



ICAO

International Civil Aviation Organization

Seventh Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG/7)

Virtual Teleconference, 9 – 11 December 2025

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

**REVIEW OF BOBTFRG ATS ROUTE OPERATIONAL IMPROVEMENT AND PRIORITY AREAS IMPLEMENTATION TIMELINES**

(Presented by the Secretariat)

**SUMMARY**

This paper presents the proposed implementation timelines for BOBTFRG Priority Areas for review and update to firm up the feasible implementation timelines of PBCS for the performance-based longitudinal separation over the Bay of Bengal airspace.

**1. INTRODUCTION**

1.1 The BOBTFRG Priority Areas 1 and 2 were developed and agreed upon at the Second Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG/2, Bangkok, Thailand, 08 – 10 October 2019). The BOBTFRG/3 (VTC, 14 -15 December 2021) agreed to update the implementation timeline for each priority area to reflect the changes in factors caused by COVID-19.

1.2 At BOBTFRG/5 (Bangkok Thailand, 6-8 December 2023), the group had agreed upon the trial implementation plan for the PBCS of the Bay of Bengal, which had developed a three-phased plan for PBCS implementation.

1.3 This paper aims to facilitate the discussion to firm up the feasible implementation timelines of Performance-Based Communications and Surveillance (PBCS) for performance-based longitudinal separation with the key enabler of ADS-C/CPDLC mandate over the Bay of Bengal area to optimise the airspace capacity. The suggested update of the implementation timeline for each priority area is contained in **Attachment B**.

**2. DISCUSSION**

Performance Expectations in the *Asia/Pacific Seamless ANS Plan*

2.1 In Category R airspace, ADS-C surveillance and CPDLC should be implemented to support PBN-based separation in accordance with the principles of “best equipped/capable, best served” and “most capable, best served”. Under these principles, aircraft that do not meet the specified CNS/PBN requirements should normally be accorded a lower priority, except where otherwise prescribed (e.g. for State aircraft). States are encouraged to transition to RNP 4 or RNP 2 oceanic navigation specifications at the earliest opportunity.

2.2 All ATC units should authorize the use of horizontal separation minima as specified in ICAO Doc 4444 (PANS-ATM), or as close to these minima as operationally practicable, taking into account:

- a) the automation of the ATM system, including automated hand-off between sectors;
- b) the capability of the ATC communications systems;
- c) the performance of the ATS surveillance system, including data-sharing or overlapping coverage at TOC points; and
- d) ensuring the competency of air traffic controllers to apply the full tactical capability of ATS surveillance systems.

2.3 The provision of ATC services should be based primarily on available CNS/ATM capabilities. Where Annex 11-compliant ATS surveillance is provided, surveillance-based separation minima of 5 NM (en-route) and 3 NM (terminal) should be authorized within sectors. At TOC points in such an environment, separation minima of 5–10 NM should be authorized where automated hand-off and surveillance data-sharing or overlapping coverage are available, and 5–20 NM where automated hand-off is not available, subject to an appropriate safety assessment.

2.4 The effectiveness, continuity and availability of ATM services should be supported through adherence to regional planning and guidance material on ATM automation and ATM contingency arrangements. For ATM contingency operations, reference should be made to the applicable Regional ATM Contingency Plan.

2.5 As far as practicable, all newly established ATS routes should be designated as PBN routes, in accordance with the applicable performance-based navigation specifications.

<i>APAC Seamless ANS Plan</i>	<b>Category R airspace</b>	<b>Category S airspace</b>
<b>PARS Phase II with expected implementation by 07 Nov 2019</b>	RNP 4, RNP 10 (RNAV 10) (other acceptable specifications – RNP 2 oceanic)	RNAV 2 or RNP 2
To support ASBU	APTA-B0/1 – 8, APTA-B1/1 – 5	
<b>PARS Phase III with expected implementation by 03 Nov 2022</b>	RNP 2 Oceanic (requires dual independent installations) (other acceptable specifications – RNP 4)	RNAV 2 or RNP 2
To support ASBU	COMS-B0/1 – 2, COMS-B1/1 – 3, APTA B0/1 – 8, APTA B1/1 – 5	

2.6 It is important to note that the selected ATS route navigation performance specification should be harmonised and utilise the least stringent requirement needed to support the intended operation unless obstacle clearance or ATC separation requirements demand.

