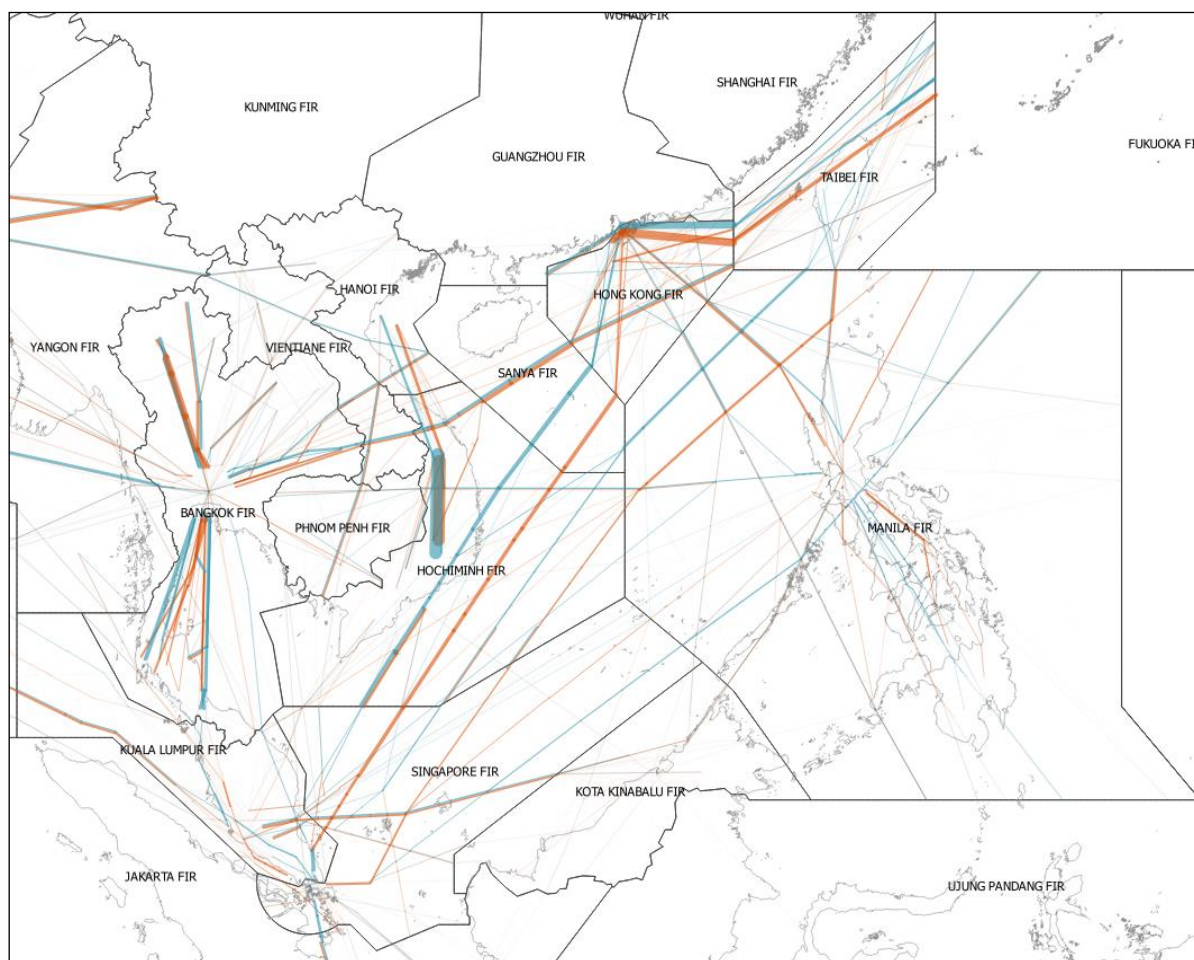


**Figure 1: 2018 Traffic Flow from TSD in South China Sea Airspace**

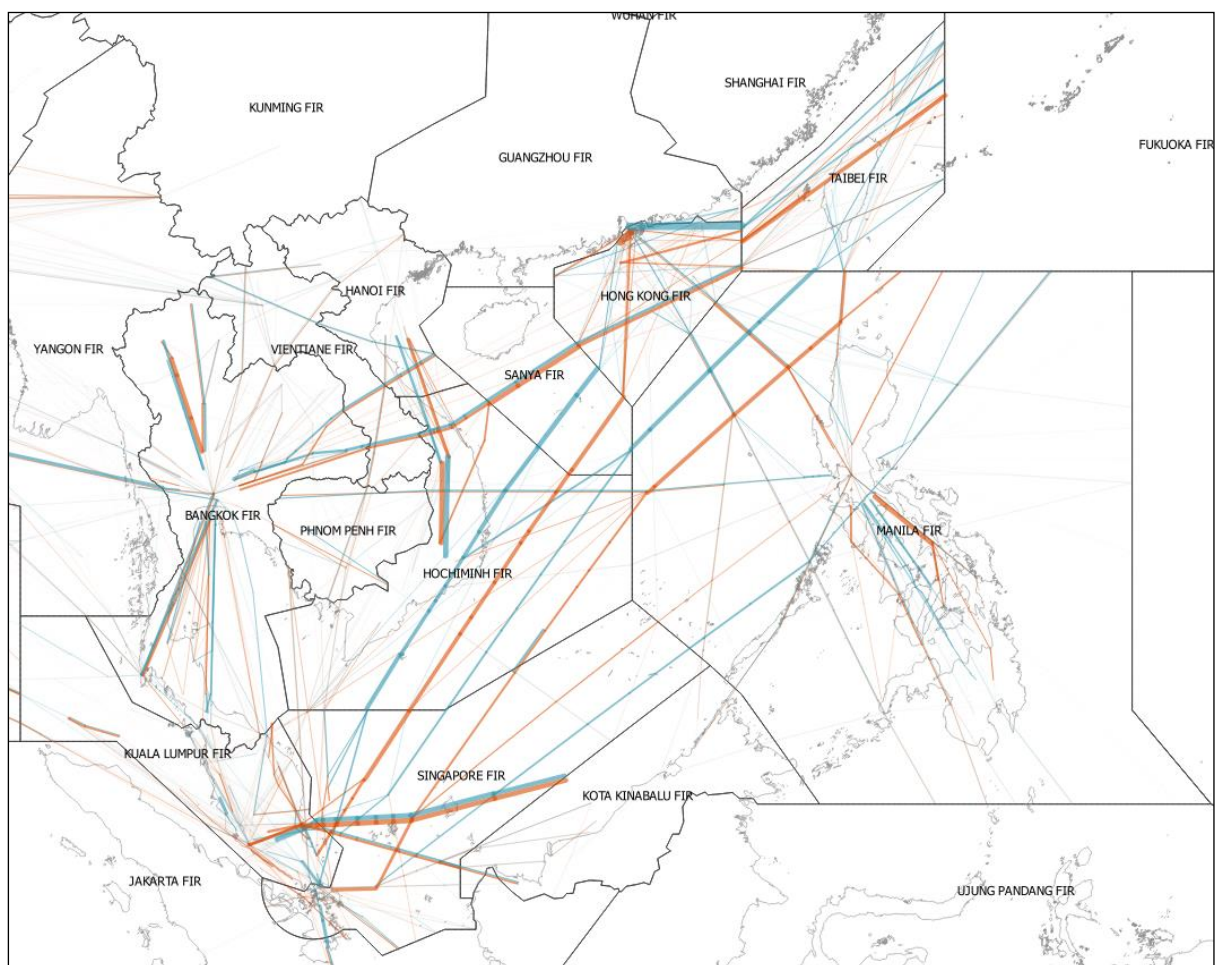


