

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**



**REPORT OF THE SEVENTH MEETING OF THE BAY OF BENGAL  
REDUCED HORIZONTAL SEPARATION IMPLEMENTATION TASK  
FORCE (BOB-RHS/TF/7) AND  
THE SECOND MEETING OF THE SOUTH ASIA/INDIAN OCEAN ATM  
COORDINATION GROUP (SAIOACG/2)**

BANGKOK, THAILAND, 21 – 24 MAY 2012

The views expressed in this Report should be taken as those of the  
Meeting and not the Organization

Approved by the Meeting  
and published by the ICAO Asia and Pacific Office, Bangkok

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## INTRODUCTION

### Meeting

1.1 The Seventh Meeting of the Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF/7) was held at ICAO Asia and Pacific Office on 21 May 2012. The Second Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/2) was held from 22 to 24 May 2012 at the same venue.

### Attendance

2.1 50 participants attended the meetings from Bangladesh, India, Indonesia, Maldives, Malaysia, Myanmar, Nepal, Oman, Singapore, Sri Lanka, Thailand, United States, IATA and ARINC. The list of participants is at **Attachment 1** to this report.

### Officer and Secretariat

3.1 Mr. Edmund Heng, Deputy Chief of Singapore ATC Centre, CAAS chaired the BOB-RHS/TF/7 Meeting. Mr. Sylvester Israel, General Manager (ASM) of the Airports Authority of India chaired the SAIOACG/2 meeting.

3.2 Mr. Len Wicks, Regional Officer, ATM of the ICAO Asia and Pacific Office acted as Secretary to the Meeting. He was assisted by Mr. Shane Sumner, Regional Officer, ATM and Mr. Soon Boon Hai, ATM Expert, ICAO Asia and Pacific Office.

### Opening of the Meeting

4.1 On behalf of Mr. Mokhtar A. Awan, Regional Director of ICAO Asia and Pacific Office, Mr. Len Wicks welcomed all the participants to the meeting.

4.2 Mr. Edmund Heng and Mr. Sylvester Israel welcomed participants to the meetings.

### Documentation and Working Language

5.1 English was the working language of the meeting and documentation.

5.2 Six working papers (WPs) and one information paper (IP) were presented to BOB-RHS/TF/7. Eighteen WPs and six IPs were presented to SAIOACG/2.

5.3 The list of papers and presentations is shown at **Attachment 2** to this report.

### Draft Conclusions, Draft Decisions and Decisions of SAIOACG and BOBRHS/TF– Definition

6.1 Draft Conclusions, Draft Decisions and Decisions were defined as following:

- a) **Draft Conclusions** deal with matters that, according to Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) terms of reference, require the attention of States, or action by ICAO in accordance with procedures;
- b) **Draft Decisions** deal with the matters of concern only to APANPIRG and its contributory bodies; and
- c) **Decisions** of the SAIOACG and BOBRHS/TF that related solely to matters dealing with the internal working arrangements of these bodies.

**List of Decisions and Draft Conclusions/Decisions**7.1 List of Draft Conclusions**Draft Conclusion SAIOACG2/1 – Asia/Pacific Air Navigation Concept of Operations Mandates**

That, States intending to implement Performance-Based Navigation and Safety Nets may, after appropriate consultation with airspace users, designate portions of airspace within their area of responsibility:

as providing priority for access to such airspace for aircraft with prescribed Performance-Based Navigation (PBN) specifications and supporting data-link equipage (ADS/CPDLC); and

mandating the carriage and use of an operable Automatic Dependent Surveillance/Controller Pilot Data-link Communications Systems (ADS/CPDLC) system, mode A/C and/or mode S transponder, Airborne Collision Avoidance System (ACAS) and Terrain Awareness Warning Systems (TAWS) as appropriate.

7.2 List of Draft Decisions**Draft Decision BOBRHS/TF7/1 – Dissolution of the BOB-RHS/TF**

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

**Draft Decision SAIOACG2/3 – Basic Air Navigation Plan Amendment Procedure Template**

That, for ease of reference and reduction of submission errors, the ICAO Regional Office should provide the Doc 9673 Amendment Procedure on the Asia/Pacific website, including requirements to provide detailed and accurate information, an appropriate chart in the case of ATS route amendments, and information on prior consultation with any affected States.

7.3 List of Decisions**Decision SAIOACG2/2 Establishment of SAIOACG Small Working Groups**

That, SAIOACG Air Traffic Flow Management (ATFM), ATS Communications (COM) and ATS Surveillance (SUR) Small Working Groups be established to:

- a) Assess the current status and planning of implementation;
- b) Identify barriers to implementation;
- c) Make recommendations to assist harmonized ATM procedures and applications;
- d) Make recommendations that assist implementation in accordance with the Asia/Pacific Air Navigation and ATFM Concepts of Operations, and the Asia/Pacific Seamless ATM initiatives, related to the ATFM, COM and SUR fields.

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# **BOB-RHS/TF7**

**REPORT ON AGENDA ITEMS – BOB-RHS/TF/7**

**Agenda Item 1: Adoption of Agenda (WP01)**

1.1 The provisional agenda was adopted by the meeting.

**Agenda Item 2: Review Outcomes of Related Meetings**

2.1 Discussion under this item was held under the equivalent Agenda Item of SAIOACG/2.

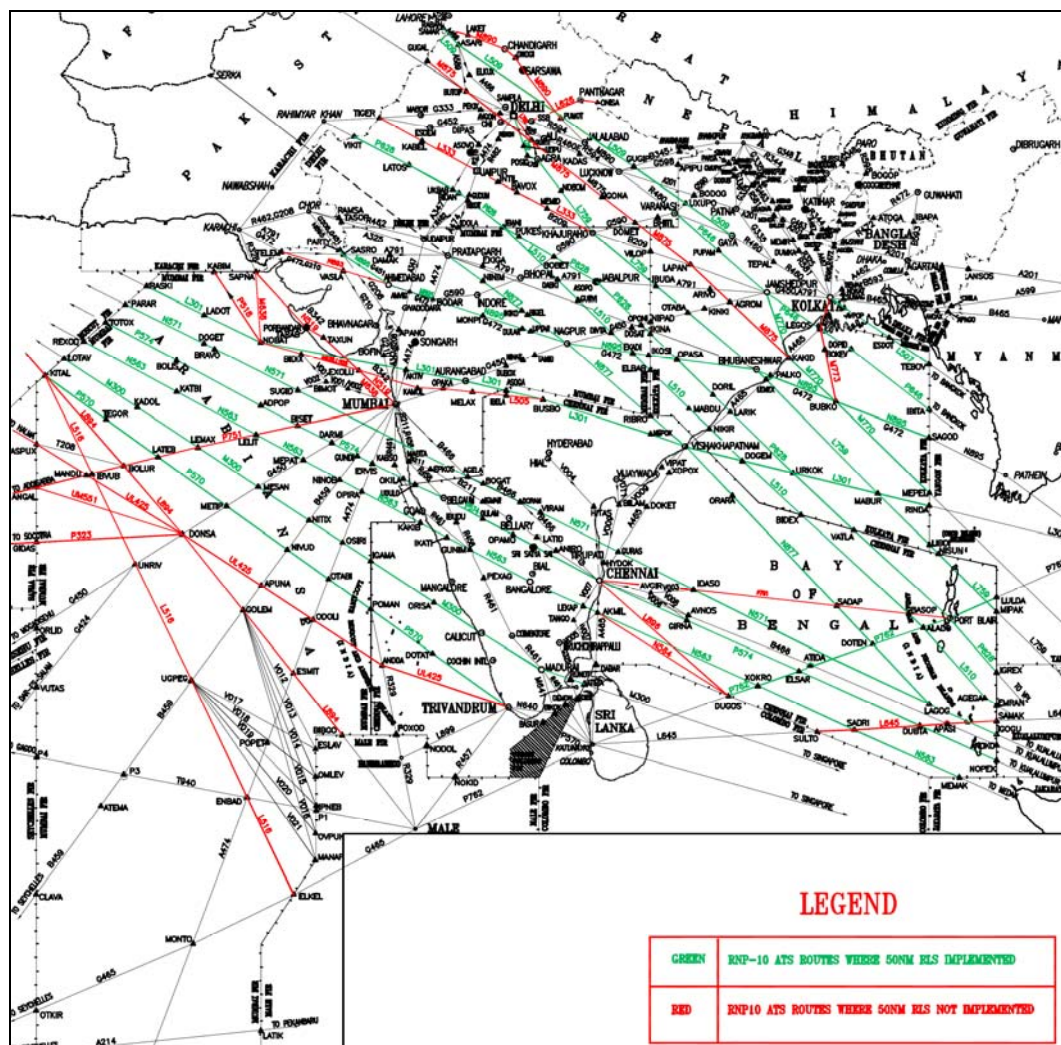
**Agenda Item 3: Review of CNS/ATM System Implementation**

3.1 Discussion under this item was held under the equivalent Agenda Item of SAIOACG/2.

**Agenda Item 4: Review Current Southeast Asia Operations and Identify Problem Areas**

Post-Implementation Analysis of 50NM Longitudinal Separation (WP05)

4.1 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 ATS routes that were proposed to have 50NM separation applied.



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



4.2 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).

4.3 **Table 1** indicates the Phase 250NM longitudinal separation implementation status:

<b>FIR</b>	<b>Phase 2A Routes (15 December 2011)</b>
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
	<b>Phase 2B Routes (12 January 2012)</b>
Jakarta	M300*, N563*, P570*, P574*
Kabul	A466, L509, N644, L750, G796, M875
	<b>Phase 2C Routes (8 March 2012)</b>
Colombo	M300*, P570*
	<b>Post-8 March 2012</b>
Karachi	UL333, P628, N636, N895
Lahore	A466, L509, N644, L750

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

4.4 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 the aircraft equipage status. India and Oman discussed this issue at the BOBASIO/02 meeting and agreed to share data and analysis in order to implement on routes M300, L301, N563, P570 and P574.

