International Civil Aviation Organization

Third Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG/3)

Video Teleconference, 14 – 15 December 2021

Agenda Item 6: Any Other Business

REVIEW OF BOBTFRG PRIORITY AREAS IMPLEMENTATION TIMELINES

(Presented by the Secretariat)

SUMMARY

This paper presents the implementation timelines for BOBTFRG Priority Areas for review and update.

1. INTRODUCTION

1.1 The BOBTFRG Priority Areas 1 and 2 were developed and agreed at the Second Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG/2, Bangkok, Thailand, 08 – 10 October 2019. The meeting also agreed to the implementation timelines for each priority area as provided in **Attachment A** to this working paper.

2. DISCUSSION

Review of BOBTFRG Priority Areas Implementation Timelines

2.1 Based on data submitted by Bangladesh, India, Indonesia, Malaysia, Myanmar, Pakistan and Thailand to ICAO, in response to State Letter AP 058/19 (RSO) Attachment D (Data Related to ATS Route Form) dated 16 May 2019, the *Implementation Timelines for BOBTFRG Priority Areas* has been updated (**Attachment B**).

ADS-C/CPDLC Equipage

2.2 At the BOBTFRG/2, the meeting discussed the need to implement Automatic Dependent Surveillance – Contract (ADS-C) and Controller Pilot Data-link Communications (CPDLC) systems and Performance-based Communications and Surveillance (PBCS), to support performance-based separations and enhance the efficiency in the Bay of Bengal.

2.3 To ensure both Air Navigation Service Providers (ANSPs) and airspace users are ready and capable of PBCS, the meeting had agreed to recommend to the South Asia/Indian Ocean ATM Coordination Group (SAIOACG) for ADS-C/CPDLC non-exclusive mandate[1] in the Bay of Bengal, tentatively planned by 1 January 2023.

[1] For better clarity, the ADS-C/CPDLC non-exclusive mandate should be referred to as “designation as non-exclusive PBN and PBCS airspace to allow operational priority for PBN and PBCS approved aircraft”. The designation as non-exclusive PBN and PBCS airspace to allow operational priority for PBN and PBCS approved aircraft requires supporting procedures in ICAO Doc 7030 – *Regional Supplementary Procedures*.

2.4 However, due to the COVID-19 pandemic, which has caused severe impact on airlines and ANSPs resources and revenues, the discussion on the designation as non-exclusive PBN and PBCS airspace to allow operational priority for PBN and PBCS approved aircraft has been postponed.

2.5 The COVID-19 pandemic may has caused changes to the aircraft capability in the Bay of Bengal. In order for the Group to progress with the designation as non-exclusive PBN and PBCS airspace to allow operational priority for PBN and PBCS approved aircraft in the Bay of Bengal, the following actions are expected:

- BOBTFRG States should work with local airlines to conduct the analysis on the fleet equipage in ADS-C/CPDLC, RNP 10, RNP 4 and RNP 2;
- States requiring PBCS support to implement performance-based separation should develop its PBCS implementation plan, including the expected timeline; and
- IATA to support States and work with its member airlines to conduct the analysis of fleet equipage.

Airspace Equipage Mandate

2.6 Followings are the important considerations when planning for airspace equipage mandate, based on the *Asia/Pacific Seamless ANS Plan* excerpt:

- *Preparation Time: Operators need time to prepare for any mandated equipage requirement – if new equipment is involved, several years may be required to allow fitment to take place during normal airframe maintenance cycles.*
- *Cost Benefit: Operational improvements, including the use of new technologies or implementing ASBUs, need to provide operational benefits that outweighed the total cost of implementation and operation. This included the airspace user side of the equation. States/ANSPs should carry out studies of the costs and benefits for all stakeholders.*
- *Education and Promulgation: States/ANSPs should work with local airlines and International Organizations to ensure industry and other stakeholders are educated and informed regarding upcoming aircraft equipage mandates very early in the planning process. Ideally, the dialogue should begin with user consultation pertaining to the selection of appropriate solutions. Once a decision has been made, user education should include briefings, media notifications as well as required AIS promulgation.*
- *Service Outcomes: States/ANSPs must ensure the service delivery efficiencies enabled by an aircraft equipage mandate are actually delivered operationally coincident with the implementation date of the mandate. If service delivery is delayed, any related aircraft equipage mandate should also be delayed accordingly. States/ANSPs should consider offering operational advantages to early adopters of the desired equipage or capability to offset costs. This would enable operators to make at least partial use of the mandated capability in advance of the mandated date.*
- *Harmonization: it is essential that States/ANSPs harmonize requirements with neighbours as far as practicable, including implementation dates.*
- *Regulatory considerations: it is essential that regulators are involved very early in the planning process. Experience shows that regulatory approvals are often a problem with the introduction of aircraft equipage mandated environments.*
- *High Seas: Where airspace over the High Seas is affected, States must ensure appropriate ICAO processes are followed, including amendments to the required ICAO provisions.*

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) review and provide feedback on the *Implementation Timelines for BOBTFRG Priority Areas* in **Attachment B**;

c) urge States and IATA to conduct the analysis on the fleet equipage in ADS-C/CPDLC, RNP 10, RNP 4 and RNP 2;

d) urge States that require PBCS support to implement performance-based separation to develop its PBCS implementation plan, including the expected timeline; and

e) discuss any relevant matters as appropriate.

…….

IMPLEMENTATION TIMELINES FOR BOBTFRG PRIORITY AREAS

BOBTFRG Priority Area 1: Conduct a review of the air traffic flows in Category S airspace through Thailand and Myanmar to the Bay of Bengal, 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.	October 2019	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019.
	2	Identify impediments to implementation of improved spacing (staffing and ATC sectorisation constraints).	October 2019	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019.
	3	Identify the ATS surveillance and communication gaps and actions taken to fill the gaps.	October 2019	Ref CNS SG/23 WP/22.
	4	Identify ATS Inter-Facility Data Communication (AIDC) and/or direct speech circuits' capabilities.	30 November 2019	States to provide update to the Secretariat latest by 30 November 2019.
	5	Investigate whether appropriate handoff procedures are implemented between controllers providing ATS surveillance in adjacent airspace – review ATS Letter of Agreement (LOA).	30 November 2019	
	6	Review the existing Flight Level Allocation Scheme (FLAS) operating within the concerned airspace, with a view to improve efficiencies.	31 October 2019	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019.
	7	States to identify routes along which reliable surveillance and communication are available to look at the possibility of reduced longitudinal spacing.	January 2020	India, Myanmar, Thailand, Pakistan.
Phase 2	8	Agreement between States to implement 20 NM longitudinal spacing (or as close to the separation minima as practicable) on affected ATS routes.	December 2020	

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.	31 January 2020	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.
	2	Facilitate potential modernization of Bangladesh CNS/ATM system (meeting tentatively planned for 23 October 2019).	March 2020	ICAO RO to provide feedback during SAIOACG/10.
	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.	To be determined	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.
	4	Implementation of 50 NM longitudinal spacing to aircraft operating in the BOB airspace, at or above a level to be determined.	1 January 2023	ADS-C/CPDLC non-exclusive mandate? PfA to ICAO Doc 7030 – *Regional Supplementary Procedures*. Current fleet equipage is less than 70%. Most of the non-equip aircraft are narrow-body aircraft and low cost airlines. States to issue AIC after SAIOACG/10.

		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.	2023	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.	2023	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 affected ATS routes.	2024	
Phase 2	8	Review capacity on the affected ATS routes.	2024	
	9	Identify solutions to integrate departing traffic from New Delhi with the BOBCAT traffic.	2024	
	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.	2024	
	11	Make recommendations to SAIOACG on the future status of the BOBCAT tool.	2024	

IMPLEMENTATION TIMELINES FOR BOBTFRG PRIORITY AREAS

BOBTFRG Priority Area 1: Conduct a review of the air traffic flows in Category S airspace through Thailand and Myanmar to the Bay of Bengal, 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.	October 2019	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019. 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).	October 2019	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019. 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.	October 2019	Ref CNS SG/23 WP/22.
	4	Identify ATS Inter-Facility Data Communication (AIDC) and/or direct speech circuits' capabilities.	~~30 November 2019~~ Completed	States to provide update to the Secretariat latest by 30 November 2019. Updated AIDC implementation status in the APAC Region was provided in Appendix B to the APA TF/7 Report.