#### PBCS Implementation

2.7 Recalling that the Performance-Based Communication and Surveillance (PBCS) provisions in ICAO Annexes 6 and 11, Doc 4444 (PANS-ATM) and associated guidance material were intended for implementation no later than 29 March 2018, the meeting is invited to note the following:

- ***By Air Navigation Service Providers applying the following commonly used performance-based separation minima<sup>1</sup> were supported by ADS-C/CPDLC:***
  - 23 NM lateral separation (RNP 4 or RNP 2);
  - 50 NM longitudinal separation (RNAV 10/RNP 10 or RNP 4); and

<sup>1</sup> ICAO Doc 4444 Procedures of Air Navigation Services – Air Traffic management (PANS-ATM) sections 5.4.1.2.1.6 and 5.4.2.9.2 detail the communications and surveillance performance requirements for tall performance-based separation minima that are supported by ADS-C/CPDLC. 50NM longitudinal separation minimum in 5.4.2.6.3 does not require the use of ADS-C, but does require direct controller pilot communications (DCPC) and distance reports at frequent intervals (at least every 24 seconds).

- 30 NM longitudinal separation (RNP 4 or RNP 2).

- **By Regulatory Authorities:**

- For safety oversight of ANSP PBCS operations; and
- To approve, and monitor the performance of, PBCS operations by aircraft and aircraft operators of the State of Registry.

2.8 In the Bay of Bengal area, the majority of ATS routes remain specified as RNAV 10 (RNP 10), and progress in implementing RNP 2 (or RNP 4) routes and PBCS has been limited. In light of the continuing recovery of traffic following the COVID-19 pandemic, further postponement of more efficient performance-based separation should be avoided.

Global Project 30/10 – Optimised implementation of longitudinal separation minima

2.9 The Fourteenth Air Navigation Conference (AN-CONF/14, September 2024), noted that air traffic management performance is constrained by inconsistent application of separation minima across FIR boundaries, and using separation standards that are not harmonized at regional or sub-regional level. While many States are actively improving service efficiency and reducing environmental impact, these efforts are often limited by downstream bottlenecks arising from non-seamless operations.

2.10 In this context, ICAO’s Air Navigation Bureau presented Working Paper AN-CONF/14-WP/10, which proposed an initiative to promote harmonized implementation of longitudinal separation minima of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less in other airspace. The intent is to enhance the operational efficiency of the global air navigation system through consistent, performance-based separation ([AN-Conf/14-WP/10](#)).

2.11 As a result of the discussion, what is noteworthy is that the Committee approved the **Recommendation 3.1/1: Project 30/10 – Optimised implementation of longitudinal separation minima.**

*That States:*

- a) *within the processes of the planning and implementation regional groups, actively collaborate with neighbouring States to implement Project 30/10 – implementation of longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere;*

*that ICAO:*

- b) *through the planning and implementation regional groups, develop regional action plans for the implementation of Project 30/10;*
- c) *support inter-regional collaboration for a harmonized implementation of Project 30/10; and*
- d) *consider other minimum service level procedures, via a framework, for implementation in oceanic and remote airspace.*

2.12 With respect to Project 30/10, States have begun aligning their implementation plans. In particular:

- a) **India**
  - Has permanently implemented 20 NM longitudinal separation between eligible aircraft on routes L301 and L639 between Muscat and Mumbai in the Mumbai FIR;

- Is conducting a trial of 20 NM longitudinal separation on route N571 between Mumbai and Muscat; and
- Is applying 30 NM longitudinal separation between eligible aircraft on route N571 between Chennai and Kuala Lumpur FIR.

