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

BAY OF BENGAL TRAFFIC FLOW REVIEW GROUP MEETING OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the key outcomes of the Sixth Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG/6) for the review and action by SAIOSEACG.

1. INTRODUCTION

1.1 The Bay of Bengal Traffic Flow Review Group (BOBTFRG), initiated by SAIOACG, focuses on analyzing traffic patterns and air routes within the Bay of Bengal airspace. Its goals are to address safety concerns and enhancing long-term airspace efficiency.

1.2 The Bay of Bengal Traffic Flow Review Group (BOBTFRG) convened for its sixth meeting in Bangkok, Thailand, from November 14 to 15, 2024. This gathering saw the participation of 32 attendees from Bangladesh (Online), Indonesia, Malaysia, Pakistan, Singapore, Sri Lanka, Thailand, and alongside representatives from IATA and ICAO. Presentations and documents from the meeting can be accessed at https://www.icao.int/APAC/Meetings/Pages/2024-BOBTFRG-6.aspx.

2. DISCUSSION

Outcomes of Relevant Meetings

2.1 ICAO provided a summary of outcomes from AN-CONF/14, FIT-Asia/14, RASMAG/29, and ATM/SG/12, relevant to ATM enhancements. Key recommendations included:

- **Project 30/10:** Reduction of longitudinal separation to 30 NM (oceanic) and 10 NM (non-oceanic) for improved efficiency (Recommendation 3.1/1).
- **Trajectory-Based Operations (TBO):** Encouraging synchronization of air-ground trajectory (Recommendation 3.1/3).
- **Expansion of Free Route Airspace (FRA):** Promoting operational efficiency and fuel savings (Recommendation 3.1/4).
- **Transition to FF-ICE by 2034:** States urged to prepare for phasing out the 2012 flight plan (Recommendation 3.2/2).

2.2 ICAO updated the Seamless Air Navigation Services (ANS) Plan, aligning with the ASBU framework and strengthening FIR boundary management. Safety updates from RASMAG/29 indicated

an increase in lateral and longitudinal deviations (LHDs) despite meeting Target Level of Safety (TLS), highlighting a need for ongoing monitoring.

2.3 The ATM/SG/12 emphasized regional coordination in adopting Project 30/10, expanding FRA, and preparing for FF-ICE implementation.

BOBTFRG Priority Areas Implementation Timelines

2.4 A phased plan was reaffirmed for Performance-Based Communication and Surveillance (PBCS) implementation outlined as follows.

- **Phase 1:** 50 NM longitudinal separation using RNAV 10 (Immediate).
- **Phase 2:** Trial implementation of 30 NM longitudinal / 23 NM lateral separation with ADS-C/CPDLC mandates.
- **Phase 3:** Full implementation by March 2026, pending post-operational evaluation.

2.5 ATM/CNS system readiness across BOB States was reviewed as the following information of Table 1, with Malaysia, India, and Sri Lanka advancing in PBCS readiness, while Bangladesh, Myanmar, and Indonesia required further upgrades by 2025-2026.

STATE	FIR	FPL PROCESSING FOR PBCS	ADS-C /CPDLC	RCP 240	RSP 180	POST IMPLEMENTATION MONITORING	REMARK
BANGLADESH	DHAKA						ATM automation system not implemented yet, planning on 2025
INDIA	CHENNAI	YES	AVAILABLE	YES	YES	YES	System testing required
	KOLKATA	NO	AVAILABLE	YES	YES	YES	
	MUMBAI	YES	AVAILABLE	YES	YES	NO	System testing required
INDONESIA	JAKARTA	NO	TRIAL	NO	NO	NO	The system will be upgraded in Q3 2026.
MALAYSIA	KUALA LUMPUR	NO	AVAILABLE	YES	YES	YES	monitoring only for ADS-C/CPDLC
MYANMAR	YANGON	NO	YES	NO	NO	NO	
SRILANKA	COLOMBO	On testing	YES	YES	YES		The system will be upgraded to PDC by 2024.
THAILAND	BANGKOK	YES	NO	NO	NO	AVAILABLE	En-route airspace is fully covered with SSR. no plan to prescribe PDC.

Table 1: The readiness of ATM/CNS system of BOB States (Updated November 2024).

2.6 Malaysia and India implemented 50 NM separation on ATS routes L510, N571, P574, P628, effective July 1, 2024, with Singapore joining by August 28, 2024 as outlined Figure 2. Data Link Performance Reports from FIT-Asia/14 emphasized ongoing efforts to establish a Central Reporting Agency (CRA) for data-sharing agreements.