**Figure 2:** 2019 Traffic Flow from TSD in South China Sea Airspace

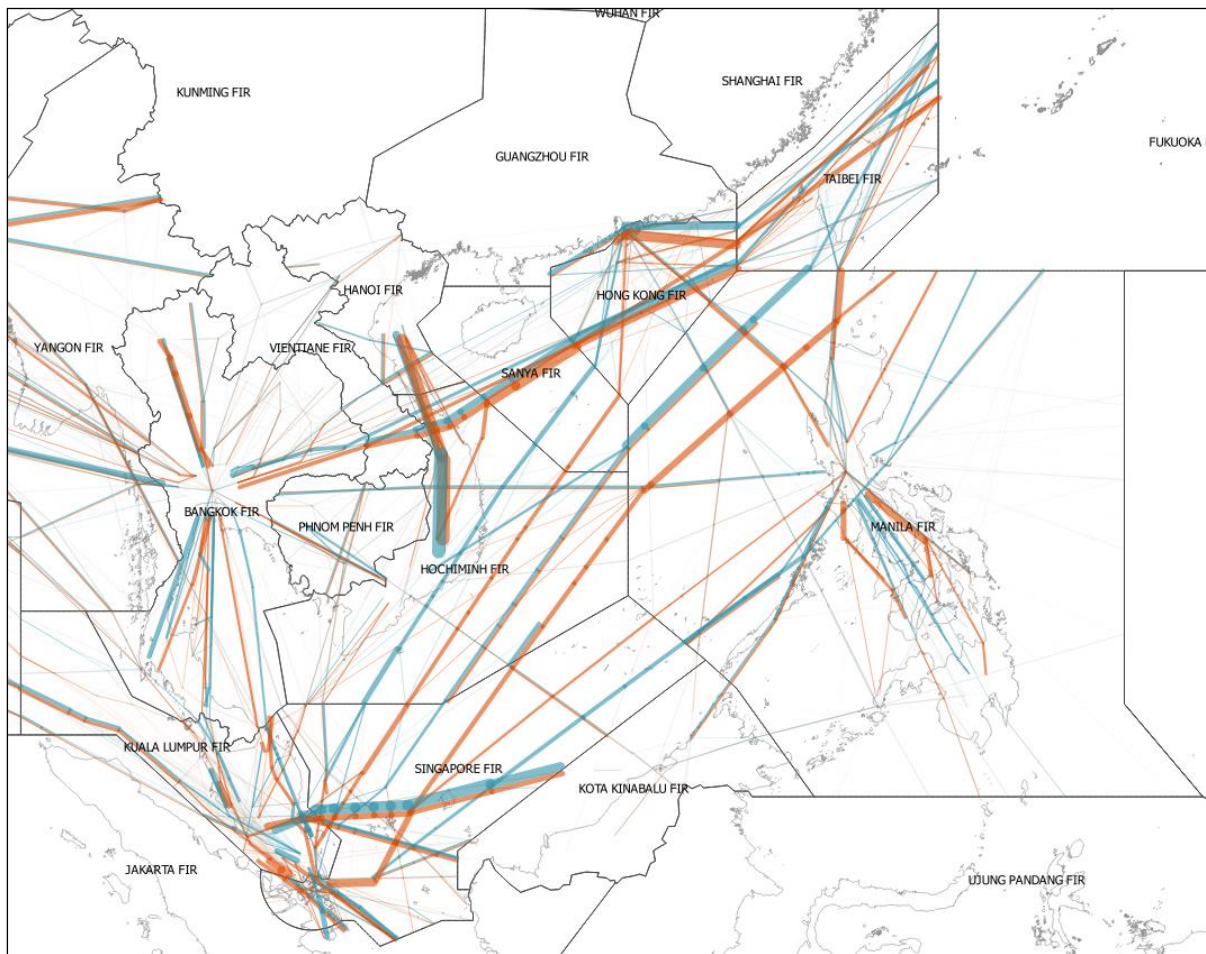




**Figure 3: 2020 Traffic Flow from TSD in