#### Trial implementation plan for the PBCS of the Bay of Bengal

2.13 According to the Project 30/10 – Optimised implementation of longitudinal separation minima (AN-CONF/14), the trial implementation plan for the PBCS of the Bay of Bengal formulated by BOBTFRG/5 (December 2023) has been proven to be correct and in line with the development trend. The phased detailed action plans the group has agreed upon are listed as the following:

- i. **Phase 1**– 50 NM longitudinal separation to be applied based on the current capability RNAV 10 (RNP 10) available as soon as possible;
- ii. **Phase 2** – to start transitional period: trial implementation of 30 NM longitudinal / 23 NM lateral separation with harmonized ADS-C/CPDLC equipage mandate for RNP 4 or RNP 2, RCP 240, RSP 180 requirements.
- iii. **Phase 3** – permanent implementation of 30 NM longitudinal / 23 NM lateral separation not later than **1 March 2026**, subject to post-op evaluation on Phase 2 and ANSP’s readiness to give flexibility or earlier implementation.

2.14 With respect to the phased detailed action plans, States provided the following updates on their implementation progress;

- a) **India** intends to extend the same level of separation to additional routes within the Mumbai, Chennai and Kolkata FIRs in a phased manner.
  - **Phase 1:** Application of 50 NM longitudinal separation between ADS-C/CPDLC-equipped aircraft on all RNAV 10 (RNP 10) routes within Indian FIRs was planned; however, full and effective implementation has been constrained by readiness limitations.
  - **Phase 2:** Trial implementation of 30 NM longitudinal separation, based on PBCS, between eligible aircraft on route N571 between Chennai and Kuala Lumpur FIR is ongoing.
  - **Phase 3:** Permanent implementation of 30 NM/23 NM PBCS separation has not yet been achieved. Nevertheless, 20 NM longitudinal separation based on space-based ADS-B and CPDLC (RCP 240) between eligible aircraft on routes L639 and L301 between Mumbai and Muscat has been permanently implemented.
- b) **Sri Lanka** informed the meeting that 50 NM longitudinal separation has been implemented since November 2022, and that plans are in place to introduce 30 NM longitudinal and 23 NM lateral separation.
- c) **Malaysia** reported the following phased PBCS action plan.
  - **Phase 1 (Completed):** Default application of 50 NM longitudinal distance-based separation between pairs of RNP 10/RNP 4–approved aircraft has been in effect since 1 July 2024.
  - **Phase 2 (Ongoing):** Trial implementation of 30 NM longitudinal performance-based separation between any pair or combination of RNP 4 or RNP 2 approved aircraft, on an opportunity basis and in line with the “best equipped,

best served” principle, commenced on 1 September 2025 for a period of one year. Tentative implementation of an ADS-C/CPDLC and PBCS mandate on ATS route N571 is targeted for 7 August 2026.

- **Phase 3** (Future Plan): Tentative permanent implementation of 30 NM longitudinal performance-based separation between aircraft approved for RNP 4 or RNP 2, RCP 240, RSP 180, and ADS-C/CPDLC is targeted by 7 August 2026.
- d) **Indonesia** is targeting 2026 for the operational implementation of space-based ADS-B, including subscription to and use of space-based ADS-B services.
- e) **Bangladesh** plans to develop a three-phase longitudinal separation reduction programme in the future and will conduct further studies and analyses to support this work.

#### Analysis of the Current Separation being applied in the BOB Area

2.15 The most recent updates were provided by Malaysia through Information Paper (ATM/SG/12 – IP/05) and follow-up email correspondence, as well as by other States, including India and Sri Lanka, as reflected in **Attachment A**. Malaysia reported the implementation of a default 50 NM longitudinal separation in the Bay of Bengal (BOB) area, together with an additional Flight Level Allocation Scheme (FLAS) using FL360 on ATS routes L510, N571, P574 and P628. In coordination with India, this measure has significantly increased available capacity over the BOB area and enhanced air traffic management efficiency within the Kuala Lumpur FIR.