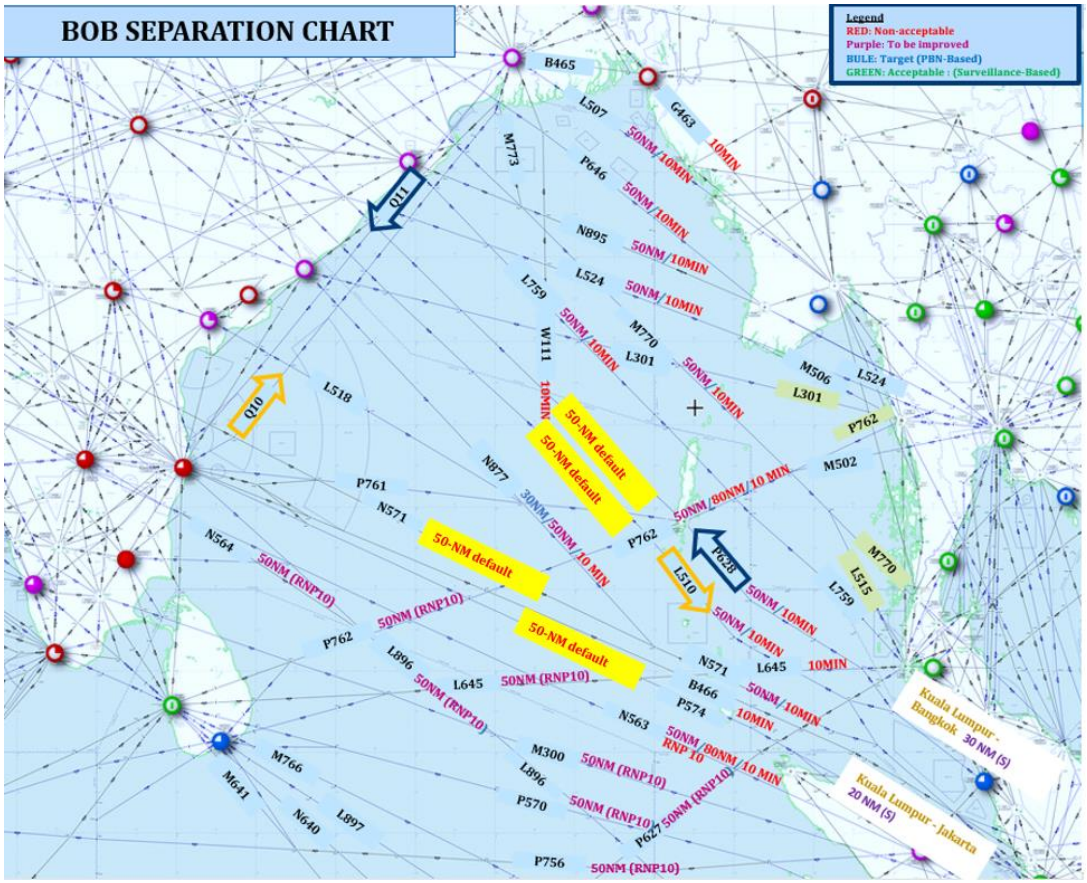

Figure 2: Horizontal Separation Minimus being applied in the BOB area (updated November 2024).

Space-Based ADS-B Trials

2.7 India and other States are exploring space-based ADS-B, offering enhanced tracking in oceanic and remote areas. ICAO introduced update on the amendment concerning separation minima based on an ATS surveillance system to the PANS-ATM, requiring further study, which will be further discussed in the IP03 and Flimsy01 in this meeting.

Traffic Flow Visualization

2.8 The Monitoring Agency for Asia Region (MAAR) analyzed traffic flow data from 2018-2023 for ATS routes L759, P628, L510, L645, and N571 as the **Attachment A**. An increase in traffic density post-pandemic was observed, with India's improved civil-military coordination enhancing flexible airspace use. Thailand recommended expanding analysis to include northern ATS routes.

Review of Existing FLAS/FLOS

2.9 The current FLAS system was reviewed, highlighting inefficiencies:

- Fuel inefficiency and increased emissions due to suboptimal cruising levels.
- Frequent level changes, increasing ATC workload.
- Limited flexibility in adjusting to traffic patterns.
- Excessive reliance on vertical separation, contributing to a shortage of flight levels.

