International Civil Aviation Organization

The Twenty-Second Meeting of the APANPIRG ATM/AIS/SAR Sub-Group (ATM/AIS/SAR/SG/22)

Bangkok, Thailand, 25 – 29 June 2012

Agenda Item 4: Review outcome of relevant meetings

BAY OF BENGAL REDUCED HORIZONTAL SEPARATION TASK FORCE OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes from the Bay of Bengal Reduced Horizontal Separation Task Force (BOB-RHS/TF/7), Bangkok, Thailand, 21 May 2012). The Second Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/2) was consequently held from 22 to 25 May 2012 at the same venue.

This paper relates to –

Strategic Objectives:

A: ***Safety*** *– Enhance global civil aviation safety*

C: ***Environmental Protection and Sustainable Development of Air Transport*** *– Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

Global Plan Initiatives:

GPI-5 RNAV and RNP (Performance-based navigation)
GPI-6 Air traffic flow management
GPI-7 Dynamic and flexible ATS route management
GPI-17 Data link applications
GPI-18 Aeronautical information
GPI-19 Meteorological Systems
GPI-21 Navigation systems
GPI-22 Communication infrastructure

1. INTRODUCTION

1.1 Fifty (50) participants attended the meetings from Bangladesh, India, Indonesia, Maldives, Malaysia, Myanmar, Nepal, Oman, Singapore, Sri Lanka, Thailand, United States, IATA and ARINC.

1.2 Six working papers (WP) and one information paper (IP) were presented to BOB-RHS/TF/7. One (1) Draft Decision was developed by the BOB-RHS/TF/7.

2. DISCUSSION

Post-Implementation Review

2.1 India presented details on problems identified while implementing 50NM (Nautical Mile) separation and proposed solutions for States to consider in order to implement in a seamless manner. **Figure 1** illustrates the Air Traffic Services (ATS) routes that were proposed to have 50NM separation applied.