- a) The 50 NM longitudinal separation for ATS routes L510, N571, P574 and P628 was effectively implemented on 1 July 2024. Malaysia and India agreed to adopt this default separation standard to enhance traffic capacity over the BOB. This standard applies to flights departing from Kuala Lumpur, Singapore and other overflights that cruise along these ATS routes. Following coordination with Singapore, their implementation will commence on 28th August 2024.
- b) For aircraft departing from Kuala Lumpur International Airport, a ground separation of seven (7) minutes between aircraft pairs on ATS routes L510, N571, P574, and P628 have been imposed to ensure the 50 NM longitudinal separation can be achieved. The same procedures are also followed for aircraft departing from Changi Airport.
- c) The joint decision by Malaysia and India to incorporate FL 360 into the current FLAS has significantly enhanced the efficiency and capacity of air traffic management over the BOB. The total available FLAS for westbound flights has increased to six (6) flight levels: FL280, FL300, FL340, FL360, FL380 and FL400.
- d) In the event of Large-Scale Weather Deviation (LSWD) in the BOB that necessitates suspending the seven (7) minutes of ground separation, KL ACC Oceanic Sector will notify Chennai OCC and Singapore ACC. During such events, ten (10) minutes of ground separation will be re-applied, and real-time coordination shall be maintained.
- e) Planning efforts are ongoing, and the data is anticipated to be fed into operational systems in Q4 2026.

2.16 **India** has implemented SB-ADS-B since 2021, and India has implemented 20NM longitudinal separation based on SB ADS-B/CPDLC between eligible aircraft on L301 and L639 between Muscat and Mumbai. Trial operation of 20NM longitudinal separation is in progress on N571 between Mumbai and Muscat. India has plan to extend the same to other routes also.

2.17 **India** also confirmed that 30 NM longitudinal separation based on PBCS is currently applied on route N571 in the Chennai FIR between Chennai and Kuala Lumpur FIR, with permanent implementation to proceed once Malaysia is ready.

2.18 **Sri Lanka** informed the meeting that the INTELCAN ATM system has been upgraded to support PBCS operations, with several new functions introduced to enable accurate identification and monitoring of PBCS-capable aircraft.

- a) PBCS capabilities (e.g. RCP and RSP specifications) are automatically detected and displayed on aircraft target labels, enabling air traffic controllers to readily identify each aircraft's communication and surveillance performance;
- b) PBCS-related data have been integrated into both electronic and printed flight progress strips to ensure consistent access to aircraft capability information throughout flight management;
- c) The system is currently operating in accordance with RSP 180 and RCP 240 (P2) performance levels, ensuring compliance with PBCS requirements;
- d) A 50 NM longitudinal separation minimum, based on RNP 10, is applied on all ATS routes in Colombo FIR and on connecting routes at KAT and MTL VORs; and
- e) Implementation of space-based ADS-B is planned in Phase I (2026–2028) of the National Air Navigation Plan.

2.19 **Indonesia** noted the introduction of the 15 NM separation standard in PANS-ATM, Section 8.7.3.3, for use within Free Route Airspace (FRA), with cross-border application predicated on aircraft meeting RNP 4 capability. For non-RNP 4 traffic, existing separation minima of 30 NM (where applicable) and 50 NM based on RNP 10 continue to be applied.

2.20 **Indonesia** reported the current longitudinal separation status within Jakarta FIR as follows: 20 NM (surveillance-based) on route P574; 50 NM on route N563; 50 NM on route M300; and no reduced longitudinal separation implemented yet on route P570.

2.21 **With respect to Indonesia–Malaysia operations, Indonesia** advised that separations applied upon entry into Indonesian airspace are based on surveillance. No additional updates were provided at this time.



SRILANKA	COLOMBO	YES	AVAILABLE	YES	YES	NO	Trials to be commenced.
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 by BOBTFRG/7).

2.24 Bangladesh informed the meeting that shadow operations for its new ATM automation system are currently in progress, with full operational implementation expected in the first quarter of 2026. Upon commissioning of the system, Bangladesh will commence coordination with neighbouring States, as the upgraded ATM/CNS infrastructure—equipped with ADS-C and CPDLC capabilities—will enhance the provision of air traffic services within the Bay of Bengal region.

### 3. CONCLUSION

3.1 The Asia/Pacific region is progressively modernizing its airspace by moving toward harmonized, performance-based separation standards, supported by wider use of PBN, PBCS, ADS-C/CPDLC and space-based ADS-B.