2.10 Discussions emphasized the need for optimizing FLAS based on the Asia/Pacific Region Seamless ANS Plan.

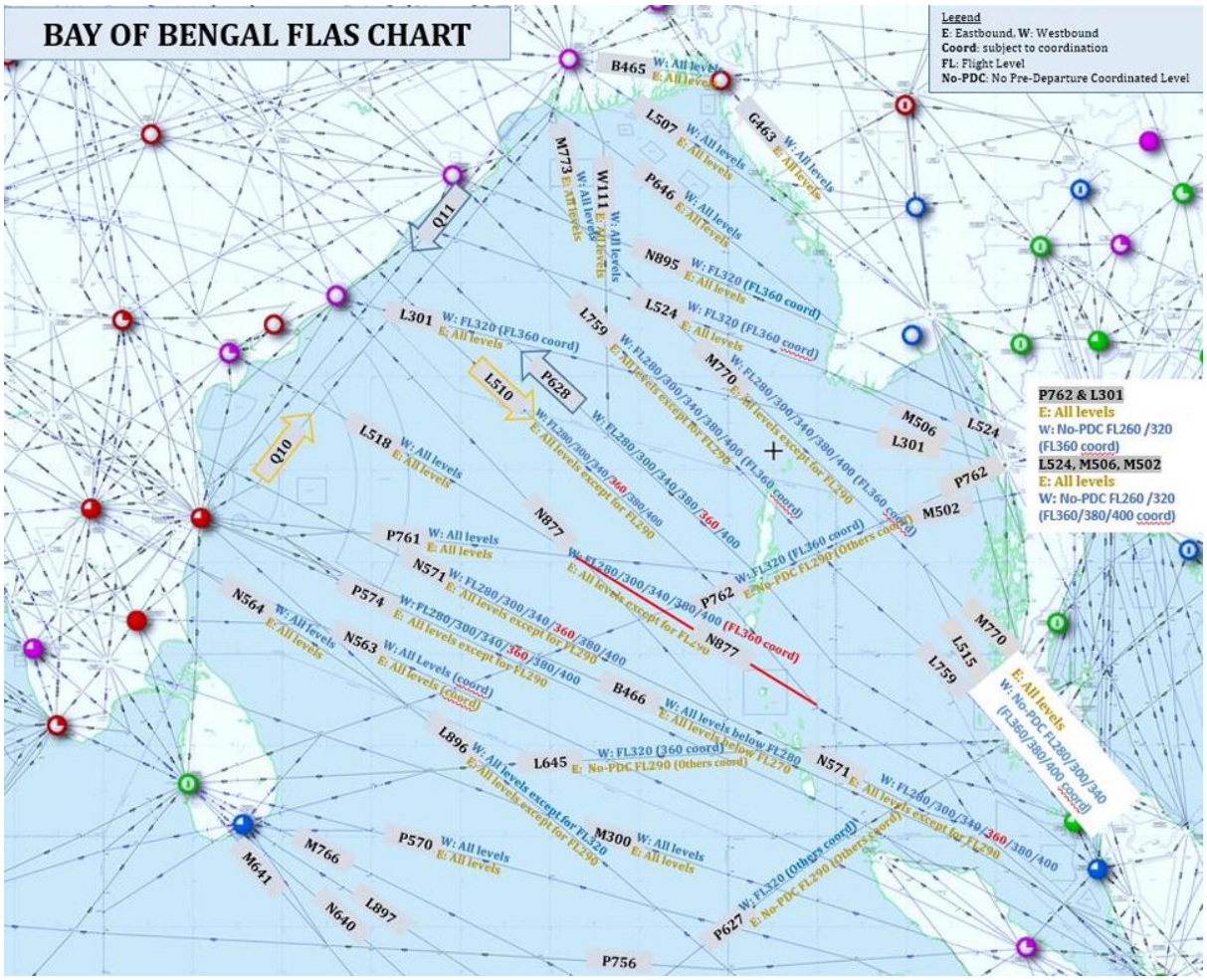

Figure 3: FLAS/FLOS among the ATS Routes of BOB Area

Free Route Airspace (FRA) Implementation Strategy

2.11 IATA proposed a phased FRA trial, allowing flexible routing to reduce congestion and emissions. Steps included:

- Identifying airspace volumes suitable for trials.
- Analyzing traffic patterns for optimal implementation.
- Conducting safety assessments and operator engagement.
- Launching limited FRA trials, scaling up based on performance.

2.12 Sri Lanka, Bangladesh, and Thailand expressed interest, with Bangladesh planning formal adoption after ATM-CNS system upgrades.

Reactivation of BOBCAT ATFM System

2.13 The BOBCAT ATFM system, suspended since August 2021, is targeted for reactivation by February 20, 2025, pending ICAO's Kabul Contingency Coordination Team (CCT) approval.

2.14 Key discussions included:

- **Flight Level Concerns:** Pakistan requested ICAO explore lower flight level availability over Afghanistan, especially during BOBCAT hours (2000-2359 UTC).
- **Traffic Data Contributions:** Pakistan will provide hourly westbound air traffic data to refine slot allocations.
- **Stakeholder Coordination:** ATC refresher training and updated BOBCAT procedures for compliance.
- **Regional Readiness:** Malaysia and Singapore confirmed implementation readiness, with Pakistan reviewing procedures.
- **New Route Considerations:** Increased South Asia-Europe traffic via Afghanistan requires additional ANSP coordination.
- **Updating Contact Details:** BOBCAT system users (Hong Kong, India, Malaysia, Singapore, Indonesia, Vietnam) must update their Point of Contact information for slot allocations.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) Relevant states to update the meeting with the latest progress on the Priority Areas of the BOBTFRG; and

c) discuss any relevant matters as appropriate.

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The visualization of traffic flow over Bay of Bengal Airspace based on Traffic Sample Data (TSD) from 2018 to 2023.