4.5 Sri Lanka could not participate in the phase 2 implementation due to issues in upgrading their ATM system.

4.6 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 proposed to extend the availability of L509 in Lahore FIR to 9 hours between 1500 and 2359UTC at or above FL300 and FL280 between 1900 and 2359 UTC from 5 April 2012. India was also considering the extension of the timings to include BOBCAT hours with Indian military authorities, and were also discussing with Pakistan the possibility of introducing 50NM on two more routes (M875 and L333), which were not part of BOB-RHS plan.

4.7 India also offered to provide connectivity from PRA to SERKA for westbound flights using ATS routes A325/B210 and N893/G208. India was exploring the possibility of declaring A325 as bi-directional to accommodate eastbound flights. India advised that they were ready to accept eastbound aircraft with 50NM separation via TELEM on route N893.

4.8 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. Updated information on the status of the LOAs from Malaysia and Indonesia would be available in the SAIOACG Task list. The Secretariat emphasized 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 agreed, and stated that airspace should be promulgated as capable, not ATS routes alone. IATA asked about the availability of 50NM on bypass route M890 for M875. India confirmed that their military were assessing this.

4.9 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.

4.10 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 Asia/Pacific Air Navigation Concept of Operations.

4.11 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 collaborative design and procurement processes in future. Improved military cooperation was also a focus area for Seamless ATM.

4.12 The business case study indicated that there could be at least 30 aircraft pairs per month using the new separation standard. Unfortunately, the number of aircraft pairs post-implementation was not more than ten in all four Indian FIRs.

4.13 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 separation.

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

4.15 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.

#### **Agenda Item 5: ATS Route Development**

##### Proposal to Introduce 30NM on ATS Route L301 and N571 (WP04)

5.1 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.

5.2 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 not be implementation on a route-by-route basis; rather it should be by airspace or FIR. 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 approved by APANPIRG.

5.3 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 Bay of Bengal Arabian Sea Indian Ocean (BOBASIO) forum. There was to be further discussion regarding ongoing improvements such as 30/30NM implementation under Agenda Item 8.

5.4 IATA emphasized that the work that had been started by the TF needed to be progressed. The Secretariat encouraged India to use 30/30NM, not a mixture like 30NM lateral and 50NM longitudinal. Thailand asked whether India was planning to provide priority for equipped aircraft; India would consider this.

#### **Agenda Item 6: Development of a Coordinated Action Plan**

6.1 There was no discussion under this Agenda Item.

#### **Agenda Item 7: Review of BOB-RHSTF Task List**

##### Post Implementation Review (WP02)

7.1 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.

7.2 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.

BOB-RHS/TF Task List (WP06)

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

**Agenda Item 8: Any Other Business**

Dissolution of Bay of Bengal Reduced Horizontal Separation Task Force (WP03)

8.1 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.

8.2 The final phase of 50/50NM horizontal separation was implemented on 8 March 2012 over selected routes in the Oman, Pakistan, Afghanistan, India, Sri Lanka, Myanmar, Thailand, Malaysia, and Indonesia. However, there were some issues which arose from the implementation due to connectivity in the routes which theoretically prevented the seamless implementation across multiple FIRs. 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 2012 to resolve these issues.

8.3 With the implementation of 50/50 NM 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 BOBRHS/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).

**Agenda Item 9: Date and Venue for the Next Meeting**

9.1 There were no further BOB-RHS/TF meetings planned.

**Closing of the Meeting**

9.2 The Chairman thanked the meeting participants for their contributions. IATA thanked the participants for the positive work and outcomes. The meeting recorded its thanks to the work of Mr. John Richardson, Mr. Edmund Heng, and the Central Reporting Agency.

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BOB-RHS/TF/7  
Appendix A to the Report

TASK LIST

SN	Activity	Start Date	Completion Date	Present Status	Remarks
	<b>Identify Operational Need</b>				
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
	<b>Safety Assessment</b>				
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
	<b>Feasibility Analysis</b>				
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
	<b>Determination of Requirements (airborne &amp; ground systems)</b>				
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
	<b>Perform Necessary Industry &amp; International Co-ordination</b>				
13	User consultation; establish target implementation date on the 50NM longitudinal separation on xxxxxxxx	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	Transfer 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/7  
Appendix A to the Report

TASK LIST

SN	Activity	Start Date	Completion Date	Present Status	Remarks
<b>Approval of Aircraft &amp; Operators</b>					
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
<b>Develop ATC Procedures</b>					
21	States to develop procedures for handling non-compliant aircraft in ATS documentation	October 2010	September 2011 (BOB-RHS/TF/6)	Closed	
<b>ATC Training</b>					
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
<b>Complete Safety Assessment</b>					
24	Review and accept safety assessment	October 2010	September 2011 (BOB-RHS/TF/6)	BOBASMA completed assessment	
<b>Final Implementation Decision</b>					
25	Go/No-Go Decision	October 2010	September 2011 (BOB-RHS/TF/6)	Closed	Completed for phase 1
26	Implementation	<del>10 March 2011</del>	<del>1 March 2012</del>	Ongoing	States
<b>Post Implementation</b>					
27	Post Implementation Review		May 2012	Closed	States
28	Phase 2 assessment		<del>BOB-RHS TF/6, 19-23 Sept 2011</del>	Ongoing-Closed	States
29	Assessment of future status (RNP4)		May 2012	Review at SAIOACG	States

# **SAIOCG/2**

## REPORT ON AGENDA ITEMS – SAIOACG/2

### Agenda Item 1: Adoption of Agenda (WP01)

1.1 The provisional agenda was adopted by the meeting.

### Agenda Item 2: Review Outcomes of Related Meetings

#### Relevant Meeting Outcomes (WP02)

2.1 The meeting was briefed on recent meeting outcomes relevant to the SAIOACG. APANPIRG/22 (Bangkok, Thailand, 5 – 9 September 2011) agreed on:

- *Conclusion 22/5 - Major Traffic Flow (New)*
- *Decision 22/6 – Establishment of SAIOACG*
- *Conclusion 22/7 - Asia/Pacific Air Navigation Concept of Operations*
- *Conclusion 22/8 - Automatic Dependent Surveillance – Broadcast (ADS-B) Airspace Mandate*
- *Conclusion 22/9 - Regional ATM Contingency Plan Task Force*

2.2 The First Meeting of the ICAO Asia/Pacific Seamless ATM Planning Group (APSAPG/1, Bangkok, 31 January – 3 February 2012) noted there were three main areas which required the development of Seamless ATM principles: People, Facilities, and Technology and Information. A total of 53 draft Seamless ATM Principles developed by APSAPG were presented to SAIOACG/2.

2.3 The Sixteenth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/16, Bangkok, 20 – 23 February 2012) analysed an airspace analysis and safety assessment from the Bay of Bengal, Arabian Sea and Indian Ocean Monitoring Agency (BOBASMA) in support of 50NM separation on various RNP10 routes. RASMAG noted there had been difficulty in completing LOA for data sharing, as many States had administrative issues signing agreements with foreign entities. The safety assessment indicated that both lateral and longitudinal risks were well below the Target Level of Safety (TLS). The Monitoring Agency for the Asia Region (MAAR) provided a summary of the Bay of Bengal airspace Reduced Vertical Separation Minimum (RVSM) risks, which were also below TLS at  $1.16 \times 10^{-9}$ .

2.4 The Seventh Meeting of the Aeronautical Information Services– Aeronautical Information Management Implementation Task Force (AAITF/7) and an International Codes and Routes Designators (ICARD) Seminar were held in Hanoi, Viet Nam from 13 until 16 March 2012. Of the South Asian nations, only Afghanistan, Bhutan, the Maldives, Myanmar and Nepal did not have access to ICARD.

2.5 The AAITF/7 meeting discussed possible reasons for the lack of compliance with Annex 15 requirements for major changes such as ATS routes, navigation aids and the status of aerodromes. Specifically, these issues involved lack of adequate notice and compliance with the Aeronautical Information Regulation and Control (AIRAC) cycle. The SAIOACG meeting discussed and endorsed: *AAITF Draft Conclusion 7/1: Annex 15 Promulgation Requirements Compliance*.

2.6 Only 10 Asia/Pacific administrations had achieved Phase 1 for Aeronautical Information Management (AIM), while eight had implemented eight of the 21 elements (only India and Pakistan from South Asia). Given the slow progress in many States thus far, the need for much greater emphasis on individual State planning was recognised, to achieve AIM transition as soon as



practicable. The SAIOACG meeting discussed and endorsed: *AAITF Draft Conclusion 7/2: AIS-AIM Transition State Plan*.

2.7 The Ninth Meeting of the ICAO Asia/Pacific Performance-Based Navigation Task Force (PBN/TF/9 Bangkok, 27 – 30 March 2012) had noted an improvement of States with a ‘Robust’ status PBN Plan from 21% to 33%. Notwithstanding the improvement, a large number of States remained as either ‘Marginal’ or ‘Incomplete’ status plans, or had no plan, including Pakistan (‘Marginal’), although Pakistan noted that their plan would be updated in the near future.

2.8 The Nineteenth Meeting of the South-East Asia ATM Coordination Group (SEACG/19, 1– 4 May 2012) had noted that although the Asia/Pacific Air Navigation Concept of Operations included reference to certain PBN airspace capabilities and expected safety net standards (such as Airborne Collision Avoidance Systems), there was no equivalent to Conclusion 22/8 for these areas in terms of airspace mandates and application of priorities. As some Asia/Pacific administrations were planning to mandate requirements such as RNP4, SAIOACG/2 discussed the *Draft Conclusion SEACG 19/1 – Asia/Pacific Air Navigation Concept of Operations Mandates*.