3.2 Through Project 30/10 and the Bay of Bengal PBCS action plan, States are working to reduce longitudinal separation to 30 NM or less, with some (e.g. India, Malaysia, Sri Lanka, Indonesia, Bangladesh) already conducting trials or applying reduced separations on selected routes.

3.3 However, differences in system readiness, automation, and approved minima across FIR boundaries still create bottlenecks and limit seamless operations. Sustained investment in CNS/ATM upgrades, robust safety assessments, and strengthened cross-border coordination will be critical to fully achieve the targeted capacity, efficiency, and safety benefits in the Bay of Bengal and the wider Asia/Pacific network.

### 4. ACTION BY THE MEETING

4.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) review and provide feedback on Figure 1: *Horizontal Separation Minimus being applied in the BOB area*;
- c) review and provide feedback on Table 1: *The readiness of ATM/CNS system of BOB States*
- d) review and provide feedback on the *Implementation Timelines for BOBTFRG Priority Areas* in **Attachment A**; and
- e) discuss any relevant matters as appropriate.

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**Bay of Bengal ATS Route Operational Overview – Where We Are & Key Challenges**

ATS Routes (Categories)	Horizontal Separation	Horizontal Challenges	Vertical Management	Vertical Challenges	Concerning States (Leading)	Timelines	CNS Infrastructures
L510, P574, P628, N571 (RNAV 10 / RNP 10)	Phase 1: 50 NM longitudinal separation; Phase 2/3 planned: 30 NM longitudinal / 23 NM lateral (RNP 4 or RNP 2 with ADS-C/CPDLC, RCP 240, RSP 180)	Lack of harmonized separation minimum across FIR boundaries; limited RNP 2/RNP 4 implementation; varied ANSP readiness; dependency on ADS-C/CPDLC mandates	FLAS includes FL280, FL300, FL340, FL360, FL380, FL400 (westbound)	Need for harmonized vertical separation and allocation; weather deviations (LSWD) require reverting to 10-minute separation	Malaysia (TBD) (lead for L510, N571, P574, P628 implementation with India); India (Chennai/Kolkata FIRs)	<p><b>Phase 1:</b> 50 NM (implemented 1 July 2024)</p> <p><b>Phase 2:</b> Trial started on 1st September 2025 for a period of one (1) year specifically on N571 (FL280 up to FL410) to explore CRA options and assess operational limitations.</p> <p><b>Phase 3:</b> Tentative permanent implementation of 30NM PBCS-based separation by 7th August 2026.</p>	ADS-C/CPDLC available in some FIRs; varied readiness — some FIRs lack automation; some under upgrade (Indonesia); Malaysia monitoring ADS-C/CPDLC only
N571 (Chennai FIR – Oceanic)	Trial use of PBCS-based 30 NM & 5-minute separation (opportunity basis)	Limited benefits due to restricted segment (AGELA–IGOGU); <b>Limited flight participation from Malaysia due to operational limitation (i.e. large weather deviation)</b> , lack of participation from Oman; some aircraft excluded due to non-PBCS compliance or boundary sector not in trial	RVSM band	Limited vertical optimization until Malaysia, exit boundary constraints	India (lead); Malaysia, (encouraged to join)	Trials commenced 4 Feb 2025, 0300–1300 UTC daily; 3-month trial; possible H24 extension and expansion to other RNAV/RNP 10 routes pending regulatory approval. India implemented trial operation of 30NM/5min PBCS separation on N71 on H24 based with effect from 03 Jun 2020.	ATM automation with PBCS compliance alerts; ADS-C; CPDLC
L301 and L639; N571 (Mumbai FIR,	20 NM longitudinal separation	Limited eligible aircraft pairs (~53% L639, ~52% L301); intermittent drop of	Confirmation required from member States	Confirmation required from member States	India (Airports Authority of India, DGCA) – Lead; Oman	15 Jan 2024: trial start eastbound only; 14 Aug 2024: Oman joined	Space-Based ADS-B (Aireon, 1090ES, 8-sec update), CPDLC,

