

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**



**REPORT OF COMBINED THIRD MEETING OF THE SOUTH ASIA/INDIAN  
OCEAN ATM COORDINATION GROUP (SAIOACG/3) AND  
TWENTIETH MEETING OF THE SOUTH-EAST ASIA ATS  
COORDINATION GROUP (SEACG/20)**

**BANGKOK, THAILAND, 18 – 22 FEBRUARY 2013**

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

SAIOACG/3 and SEACG/20  
Table of Contents

---

**CONTENTS**

INTRODUCTION.....	i
Meeting .....	i
Attendance .....	i
Officers & Regional Office .....	i
Opening of the Meeting.....	i
Documentation and Working Language.....	i
Draft Conclusions, Draft Decisions and Decisions of SAIOACG and SEACG – Definition ....	ii
List of Decisions and Draft Conclusions/Decisions .....	ii
REPORT ON AGENDA ITEMS.....	1
Agenda Item 1: Adoption of Agenda (WP01).....	1
Agenda Item 2: Review Outcomes of Related Meetings .....	1
Agenda Item 3: Review of Current Operations and Problem Areas .....	5
Agenda Item 4: Implementation of New CNS/ATM Systems.....	11
Agenda Item 5: ATS Route Developments .....	13
Agenda Item 6: Development of State Contingency Plans .....	15
Agenda Item 7: ANSP Coordination and Civil/Military Cooperation.....	15
Agenda Item 8: Review of SAIOACG / SEACG Task List .....	16
Agenda Item 9: Any other business.....	16
Agenda Item 10: Date and Venue of the Next Meeting .....	16
11. Closing of the meeting .....	16

SAIOACG/3 and SEACG/20  
Table of Contents

---

**APPENDICES**

Appendix A:	List of Participants .....	A-1
Appendix B:	List of Working and Information Papers.....	B-1
Appendix C:	ATFM SWG Report .....	C-1
Appendix D:	COM SWG Report .....	D-1
Appendix E:	SUR SWG Report.....	E-1
Appendix F:	SAIOACG Task List.....	F-1
Appendix G:	SEACG Task List .....	G-1

## **INTRODUCTION**

### **Meeting**

1.1 The combined Third Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/3) and Twentieth Meeting of the South-East Asia ATM Coordination Group (SEACG/20) was held in Bangkok, Thailand from 18 to 22 February 2013 at the Kotaite Wing of the ICAO Asia and Pacific Regional Office.

### **Attendance**

2.1 The meeting was attended by 60 participants from Brunei Darussalam, Cambodia, China, Hong Kong China, India, Indonesia, I.R. Iran, Lao PDR, Malaysia, Maldives, Myanmar, Philippines, Singapore, Thailand, United States, IATA and ICAO. A list of participants is appended at **Appendix A** to this report. Sri Lanka and Viet Nam sent apologies.

### **Officers & Regional Office**

3.1 Mr. Sylvester Israel, General Manager (ASM) of the Airports Authority of India, and Chairperson of SAIOACG and Mr. Raymond Kwok-chu Li, Chief Air Traffic Control Officer, Air Traffic Management Division, Civil Aviation Department, Hong Kong, China, and Chairperson of SEACG co-chaired the combined meeting.

3.2 Mr. Len Wicks, Regional Officer ATM, ICAO Asia and Pacific Office, and Mr Soon Boon Hai, ATM Expert, ICAO Asia and Pacific Office were the Secretaries for the meeting, assisted by Mr. Shane Sumner, Regional Officer, ATM.

### **Opening of the Meeting**

4.1 Mr. Sylvester Israel and Mr. Raymond Kwok-chu Li welcomed participants to the meeting.

4.2 On behalf of Mr. Mokhtar A. Awan, Regional Director of ICAO Asia and Pacific Office, Mr. Soon Boon Hai welcomed participants to the meeting.

### **Documentation and Working Language**

5.1 The working language of the meeting and all documentation was English. There were 20 Working Papers (WP), two Information Papers (IP), and one Flimsy considered by the meeting. A list of papers is included at **Appendix B** to this report.