South China Sea Airspace**

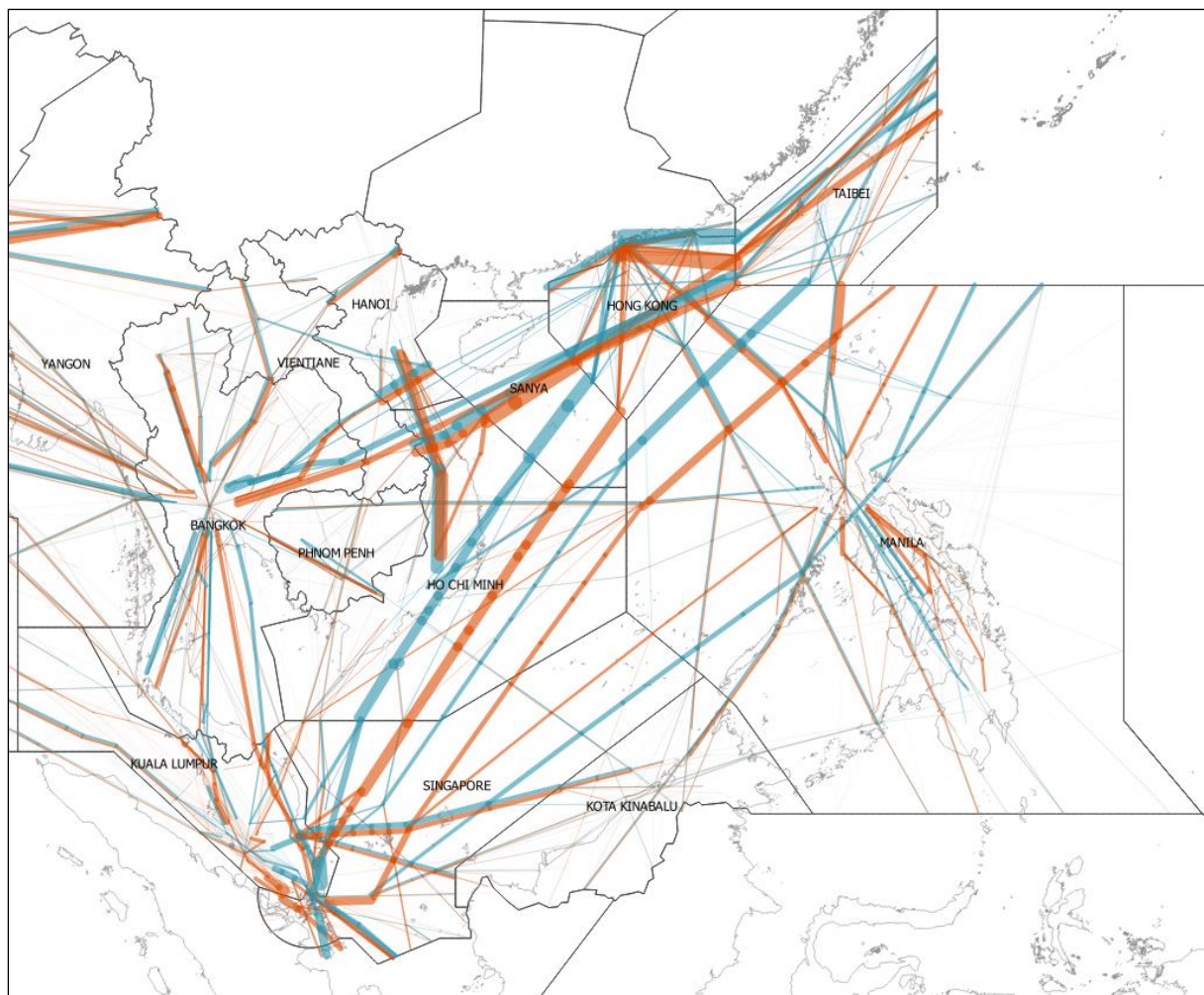


**Figure 4:** 2021 Traffic Flow from TSD in South China Sea Airspace



**Figure 5:** 2022 