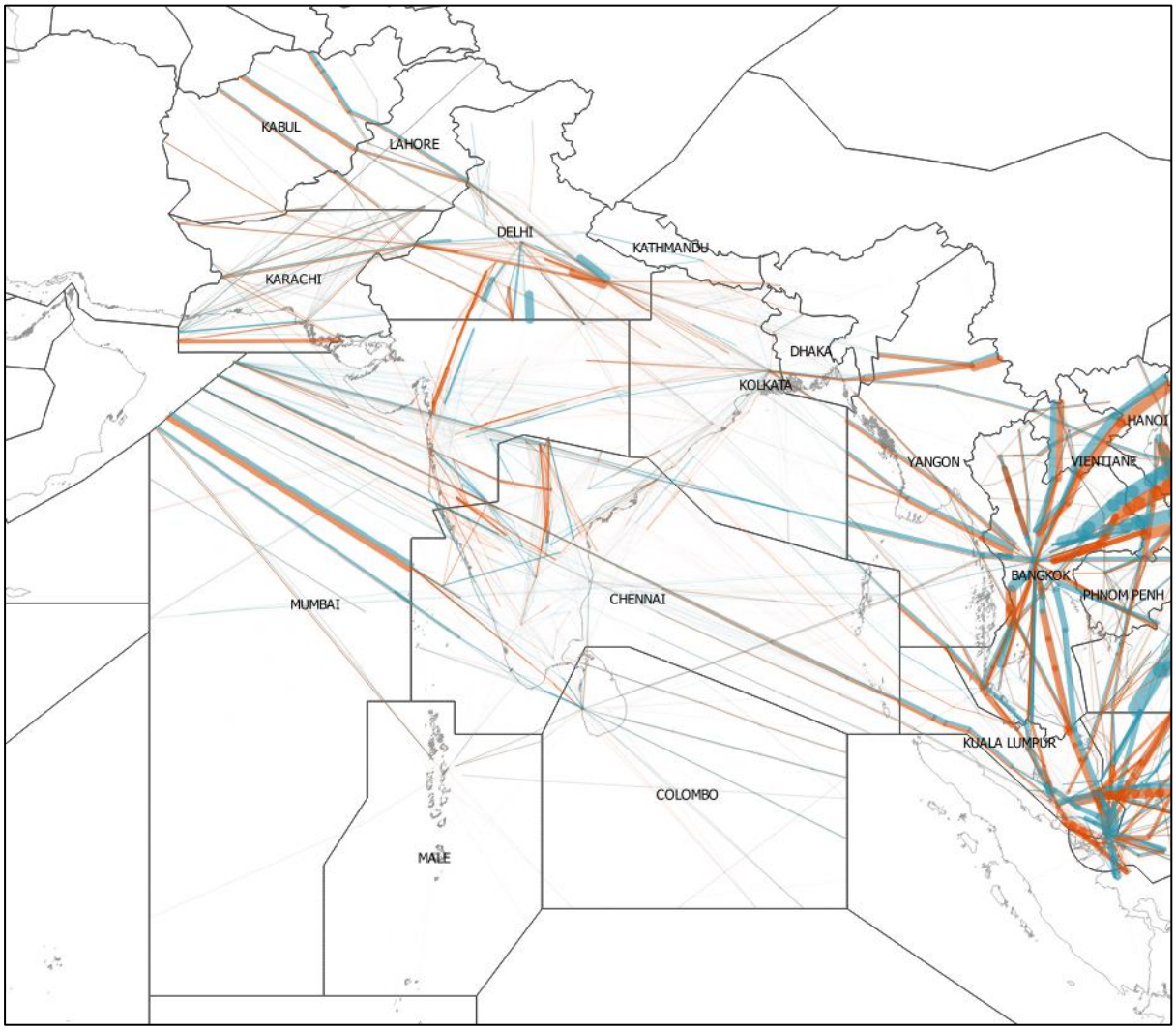


Figure 1: 2018 Traffic Flow from TSD over Bay of Bengal Airspace

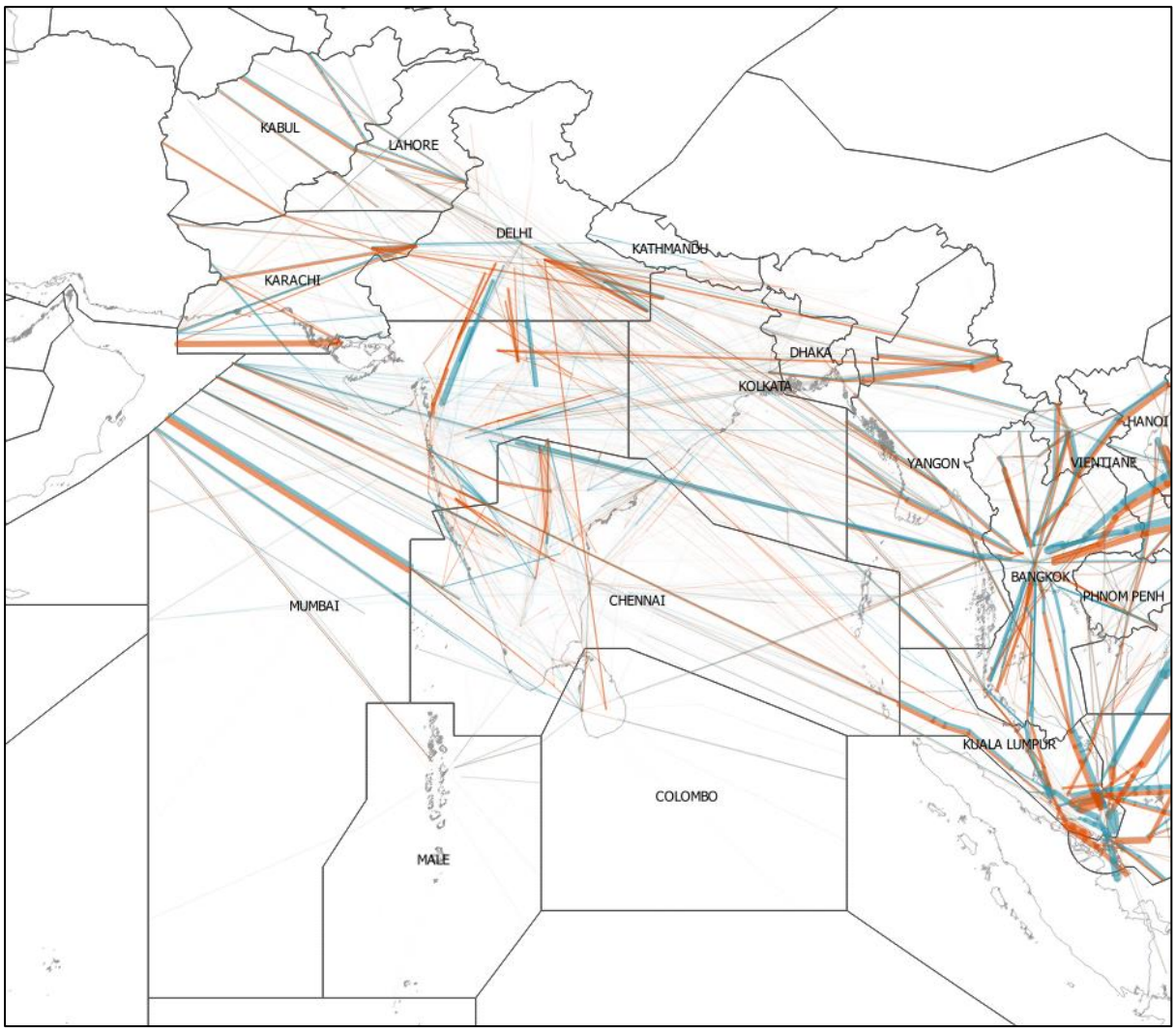


Figure 2: 2019 Traffic Flow from TSD over Bay of Bengal Airspace

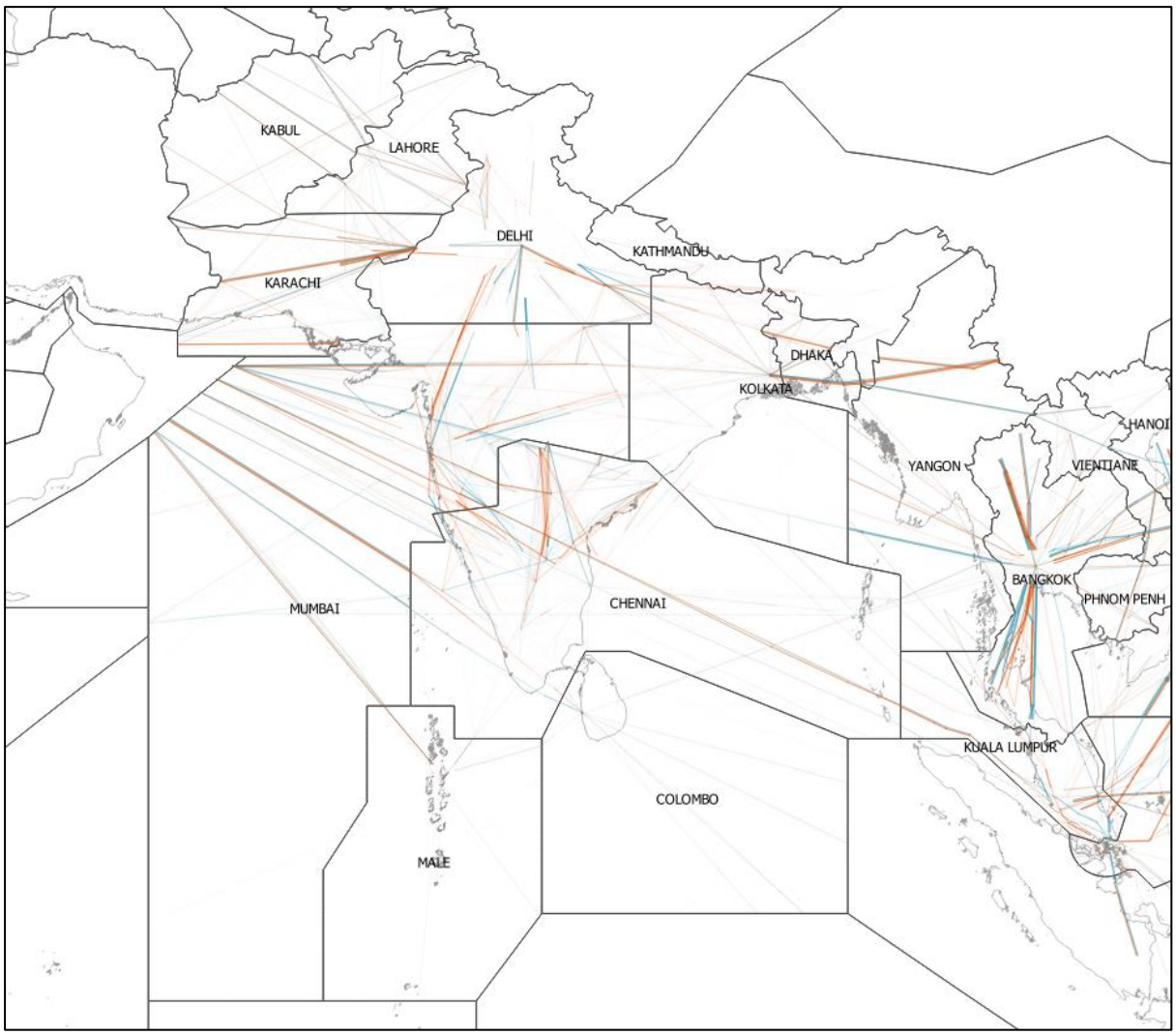


Figure 3: 2020 Traffic Flow from TSD over Bay of Bengal Airspace

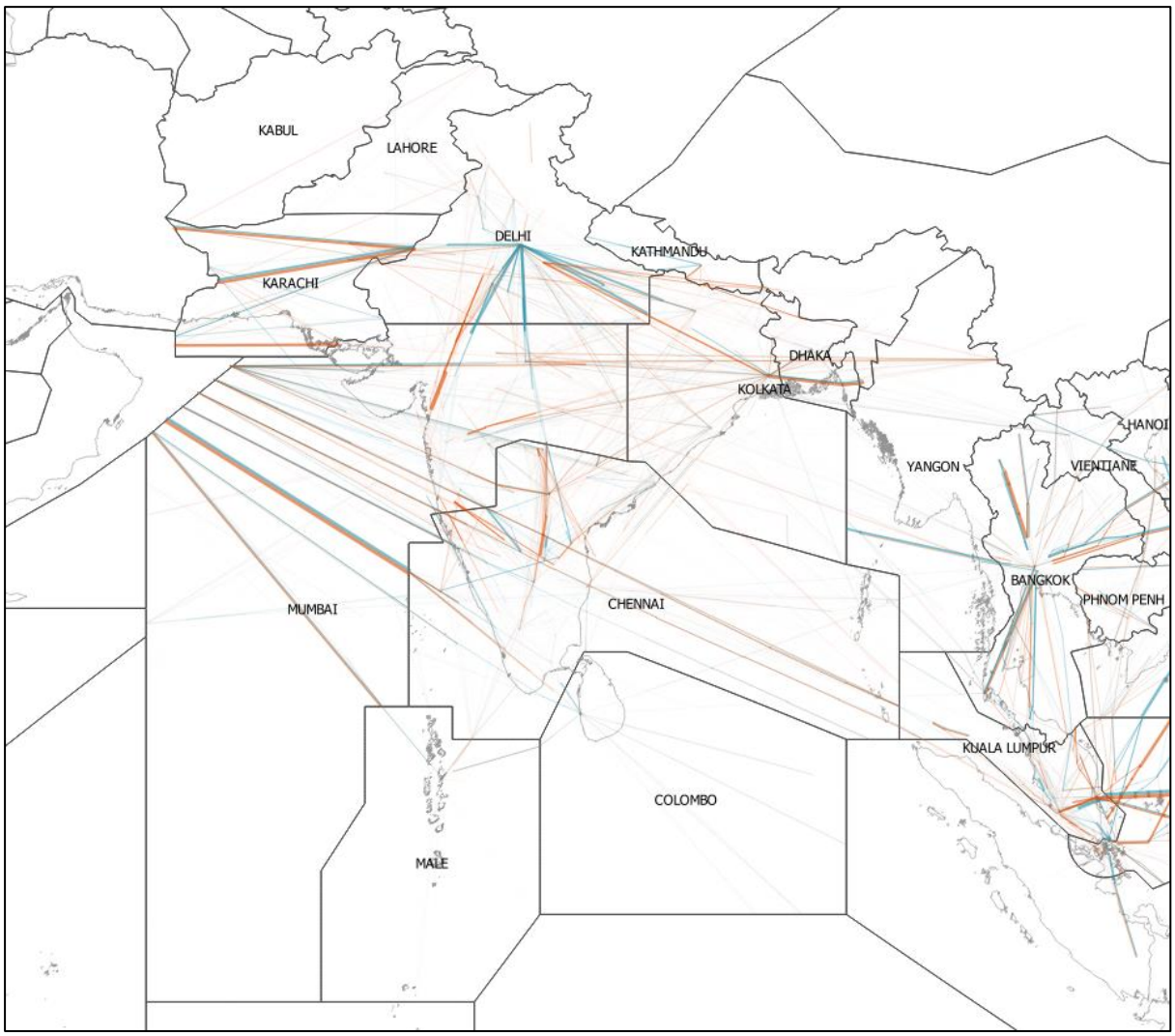