**Draft Conclusions, Draft Decisions and Decisions of SAIOACG and SEACG – Definition**

6.1 SAIOACG and SEACG recorded its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

- a) **Draft Conclusions** deal with matters that, according to APANPIRG terms of reference, require the attention of States, or action by the ICAO in accordance with established procedures;
- b) **Draft Decisions** deal with the matters of concern only to APANPIRG and its contributory bodies; and
- c) **Decisions** of SAIOACG and SEACG 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 SAIOACG3/SEACG20-1: ATFM Capacity Assessments**

That States be urged to establish capacity assessment and adjustment mechanisms, and regular review for all aerodromes and ATC sectors where traffic demand is expected to reach capacity, or is experiencing traffic congestion, and to report the assessment outcomes to the Asia/Pacific Regional Office prior to 1 May 2014.

**Draft Conclusion SAIOACG3/SEACG20-2: ATFM Information Sharing**

That States, where ATFM processes are in place, including within adjacent airspace, be urged to share information, which may include:

- 1) capacity assessment: including factors of interest affecting capacity, such as special use airspace status, runway closures and weather information;
- 2) traffic demand information: which may include flight schedules, flight plan, repetitive flight plan data as well as associated surveillance updates of flight status; and
- 3) ATFM Daily Plan.

**Draft Conclusion SAIOACG3/SEACG20-4: South China Sea ATS Facilities**

That the provision of surveillance and communications services in the South China Sea area, where radar, ADS-B and/or VHF voice communications are currently not provided, be reviewed by China, Hong Kong China, Malaysia, Philippines, Singapore and Viet Nam, to consider:

- a) enhancement of current services;
- b) delegation or amendment of airspace service volumes; and
- c) cooperative agreements to exchange communications and surveillance capability.

**Draft Conclusion SAIOACG3/SEACG20-5: AIDC Implementation**

Recognizing that:

- States implementing AIDC messaging may be doing so without previous knowledge or experience;
- States may be implementing AIDC within a sub-regional environment without AIDC having previously been implemented; and
- Significant safety, ATC capacity and workload benefits will immediately arise from implementation of an appropriately selected initial suite of AIDC messages;

States be urged to:

- a) engage as soon as possible in AIDC trials to develop knowledge and address any related ATM or communications system issues;
- b) implement operational AIDC messaging as a matter of priority, in accordance with APANPIRG Conclusion 19/19; and
- c) implement as a minimum the AIDC messages Advanced Boundary Information (ABI), Coordinate Estimate (EST), Acceptance (ACP), Transfer of Control (TOC) and Assumption of Control (AOC).

**Draft Conclusion SAIOACG3/SEACG20-6: ATS Route Catalogue Version 12**

That Version 12 of the *Asia and Pacific Region ATS Route Catalogue* replace Version 11 on the Asia/Pacific Regional Office's web site.

7.2 List of Draft Decisions

**Draft Decision SAIOACG3/SEACG20-3: ATFM Steering Group**

That the ATFM Steering Group be reconvened by 1 September 2013, to address ATFM implementation issues.

.....

## REPORT ON AGENDA ITEMS

### 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 ICAO presented information relevant to the SEACG/SAIOACG meeting from recent meetings including the:

- Twenty Third Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/23, Bangkok, Thailand, 10-14 September 2012);
- Second and Third Meetings of the ICAO Asia/Pacific Seamless ATM Planning Group (APSAPG/2, Tokyo, Japan, 6-10 August 2012 and APSAPG/3, Chennai, India, 21 to 25 January 2013);
- Seventeenth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/17) and First Meeting of the Future Air Navigation Interoperability Team (FIT-Asia/1, Bangkok, 27 to 31 August 2012);
- Tenth Meeting of the ICAO Asia/Pacific Performance-Based Navigation Task Force (PBN/TF/10, Nadi, Fiji, 10-13 December 2012);
- Seventh Meeting of the Aeronautical Information Services – Aeronautical Information Management Implementation Task Force (AAITF/8, Hanoi, Vietnam, 13 to 16 March 2012); and
- First Meeting of the Asia/Pacific Regional Search and Rescue Task Force (APSAR/TF/1, Bangkok, 5 to 7 February 2013).