Traffic Flow from TSD in South China Sea Airspace



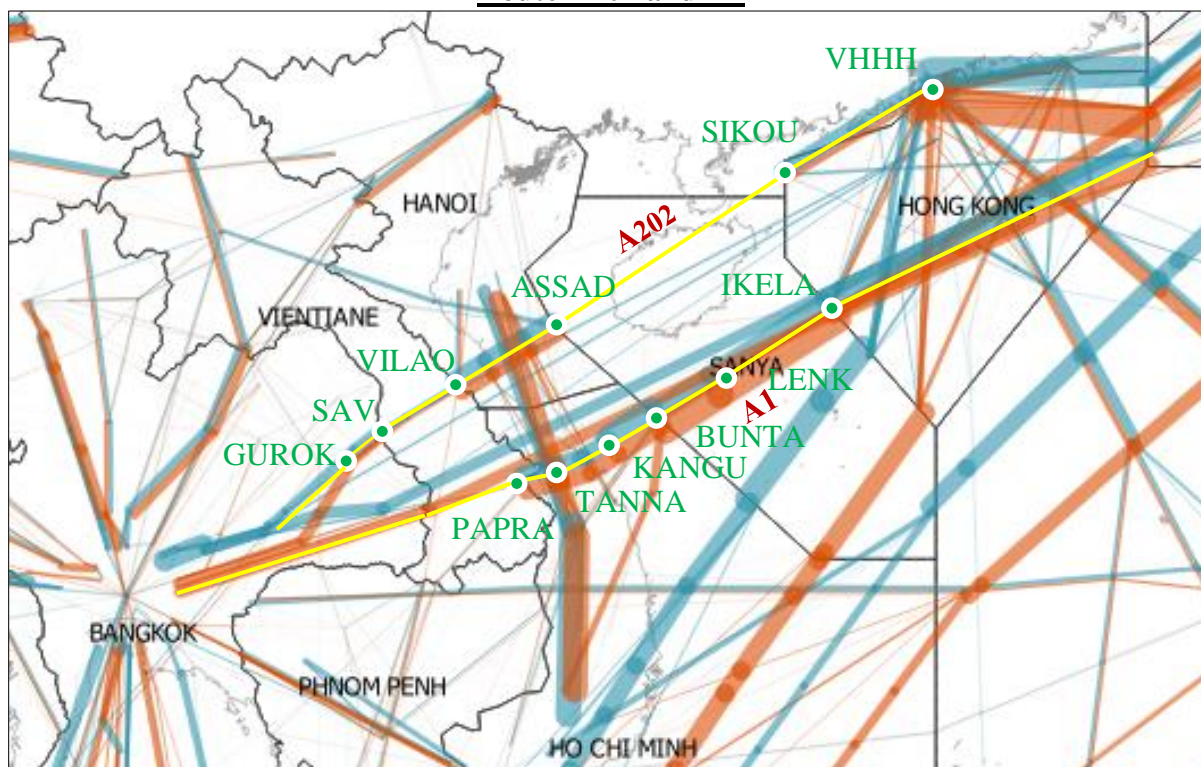


**Figure 6:** 2023 Traffic Flow from TSD in South China Sea