ATS Routes (Categories)	Horizontal Separation	Horizontal Challenges	Vertical Management	Vertical Challenges	Concerning States (Leading)	Timelines	CNS Infrastructures
international oceanic routes to/from Muscat FIR)	between eligible aircraft	ADS-B targets; need for neighboring FIR participation (Muscat joined Aug 2024)			(Muscat FIR) – participant since Aug 2024	(east/west bound); 1 Jan 2025: 24-hr trial; safety assessment done Dec 2024; permanent implementation since 21 <sup>st</sup> May 2025; 20NM Trials commenced from 20 <sup>th</sup> Aug in Muscat Mumbai-Chennai FIR; phased expansion planned to other Mumbai FIR routes, then Chennai & Kolkata FIRs. Trials commenced on 20 <sup>th</sup> Aug 2025 for route N571 in Oman and India FIRs.	HF/SAT phone backup; terrestrial ADS-B & VHF in U5V sector
P570 (Chennai–Muscat flow)	Confirmation required from member States	Crossing conflicts at KITAL between P570, and P751; decreased availability of optimum levels	Confirmation required from member States	Inefficient use of available flight levels due to crossing points and route convergence	India (Airports Authority of India, Mumbai ACC) – Lead; coordination with Oman (Muscat FIR), Maldives (Male FIR), and possibly Chennai FIR	Jan 2025: Proposal discussed with airlines and IATA; feedback awaited; UPR implementation in southern Mumbai Oceanic airspace under consideration; new route south of BIBGO proposed to decongest KITAL India proposal to create a new route from ESLAV to ASPUX is being discussed. Airlines from AFI region are encouraged to FPL UPRs through ASIO UPR zone for Southeast Asian destinations.	Confirmation required from member States

**IMPLEMENTATION TIMELINES FOR BOBTFRG PRIORITY AREAS V3.0**

**BOBTFRG Priority Area 1:** Conduct a review of the air traffic flows in **Category S airspace** through Thailand, Myanmar, Bangladesh, India, Pakistan and Afghanistan. The objective is to develop a plan to implement improved and harmonised longitudinal spacing on affected ATS route(s) (targeting **20 NM longitudinal spacing**, or as close to the separation minima as practicable).

		Activity	Completion Date	Remarks
Phase 1	1	Identify current spacing implemented by States.	<del>BOBTFRG/4</del> Completed	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019. Updated at BOBTFRG/3: Bangladesh, India, Indonesia, Malaysia, Myanmar, Pakistan and Thailand had submitted data to ICAO. Re: ATM/SG/9 WP/7, ICAO APAC Regional Office would circulate a new survey form, requesting APAC Administrations to provide information about the authorised ATC separation minimums and separation minimums at each FIR TOC point.
	2	Identify impediments to implementation of improved spacing (staffing and ATC sectorisation constraints).	Completed at BOBTFRG/3	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019. Updated at BOBTFRG/3: Reasons provided by States: communication and surveillance coverage limitations; ATM system capability related to PBCS; and low level of ADS-C/CPDLC equipage.
	3	Identify the ATS surveillance and communication gaps and actions taken to fill the gaps.	Closed at BOBTFRG/3	Ref CNS SG/23 WP/22. Updated at BOBTFRG/3: ATS Surveillance and DCPC VHF Coverage Charts was included in the <i>Asia/Pacific Seamless ANS Plan V3.0</i> .