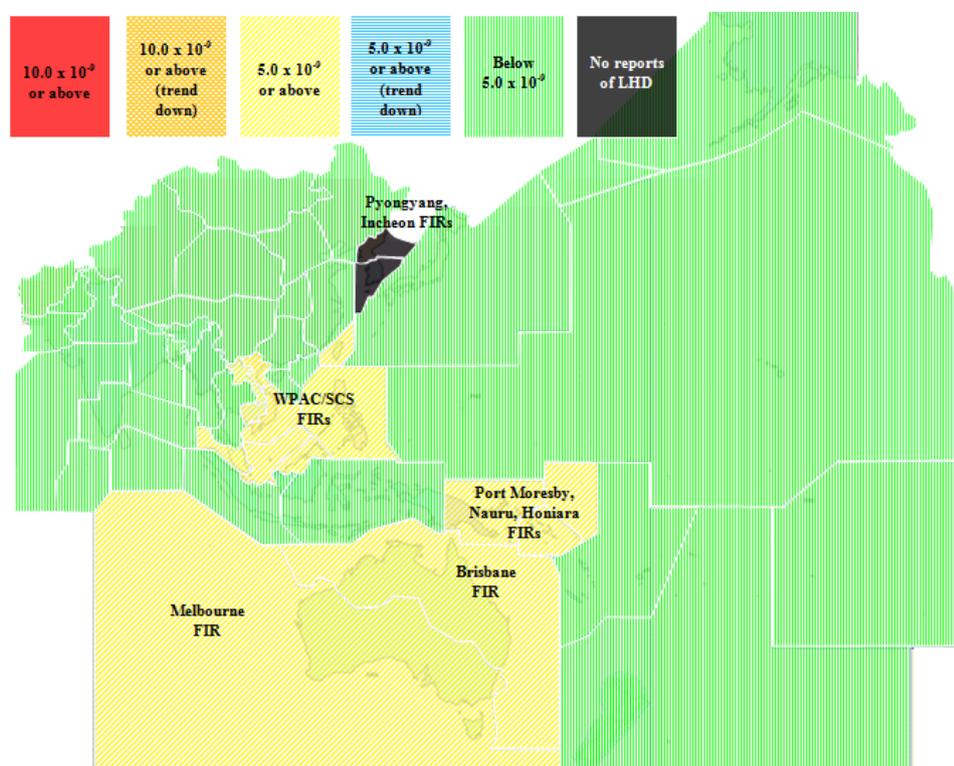
2.2 The Southeast Asia Route Review Task Force (SEARRT/F) and the Bay of Bengal Reduced Horizontal Separation Task Force (BOBRHS/TF) were dissolved by APANPIRG/23 and outstanding tasks transferred to the SEACG/19 and SAIOACG/2 meetings respectively. The outcomes and issues reported in the SEACG/19 and the SAIOACG/2 Meetings were transferred to the SAIOACG/SEACG Task Lists.

2.3 At the APSAPG/3 meeting, IATA highlighted the airline Industry's concern at the increasing level of delay at many airports and major routes questioning the ability of the Asia Pacific ATM infrastructure to meet future air traffic demand. The meeting noted the proposed ASEAN Single Aviation Market would be implemented in 2015 and the potential loss of economic benefit to the Region if capacity constraints limit traffic levels. Airlines were reporting increased delay and capacity constraints at many airports and airlines' leading to increased concern at the cost and inconvenience of delay. In accordance with the APSAPG Terms of Reference (TOR), a draft Seamless ATM Plan was required to be submitted to APANPIRG/24 in 2013.

2.4 The SAIOACG/SEACG Co-Chairperson drew the attention of the meeting to the increasing delays at airports of the region. He noted that many initiatives had been undertaken by States in this regard, and the implementation of ICAO Aviation System Block Upgrades (ASBU) and the Seamless Air Traffic Management (ATM) plan were key elements of these initiatives.

2.5 The FIT-Asia/1 meeting noted that there were still issues with data link implementation in the Bay of Bengal area, as highlighted by the number of Problem Reports. FIT-Asia/1 also noted that IATA would continue to support the Boeing Central Reporting Agency (CRA) until 2015 at least. The meeting discussed the future possibility of forming a CRA for Asia, with a direct link to the Boeing CRA, supported collaboratively by several Asia/Pacific States.

2.6 The overall Reduced Vertical Separation Minimum (RVSM) Target Level of Safety (TLS) compliance for Asia/Pacific airspace was presented to RASMAG/17 in Figure 1:



**Figure 1:** Asia/Pacific TLS compliance reported to RASMAG/17

2.7 The PBN/TF/10 meeting extensively discussed proposed amendments to the Regional Navigation Strategy for the Asia/Pacific Region and the Regional PBN Implementation Plan. They also took the opportunity to provide feedback on the early draft excerpt of the Asia/Pacific Seamless ATM Plan related to PBN, which provided an emphasis on RNP2, RNAV2 and RNAV5 specifications within areas of Air Traffic Services (ATS) surveillance coverage.