Figure 4: 2021 Traffic Flow from TSD over Bay of Bengal Airspace

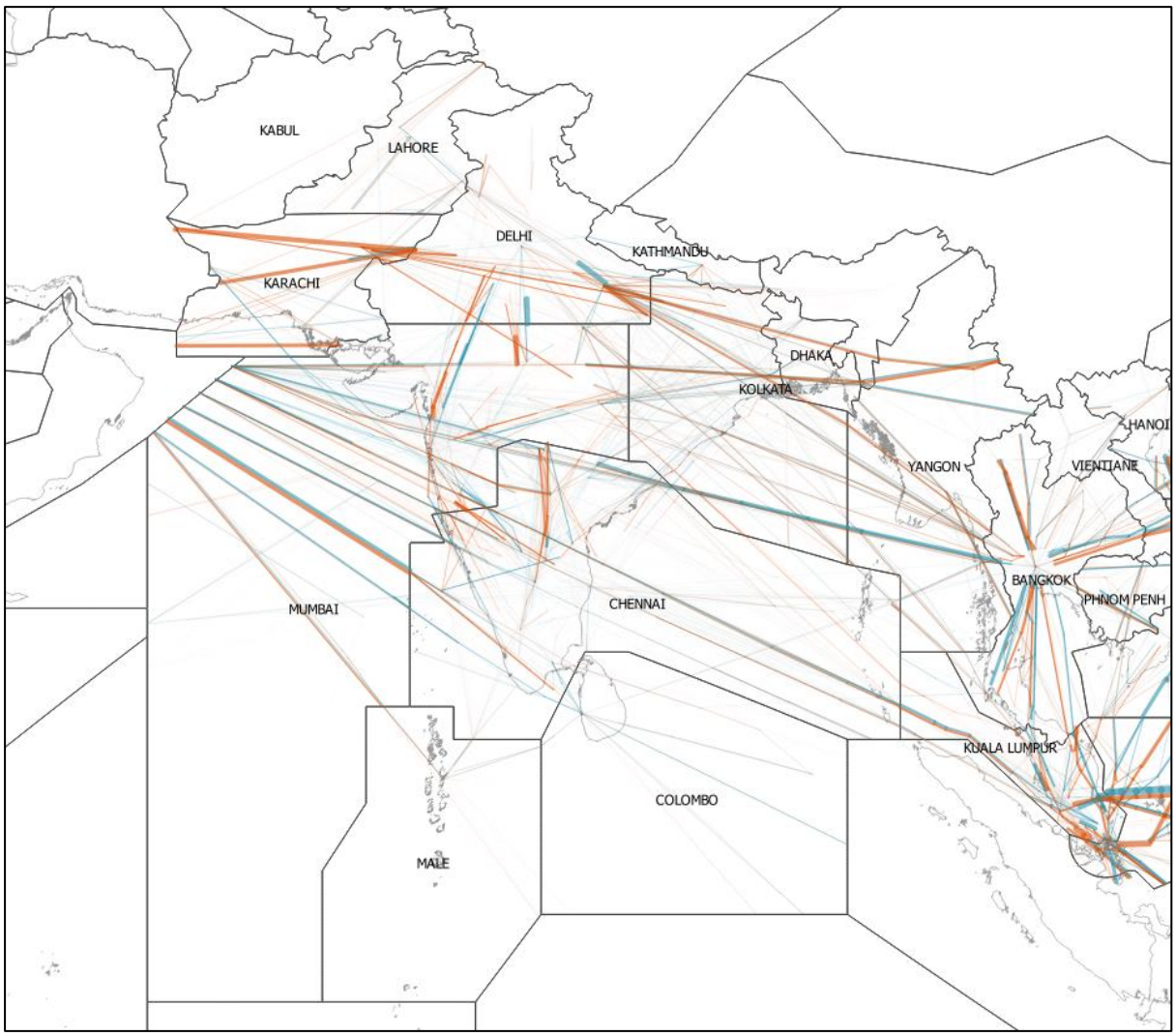


Figure 5: 2022 Traffic Flow from TSD over Bay of Bengal Airspace

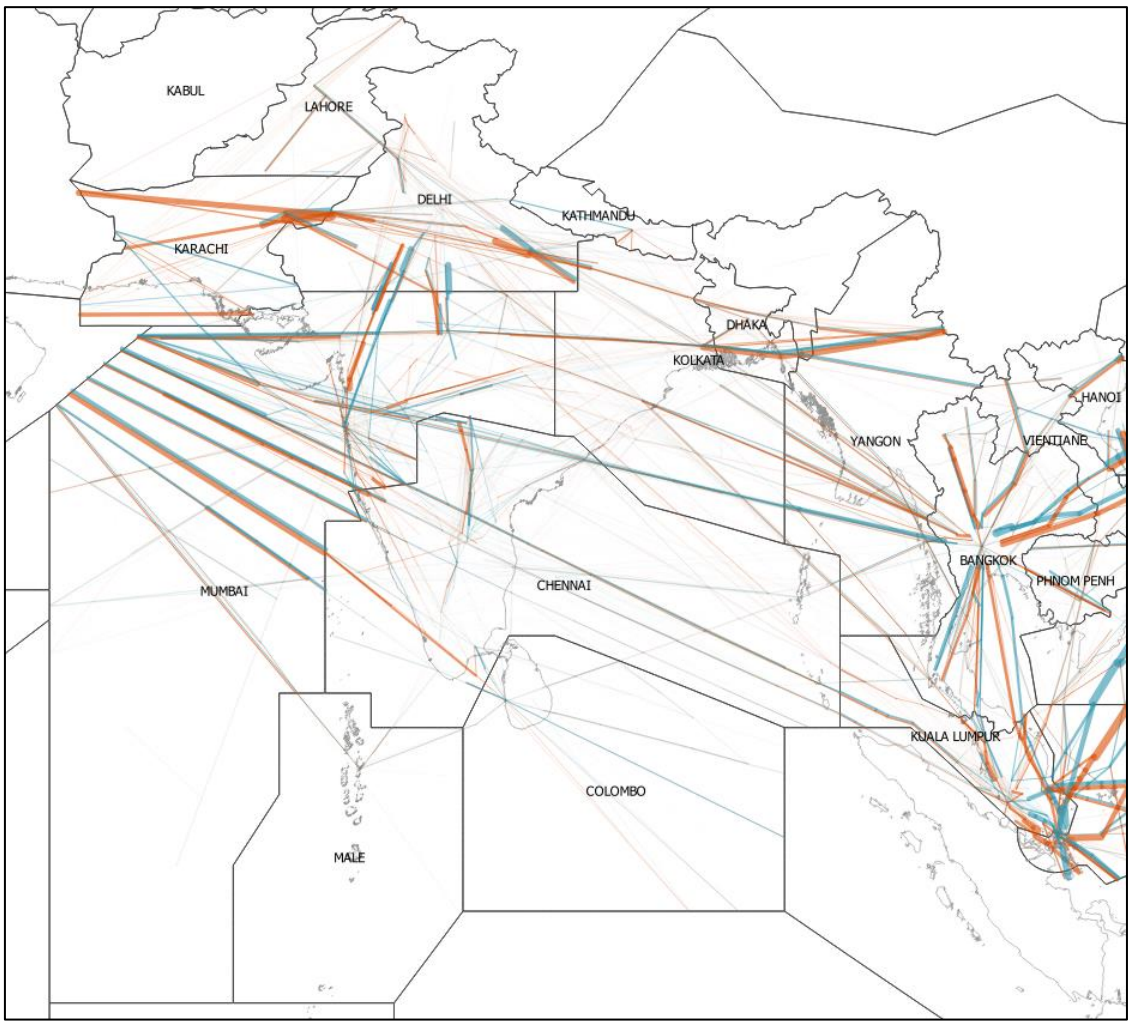
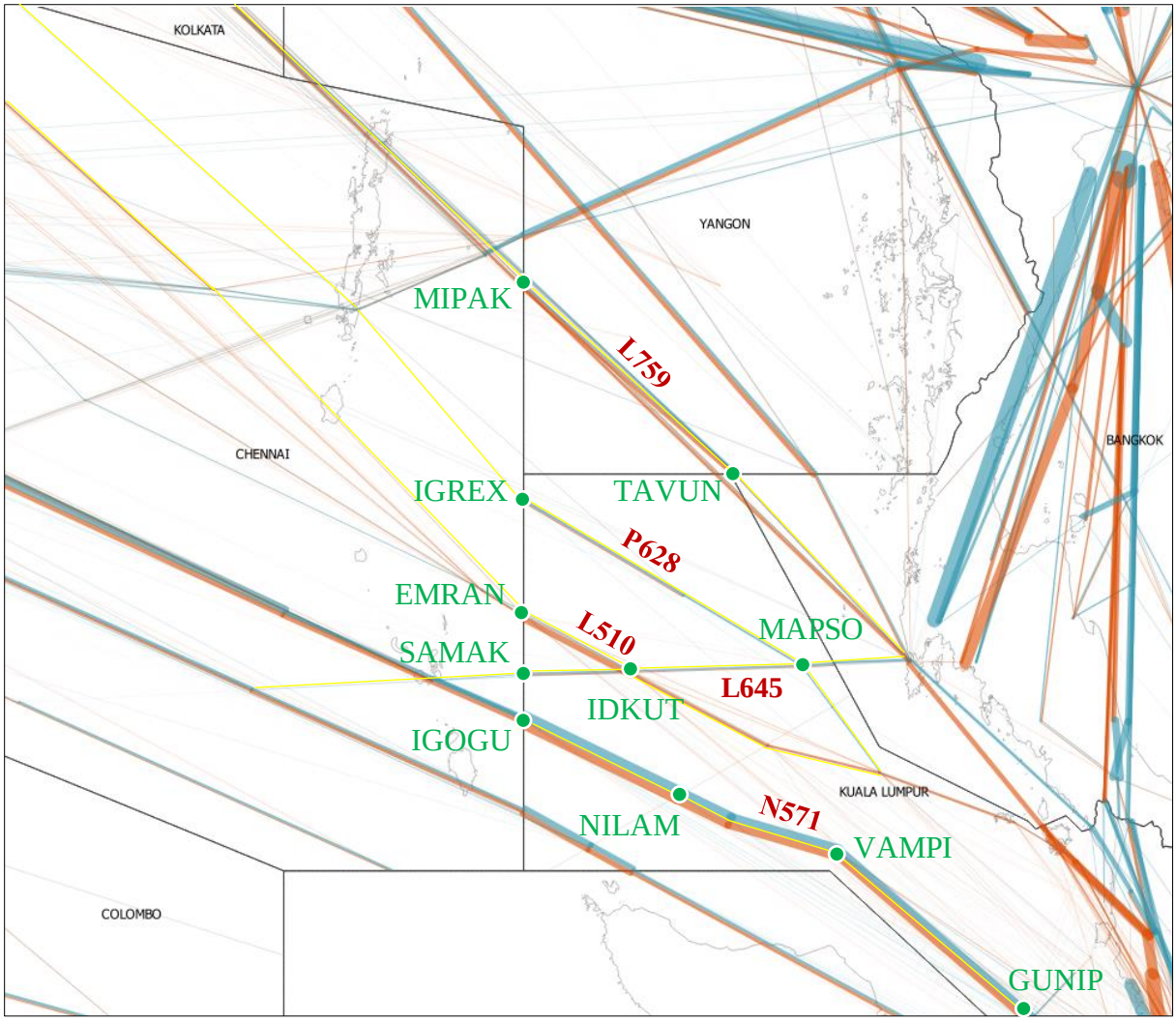


Figure 6: 2023 Traffic Flow from TSD over Bay of Bengal Airspace