2.9 The SAIOACG/2 meeting agreed that the SEACG Draft Conclusion should include reference to ADS-C and CPDLC, and therefore needed some additional text (highlighted in grey). The meeting developed an enhanced Draft Conclusion on this basis:

**Draft Conclusion SAIOACG2/1 – Asia/Pacific Air Navigation Concept of Operations Mandates**

That, States intending to implement Performance-Based Navigation and Safety Nets may, after appropriate consultation with airspace users, designate portions of airspace within their area of responsibility:

- a) as providing priority for access to such airspace for aircraft with prescribed Performance-Based Navigation (PBN) specifications and supporting data-link equipage (ADS/CPDLC); and
- b) mandating the carriage and use of an operable Automatic Dependent Surveillance/Controller Pilot Data-link Communications Systems (ADS/CPDLC) system, mode A/C and/or mode S transponder, Airborne Collision Avoidance System (ACAS) and Terrain Awareness Warning Systems (TAWS) as appropriate.

2.10 SAIOACG was apprised of information on the Fifth Meeting of the Flight Plan & ATS Messages Implementation Task Force (Manila, Philippines, 7–9 November 2011), including the Flight Plan Implementation Tracking System (FITS, <http://www2.icao.int/en/FITS/Pages/home.aspx>).

2012 FPL & ATS Message Implementation Update (IP02)

2.11 IP02 provided detail on Doc 4444 Amendment 1 implementation progress; there appeared to have been considerable schedule slippage. Five States had indicated planning to complete Phase 1 activities on schedule, but had not advised completion. Two states reported completing Phase 1 on schedule (by 30 Mar 2012). While thirteen States planned to conduct Phase 2 activities in accordance with the agreed schedule (1 April–30 June 2012), none had reported completing this work.

2.12 The Regional Office had conducted a risk assessment to determine the level of risk to the regional ATM network for any administration’s potential failure to transition to NEW format. During the meeting the risk assessments were updated, based on 12 responses to a new questionnaire dated 12 April 2012. Several risk assessments were lowered as a result, including India, Myanmar and Thailand (each risk assessment would be reviewed as further updates were received).

2.13 IATA stated that they had been in contact with airlines, including some non-IATA airlines, and most if not all were indicating readiness. IATA emphasised that it was very important for ANSPs reach out to local airlines to ensure they were also ready.

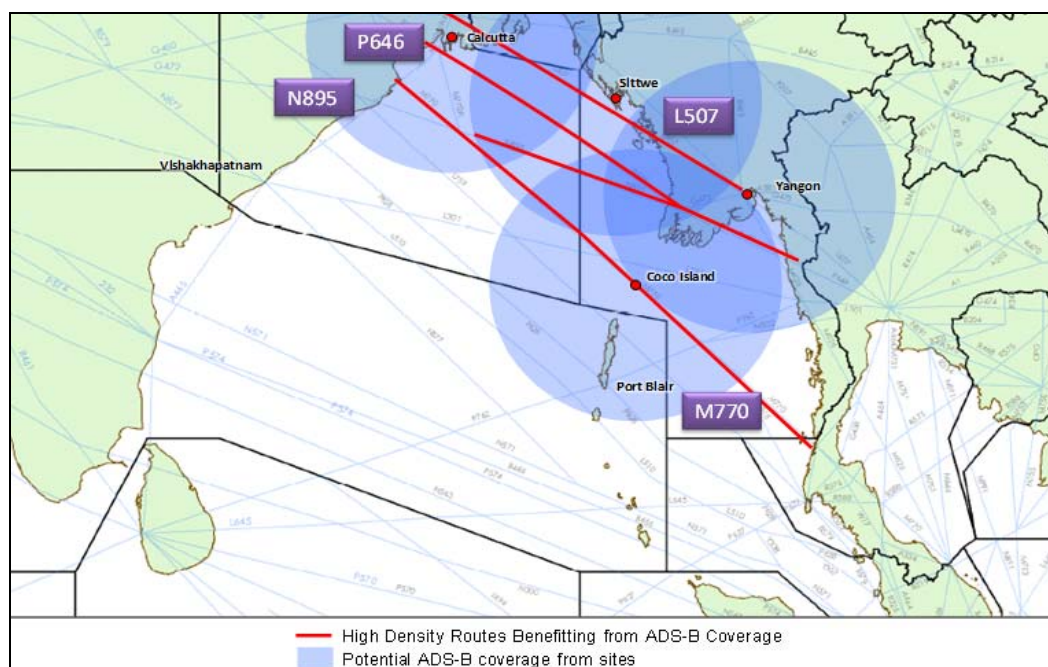
#### India's Preparedness for New ICAO FPL 2012 (WP15)

2.14 India presented an update on their implementation of the NEW format ICAO flight plan and associated messages, and requested the Regional Office to update progress details on the FITS website. India confirmed that they had invited all the affected airline operators to discuss and plan the smooth transition of the changes.

2.15 Oman discussed the potential inter-regional issues regarding I. R. Iran, which was not able to upgrade their system to incorporate Amendment 1, and any possible consequences for the Bay of Bengal Cooperative Air Traffic Flow Management System (BOBCAT) system. Thailand assured the meeting that the BOBCAT system would be unaffected by the Amendment 1 readiness of States, as flight plans came from airlines.

#### ADS-B Planning (WP03)

2.16 The ADS-B Study and Implementation Task Force meeting (ADS-B SITF/11, Jeju, Republic of Korea, 24-27 April 2012) noted India had announced plans to install ADS-B at 14 locations. Myanmar had advised of its intentions to install six ADS-B stations before the end of 2013. A key focus area for the Bay of Bengal were the ADS-B stations at Port Blair (India) and Coco Island (Myanmar) and data sharing from these facilities (**Figure 2**). This would assist the management of ATS routes L510, L759, M770, N877, P628 and crossing P762 intersections, using ATS surveillance based separation instead of 15 minute procedural and Flight Level Allocation Scheme (FLAS) procedures. Myanmar advised that the Sitwe installation was expected to be completed in 2012.



**Figure 2:** Proposed ADS-B data sharing between Indian and Myanmar ADS-B Stations

2.17 The meeting noted that sharing ADS-B data with neighbouring States and ATS units to improve safety (through the use of safety nets such as conflict alerts), confidence/trust in adjacent operations, and overall efficiency in identifying impending traffic was a key Seamless ATM enabler. One difference between ADS-B technology and traditional radars was that positional data from

ADS-B systems was determined by the aircraft itself, and was 'publicly' broadcast, so there were much fewer implications regarding security of information for national security and the military.

#### ADS-B Implementation Plan (WP09)

2.18 India presented its plan to enhance ATS surveillance through the use of ADS-B on major air routes and within terminal areas, integrated with ATC automation to supplement existing radars. During 2012, it was proposed to install seven more ADS-B ground stations to cater for medium traffic density at the airports as well as to provide redundancy.

2.19 India was willing to share ADS-B data with neighbouring states as follows:

- a) Malaysia after commissioning of their new ATC automation in 2012;
- b) Myanmar (Coco Island and Patheingyi), Maldives, Pakistan and Sri Lanka;
- c) Indonesia, if Indonesia needed the Port Blair data.

2.20 India thanked Australia for the planned familiarisation programme from 2 – 6 July 2012 in Australia for Indian staff, to cover every aspect of ADS-B implementation.

2.21 Sri Lanka had planned two ADS-B stations, one near the international airport and one to enhance coverage towards the east. Sri Lanka requested data sharing with India to assist with coverage within the northeast and southern portions of their FIR.

2.22 Oman stated that sharing ADS-B data took time to organise, and they used filters to ensure that some data (such as military aircraft) is shared without the security implications. Oman was studying a proposal for a floating platform for ADS-B and VHF which is connected by fibre in the Arabian Sea, and stated the return on investment would be very positive.

2.23 IATA stated that innovative solutions like a floating platform were required, and would assist Seamless ATM. IATA was supportive of the Indian developments, in particular the provision of surveillance-based separation. IATA requested that if India was looking at mandating ADS-B in its airspace, that it considered a common minimum Navigational Uncertainty Category (NUC) value and recognition of mutual approvals, so that airlines only needed one approval from their State of Registry.

#### Review of BOBASIO/02 Meeting at Chennai (WP/16)

2.24 India presented a brief review of the Second Bay Of Bengal, Arabian Sea and Indian Ocean Region (BOBASIO/02, Chennai, India, 11–13 April, 2012). The meeting was attended by Nepal, Bangladesh, Thailand, Singapore, Indonesia, Maldives, Seychelles, Oman, IATA and IFATCA.

2.25 BOBASMA advised that since 1 July 2010, there has been no report of occurrence of either Large Lateral Deviation (LLD) or Large Longitudinal Error (LLE) for the Bay of Bengal area. India suggested that air traffic controllers needed to be trained and directed to understand the importance of reporting LLD and LLE correctly.

2.26 A new ATS Route was proposed south of the current L301 as follow up from the First India-Myanmar-Thailand ATM Coordination Meeting (IMT-ATM/CM/1) to ease congestion in the area of the Major Traffic Flow AR-10. This proposal was being studied by India and their military.

2.27 India informed the meeting about the 'Upper Airspace Harmonization of Chennai FIR' project, which commenced on 22 September 2011. This created a single airspace continuum of 2.46 Million Km<sup>2</sup>, facilitating uniform application of methods, procedures and separation standards.

2.28 Seychelles, Maldives and Indonesia were urged to participate in the Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE). This was a green initiative by India and IATA focused on long-haul flights.

2.29 India and Seychelles agreed to exchange incident investigation reports of coordination failures to identify deficiencies for remedial action. A controller's exchange visit program was agreed in principle, to assist cooperation in this area.

2.30 Somalia informed the meeting that there was only a single International Direct Dial (IDD) line for coordination between Mogadishu ACC and Mumbai ACC. India advised that discussions were being held with the service provider (Tata Telecom) for converting the existing Very Small Aperture Terminal (VSAT) data line between Nairobi, Kenya and Mumbai ACC using a submarine cable with a 2 Mbps capacity dedicated line for voice communication.

2.31 Somalia requested India to consider removing the FLAS but India wanted to retain the FL300 (westbound) and FL330 (eastbound) requirements due to communication limitations, and the majority of the aircraft were still not ADS/CPDLC capable. However, India would make efforts to improve level allocation other than relying on FLAS by training the Mumbai controllers about the difficulties being experienced by Mogadishu ACC.