2.8 The AAITF/8 meeting discussed the possible reasons for the continued lack of adherence to the Aeronautical Information Regulation and Control (AIRAC) cycle for changes to aeronautical data. The AAITF/8 meeting noted that project planning that took into account AIM issues should be an automatic part of a State's responsibilities under their Safety Management System (SMS) requirements. However, poor planning and coordination between change originators such as Air Traffic Management (ATM) and Aeronautical Information Services (AIS) units not being empowered to decline non-compliant requests requirements meant that the Annex 15 AIRAC cycle was periodically ignored.

2.9 Acknowledging the serious and systemic nature of this problem, the AAITF/8 meeting agreed to the following Draft Conclusion for the ATM/AIS/SAR Sub-Group's endorsement, which was subsequently approved by APANPIRG/23:

***AAITF Draft Conclusion 7/1: Annex 15 Promulgation Requirements Compliance***

*That, States should be urged to recognise the importance of Annex 15 compliance in respect of aeronautical data affected by major projects, by:*

*establishing formal coordination between change originators and Aeronautical Information Service (AIS) units to ensure appropriate planning and that promulgation requirements were taken into account; and*

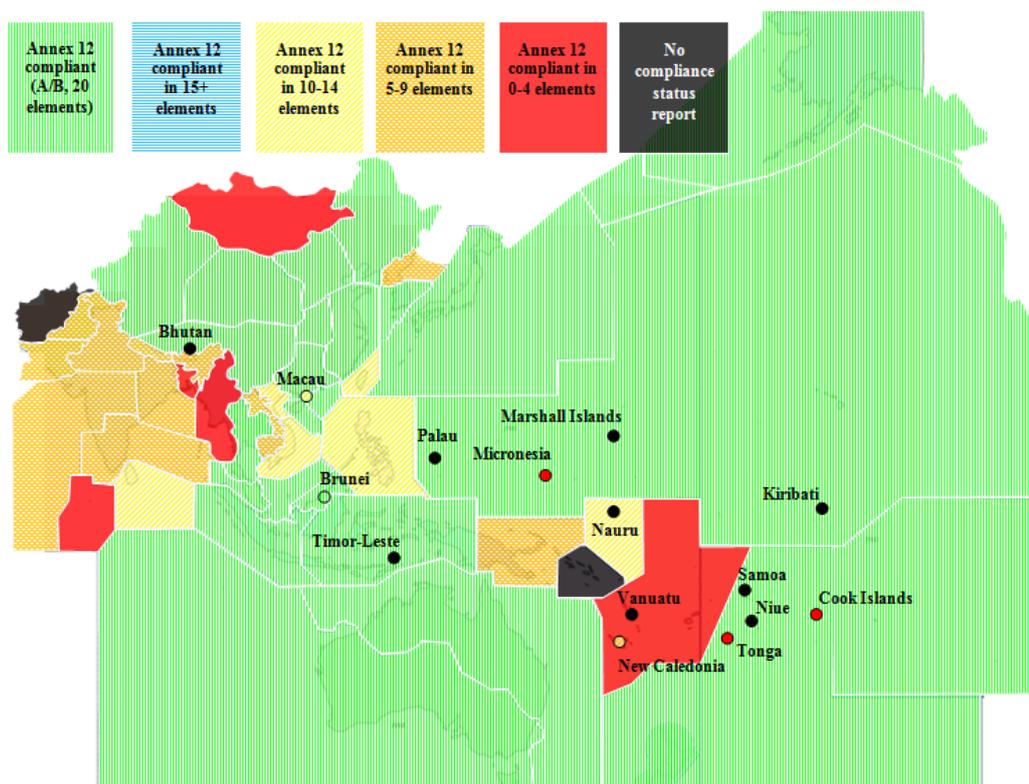
*empowering AIS personnel to decline requests that did not comply with Annex 15, except for urgent corrections, emergencies, and matters of national security.*

2.10 Given the slow progress in many States to achieve AIM transition thus far, it was suggested that the AAITF place a much greater emphasis on individual State planning as soon as practicable. The AAITF/8 meeting agreed to the following Draft Conclusion for the ATM/AIS/SAR Sub-Group's endorsement, which was subsequently approved by APANPIRG/23:

***AAITF Draft Conclusion 7/2: AIS-AIM Transition State Plan***

*That, States should develop a basic plan that identified when all the Aeronautical Information Service – Aeronautical Information Management (AIS-AIM) Transition elements in the AIS-AIM Roadmap would be completed, and submit these plans to the Asia/Pacific Regional Office prior to 1 January 2013.*

2.11 The Regional SAR Compliance Overview in the Asia/Pacific Region was presented to the APSAR/TF (**Figure 2**). The SAR Status data indicated that only three Asia/Pacific administrations had Annex 12 compliance in all elements. The Regional SAR Compliance Overview indicated particular weaknesses in South Asia, Mongolia and the Southwest Pacific areas.