Airspace



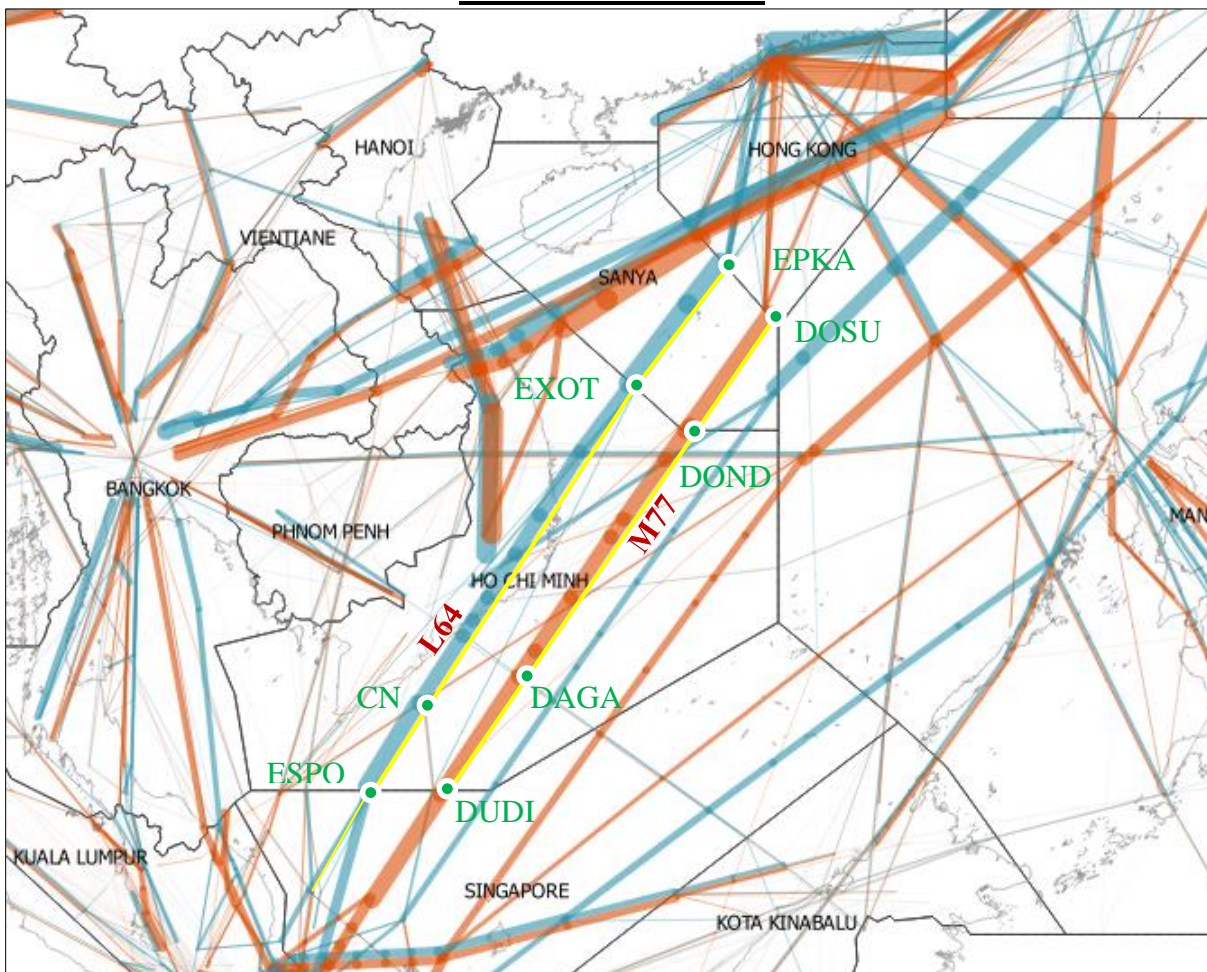
## Attachment 2

The number of flights in the South China Sea airspace based on Traffic Sample Data (TSD)  
from 2018 to 2023  
**Route A202 and A1**



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
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