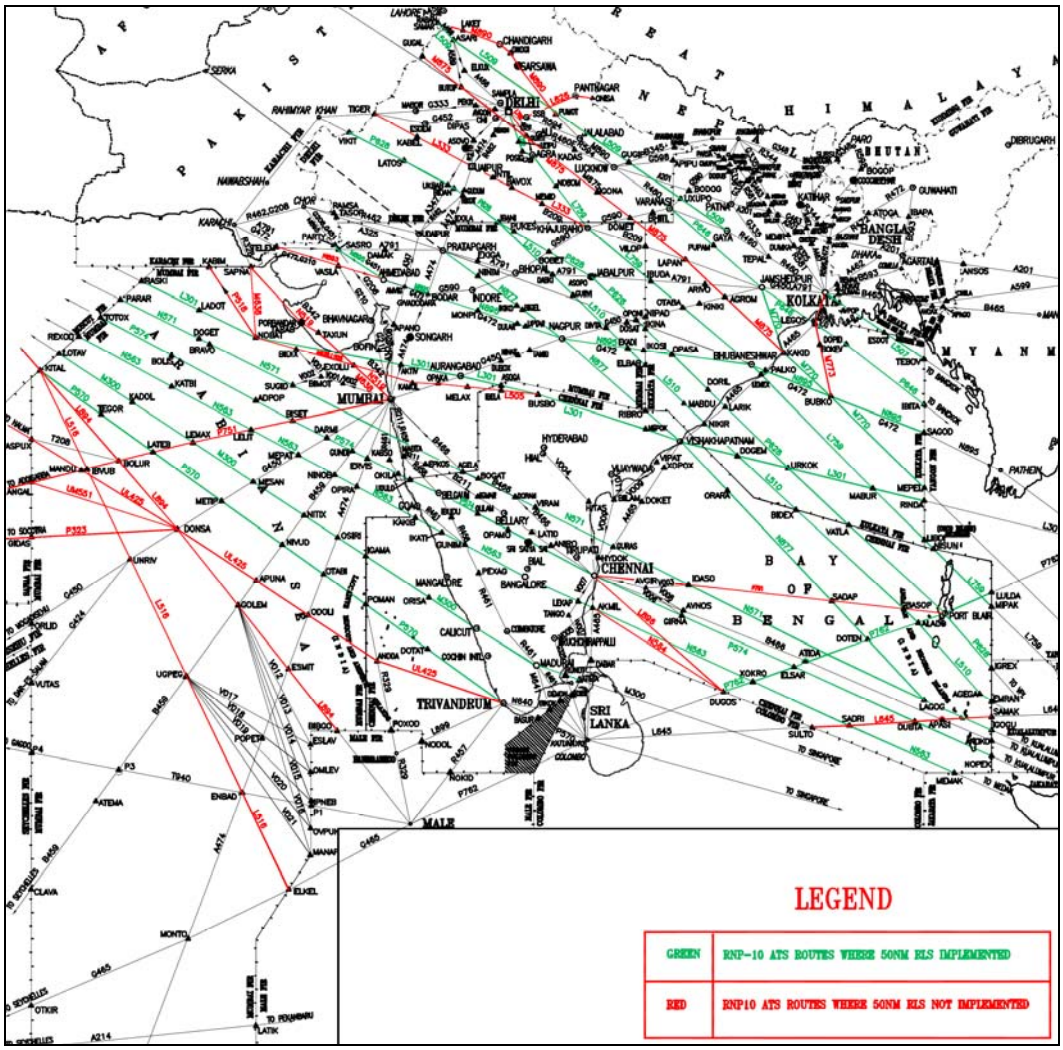

Figure 1: Indian airspace 50NM separation ATS routes (in green)

2.2 The first phase of the BOB-RHS project was implemented on 30 June 2011. Due to operational issues, 50NM separation was only implemented on two ATS routes (N571 and P762) of the proposed four routes. The second phase was planned for 15 December 2012 on the majority of RNP10 routes transiting through Bay of Bengal, Arabian Sea and routes transiting through the Kabul Flight Information Region (FIR).

2.3 **Table 1** indicates the Phase 2 50NM longitudinal separation implementation status:

FIR	**Phase 2A Routes (15 December 2011)**
Bangkok	L301, L507, L759, M770, P646
Chennai	M300*, L510, N563*, P570*, P574*, L759, N877

Delhi	L509, P646, L759
Kabul	UL333, P628, N636
Kolkata	L301, L507, L510, L509, P646, L759, M770, N895
Kuala Lumpur	L510, N571, P574*, L759, P628, M770
Mumbai	L301, M300, P570*, L759, N877, N895
Muscat	M300*, L301*, N563*, P570*, P574*
Tehran	UL333, P628 (subject to Ashgabat)
Yangon	L301, L507, P646, L759, M770, N895
	Phase 2B Routes (12 January 2012)
Jakarta	M300*, N563*, P570*, P574*
Kabul	A466, L509, N644, L750, G796, M875
	Phase 2C Routes (8 March 2012)
Colombo	M300*, P570*
	Post-8 March 2012
Karachi	UL333, P628, N636, N895
Lahore	A466, L509, N644, L750

Table 1: Phase 2 Implementation Status (* = postponed)

2.4 India and Pakistan implemented 50NM on L509 on 12 January 2012 between 1900 and 2130UTC at or above F320 with mutual coordination. During a Special Coordination Meeting between Afghanistan, India, Pakistan and IATA, Pakistan and India considered the availability of 50NM on various ATS routes affected by the military. India was also considering a timing extension coincident with BOBCAT hours, and were also discussing with Pakistan the possibility of introducing 50NM on two more routes (M875 and L333), which were not part of the BOB-RHS plan.