**Figure 2:** Regional SAR Overview

Outcomes of ADS-B Focus Group, Coordination/02, ASIOACG/07, Inspire 03 (WP13)

2.12 India briefed the Automatic Dependent Surveillance-Broadcast (ADS-B) Focus Group meeting on its Phase 1 plans to install and commission 14 ADS-B stations by October 2012. Under Phase 2, more ADS-B stations were slated to be installed at eight more sites by the first half of 2013. Under Phase 3, tentatively, six more ADS-B stations would be added.

2.13 Myanmar also shared implementation plans to commission two ADS-B stations at Coco Island and Sittwe by first half 2013, and tentatively, more ADS-B stations at Lashio, Myeik and Yangon by the second half of 2014. India and Myanmar agreed in-principle to share ADS-B data and VHF facilities, so there would be seamless surveillance coverage on M770 and associated routes.

2.14 The ADS-B Focus Group meeting noted that an ADS-B station at the Nicobar Islands would be beneficial to enhancing safety, efficiency and capacity over the eastern gateway of the Bay of Bengal. The surveillance coverage would also be beneficial to States such as Malaysia and Indonesia.

2.15 The ADS-B Focus Group meeting noted that Sri Lanka and the Maldives would be able to help cover some of the surveillance gaps by installing ADS-B stations and sharing data (for example, Sri Lanka may consider one more ADS-B station at a vantage position in the eastern side in addition to the proposed ADS-B station at Pidurutalagala to enhance the overall surveillance coverage in the Bay of Bengal and Indian Ocean).

2.16 Several issues were addressed at the Second ATM Coordination Meeting between Bangladesh and India, including:

- Revision of ATS and SAR Letters of Agreement (LOA);
- ICAO New Flight Plan format;
- ATS Routes and Sectorisation;
- ATS Contingency Plans;
- PBN Implementation; and
- ADS-B implementation within the Dhaka Flight Information Region (FIR).

2.17 The Seventh Meeting of the Arabian Sea Indian Ocean ATM Coordination Group (ASIOACG/7) deliberated on annual updates provided by Air Navigation Service Providers (ANSPs) regarding ATM enhancement activities undertaken during 2012, such as implementation of improved separation standards within their FIRs, ATM Coordination issues, including implementation of ATS Inter-facility Data-link Communication (AIDC) and Satellite Communications (SATCOM) procedures.

2.18 The Third Meeting of the Indian Ocean Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE/3) noted the environmental benefits being accrued as a result of User Preferred Route (UPR) operational trials within the Arabian Sea and Indian Ocean UPR Zone.

2.19 The SAIOACG/SEACG meeting congratulated India for its continued cooperation with neighbouring States and also the data-sharing initiative. The SAIOACG/SEACG Co-Chairperson also congratulated India and Myanmar for their data-sharing efforts. Thailand also congratulated India and its neighbouring States and asked if India was planning to apply surveillance-based ATS separation standards. India advised that they had implemented surveillance-based separation for climbing and descending, while procedural separation was used for aircraft in the cruise. India had a plan to implement surveillance-based separation for aircraft cruising. India mentioned that they were looking at FANS-1A equipment being mandated to support the use of improved services. IATA thanked India for their collaborative approach, citing the UPR Zone as an example.

