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International Civil Aviation Organization

The Combined Tenth Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/10) and Twenty—Seventh Meeting of the South East Asia ATS Coordination Group (SEACG/27)

Bangkok, Thailand, 30 March – 03 April 2020

Agenda Item 5: ATS Route Developments

**BAY OF BENGAL TRAFFIC FLOW REVIEW GROUP (BOBTFRG)
MEETING OUTCOMES**

(Presented by Secretariat)

SUMMARY

This paper presents outcomes from the Second Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG/2) for the review and action by the meeting.

1. INTRODUCTION

1.1 The BOBTFRG was established to identify requirements and improvements for optimising airspace capacity and maintaining an efficient route network across the Bay of Bengal airspace and routes leading towards Afghanistan’s airspace; monitor the status of implementation of the agreed ATS routes and airspace improvement projects; and to report outcomes of the review and recommendations to SAIOACG.

1.2 The BOBTFRG/2 was held at the ICAO Asia and Pacific Regional Office, Bangkok, Thailand, from 08 to 10 October 2019. The meeting was attended by 34 participants, from ten States and two International Organizations, including Bangladesh, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Singapore, Thailand, United States of America, IATA and ICAO. The relevant presentations and papers are available at <https://www.icao.int/APAC/Meetings/Pages/2019-BOBTFRG2.aspx>.

2. DISCUSSION

CNS/ATM Infrastructure in India

2.1 The meeting noted the actions taken by India to address the air traffic services (ATS) surveillance gaps in Indian Flight Information Regions (FIRs):

- a) installed ten new Automatic Dependent Surveillance – Broadcast (ADS-B) ground stations. The ADS-B data were being tested for integration to the air traffic management (ATM) automation system;
- b) installation of new monopulse secondary surveillance radars (MSSR) at Bikaner and Aurangabad; and
- c) implementing space-based ADS-B to fill the surveillance gaps in the oceanic airspace of Chennai, Kolkata and Mumbai FIRs. The space-based ADS-B data were expected to be available for trials from January 2020.

2.2 The meeting was also informed of ADS-B mandate by India, which would be effective from 01 January 2020. As per the mandate, all flights intended to operate on PBN routes in Indian continental airspace and identified international and domestic routes, at or above flight level (FL) 290 shall be equipped with ADS-B. Non-ADS-B aircraft may be permitted to operate in the designated airspace subject to approval and flight level assignments would be subject to air traffic conditions.

BOBTFRG Priority Areas

2.3 The meeting discussed and agreed to the BOBTFRG Priority Areas below, and had developed the implementation timelines for each priority area as provided in **Attachment A** to this paper.

- a) **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).
- b) **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.

2.4 To ensure a coordinated implementation of 50 NM and future 30 NM longitudinal spacing in the entire Bay of Bengal (BOB) airspace seamlessly, the meeting had agreed to recommend to SAIOACG for notifying ADS-C/CPDLC non-exclusive mandate over the BOB airspace by 01 January 2023. The reasons for the mandate were:

- a) that the low level of aircraft equipage (less than 70%) and non-availability of ADS-C/CPDLC mandate had reduced the effectiveness of ADS-C/CPDLC in enhancing capacity in BOB airspace; and
- b) “Best equipped, best served” – currently, ADS-C/CPDLC equipped aircraft were sometimes being penalised by not getting the optimum flight level when the preceding or succeeding aircraft were non-ADS-CPDLC equipped. 10 minutes longitudinal separation were applied between such pair instead of 50 NM longitudinal spacing.

Update on Coordination Procedure between Bangladesh and India Regarding the Danger Areas Over Bay of Bengal

2.5 The meeting was informed that Bangladesh and India had agreed to a Standard Operating Procedure (SOP) on the activation, de-activation and suspension of Danger Areas VGD 32 and VGD 34. A copy of the SOP could be found in **BOBTFRG/2 IP/05 Attachment A**.

2.6 ICAO commented that even though the SOP had been enacted, it was merely to reduce the immediate danger of civil flights traversing through the danger areas during bad weather. It does not resolve the issue of non-compliance with an ICAO Standard and Recommended Practices in which aeronautical information related to an airspace shall only be disseminated by the State that was responsible for the FIR concerned.

2.7 Bangladesh informed the meeting that they would consult with their appropriate authorities, and revert to India and ICAO on their acceptance to let India publish the danger areas in the Aeronautical Information Publication (AIP) India. In addition, India had also requested Bangladesh to consider dividing the danger areas to different vertical limits so that the affected area for civilian flights would depend on the activation of the corresponding vertical portion.

Realignment of ATS Route N877

2.8 During the Ninth Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/9) held in Bangkok, Thailand from 26 to 30 March 2019, India had presented a proposal to alleviate pressure on ATS route N571 by realigning ATS route N877 from AMVUR to AGEGA and join ATS route L510.

2.9 Malaysia informed the meeting that based on its assessment, the realignment of ATS route N877 from AMVUR to AGEGA would cause additional conflict and ATC workload, and severely restrict the availability of optimum flight levels at VPL and KARMI for eastbound traffic from Bangkok FIR. Malaysia counter-proposed for India to establish a new route between AMVUR to AGEGA that would be available only between 0000UTC and 1859UTC, and ATS route N877 from AMVUR to LAGOG shall be retained to serve traffic between 1900UTC and 2359UTC.

2.10 The meeting noted ICAO’s comment that considering the traffic convergence would occur at VPL and VIH that are within Category S airspace, Kuala Lumpur ACC should be able to manage and respond to the traffic confliction accordingly and timely. Therefore, ICAO suggested that India and Malaysia to continue the discussion on having the route implemented as 24-hours, and provide update at the next BOBTFRG meeting.