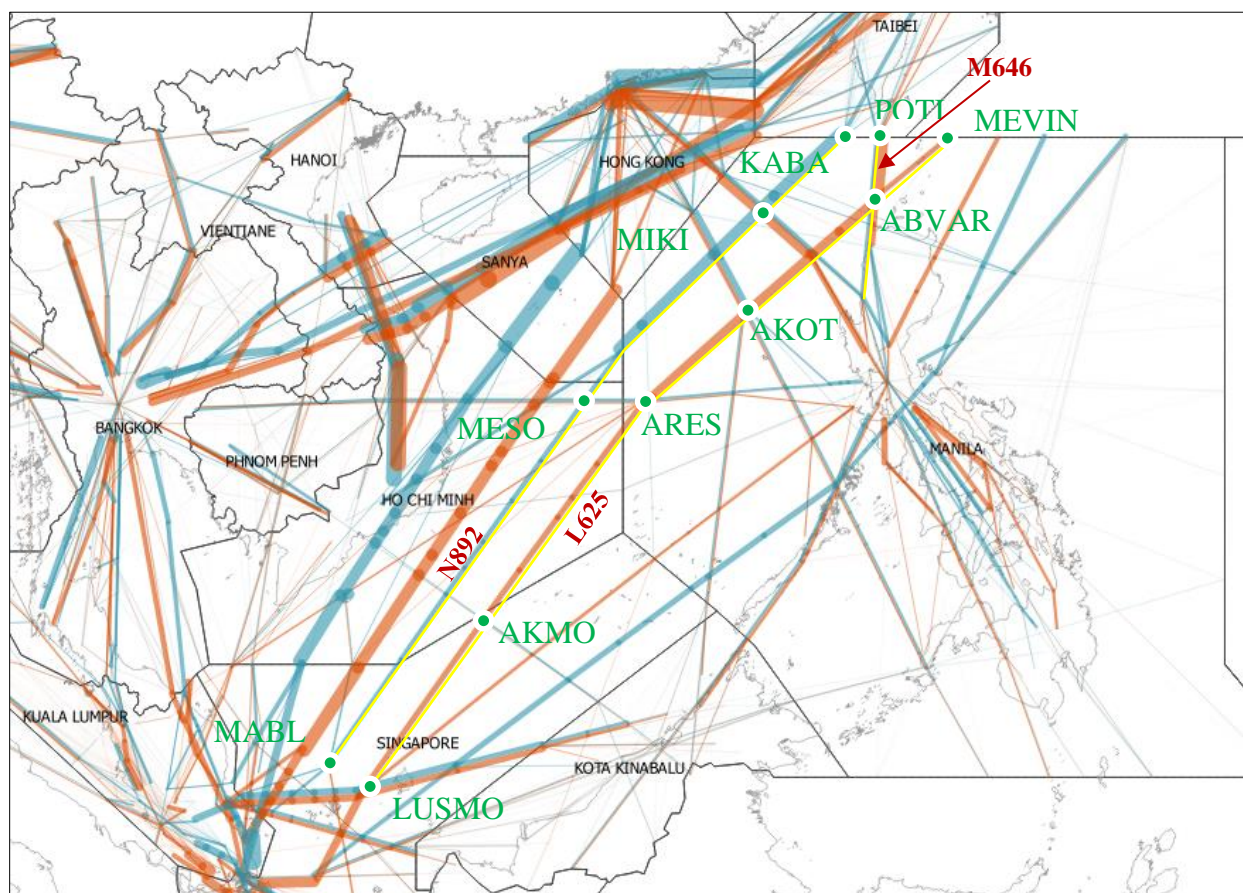
### Route L642 and M771



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

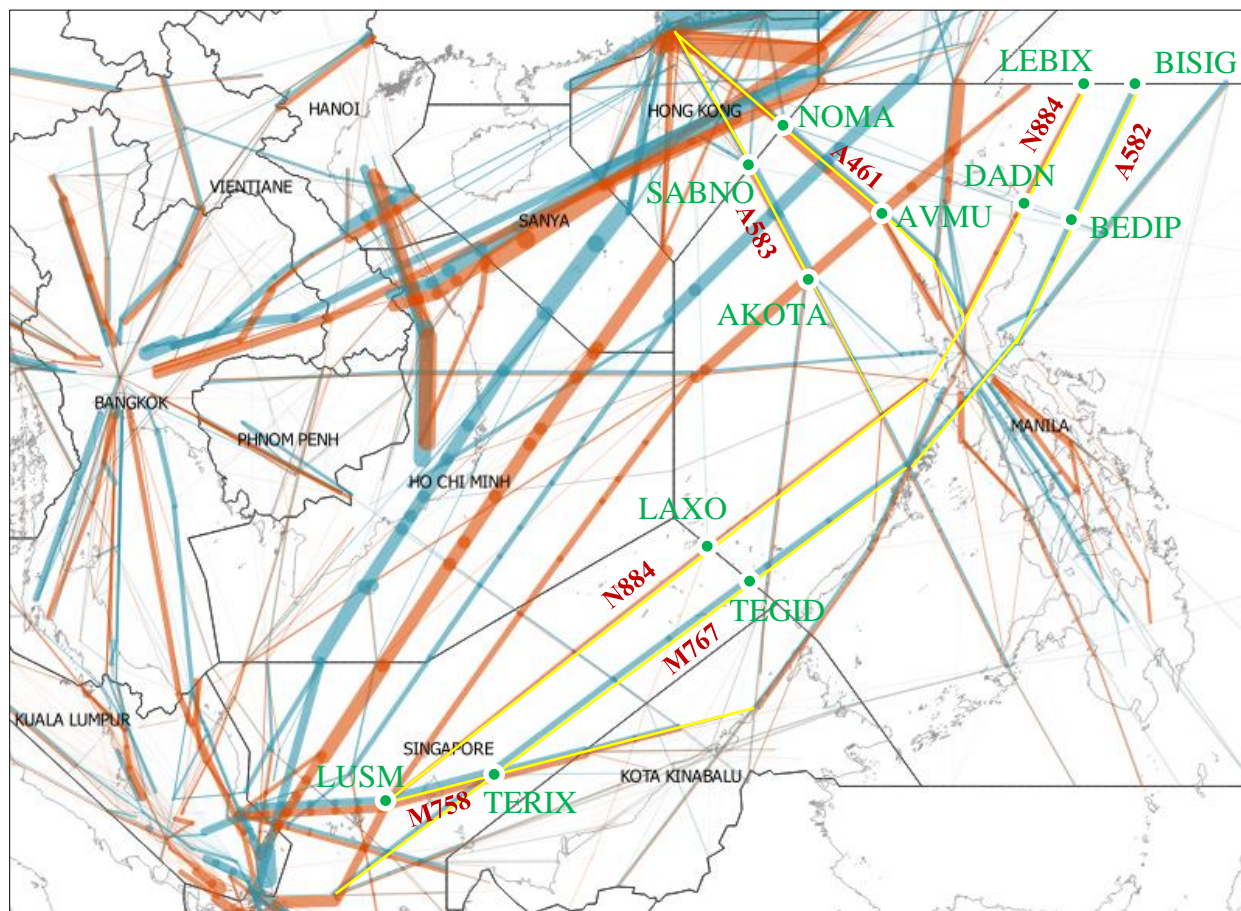


### Route N892, L625 and M646



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
M646	ABVAR to POTIB	Eastbound	6676	3570	979	1011	2311	3034
M646	POTIB to ABVAR	Westbound	2673	1520	192	164	530	1033

**Route A583, A461, N884, A582, M767 and M758**



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
A461	NOMAN to AVMUP	Eastbound	5894	3171	914	946	1413	2362
A461	AVMUP to NOMAN	Westbound	4033	1984	483	440	642	1085
N884	LUSMO to LAXOR	Eastbound	876	1036	282	424	864	927
N884	DADNU to LEBIX	Eastbound	1919	1501	395	436	895	1239
A582	BISIG to BEDIP	Westbound	2387	1604	277	279	756	1402
M767	TEGID to TERIX	Westbound	2934	1650	457	674	1422	1625
M758	LUSMO to TERIX	Eastbound	3898	2029	543	1572	1767	1641
M758	TERIX to LUSMO	Westbound	2207	2315	559	1616	3430	1900