2.32 India and Maldives - Male informed that AIDC Trial operations may commence from June, 2012 on routes R329 and R457 between Chennai ACC and Male ACC. AIDC exchanges between these ACCs would be explored on Route R458 after successful completion of the trial between Chennai and Male. India expressed its willingness to assist the Maldives in implementing AIDC.

2.33 The Maldives expressed concern over the flight level allocation on R329 over POXOD. India requested Maldives to provide sample data for analysis and initiating remedial measures. Non availability of flight plan data with Mumbai resulted in increased coordination and workload was reported. India agreed to address this issue immediately.

2.34 Due to frequent failure of VSAT line between India and Maldives, it was requested by Male ACC to have an alternate voice communication through different operator for Upper Chennai or Trivandrum. India agreed to examine the proposal of using a submarine cable instead of the VSAT.

2.35 India updated the meeting on the GPS Aided GEO Augmented Navigation (GAGAN) SBAS system. They explained that the footprint of the space segment covered a large portion of the Asia/Pacific region and that India was working towards attaining APV1.0 capability over the entire landmass. IATA thanked India for the effort in facilitating a very productive meeting, but restated that they do not support Space Based Augmentation Systems (SBAS), which they saw as principally supporting non-airline operations.

2.36 IATA asked whether the BOBASIO and the SAIOACG meetings were duplicating the same tasks as they covered similar areas of responsibility. The Secretariat suggested that the informal BOBASIO meeting was an appropriate forum for much of the detailed technical discussion for short to medium term issues. This was encouraged like the other informal forums such as ASIOACG and the Thailand-Myanmar-India meetings, as these could be held when needed, and without the formality of ICAO meetings.

2.37 In this regard, the Regional Office supported these meetings whether they were attended by ICAO or not, as it was better for States to work together to solve matters in a timely manner and independently if possible, to gain from that experience. The SAIOACG was a formal mechanism to provide APANPIRG with strategic ATM planning information and advice, so its function was different, although in future years it was possible that the informal bodies would be sufficiently mature to only require the ATM Sub-group for this function, as was the case in the Pacific.

#### Regional ATM Contingency Planning Task Force (IP03)

2.38 The Secretariat presented a summary of the discussion and outcomes of the First Meeting of the Regional ATM Contingency Planning Task Force (RACP/TF/1, Bangkok, 17 – 20 April 2012). The RACP/TF meeting noted that Level 1 (internal State) plans would not be part of the Regional ATM Contingency Plan, but could be referred to in that document. Level 2 (Inter-State) planning, which involved or affected other States, were considered to be a priority for the RACP/TF analysis, as these were needed to be harmonised to allow a seamless Level 3 (Regional) Plan.

2.39 A Task Force Review Team of India, Indonesia, Singapore and Thailand was established to review the current status of ATM contingency plans and the contingency preparedness of Asia and Pacific Region States, as required by the Terms of Reference. The Review Team would work via electronic communication to assess and analyse Level 1 and Level 2 Contingency Plan readiness using the draft Basic Plan Elements.

### **Agenda Item 3: Review of Current Operations and Problem Areas**

#### Infrastructure Development, ATM Improvements, and Capacity Enhancements (WP05)

3.1 ICAO provided information on ATM infrastructure development, Air Traffic Management (ATM) improvements, and capacity enhancements in the South Asia/Indian Ocean Area in the last decade, which included RVSM, implementation of Air Traffic Flow Management (ATFM) and 50NM horizontal separations, and improved communications and ATS surveillance capability. Despite the improvement efforts, the Asia/Pacific region still needed to do more as traffic continued to grow at almost double digit rates. The region had a large number of high density airports, while the escalating cost of fuel and environmental drivers translated into pressure to be more efficient.

3.2 The meeting recalled that the lateral spacing between ATS routes was 50NM or more, and that FLAS was utilized at various crossing points so the current scheme was very conservative. Thus, the meeting was urged to commit to providing the full range of ATM separation services commensurate with the potential ATM capability available, based on the Asia/Pacific Air Navigation Concept of Operations, Seamless ATM, and a focus on ADS-B implementation and data-sharing.

#### Issues and Suggestions regarding BOBCAT ATFM Operations – Delhi FIR (WP07)

3.3 India presented information on issues related to ATFM operations and the BOBCAT system within the Delhi FIR and the suggestions for improvement. India had problems with convergence of ATS routes within the Delhi FIR that required a tactical handling of aircraft crossing or joining the Major Traffic Flows being managed by BOBCAT. The short route lengths and requirement to hand off to Pakistan to meet their tactical requirements meant that adjustment to level allocations was regularly required.

3.4 It was estimated that more than 50% of aircraft significantly differed from their allocated slots, and there were some overflying aircraft which do not participate in BOBCAT. Sometimes due to non-availability of levels for overflying traffic, level allocations of Delhi departures are used, which involved ground delays for these aircraft.

3.5 India noted that airspace saturation was observed during daytime, also resulting in delays to overflying flights and Delhi departures. There was a need to extend ATFM, perhaps through extending BOBCAT allocation during daytime.

3.6 Although 50NM was implemented on ATS routes P628 and L509. Lahore FIR was apparently accepting aircraft separated by 50NM only on case-by-case basis. India stated that the agreed separation standard should be uniformly applied, unless there were special circumstances.

3.7 India suggested a number of changes, including strict adherence to routes, additional time and level allocation at the Delhi FIR exit points, reserved levels for Delhi and Lahore departures, the extension of BOBCAT operating hours, and making the traffic distribution more even across the routes involved. These matters were discussed in depth under Agenda Item 4.

3.8 In summary, IATA supported conformance with the expected routes and allocated levels, but needed to know when airlines were not playing their part. Equally, data was needed to assess whether ANSPs were not assisting the allocation process, particularly regarding timing of the aircraft before it reached the Delhi FIR. India stated that they would encourage controllers to report non-participating airline problems with BOBCAT.

3.9 The meeting noted a more tactical approach should be taken than relying on more procedural restrictions, especially if this is able to take into account the actual ATM system capability. Thus the meeting did not initially support more rigid BOBCAT measures, at least until data had been properly analysed. Thailand suggested that more transfer of control information (sharing of departure and flight plan messages) should be able to be provided to assist more tactical decision-making, particularly on the India-Pakistan boundary.

3.10 The meeting noted the problem of controllers in the Karachi and Lahore FIRs only accepting 50NM spacing on a case-by-case basis, and also requiring aircraft to be at their allocated BOBCAT level on entering the Pakistan FIRs. The meeting agreed that it would be more efficient for Pakistan to accept westbound aircraft at levels transitioning to their BOBCAT levels, recognizing that both India and Pakistan had complete ATS surveillance coverage.

3.11 Oman stated that airlines needed to play their part in managing the ATFM congestion issues. IATA stressed that they preferred a regular ATFM oversight mechanism for the region. IATA noted that different airports had different ways of treating wheels-up time.

3.12 The Secretariat emphasised that we should not be engineering more complex procedural systems to solve a problem that had its genesis in tactical demand and capacity issues. The meeting noted that CDM was a core component of ATFM, so if a more sophisticated form of ATFM was established, it would include the airline collaboration that Oman suggested, and could be designed to match the tactical management capability of the present system.

3.13 India was ready to share the ATFM platform being developed jointly with the FAA at Delhi. Thailand would consider working with India to assist a seamless transition of current BOBCAT capability to the more comprehensive ATFM system being implemented.

#### BOBCAT Operational Updates and Future Arrangement (WP18)

3.14 Thailand presented an analysis of operational data on westbound flights operating through the Kabul FIR associated with the ATFM BOBCAT process from the commencement of the ATFM operational trials during the period July 2007 to April 2012. Since operational implementation of the ATFM procedures commenced on 5 July 2007 until the end of April 2012, 97,481 aircraft had been managed, with over 90% accepting their slot allocation.

3.15 The meeting recalled implementation of RVSM in the Afghanistan airspace (Kabul FIR) on AIRAC 17 November 2011, which increased effective westbound airspace capacity in the Kabul FIR during BOBCAT hours between FL280 – FL360 by 40%.

3.16 The meeting noted that the implementation of 50NM in the Bay of Bengal and Arabian Sea airspace further increased effective westbound airspace capacity in the Kabul FIR during BOBCAT hours between FL280 – FL360 by approximately 20%.

3.17 When combined in theory, RVSM in the Kabul FIR and 50/50NM implementation contributed to reducing ATFM delay (defined by the difference between the latest slot request and the first slot allocation from BOBCAT) from approximately five minutes per flight in October 2011 to approximately four minutes per flight in March 2012. It was also noted that since airlines had the ability to adjust slot allocation after the first slot allocation, the actual delay figure might be lower.

3.18 Analysis of the data during February – April 2012 indicated that the percentage of flights achieving preferred flight levels within the Kabul FIR had fallen from approximately 90% prior to RVSM and 50NM implementation to 65 – 76%, which was a major concern. Major causes of aircraft unable to achieve their preferred flight level were:

- a) tactical ATC issues: 38%;
- b) departures punctuality: 31%;
- c) unknown (more data required): 24%;
- d) EET inaccuracy: 6%; and
- e) unachievable slot allocation: 1%.

Capacity Enhancement Table (WP14)

3.19 The Secretariat provided a compilation of the planned and current status of capacity enhancements for the region as reported at various regional meetings. The meeting was reviewed and updated the table, which is appended at **Appendix A**.

#### **Agenda Item 4: Implementation of CNS/ATM Systems**

##### Establishment of SAIOACG Small Working Groups (WP04)

4.1 The meeting noted that with regard to the three areas, the following administrations provided leadership of the Small Working Groups (SWG):

- ATFM SWG – Mr. Piyawut Tantimekabut, Thailand (Secretariat– Mr. Len Wicks);
- COM SWG – Mr. Indra Gunawan, (Secretariat– Mr. S. Sumner); and
- ATS Surveillance SWG –Mr. Edmund Heng, Singapore (Secretariat– Mr. Soon Boon Hai).