2.5 In accordance with the BOB-RHS plan, 50NM should have been implemented between India and Indonesia on routes N563 and P574 and India and Indonesia on 12 January 2012. However India, Malaysia, and Indonesia were still finalizing the Air Traffic Services Letter of Agreement (ATS LOA) and the date of 50NM implementation on these four routes. The meeting agreed that an ATS LOA could be signed before an Air Navigation Service Provider (ANSP) was capable, as the usage could be described as conditional on availability. IATA asked about the availability of 50NM on bypass route M890 for M875. India confirmed that their military were assessing this.

2.6 India identified the following problems for the post-implementation review:

- low percentage of data-link equipped aircraft and VHF coverage limitations;
- non-RNAV route segments within RNP 10 routes selected for 50NM;
- controllers reluctant to accept aircraft with 50NM separation;
- staggered availability of route timings in different States due to military restrictions;
- different dates of implementation on same route; and
- commissioning of new ATM automation systems which had interoperability issues.

2.7 The Secretariat noted that the aircraft equipage, communications and non-RNAV issues should have been identified in State safety assessment. The latter was not an issue as long as the route waypoints were able to be coded in RNAV databases. India suggested that non-RNAV route segments should be converted to PBN, consistent with the Air Navigation Concept of Operations.

2.8 The meeting noted that the reluctance of controllers to use the standard could be improved with appropriate training, especially simulation, so States needed to have a stronger focus on human factors in future. Regarding the lack of ATM system inter-operability, this was a key area for Seamless ATM planning improvement, which would focus on future collaborative design and procurement processes. Improved military cooperation was also a Seamless ATM focus area.

2.9 During Phase 2, the Sultanate of Oman had advised difficulties in implementing application of 50NM longitudinal separation, which had to be delayed. Oman stated that a large number of aircraft were not equipped with Controller Pilot Data-link Communications (CPDLC) and Muscat Area Control Centre (ACC) automation was not yet able to ascertain aircraft equipage status. India and Oman were addressed this issue at the Bay of Bengal Arabian Sea Indian Ocean (BOBASIO)/02 meeting and bi-laterally.

2.10 The Sultanate of Oman stated that they had three issues: airlines not filing their data-link status properly ('J' in the PRESENT format), training and the ATM system capability. Oman currently had issues with identifying RNP10 capable aircraft from flight plan information but stated that they would be able to accept 50NM for westbound flights by July 2012.

2.11 Indonesia advised that personnel training had affected the schedule but had published their implementation in March 2012, and was working on the ATS LOA with Sri Lanka. Sri Lanka confirmed this and clarified that they were working in a standby ACC facility, and were expecting the new ACC to be operational at the end of July as they had some past problems with the contractor. Sri Lanka expected full operational use in September 2012 and their controllers were being trained in Thailand. Sri Lanka also advised that they did not have a functioning CPDLC system, so therefore could not currently satisfy the Direct Controller Pilot Communications (DCPC) requirement for implementation of 50NM longitudinal separation.

2.12 Myanmar was using a stand-alone Automatic Dependent Surveillance-Contract (ADS-C)/CPDLC system. They clarified that although there were some issues with the communication service provider , they were able to provide CPDLC services and implement 50/50NM separation within the Yangon FIR.

2.13 The final phase of 50/50NM horizontal separation was implemented on 8 March 2012. However, there were some route connectivity problems, so a Special Coordination Meeting was held with Afghanistan, India (by telephone), and Pakistan at the ICAO Regional Office in Bangkok from 19 to 20 March 201 to resolve these issues.

2.14 The Secretariat presented a review of the issues consequent to the implementation of 50/50NM horizontal separation in the Bay of Bengal and Indian Ocean related to both procedural and technical matters. These were regarding ATS LOA not being updated in a timely manner, misunderstandings pertaining to the appropriate Transfer of Control (TOC) points, and DCPC capabilities of some ACC, whether through data-link or VHF voice communications.