		Activity	Completion Date	Remarks
	5	Investigate whether appropriate handoff procedures are implemented between controllers providing ATS surveillance in adjacent airspace – review ATS Letter of Agreement (LOA).	30 November 2019	Bangkok – Kuala Lumpur ACCs: Yes Bangkok – Yangon ACCs: Yes Jakarta – Kuala Lumpur ACCs: Yes Yangon – Dhaka ACCs (ATS route G463)? Yangon – Kolkata ACCs (ATS route A201)? Kolkata – Dhaka ACCs? Delhi – Lahore ACCs? Delhi – Karachi ACCs? Mumbai – Karachi ACCs? Lahore – Kabul ACCs? Karachi – Kabul ACCs? Colombo ACC – Chennai OCC?
	6	Review the existing Flight Level Allocation Scheme (FLAS) operating within the concerned airspace, with a view to improve efficiencies.	31 October 2019	States to fill and submit the Attachment D to BOBTFRG/2 State Letter by 31 October 2019. Reason for FLAS: multiple crossing of higher density routes over Category R airspace. BOBTFRG/3 WP/07.
	7	States to identify routes along which reliable surveillance and communication are available to look at the possibility of reduced longitudinal spacing.	January 2020	India, Myanmar, Thailand, Pakistan. 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. Indonesia and Malaysia: 20 NM longitudinal spacing implemented at the following TOC points: GOTLA, PUGER and SALAX. Malaysia and Thailand: 30 NM longitudinal spacing implemented at the TOC points between Bangkok and Kuala Lumpur FIRs. Myanmar and Thailand? India and Myanmar (ATS route A201)? India and Sri Lanka?

		Activity	Completion Date	Remarks
Phase 2	8	Agreement between States to implement 20 NM longitudinal spacing (or as close to the separation minima as practicable) on affected ATS routes.	December 2020	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. To be reviewed in tandem with the Modernization Project of CNS-ATM System of Bangladesh.

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.	~~31 January 2020~~ Completed	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. Chennai OCC and Kuala Lumpur ACC had signed a new LoA, effected on 01 June 2021. 50 NM longitudinal spacing implemented.
	2	Facilitate potential modernization of Bangladesh CNS/ATM system (meeting tentatively planned for 23 October 2019).	~~March 2020~~ Completed	ICAO RO to provide feedback during SAIOACG/10. 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.	To be determined	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.

		Activity	Completion Date	Remarks
	4	Implementation of 50 NM longitudinal spacing to aircraft operating in the BOB airspace, at or above a level to be determined.	1 January 2023	~~ADS-C/CPDLC non-exclusive mandate?~~ For better clarity, the ADS-C/CPDLC non-exclusive mandate should be referred to as designation as non-exclusive PBN and PBCS airspace to allow operational priority for PBN and PBCS approved aircraft. PfA to ICAO Doc 7030 – *Regional Supplementary Procedures*. Current fleet equipage is less than 70%. Most of the non-equip aircraft are narrow-body aircraft and low cost airlines. States to issue AIC after SAIOACG/10. 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.
	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.	2023	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.	2023	Subject to the implementation of PBCS.

		Activity	Completion Date	Remarks
	7	Agreement between States to implement 30 NM longitudinal spacing (or as close to the separation minima as practicable) on affected ATS routes.	2024	
Phase 2	8	Review the demand and capacity on the affected ATS routes.	2024	
	9	Identify solutions to integrate departing traffic from New Delhi with the BOBCAT traffic.	2024	
	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.	2024	
	11	Make recommendations to SAIOACG on the future status of the BOBCAT tool.	2024	