4.2 The meeting discussed and agreed to the following Decision:

##### **Decision SAIOACG2/2 - Establishment of SAIOACG Small Working Groups**

That, SAIOACG Air Traffic Flow Management (ATFM), ATS Communications (COM) and ATS Surveillance (SUR) Small Working Groups be established to:

- a) Assess the current status and planning of implementation;
- b) Identify barriers to implementation;
- c) Make recommendations to assist harmonized ATM procedures and applications;
- d) Make recommendations that assist implementation in accordance with the Asia/Pacific Air Navigation and ATFM Concepts of Operations, and the Asia/Pacific Seamless ATM initiatives, related to the ATFM, COM and SUR fields.

##### Future Work Focus and Concepts (WP17)

4.3 IATA discussed remaining issues with BOB-RHS/TF work, and noted that there were still a number of areas that should provide a future work focus and concepts to ensure continued effort was applied to the Southeast Asia–Europe flow. In addition, a mechanism to provide BOBCAT overview and enhancement/improvement management should be considered. The paper proposed the formation of SAIOACG SWG for future ATFM.

4.4 IATA noted that both the ICAO Seamless Airspace and ASBU initiatives urged States to consider airspace capability, rather than just focus on specific routes. An example of this is the application of ATM surveillance separation, so that where surveillance exists, the airspace concerned should be able to apply surveillance based separations. It was recognized that implementation may be influenced by adjacent airspace capability, which is a tactical matter to be addressed between States.

4.5 IATA stated that there remained too many examples of capability being available but delivery of services being based on “lower level” procedures - for example 80NM or 50NM separation standards being declared and used where full radar coverage is available (which enabled minimum separations as low as 5NM). Thus IATA proposed SWG to act as a steering group for ATFM, including BOBCAT, and the application of the correct service delivery.



Update on AMHS Trials and AIDC Testing (WP12)

4.6 India noted that the Aeronautical Message Handling System (AMHS) system was first installed in 2008, although the AMHS was not utilised until late 2009 when neighbouring States had this capability. The Mumbai – Karachi AMHS link was established in September, 2010 and interoperability tests were successfully carried out in November 2010. India was waiting for Pakistan to commence parallel operations and circuit commissioning.

4.7 The 64 Kbps ATN Link between Mumbai – Beijing was established in March 2011 and the X.25 and the IRDP Connection on Aeronautical Telecommunication Network (ATN) Router was established in April 2011. Due to software issues, testing was still in progress. India expected that these issues would be resolved after software upgrades at Beijing.

4.8 India was presently having bilateral discussions with Thailand for ATN connectivity. It was expected that interoperability tests would be carried out shortly on establishing connectivity. Airports Authority of India was pursuing AMHS Connectivity with Kenya and Oman and hoped to achieve the same at the earliest.

4.9 India was presently in the process of modernization of its ATM infrastructure. They had three major suppliers (Raytheon - Autotrac-3 for Mumbai, Chennai and New Delhi, Selex for Hyderabad and Bangalore and Indra (AIRCON 2100) for Trivandrum, Ahmedabad, Nagpur, Mangalore and Varanasi). Kolkata would also be upgraded by 2012, and 38 ATC Centres had been interconnected across the different suppliers. India noted that the AIDC testing results involving Ahmedabad, Delhi, Mumbai, Nagpur and Varanasi were very encouraging.

4.10 The Sultanate of Oman stated that in the next three to four weeks Raytheon was expected to arrive to start a testing programme for ATS Inter-facility Data-link Communications (AIDC). Oman asked for the data for the AMHS trials, and noted that they had already tested AHMS with Bahrain. The Maldives were completing an ATC upgrade project and once that was finished they would start trials with India.

4.11 Oman noted the version of AIDC and the need to talk to other States. IATA emphasised that it was very important to ensure that ATM systems were interoperable with neighbouring systems and included in the specifications for vendors. The Secretariat stated that it was very important for States to understand that AIDC implementation was subject to bilateral agreement. With respect to AIDC, the Asia/Pacific Interface Control Document (ICD) Version 3 provided guidance to assist States. A Pan-Regional ICD was still in draft form. Oman was concerned about the means by which versioning could be controlled for contracting vendors. There was consideration for an inter-regional task force on this subject.

4.12 The Secretariat noted the speech circuit communications issues between Pakistan and India, which had been the case since 2011 controllers had been resorting to public landlines and mobile phones. The data communications between Kabul and other States had also been problematic, while Afghanistan was proposing to install a CADAS system. A Communications Coordination Meeting was planned during June 2012 at Karachi.

## **Agenda Item 5: ATS Route Development**

### Procedure For The Amendment of the Regional Air Navigation Plan (WP6)

5.1 The Secretariat presented an outline of the procedure for States and Organisations when submitting amendment proposals to the Regional Basic Air Navigation Plan. The Regional Office sometimes received amendment proposals for ATS requirements from States, which did not provide the necessary information and were without an appropriate chart. In some cases even the information provided was inaccurate. Additionally there is often also no information provided with regard to whether the route has been coordinated with other affected FIRs. All these led to unnecessary delays while the Regional Office sought clarification and other relevant information, and increased workload. It was therefore very much in the interest of the proposing State to ensure that:

- a) detailed and accurate information with regard to the route is provided;
- b) an appropriate chart be provided for reference; and
- c) prior consultation and agreement be sought with the affected FIRs and information on such consultation and agreement be provided (joint proposals are recommended).

5.2 The meeting agreed with the requirements above and agreed that the correct format provided in **Appendix B** should be provided as a template on the website, including the suggested procedures:

### **Draft Decision SAIOACG2/3 Basic Air Navigation Plan Amendment Procedure Template**

That, for ease of reference and reduction of submission errors, the ICAO Regional Office should provide the Doc 9673 Amendment Procedure on the Asia/Pacific website, including requirements to provide detailed and accurate information, an appropriate chart in the case of ATS route amendments, and information on prior consultation with any affected States.

### Converting Non-RNAV Routes to RNP10 Routes and New ATS Route Creation (WP11)

5.3 India stated that since routes non –RNAV routes in Mumbai FIR G450, B459 and A474 were separated by more than 50NM until crossing N563 and thereafter were within radar coverage of Mumbai, these routes could be upgraded to RNAV routes. Similarly, G465 and T940 could also be upgraded to RNAV routes in Mumbai FIR, ensuring that Eastbound aircraft be vertically separated as these two routes were converging in the Male FIR. Sri Lanka and Maldives would discuss this proposal before submission to the Regional Office; India indicated that Somalia and the Seychelles had already indicated their agreement. The Secretariat noted that the preference was to designate all the upper airspace as RNP in accordance with the Asia/Pacific Air Navigation Concept of Operations, and the change of individual routes should be a consequential activity which should drive airline equipage in the right direction. India also proposed to implement the following additional RNP10 routes:

- a) V30 and V3;
- b) RNP10 route L856; and
- c) RNP10 route X123.

5.4 Sri Lanka raised issues with regard to V31. India assured Sri Lanka that they would take Sri Lanka's concerns into consideration.

UPR Feasibility Study within the Arabian Sea and Indian Ocean Area (WP13)

5.5 The INSPIRE programme identified User Preferred Routes (UPR) as one of the initiatives for reducing emissions in the enroute phase of flight. UPR paper trials indicated the following:

- Arabian Gulf - Australia flow: UPR routes were feasible within the UPR zone (south of DONSA, eastern boundary route UL425) for Chennai and Mumbai FIRs.
- Bangkok – Nairobi - Bangkok: UPR routes were possible, with night time flights manageable; however limitations of HF were a major impediment for the UPRs.
- Bangkok – Addis Ababa - Bangkok: UPR trials indicated that tracks were outside the identified UPR zone and cutting across high density traffic during night (early morning) hours, thus UPRs on this city pair would adversely affect 5 to 8 flights at any given time and were hence not feasible.
- Hong Kong - Johannesburg - Hong Kong: UPR trials indicated tracks passing through the southern portion of the Mumbai FIR where traffic was manageable in coordination with adjacent FIRs.

5.6 Some of the UPRs were such that the flights required vertical separation with flights on two adjacent routes. This may result in non- availability of that particular level for traffic on two routes. The conflicts for crossing Tracks (traffic from/to the Arabian Gulf conflicting with traffic to/from Africa) were observed in some cases. However, application of the existing FLAS would resolve the conflicts. Overall, UPR trials were useful in simulating the airlines requirement. The trials also indicated feasibility of UPRs in the Indian FIR portions of the proposed UPR zone.

5.7 IATA had predicted an average seven minute saving per flight with the use of UPRs and thus supported the UPR programme. India would advise which agency would administer the UPR daily usage. The meeting congratulated India and other involved States in moving to a greener system.

Suvarnabhumi Airport Runway Maintenance (IP06)

5.8 The meeting was apprised of runway maintenance work at Bangkok Suvarnabhumi Airport scheduled for 11 June -10 August 2012, which involved portions of Runway 19L/01R for 60 days (H24). Based on the runway utilization plan, it was estimated that runway capacity of the airport would be reduced from 60-76 movements/hour to 34-40 movements/hour during Visual Meteorological Conditions (VMC) weather, or less during adverse weather conditions. Thailand would be in coordination with States and Airlines involved, to minimise disruptions.

**Agenda Item 6: Development of State Contingency Plans**ATM Contingency Plan of India (WP10)

6.1 India recalled that it prepared its first ATM Contingency plan for Indian FIRs in February 2008 to meet the requirement of Annex 11 - Air Traffic Services, and that the plan was revised in 2011 during twenty first meeting of the Bay of Bengal ATS coordination group (BBACG/21) in March 2011. Subsequently, the plan was revised through the BOBASIO meeting in 2011 and 2012 with other States and then submitted to ICAO at the RACPTF/1 in April 2012.