2.15 The meeting noted that many States did not appear to have completed an adequate safety assessment, including a 'Know your Airspace' analysis that should have picked up many of the issues noted in the post-implementation review. While the experience will have improved the knowledge of many States, more collaboration in developing these assessments and the forwarding of safety assessments to the Regional Office may be necessary in the future.

Future Work

2.16 India proposed to introduce reduced 30NM longitudinal minimum separation on ATS routes L301 and N571 as a 'transition' to the application 30/30NM and also suggested the need to modify the Terms of Reference of the BOBRHS/TF. A study by India conducted from 25 to 31 December 2011 within the Chennai FIR indicated that 69% of aircraft were ADS-C/CPDLC capable.

2.17 The Secretariat noted that the 30NM standard was not 'reduced' but a standard in itself, and supported the positive action by India to introduce more efficient standards. However, the meeting recognized that the emphasis should be on implementation by FIR or airspace instead of a route –by-route basis. Moreover, when a route was within ATS surveillance within Indian FIRs, the minimum separation should be based on an ATS surveillance standard (in the order of 5NM to 10NM), in accordance with the Asia/Pacific Air Navigation Concept of Operations.

Dissolution of Bay of Bengal Reduced Horizontal Separation Task Force

2.18 The meeting reviewed and amended the Task List as appended at **Appendix A**. A small number of tasks were transferred to the SAIOACG.

2.19 The Secretariat stated that there was no need to specifically maintain the BOB-RHS/TF to facilitate such an implementation, which could be managed by the concerned States, using the safety assessment process that all States should be familiar with. Moreover, such development could be effectively managed by the informal BOBASIO forum. The meeting encouraged India to use 30/30NM standard, and not a mixture like 50NM lateral and 30NM longitudinal.

2.20 The Secretariat presented a draft decision to dissolve the Task Force, for the consideration of the meeting. The Task Force had met six times, and deliberated over many ATM issues in the region, using a large amount of data was provided through the efforts of participating states, and the safety monitoring agencies. The work of the Task Force was separated into phases, the first being the implementation of 50/50NM horizontal separation on selected routes.

2.21 With the implementation of 50/50NM separation and the Post-Implementation Review at TF/7, the work of the Task Force had essentially been completed. Any residual tasks thereafter could be delegated to the SAIOACG or other appropriate bodies. IATA wanted to emphasise that the planning of the task force included the possibility of 30NM implementation, and thus wanted this effort to continue, notwithstanding the work of BOB-RHS/TF being completed. The meeting agreed to the following Draft Decision for consideration by the ATM/AIS/SAR Sub-group:

Draft Decision BOB-RHS/TF7/1 – Dissolution of the BOB-RHS/TF

That, the Bay Of Bengal Reduced Horizontal Separation Task Force (BOBRHS/TF) be dissolved and any outstanding tasks be delegated to South Asia/Indian Ocean ATM Coordination Group (SAIOACG).

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 Decision BOB-RHS/TF7/1, regarding the Dissolution of the BOB-RHS/TF; and

c) discuss any relevant matters as appropriate.