		Activity	Completion Date	Remarks
	4	Identify ATS Inter-Facility Data Communication (AIDC) and/or direct speech circuits' capabilities.	Closed at BOBTFRG/3	States to provide update to the Secretariat latest by 30 November 2019. Updated at BOBTFRG/3: Updated AIDC implementation status in the APAC Region was provided in Appendix B to the APA TF/7 Report.
	5	Investigate whether appropriate handoff procedures are implemented between controllers providing ATS surveillance in adjacent airspace – review ATS Letter of Agreement (LOA).	<del>31 January 2022</del> Completed at BOBTFRG/4	Updated at BOBTFRG/3: Bangkok – Kuala Lumpur ACCs: Yes Bangkok – Yangon ACCs: Yes Jakarta – Kuala Lumpur ACCs: Yes Dhaka – Kolkata ACCs: expected in 2025. Dhaka – Yangon ACCs: expected in 2025. Yangon – Kolkata ACCs (ATS route A201)? Delhi – Lahore ACCs? Delhi – Karachi ACCs? Mumbai – Karachi ACCs? Lahore – Kabul ACCs? Karachi – Kabul ACCs? Colombo ACC – Chennai OCC?
	6	<del>Review the existing Flight Level Allocation Scheme (FLAS) operating within the concerned airspace, with a view to improve efficiencies.</del> Review and plan improved and efficient FLAS operating within the BOB airspace.	<del>31 January 2022</del> BOBTFRG/5	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019. Updated at BOBTFRG/3: Reason for FLAS: multiple crossing of higher density routes over Category R airspace. States to confirm the accuracy of the information in the Bay of Bengal FLAS Chart (BOBTFRG/3 Report re: WP/07).

		Activity	Completion Date	Remarks
	7	<p>States to identify routes along which reliable surveillance and communication are available to look at the possibility of reduced longitudinal spacing.</p> <p>Confirm the coverage of Surveillance and Communication over the BOB airspace (to be tasked to TF to draft the Plan of the BOB Route Network)</p>	<p>31 January 2022</p> <p>States (TF) report to SAIOSEACG/2</p>	<p>Updated at BOBTFRG/3:</p> <p>India and Pakistan: 50 NM longitudinal spacing implemented at the TOC points of following FIR boundaries: Delhi – Karachi FIRs; Delhi – Lahore FIRs; and Mumbai – Karachi FIRs.</p> <p>Indonesia and Malaysia: 20 NM longitudinal spacing implemented at the following TOC points: GOTLA, PUGER and SALAX.</p> <p>Malaysia and Thailand: 30 NM longitudinal spacing implemented at the TOC points between Bangkok and Kuala Lumpur FIRs.</p> <p>Myanmar and Thailand?</p> <p>India and Myanmar (ATS route A201)?</p> <p>India and Sri Lanka?</p>
Phase 2	8	<p>Complete the agreement between States to implement 20 NM longitudinal spacing (or as close to the separation minima as practicable) in Category S airspace through Thailand, Myanmar, Bangladesh, India, Pakistan and Afghanistan.</p> <p>Bangladesh regularly keeps the meeting updated the progress of CNS-ATM Modernization Project.</p>	2025	<p>Updated at BOBTFRG/3:</p> <p>Traffic operating north of Bay of Bengal airspace will traverse through Dhaka FIR, and currently no en-route ATS surveillance service provided in Dhaka FIR.</p> <p>To be reviewed in tandem with the Modernization Project of CNS-ATM System of Bangladesh.</p>

**BOBTFRG Priority Area 2:** Conduct a review of the air traffic flows in Category R airspace within Bay of Bengal. The objective is to develop a plan to implement improved and harmonised **30 NM longitudinal spacing** on affected ATS routes.

		Activity	Completion Date	Remarks
Phase 1	1	Agreement between States to implement 50 NM longitudinal spacing between applicable aircraft on affected ATS routes. The application of performance-based separation minima and distance-based separation minima (RNP 10, with procedural position reports not less than 24 minutes apart) in airspace over the high seas requires supporting procedures in ICAO Doc 7030 – <i>Regional Supplementary Procedures</i> .	SAIOSEACG/1 States (TF) report to SAIOSEACG/2	Chennai and Kuala Lumpur ACC to signed revised LoA by 31 January 2020. Jakarta and Colombo had implemented 50 NM longitudinal spacing. Yangon and Kolkata, and Chennai had implemented 50 NM longitudinal spacing. Updated at BOBTFRG/3: Chennai OCC and Kuala Lumpur ACC had signed a new LoA, effected on 01 June 2021. 50 NM longitudinal spacing implemented. No update at the SAIOSEACG/1
	2	Facilitate potential modernization of Bangladesh CNS/ATM system (meeting tentatively planned for 23 October 2019).	Closed	ICAO RO to provide feedback during SAIOACG/10. Updated at BOBTFRG/3: The Modernization Project of CNS-ATM System of Bangladesh expected to be completed in 2024.
	3	Research and development project conducted by India, Singapore and any other interested States to look at technology capability and benefits, including the business case for enhanced surveillance and communication.	Closed	Subject to the approval from the competent agencies of each State. India and Singapore (ATMRI) would examine the proposal and submit their comments at the BOBTFRG/3. Updated at BOBTFRG/3: On 25 November 2019, Airport Authority of India had an informal meeting with ATMRI Singapore on the ICAO request in BOBTFRG/2 for a joint research and development. In the meeting, ATMRI informed that communications and surveillance was not in their domain of research, and they would not be able to