## **Agenda Item 7: ANSP Coordination and Civil/Military Cooperation**

### Civil Military Cooperation for seamless ATM (IP05)

7.1 India presented information on the coordination between Indian civil and military agencies and the future planning for Flexible Use Airspace (FUA). IP05 also summarized some of the initiatives taken by the Airports Authority of India through effective coordination with the military for optimal use of airspace, such as:

- monthly meetings were held between Airports Authority of India and Indian Air Force at Headquarters level to address operational issues;
- military exercises are planned well in advance so as to have minimum effect on smooth operation of civil flights;
- direct corridors were allowed to military aircraft for time-critical operations;
- weather deviations/direct routings through military areas were permitted through direct coordination;
- integration of civil and military radars within the Chennai FIR had been completed;
- AAI had offered their expertise in developing PBN procedures for military airports;
- ATFM was planned for implementation by December 2012 for six major airports in which military would be major stake holder;
- military officers will be available in the Central ATFMU and would participate in implementing Traffic Management Initiatives (TMIs);
- military airspace was made available in accordance with the FUA concept;
- the military had offered to provide radar service in northeast part of India where civil radar coverage was not available (the proposal was under consideration by AAI);
- a number of ATS routes had been promulgated through Military areas either on H24 basis or for restricted hours; and
- the formation of High level Airspace Policy Body (HLAPB) to assess the National airspace usage is under consideration of by the Government of India.

7.2 IATA placed on record the tremendous work done by India in improving the civil/military cooperation, however, it was noted that India still required an air defence number. India stated that the military had been given more monitoring tools, and would further discuss the number system with the military. Oman commended India for their civil/military development, and shared that they were developing a National Airspace Policy, which defined the policy for airspace usage. Moreover, Oman stated that education among stakeholders was the key, so the development of the overarching policy. The secretariat also commended India on its proactive stance in FUA planning.

**Agenda Item 8: Review of SAIOACG Task List (WP08)**

8.1 The meeting agreed that the updated task list included as **Appendix C** to this report.

**Agenda Item 9: Any Other Business**Establishment of an ATS Route Structure for Hambantota International Airport (IP04)

9.1 Sri Lanka provided information on the establishment of an ATS Route network to cater for arrival and departure of Aircraft from the new Hambantota International Airport (HIA). India, Indonesia, Maldives and IATA endorsed the proposed routes for HIA and assisted the design of approach and departure procedures (SID and STAR). Coordination procedures between adjacent states (Australia, India, Indonesia and the Maldives) would not be affected by these changes.

**Agenda Item 10: Date and Venue for the Next Meeting**

10.1 The meeting agreed that the next SAIOACG meeting was tentatively scheduled in February 2013 at Bangkok, Thailand.

**Closing of the Meeting**

10.2 The Chairman thanked the meeting participants for their contributions.

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SAIOACG/2  
Appendix A to the Report

**Capacity Enhancement Table SAIOACG/2 Updated on May 17, 2012**

Capacity Enhancement	Action By	Estimated completion date	Completion date	Current Status
<b>Implement ADS-C/CPDLC Datalink Communications</b>				
Australia	Brisbane/Melbourne FIRs	Completed	1999	
India	Mumbai FIR Chennai FIR	Completed Completed	2006 2005	Mumbai: H24 in Oceanic airspace of the Mumbai FIR. Chennai: Route Specific as per NOTAM
Indonesia	Ujung Pandang FIR Jakarta FIR	October 2008 2009	<b>Jakarta FIR update?</b>	Trial operation 3 Jul – 3 October 2008. Trial procedures published by AIP Supplement 07/08. <b>Ujung Pandang only?</b>
Maldives	Male FIR	September 2009	???	Trials in progress
Mauritius	Mauritius FIR	Completed	2003	
Oman	Muscat FIR	Not Applicable	???	<b>Full VHF coverage????</b>
Seychelles	Seychelles FIR	Target 2010	Estimated 2010	<b>Update?</b>
Sri Lanka	Colombo FIR	Completed	2006	<b>Update? Moving to new ACC?</b>
Malaysia	Kuala Lumpur FIR Kota Kinabalu FIR	Completed Update on KK FIR	Completed Update on KK FIR	<b>Update on Kota Kinabalu FIR</b>
Thailand	Bangkok FIR	No Requirement		No Requirement Full VHF coverage
Myanmar	Yangon FIR	completed	Completed	<b>Completed. Update on operational status?</b>
Afghanistan	Kabul FIR	No requirement		<b>No requirement .Full VHF coverage?</b>
Pakistan	Karachi FIR Lahore FIR	No requirement No requirement		<b>No Requirement. Full VHF coverage?</b>
Singapore	Singapore FIR	Completed	Completed	South China Sea only
<b>Implement 50NM Lateral Separation (RNP10 in Oceanic Airspace)</b>				
Australia	Brisbane/Melbourne FIRs	Completed	1998 - 2001	
India	All Indian FIRs		2002	<b>All RNAV Routes except UL425 and UM551 RNP10</b>
Indonesia	Jakarta FIR Ujung Pandang FIR		2002	<b>Over specified EMARSSH Routes</b>

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Maldives	Male FIR	July 2009		G465, R457 and M512 above FL280 and in consultation with India and Sri Lanka.
Mauritius	Mauritius FIR		2003	
Oman	Muscat FIR			Update
Seychelles	Seychelles FIR	TBN	??	Update
Sri Lanka	Colombo FIR		2002	Discussions taking place with Maldives
Malaysia	Kuala Lumpur FIR Kota Kinabalu FIR		2002	Update Update
Thailand	Bangkok FIR		2002	Not Applicable
Myanmar	Yangon FIR		2002	Update
Afghanistan	Kabul FIR		2002	Not applicable
Pakistan	Karachi FIR Lahore FIR		2002	Not Applicable
Singapore	Singapore FIR		2002	Update?
<b>Implement 50NM Longitudinal Separation (RNP10 in Oceanic Airspace)</b>				
Australia	Brisbane/Melbourne FIRs		1998 - 2001	
India	All Indian FIRs	2009		CRA established from September 2008. Implementation in accordance with ICAO Regional PBN Implementation Plan
Indonesia	Jakarta FIR Ujung Pandang FIR	TBN		To be reviewed after introduction of ADS/CPDLC
Maldives	Male FIR	2009		Update?
Mauritius	Mauritius FIR	TBN		Using RNAV 80 nm longitudinal
Oman	Muscat FIR	2009		Co-incident with India Implementation LOA?
Seychelles	Seychelles FIR	TBN		Regional implementation within AFI Region
Sri Lanka	Colombo FIR	2009		Subject to CRA
Malaysia	Kuala Lumpur			Update
Thailand	Bangkok FIR			Update
Myanmar	Yangon FIR			Update

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Afghanistan	Kabul FIR			Not Applicable
Pakistan	Karachi FIR Lahore FIR			Not Applicable
Singapore	Singapore FIR		Completed?	Update...SCS
<b>Implement RNP4</b>				
Australia	Brisbane/Melbourne FIR	2005		Available in Tasman Sea region (Aus/NZ) and planned for implementation in the Melbourne FIR on 12 <sup>th</sup> March 2009.
India	All Indian FIRs			
Indonesia	Jakarta FIR	TBN		
Maldives	Male FIR	TBN		
Mauritius	Mauritius FIR	TBN		
Oman	Muscat FIR	Not Applicable		RNP5 currently available throughout Muscat FIR. Once RNP4 is implemented in the Mumbai FIR, then Muscat FIR will be able integrate with Mumbai.
Seychelles	Seychelles FIR	TBN		
Sri Lanka	Colombo FIR			
Malaysia	Kuala Lumpur FIR			
Thailand	Bangkok FIR			
Myanmar	Yangon FIR			
Afghanistan	Kabul FIR			
Pakistan	Karachi FIR Lahore FIR			
Singapore	Singapore FIR			
<b>Implement 30/30 Separation Standards in Oceanic Airspace (based on RNP4)</b>				
Australia	Brisbane/Melbourne FIRs			Tasman Sea region implemented and planned for implementation in the Melbourne FIR on 12 <sup>th</sup> March 2009.
India	All Indian FIRs	TBN		
Indonesia	Jakarta FIR Ujung Pandang FIR			
Maldives	Male FIR	TBN		



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Mauritius	Mauritius FIR	TBN		
Oman	Muscat FIR	TBN		
Seychelles	Seychelles FIR	TBA		
Sri Lanka	Colombo FIR	TBA		
Malaysia	Kuala Lumpur FIR Kota Kinabalu FIR			
Thailand	Bangkok FIR			
Myanmar	Yangon FIR			
Afghanistan	Kabul FIR			
Pakistan	Karachi FIR Lahore FIR			
Singapore	Singapore FIR			
<b>Implementation of Flex Tracks &amp; Connector Routes</b>				
Australia	Melbourne FIR		27 June 2005	Implementation of AUSOTS Additional tracks added since ASIOACG/1 Other options under consideration.
India	Mumbai FIR	2008 2009	2005	UM551 implemented between Mumbai and Muscat FIRs KITAL direct ELKEL to be implemented 12 March 2009 Flex Tracks to be evaluated for phased implementation – commencing in Southern portion of Mumbai FIR
Indonesia	Jakarta FIR Ujung Pandang FIR	2007 2009	2007 TBA	Southern connector routes implemented March 2007 Western connector routes subject to further discussion
Maldives	Male FIR	Completed	June 2004	Connector routes established between Male FIR and Melbourne FIR. December 2008 additional implemented Male/Melbourne FIR now CMB/MLE FIR done – 2 routes and currently evaluating 3 more connector routes MLE/CMB/MEL
Mauritius	Mauritius FIR	Completed	.	Connector routes established between Mauritius FIR and Melbourne FIR. Currently using UPRs.
Oman	Muscat FIR	N/A		
Seychelles	Seychelles FIR	N/A		