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BOB-RHS/TF TASK LIST

SN	Activity	Start Date	Completion Date	Present Status	Remarks
	Identify Operational Need				
1	Agree that an operational needs for a 50 NM horizontal separation in the Bay of Bengal and Oceanic Area of the Mumbai FIR	November 2009	November 2009	Closed	All delegates at the BOB-RHS/TF/1
	Safety Assessment				
2	Appointment of a Bay of Bengal and Mumbai Enroute Monitoring Agency	November 2009	February 2011 (BOB-RHS/TF/5)	Closed	India has accepted the responsibility to establish an EMA. BOBASMA has been endorsed by APANPIRG
3	States to continue to collect and provide traffic data	1 July 2010	November 2011	Closed	RASMAG Task
4	States to provide additional data as required by the EMA	1 July 2010	November 2011	Closed	RASMAG Task
5	Examine history of navigational errors and assess possible impact on safety	1 July 2010	November 2011	Closed	RASMAG Task
6	Confirm collision risk model assumptions/parameters are consistent with airspace where the 50 NM horizontal separation is to be applied	October 2010	November 2011	Closed	RASMAG Task
7	Report monthly navigational errors (including operational errors)	1 July 2010	November 2011	Closed	RASMAG Task
8	Qualitative Safety Assessment to be completed (including operational factors and workload, training, consequences on ATC systems, non-compliant aircraft, contingencies)	1 July 2010	November 2011	Closed	RASMAG Task
	Feasibility Analysis				
9	Examine the operational factors and workload associated with the 50 NM longitudinal separation implementation in BOB/Mumbai FIRs	February 2010	November 2011	Closed	Closed
10	Complete feasibility analysis on the 50NM longitudinal separation implementation on N571, P628, L510 and P762	May 2010	September 2011 (BOB-RHS/TF/6)	Closed	Completed
	Determination of Requirements (airborne & ground systems)				
11	States assess the impact of the 50 NM longitudinal separation implementation on controller automation systems and plan for upgrades/modifications	November 2009	November 2011	Closed	Closed
12	States to report the status and updates on ADS-C/CPDLC system	October 2010	November 2011	Closed	States
	Perform Necessary Industry & International Co-ordination				
13	User consultation; establish target implementation date on the 50NM longitudinal separation on xxxxxxx	May 2010	Completed	Closed	Closed
14	Report to ATM/AIS/SAR/SG	November 2009	July 2011	Closed	ICAO
15	States to coordinate with Boeing Lab for bench testing ADS-C/CPDLC system and ADS-C/CPDLC data collection and problem report to Boeing Lab	November 2009	November 2011 as required	Trasfer to FIT ASIA Closed	Boeing/States; FIT-BOB task
16	Publish information containing the 50 NM longitudinal separation policy/procedures	December 2010	Closed	Ongoing	AIP SUPP template completed and distributed; States
17	Review and finalise Letter of Agreement between ACCs	December 2010	November 2011	State function- Closed	States
18	Finalize Gross Navigation Errors Letters of Agreement	December 2010	November 2011	Closed	Maldives, Malaysia

BOB-RHS/TF TASK LIST

SN	Activity	Start Date	Completion Date	Present Status	Remarks
	Approval of Aircraft & Operators				
19	Establish approved operations readiness targets	BOB-RHS/TF/2	September 2011 (BOB-RHS/TF/6)	Closed	States
20	Assess operator readiness	BOB-RHS/TF/2	September 2011 (BOB-RHS/TF/6)	Closed	States
	Develop ATC Procedures				
21	States to develop procedures for handling non-compliant aircraft in ATS documentation	October 2010	September 2011 (BOB-RHS/TF/6)	Closed	
	ATC Training				
22	Complete training for air traffic controllers on the application of 50NM horizontal separation	October 2010	November 2011	Closed State function	States
23	Complete ADS-C/CPDLC system training for Air Traffic Controllers	Jul-10	November 2011	Closed State function	States
	Complete Safety Assessment				
24	Review and accept safety assessment	October 2010	September 2011 (BOB-RHS/TF/6)	BOBASMA completed assessment	
	Final Implementation Decision				
25	Go/No-Go Decision	October 2010	September 2011 (BOB-RHS/TF/6)	Closed	Completed for phase 1
~~26~~	~~Implementation~~	~~10 March 2011~~	~~1 March 2012~~	~~Ongoing~~	~~States~~
	Post Implementation				
27	Post Implementation Review		May 2012	Closed	States
~~28~~	~~Phase 2 assessment~~		~~BOB-RHS-TF/6, 19-23 Sept 2011~~	~~Ongoing Closed~~	~~States~~
29	Assessment of future status (RNP4)		May 2012	Review at SAIOACG	States