Civil and Military Cooperation in APAC Region

2.11 ICAO presented information on ICAO’s provisions and basic considerations by the States when establishing prohibited, restricted, and danger areas.

2.12 ICAO noted the suggestion by the States for ICAO to conduct regular Civil/Military ATM Cooperation (CMAC) / Flexible Use of Airspace (FUA) workshop or seminar, at least once a year. This would assist the States to strengthen their knowledge and understanding of CMAC and FUA as advocated by ICAO through Circular 330 (and future ICAO Doc 10088), and to get insights into best practices from other States.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss and agree to the draft Proposal for Amendment of the Regional Supplementary Procedures Middle East/Asia (MID/ASIA) Region (ICAO Doc. 7030) regarding the implementation of ADS-C/CPDLC non-exclusive mandate over the BOB airspace (refer **Attachment B**); and
- c) discuss any relevant matters as appropriate.

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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 – <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. 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	

**PROPOSAL FOR AMENDMENT OF THE
REGIONAL SUPPLEMENTARY PROCEDURES
EAST/ASIA (MID/ASIA) REGION (Doc. 7030/5)**

(Serial No.: APAC-S MID/ASIA Chapter 3/MID/ASIA 3-2 and Chapter 5/ MID/ASIA 5-3)

a) Regional Supplementary Procedures:

MIDDLE EAST/ASIA (MID/ASIA) REGIONAL SUPPLEMENTARY PROCEDURES

b) Proposed by:

Bay of Bengal Traffic Flow Review Group (BOBTFRG)

c) Proposed amendment:

Include ADS-C/CPDLC non-exclusive mandate over Chennai, Colombo, Jakarta, Kolkata, Kuala Lumpur, Mumbai and Yangon Flight Information Regions to MID/ASIA Regional Supplementary Procedures.

Editorial Note: Amendments are arranged to show deleted text using strikethrough (~~text to be deleted~~), and added text with grey shading (text to be inserted).

On page MID/ASIA 3-2 and 5-3.

Add the following in the MIDDLE EAST/ASIA (MID/ASIA) REGIONAL SUPPLEMENTARY PROCUDURES, Chapter 3 and 5.

Chapter 3. COMMUNICATIONS

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3.3 CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)

3.3.1 The procedures contained in 3.3.2 shall be applicable in those portions of the following FIRs where CPDLC service is provided:

Chennai, Colombo, Jakarta, Kolkata, Kuala Lumpur, Mumbai and Yangon.

3.3.2 From 03 November 2022, all aircraft intending to conduct flights at or above FL290 within the airspace concerned shall be equipped with CPDLC and shall satisfy required communication performance 240 (RCP 240). Non-CPDLC equipped aircraft could continue to operate in this airspace at or below FL280, or as approved by ATC.

Note: - The above procedures does not apply to State aircraft.

Chapter 5. SURVEILLANCE

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5.4 AUTOMATIC DEPENDENT SURVEILLANCE – CONTRACT (ADS-C)

5.4.1 The procedures contained in 5.4.2 shall be applicable in those portions of the following FIRs where an ADS-C service is provided:

Chennai, Colombo, Jakarta, Kolkata, Kuala Lumpur, Mumbai and Yangon.

5.4.2 From 03 November 2022, all aircraft intending to conduct flights at or above FL290 within the airspace concerned shall be equipped with ADS-C and shall satisfy required surveillance performance 180 (RSP 180). Non-ADS-C equipped aircraft could continue to operate in this airspace at or below FL280, or as approved by ATC.

Note: - The above procedures does not apply to State aircraft.

-END-

d) Date when proposal received:

03 April 2020

e) Proposer's reason for amendment:

The Bay of Bengal Traffic Flow Review Group has agreed to implement ADS-C/CPDLC non-exclusive mandate over the Bay of Bengal airspace by 03 November 2022 for the following reasons:

1. that the low level of aircraft equipage (less than 70%) and non-availability of ADS-C/CPDLC mandate had reduced the effectiveness of ADS-C/CPDLC in enhancing capacity in the Bay of Bengal airspace; and
2. currently, ADS-C/CPDLC equipped aircraft were sometimes being penalised by not getting the optimum flight level when the preceding or succeeding aircraft were non-ADS-CPDLC equipped, in contrast to the “best equipped, best served” principle. 10 minutes longitudinal separation were applied between such pair instead of 50 NM longitudinal spacing.

f) Proposed implementation date of the amendment:

Upon approval by Council.

g) Action by the Secretary General:

The proposal has been circulated to the following States and International Organizations:

Afghanistan	Micronesia	ACI
Australia	Mongolia	CANSO
Bangladesh	Myanmar	IACA
Bhutan	Nauru	IAOPA
Brunei Darussalam	Nepal	IATA
Cambodia	New Zealand	IBAC
China	Pakistan	IFALPA
Hong Kong, China	Palau	IFATCA
Macao, China	Papua New Guinea	EUROCONTROL
Cook Islands	Philippines	
DPR Korea	Republic of Korea	
Fiji	Samoa	

India	Singapore
Indonesia	Solomon Islands
Japan	Sri Lanka
Kiribati	Thailand
Lao PDR	Timor Leste
Malaysia	Tonga
Maldives	Tuvalu
Marshall Islands	Vanuatu
	Viet Nam

This proposal has been circulated to United States for information.

h) Secretariat's comments:

The Regional Office notes that the proposed mandate is non-exclusive in nature, and is supported by the Bay of Bengal Traffic Flow Review Group, and is also in line with the regional policy within the *Asia/Pacific Seamless ANS Plan*.

— END —