		Activity	Completion Date	Remarks
				participate.
	4	Implementation of 50 NM longitudinal separation (RNAV 10/RNP 10) with PBCS in the BOB airspace, at or above a level to be determined.	<del>To be discussed</del> at SAIOSEACG/1 States (TF) report to SAIOSEACG/2	ADS-C/CPDLC non-exclusive mandate? PfA to ICAO Doc 7030 – <i>Regional Supplementary Procedures</i> . Current fleet equipage is less than 70%. Most of the non-equip aircraft are narrow-body aircraft and low cost airlines. Updated at BOBTFRG/3: <del>States to issue AIC after SAIOACG/10.</del> For better clarity, the ADS-C/CPDLC non-exclusive mandate should be referred to as “ <i>designation as non-exclusive PBN and PBCS airspace to allow operational priority for PBN and PBCS approved aircraft</i> ”. Due to the COVID-19 pandemic, which has caused severe impact on airlines and ANSPs resources and revenue, the discussion on the plan designation as non-exclusive PBN and PBCS airspace to allow operational priority for PBN and PBCS approved aircraft. has been postponed.
		a. States <del>and IATA</del> to conduct analysis on fleet equipage in ADS-C/CPDLC, RNP 10, RNP 4 and RNP 2 (continental and oceanic).	SAIOSEACG/1 States (TF) report to SAIOSEACG/2	BOBTFRG/3 Report re: WP/08. IATA presented its analysis results at the SAIOSEACG/1 and ATM SG/10.
		b. States requiring PBCS support to implement performance-based separation to develop its PBCS implementation plan, including expected date of implementation.	SAIOSEACG/1 States (TF) report to SAIOSEACG/2	BOBTFRG/3 Report re: WP/08. No update at the SIOSEACG/1

		Activity	Completion Date	Remarks
	5	Develop Performance-based Communication and Surveillance (PBCS) Implementation Plan to support 30 NM longitudinal spacing on RNP 4 (or RNP 2) routes within Category R airspace.	To be determined States (TF) report to SAIOSEACG/2	States that require PBCS to support 30 NM longitudinal spacing: Bangladesh: To be determined. Sri Lanka: No information. India: Expected to be implemented in Chennai FIR in 2020; Mumbai FIR in 2023; and Kolkata FIR to be determined. Indonesia: Expected in 2023 as part of the new Jakarta ACC ATM system project. Malaysia: Expected in second quarter of 2022. Myanmar: To be determined.
	6	Implementation of RNP 4 (or RNP 2) routes within BOB airspace.	To be determined States (TF) report to SAIOSEACG/2	Subject to the implementation of PBCS.
	7	Agreement between States to implement 30 NM longitudinal spacing (or as close to the separation minima as practicable) on trial basis.	To be determined <b>1 March 2024</b>	Updated at BOBTFRG/3: Subject to the implementation of PBCS.
Phase 2	8	Review the demand and capacity on the affected ATS routes.	To be determined 2025 (SAIOSEACG/4)	Subject to the trial implementation of PBCS.
	9	Identify solutions to integrate departing traffic from New Delhi with the BOBCAT traffic.	To be determined 2025 (SAIOSEACG/4)	
	10	Review the requirement to retain BOBCAT tool based on the increase in capacity utilising improved longitudinal spacing, taking into account forecast growth in air traffic.	To be determined 2025 (SAIOSEACG/4)	
	11	Make recommendations to SAIOACG on the future status of the BOBCAT tool.	To be determined 2025 (SAIOSEACG/4)	