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Sri Lanka	Colombo FIR	30 Sep 2006  Point 3 – TBA		<ol style="list-style-type: none"> <li>1. Connector routes between Colombo and Jakarta FIRs pending - Implemented</li> <li>2. Connector routes between Colombo and Chennai FIRs pending – Implemented</li> <li>3. Connector routes between Colombo and Melbourne FIRs pending – Study ongoing</li> </ol>
Malaysia	Kuala Lumpur FIR Kota Kinabalu FIR	N/A		
Thailand	Bangkok FIR	N/A		
Myanmar	Yangon FIR	N/A		
Afghanistan	Kabul FIR	N/A		
Pakistan	Karachi FIR Lahore FIR	N/A		
Singapore	Singapore FIR	N/A		
<b>TMA Procedures PBN Based (RNP/RNAV Approaches, SIDS &amp; STARS)</b>				
Australia	Melbourne/Brisbane FIRs			
India	All Indian FIRs			Developed and promulgated by AIP for Mumbai, Delhi and Ahmedabad. Subject to authorization by regulatory authority of use of GNSS. 2008 implemented at Mumbai, Delhi and Ahmedabad and under development for Chennai.
Indonesia	Jakarta FIR			
Maldives	Male FIR	Implemented 2005		Developed for Male International and Gan International Airport and seeking Regulatory Approval
Mauritius	Mauritius FIR	December 2008		GNSS (RNAV) SIDSs & STARS available
Oman	Muscat FIR	Implementation by Dec 2008		GNSS Approaches for Muscat and Salalah International Airports are being developed and will be operational by September 2009.
Seychelles	Seychelles FIR	April 2008		GNSS (RNAV) SIDSs & STARS available
Sri Lanka	Colombo FIR	In progress – implementation TBA		
Malaysia	Kuala Lumpur FIR			
Thailand	Bangkok FIR			

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Myanmar	Yangon FIR			
Afghanistan	Kabul FIR			
Pakistan	Karachi FIR Lahore FIR			
Singapore	Singapore FIR			
<b>Implement AIDC Messaging</b>				
Australia	Melbourne	2006		Mauritius operational with Melbourne
India	Mumbai FIR	TBA		Trial operations with Muscat expected to commence in March 2009
Indonesia	Ujung Pandang FIR Jakarta FIR	2008 TBA	2009 TBA	Ujung Pandang – Brisbane FIRS under trial since May 2008 Jakarta FIR – After introduction of new “JATS” System
Maldives	Male FIR			Not Applicable
Mauritius	Mauritius FIR		2003	Implemented with Melbourne
Oman	Muscat FIR	2009	2009	OLDI trials with Bahrain in 2008 AIDC Trials with India expected March 2009
Seychelles	Seychelles FIR			Not Applicable
Sri Lanka	Colombo FIR	2006		
Malaysia	Kuala Lumpur FIR Kota Kinabalu FIR			
Thailand	Bangkok FIR			
Myanmar	Yangon FIR			
Afghanistan	Kabul FIR			
Pakistan	Karachi FIR Lahore FIR			
Singapore	Singapore FIR			
<b>Implement ADS-B Surveillance system</b>				
Australia	Brisbane/Melbourne FIR	2009		NFRM issued for mandate above FL290 with implementation proposed for 12 September 2013
India	Chennai FIR	Trials completed		
Indonesia	Jakarta FIR Ujung Pandang FIR	TBN		Under review by Indonesia DGCA

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Maldives	Male FIR	TBN		MSSR implemented 2009 with ADS-B Phased implementation program under consideration.
Mauritius	Mauritius FIR	TBN		Pending trial results from Reunion Island
Oman	Muscat FIR	2012		Subject to MID Regional Plan
Seychelles	Seychelles FIR	Program scheduled for 2009		
Sri Lanka	Colombo FIR	2010		
Malaysia	Kuala Lumpur FIR Kota Kinabalu FIR			
Thailand	Bangkok FIR			
Myanmar	Yangon FIR			
Afghanistan	Kabul FIR			
Pakistan	Karachi FIR Lahore FIR			
Singapore	Singapore FIR			

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**PROPOSAL FOR AMENDMENT OF THE  
ASIA/PACIFIC BASIC AIR NAVIGATION PLAN  
(Doc 9673)**

(Serial No.: APAC 12/X – ATS)

a) **Plan:**

Doc 9673

b) **Proposed by:**

(Name of State or Organisation)

c) **Proposed amendment:**

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

*Amend* requirement for ATS routes as follows:

d) **Date when proposal received:**

xxxxxx

e) **Proposers reason for amendment:**

xxxxxx

*Note:* Where the route affects adjacent FIRs, the proposer should provide information on the consultation, and agreement reached.

f) **Proposed implementation date of the amendment:**

Upon approval by the Council.

g) **Action by the Regional Office:**

The proposal is circulated to the following States.

(i) xxxx, (ii) xxxx, (iii) xxxx, (iv) xxxxxxxx,

*Note:* The list should include the States or organisations affected by the route change. The proposal for amendment may also be circulated to some interested states, for information.

h) **Secretariat's comments:**

1. xxxxxxxxxxxxxxxxxxxx

2. xxxxxxxxxxxxxxxxxxxx

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**SAIOACG — TASK LIST**

*(last updated SAIOACG/2)*

<b>ACTION ITEM</b>	<b>DESCRIPTION</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
18/2	Chennai/Colombo FIR boundary harmonization	2012	India, Sri Lanka Regional Office	Closed	India informed BBACG that this matter now under consideration by the Govt of India. Timeframe to be updated at the BBACG/22. SAIOCG/2. This was an inter-governmental issue.
18/4	Contingency Planning	2012	All States in the region, Regional Office	Closed	States in co-ordination with its neighbouring States, develop a contingency plan or plans for their airspace, taking into account Conclusion 17/11 Adoption of Model National ATM Contingency Plan. States to update contingency plan status at BBACG/22 SAIOACG/2. RACPTF was addressing the issue.
18/7	Specify RVSM airspace as Class A	Update SAIOACG/3	States Regional Office	Open	India expected to upgrade airspace to class A. To be done in 2013.
18/8	Lowering MEA on G792 from FL310 to FL300 to be in alignment with P628 in India	Update SAIOACG/3	India, Pakistan, ICAO APAC Regional Office,	Open	This matter is in coordination between Pakistan and India. Update at SAIOACG/3
18/9	Search and Rescue Agreements between States	Update BBACG/22	Regional Office All States	Open	<p>a) States, in conjunction with their neighbouring State (s), will develop Search and Rescue Agreements, for the purpose of providing a more efficient response to a search and rescue action and increase the possibility of a successful search and rescue mission; States conduct joint training and exercises, as appropriate, to maximize proficiency;</p> <p>b) a State, together with a neighbouring State, establish common SAR procedures, where practicable; and</p> <p>c) Pakistan scheduled to meet with I.R. of Iran and Afghanistan on harmonization of SAR Plans</p> <p>SAR agreements are reviewed at APANPIRG.</p> <p>BOBASIO/1 meeting addressed SAR agreements with India's neighbouring States</p>

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
19/5	<p>Establishment of Indian Ocean UPR (Southern Africa to Southeast Asia)</p> <p>1. Australia - Compile Contact List</p> <p>2. Australia - Develop Operational Concept which identifies Operators; City Pairs; &amp; Aircraft types for interim application (March 2008)</p> <p>3. Singapore Airlines to provide Flight Plan Data JNB – CPT - SIN</p>	2012	Australia, IATA, affected States	Open	<p>Assist ASIOACG members with this work.</p> <p>Primary coordination point is Mr. Phil Mayo of Airservices Australia, email: (Phil.Mayo@AirservicesAustralia.com)</p> <p>ASIOACG/4 Report contains record of positive progress so far. 2 routes implemented from Sumatra to Johannesburg.</p> <p>Data has been provided to ASIOACG. IATA informed meeting that operational UPRs were planned in June 2012.</p>
20/1	<p>Ensure BOBCAT flight plans and movement messages (DEP, CHG, CNL, etc) of flights subject to ATFM procedures (BOBCAT) are addressed by AFTN to Bangkok ATFMU</p>	Update SAIOACG/3	States, IATA	Open	<p>Improvement noted in BBACG/21, but departure messages are still not being consistently received from certain airports. AEROTHAI to communicate with the relevant ANSPs and airlines. Action by ATFM SWG</p>

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
20/3	<p>Poor on time performance of BOBCAT aircraft subject to ATFM procedures has direct impact on efficiency of ATFM procedures. All parties to undertake investigation as to reason for poor on-time performance including:</p> <ul style="list-style-type: none"> <li>a) Incorrect flight planned EET,</li> <li>b) Non compliance with BOBCAT AWUT – early and late departures</li> <li>c) Non compliance with BOBCAT Kabul entry time – early and late at Kabul entry fix.</li> </ul>	Update BBACG/22	Affected States, IATA	Open	<p>Poor punctuality performance is actively being monitored by BOBCAT and rectified where possible by IATA/States.</p> <p><b>Action by ATFM SWG</b></p>
20/4	India to consider approving use of existing ATS route west of Chennai as connector route for N571/N877 for bypass traffic on L510 to enable efficient and BOBCAT metered traffic feed to UL333 in Kabul FIR	Update BBACG/22	India, Regional Office, Malaysia	Open	India to update Regional office
20/5	Progress bulk ANP amendment proposal for re-designation of BBACG conventional routes to RNAV routes (BBACG/20 Appendix M refers). Target date for implementation is June 2011.	Update BBACG/22	Affected States, Regional Office	Closed	Affected routes in Phase 1 and 2 of the 50NM longitudinal separation



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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
SAIOACG2/1	Flights will be spaced 50nm longitudinally at points where routes converge instead of 10 minutes currently required. Where necessary to ensure separation to apply vertical separation instead. LOAs to be amended to reflect this agreement.	Immediate	Between Afghanistan and Pakistan  Between Pakistan and India	Open	Note: State which is sending traffic on converging routes into an adjoining FIR is responsible for ensuring that the flights have 50nm longitudinal separation prior to transferring control. Request to ICAO office to facilitate meeting if required.
2/2	LOA India /Oman: To Sign LOA and implement 50/50 on P570,M300,N563,P574,L301	Immediate	India/Oman	Open	LOA signed. However 50/50 implementation held in abeyance pending resolution of issues relating to aircraft equipage as filed in FPLs, and other operational issues between Mumbai and Muscat ACC.  Oman reports ready to implement 50/50NM eastbound by July 2012.
2/3	Afghanistan to review requirement for blocking FL290 and FL300 in Kabul FIR. Data required on flights which had to avoid Kabul airspace as a consequence of FL 290 &FL300 blocked.	Immediate	IATA	Open	IATA has updated Afghanistan authorities. A review meeting is scheduled in late May.
2/4	FL330 Blocked on G325. NOTAM action to rescind the requirement	15 May 2012	Pakistan	Open	
2/5	Resolve the communications issues between Pakistani and Afghanistan ACCs	Immediate	Pakistan  Afghanistan  ICAO CNS	Open	Pakistan to host a meeting comprising Afghanistan, Pakistan and ICAO CNS
2/6	M890-to implement 50nm longitudinal separation in India	Immediate	India	Open	India to consider. To conduct safety assessment as appropriate.