The number of flights in the Bay of Bengal airspace based on Traffic Sample Data (TSD) from 2018 to 2023.

Route L759, P628, L510, L645 and N571



Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023
L759	MIPAK to TAVUN	Eastbound	1458	947	81	N/A	795	238
L759	TAVUN to MIPAK	Westbound	1250	961	48	N/A	457	510
P628	MAPSO to IGREX	Westbound	432	405	159	184	252	249
L510	EMRAN to IDKUT	Eastbound	551	693	134	N/A	394	638
L510	IDKUT to EMRAN	Westbound	N/A	N/A	N/A	N/A	N/A	107
L645	SAMAK to IDKUT	Eastbound	6	9	10	18	17	138

Route	Portion	Direction	The number of flights					
			2018	2019	2020	2021	2022	2023
L645	IDKUT to MAPSO	Eastbound	13	81	11	18	48	98
L645	MAPSO to IDKUT	Westbound	12	211	10	17	107	196
L645	IDKUT to SAMAK	Westbound	108	213	10	16	113	204
N571	IGOGU to NILAM	Eastbound	1684	2096	715	385	1217	866
N571	VAMPI to GUNIP	Eastbound	1116	1319	495	N/A	937	666
N571	GUNIP to VAMPI	Westbound	1466	1394	387	N/A	693	679
N571	NILAM to IGOGU	Westbound	1706	1599	428	689	1290	971

Note: N/A" indicates that no data from the TSD for that particular year