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
	To implement 50nm longitudinal separation on L509 between Lahore /Delhi FIR	12 Jan 2012	India/Pakistan	Completed	L509 available from 1900-2130 at or above F320. Note: Pakistan has issued an A series NOTAM to make L509 available from 1500-2130UTC.
	To sign LOA  to Implement 50/50 on N563,P574 between Jakarta /Chennai	12 Jan 2012	India /Indonesia/Malaysia	Completed	Completed. India /Indonesia signed the LOA. Malaysia/India the signed LOA. Implemented 3 May 2012
	To sign LOA and implement 50/50NM on P570 and M300	Sept 2012	Indonesia/Sri Lanka	Pending new ATM system implementation	Indonesia completed and implemented on 3 MAY. Sri Lanka unable to implement due unreliable CPDLC. New date to be decided after commissioning of new ATC Centre.  LOA to be signed by Sri Lanka .
2/7	Implement 50/50 on 14 routes as described in TF6 Meeting	8 March 2012	India	Completed	Routes are P570,M300,N563,P574,N877,L759,L510,L759,P646,L509,M770,L301,N895,L507 in Kolkata, Delhi, Chennai and Mumbai FIR.
2/8	DCPC by Jakarta ACC. To confirm whether DCPC capability is via CPDLC or extended range VHF	Immediate	Indonesia	Completed	Indonesia confirms VHF coverage within FIR for DCPC
	CPDLC Yangon ACC. To confirm availability	Immediate Aug 2012	Myanmar	Open	Reported as having connectivity issues due to aging equipment and issues with Service Provider. Discussions with SITA were on-going.
	CPDLC MALAYSIA. To confirm availability	Immediate	Malaysia	Completed	Confirms CPDLC serviceable and implemented 50/50. Integrating into ATC system.
	Sri Lanka CPDLC. To confirm availability	Sept 2012	Sri Lanka	Open	Reported as moving to new ACC. CPDLC unreliable at this time.

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
2/9	Lahore/Delhi FIR new routes. Implement additional routes M875, L333	TBN	India/ Pakistan	Open	No agreement on implementation date. Discussions to continue.
	Lahore/Delhi FIR new routes. PRA SERKA		India/ Pakistan	Open	Regional office to follow up with Pakistan to activate the segment in Pakistan.  India offer to provide connectivity for westbound thru A325/B210 and N893/G208. India ready to implement within Indian airspace. Draft LOA for connectivity has been sent to Pakistan for consideration.  India exploring A325 as bidirectional to accommodate eastbound.
	Lahore/Delhi FIR new routes. 50/50 for eastbound flights on N893		India/ Pakistan	Open	India can accept eastbound flights on N893 via TELEM. Response from Pakistan required.
2/10	Investigate capability and timeline to implement 30/30	2013	All States	Open	India considering implementing 30/30 on selected routes in the near term.
2/11	RNP airspace as opposed to RNP operations on specific routes	2013	All States	Open	
2/12	WP07: ATFM SWG- Airlines should avoid changing of routes within the Delhi FIR	2013	IATA, India	Open	IATA would follow up if any State advised them of non-conforming aircraft and would issue a reminder to airlines about using the suggested routes as far as practicable. India suggested that they would encourage controllers to report non-participating airline problems with BOBCAT.
2/13	WP07: ATFM SWG- More information from BOBCAT to be made available for tactical decisions in addition to the Kabul FIR entry	2013	Thailand, India	Open	Thailand will communicate with stakeholders about an upgrade in terms of sharing information more like a CDM system. It needs to be clear that the extra information was not a 'controlling' tool.
2/14	WP07: ATFM SWG- suggestion that FL280 and FL300 should be exclusively reserved for Delhi (and possibly Mumbai) and Lahore departures.	2013	India, ICAO	Open	India would provide information on how much of a problem this was, supported by data. If the data supported a need to change, the Regional Office would communicate to Pakistan about allowing aircraft to transition through their airspace to BOBCAT allocated levels. In any case the airspace authority in Afghanistan may change military-reserved levels from FL300-310 to FL290-FL300.

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Appendix C to the Report

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
2/15	WP07: ATFM SWG- Mandatory BOBCAT requirements	2013	All States	Open	The meeting discussed the need for States to promulgate the mandatory requirements for BOBCAT compliance if they had not done so, and flights which plan to enter Kabul FIR without an AWUT and entry slot will be accommodated only after flights with slots have been processed. Such flights should expect delayed pushback and start clearances, non-preferred routes and/or flight levels, enroute holding and/or diversion around Kabul FIR
2/16	WP07: ATFM SWG- BOBCAT slot allocation may be considered beyond 2000 – 2359UTC	2013	India	Open	India to provide data to support an extension. All involved to consider operational impact. Thailand to consider operational impact of the extension – need to share data and airlines to look at impact. Such change will require a 90-day notice.
2/17	WP07: ATFM SWG- Traffic distribution on all Delhi exit points should be balanced	2013	IATA		IATA asked that some routes be made more efficient so airlines use them. IATA had been consciously trying to encourage the spread of traffic. India advised that traffic should be encouraged to use PRA-SERKA, otherwise this option might be lost.
2/18	WP07: ATFM SWG- 50NM longitudinal should be accepted for all aircraft on routes P628, L333, M875 and L509.	2013	India, ICAO		India would provide data on the amount of times 50NM was not accepted. The Regional Office may be able to follow up. It was noted that data-sharing and Seamless ATM would help.

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# **ATTACHMENTS TO THE REPORT**

BOB-RHS/TF/7 and SAIOACG/2  
Attachment 1 to the Report

**List of Participants**

	<b>Name</b>		<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
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BOB-RHS/TF/7 and SAIOACG/2  
Attachment 1 to the Report

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	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
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	<b>Name</b>		<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
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	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
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	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
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	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
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**LIST OF WORKING PAPERS (WPs) AND INFORMATION PAPERS (IPs)**

**BOB-RHS/TF/7**

**WORKING PAPERS**

NUMBER	AGENDA	TITLE	PRESENTED BY
WP/1	1	Provisional Agenda – BOB-RHS/TF/7	Secretariat
WP/2	7	Post Implementation Review	Secretariat
WP/3	8	Dissolution of Bay of Bengal Reduced Horizontal Separation Task Force	Secretariat
WP/4	5,6	Proposal to introduce 50/30NM on ATS Route L301 and P574 as a Transition from 50/50 to 30/30NM RLS	India
WP/5	4	Post Implementation Analysis on 50NM RLS in BOBASIO Region	India
WP/6	7	BOB-RHS/TF Task List	Secretariat

**INFORMATION PAPERS**

NUMBER	AGENDA	TITLE	PRESENTED BY
IP/1	-	List of Working Papers (WPs) and Information Papers (IPs)	Secretariat

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**LIST OF WORKING PAPERS (WPs) AND INFORMATION PAPERS (IPs)**

**SAIOACG/2**

**WORKING PAPERS**

NUMBER	AGENDA	WORKING PAPERS	PRESENTED BY
WP/1	1	Provisional Agenda for SAIOACG/2	Secretariat
WP/2	2	Relevant Meeting Outcomes	Secretariat
WP/3	2	ADS-B Planning	Secretariat
WP/4	4	Establishment of SAIOACG Small Working Groups	Secretariat
WP/5	3	Infrastructure Development, ATM Improvements, and Capacity Enhancements in the South Asia/Indian Ocean Area	Secretariat
WP/6	5	Procedure for the Amendment of Regional Air Navigation Plan	Secretariat
WP/7	3	Issues and Suggestions regarding BOBCAT ATFM Operations – Delhi FIR	India
WP/8	8	SAIOACG Task List	Secretariat

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<b>NUMBER</b>	<b>AGENDA</b>	<b>WORKING PAPERS</b>	<b>PRESENTED BY</b>
WP/9	4	ADS-B Implementation Plan	India
WP/10	6	ATM Contingency Plan of India	India
WP/11	5	Converting Non-RNAV Routes to RNP10 Routes and Creation of New ATS Routes in Arabian Sea Indian Ocean and Bay of Bengal	India
WP/12	4	Update on AMHS Trials and AIDC Testing	India
WP/13	5	UPR Paper Trials for Feasibility Study of Establishment of UPR Zone in Arabian Sea Indian Ocean Region	India
WP/14	3	Capacity Enhancement Table	Secretariat
WP/15	2	India's Preparedness for New ICAO FPL 2012	India
WP/16	2	Review of BOBASIO/02 Meeting at Chennai	India
WP/17	3,4,5,7	Future Work: Future Work Focus & Concepts	IATA
WP/18	3	BOBCAT Operational Updates and Future Arrangement	Thailand

**INFORMATION PAPERS**

<b>NUMBER</b>	<b>AGENDA</b>	<b>INFORMATION PAPERS</b>	<b>PRESENTED BY</b>
IP/1	-	List of Working and Information Papers	Secretariat
IP/2	2	2012 FPL & ATS Message Implementation Update	Secretariat
IP/3	2	Regional ATM Contingency Planning Task Force Updates	Secretariat
IP/4	9	Establishment of an ATS Route Structure for the Proposed New Hambantota International Airport (HIA), in Sri Lanka	Sri Lanka
IP/5	7	Civil Military Cooperation for Seamless ATM	India
IP/6	3	Suvarnabhumi Airport Runway Maintenance (11 Jun – 10 Aug 2012)	Thailand

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