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

#### SAIOACG/SEACG Small Working Group Reports (WP03)

- 3.1 Small Working Groups (SWG) were formed by SAIOACG/2 and SEACG/19 to:
- assess the current status and planning of implementation;
  - identify barriers to implementation;
  - make recommendations to assist harmonized ATM procedures and applications;
  - 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 Air Traffic Flow Management (ATFM), Communication (COM) and ATS Surveillance (SUR) fields.
- 3.2 In summary, recommendations identified by the SAIOACG and SEACG ATFM SWGs were as follows.
- 1) Recognising the City Pair CDM trials between Bangkok's Suvarnabhumi Airport and Singapore Changi Airport, and the Daily Capacity Notification Scheme and demand/capacity analysis developed for Hong Kong International Airport, Hong Kong China, adjacent States were encouraged to support the tests and plan for future expansion and development; with the trial results reported to SEACG/21.
  - 2) With respect to Large Scale Weather Deviation (LSWD), the tripartite agreement between Hong Kong China, Singapore and Thailand should include consideration of appropriate ATFM measures distributed via A-CDM ensuring maximum utilization of airport and en-route capacity during LSWD contingency procedures on ATS routes L642 and M771; with the results reported to SEACG/21.
  - 3) A Pakistan-India-Afghanistan Special Coordination Meeting should be conducted by ICAO to address:
    - more uniform application of 50NM separation whenever this was possible;
    - removal of unnecessary altitude and timing restrictions on ATS routes;
    - availability of FL280 and FL300 within the Kabul FIR outside BOBCAT hours;
    - new ATS route (WP10 and Flimsy 1 refer);
    - the status of communications and ATS surveillance facilities to support ATS surveillance-based separations and procedures;
    - transition towards a more comprehensive ATFM service; and
    - prioritisation of BOBCAT approved aircraft and their level allocation.
  - 4) It was recommended that all States with traffic capacity issues commenced aerodrome and airspace capacity analysis and adjustment process at the earliest opportunity (Draft Conclusion refers).

- 5) With regard to demand and capacity balance, the following issues should be addressed:
  - capacity of airports and congested airspace should be developed and shared in various weather conditions;
  - Exchange of schedule information and flight data;
  - efficient meteorology data exchange;
  - collaborative pre-tactical daily ATFM planning, which included flexible sectorisation and runway configuration planning where possible (Draft Conclusion refers).
- 6) It was recommended that implementation of ATFM at a sub-regional level would involve careful synchronization of individual A-CDM programs, tightly coupled with collaborative implementation of ATFM in the form of virtual ATFM Units serving catchment areas surrounding the major air-hubs. The project could start from sharing information on arrival capacity, common traffic demand and anticipated delay, then evolving into collaborative ATFM implementation among the virtual ATFMUs (Draft Conclusion refers).

3.3 As a result of the SAIOACG/SEACG ATFM SWG discussion, the following Draft Conclusions and Draft Decision were agreed, for consideration by the ATM Sub-Group and APANPIRG:

**Draft Conclusion SAIOACG3/SEACG20-1: Capacity Assessments**

That States be urged to establish capacity assessment and adjustment mechanisms, and regular review for all aerodromes and ATC sectors where traffic demand is expected to reach capacity, or is experiencing traffic congestion, and to report the assessment outcomes to the Asia/Pacific Regional Office prior to 1 May 2014.

**Draft Conclusion SAIOACG3/SEACG20-2: ATFM Information Sharing**

That States, where ATFM processes are in place, including within adjacent airspace, be urged to share information, which may include:

- 1) capacity assessment: including factors of interest affecting capacity, such as special use airspace status, runway closures and weather information;
- 2) traffic demand information: which may include flight schedules, flight plan, repetitive flight plan data as well as associated surveillance updates of flight status; and
- 3) ATFM Daily Plan.

**Draft Decision SAIOACG20/SEACG3-3: Asia/Pacific ATFM Steering Group**

That the Asia/Pacific ATFM Steering Group be reconvened by 1 September 2013, to address ATFM implementation issues.

3.4 Recommendations identified by the SAIOACG and SEACG COM SWGs were as follows.

- 1) Collation of VHF coverage data, and recommendations for enhancement of coverage, reliability and availability were determined by the requirement to provide direct controller – pilot voice communications, to support current and proposed radar and ADS-B surveillance coverage. As such, these activities should more appropriately be conducted by the SWG - SUR.
- 2) Urgent attention should be paid to rectification of HF air-ground service reliability and availability issues in the western portion of the Manila FIR over the South China Sea.
- 3) States should ensure that Controller Pilot Data-link Communications (CPDLC) systems are integrated with ATM Systems to provide DCPC at the ATC workstation controlling the aircraft concerned.
- 4) States should as a matter of priority ensure that operational AIDC messaging is implemented, in accordance with APANPIRG Conclusion 19/19. Initial implementation should include a minimum suite of AIDC messages selected from the *Asia/Pacific Regional Interface Control Document (ICD) for AIDC*<sup>1</sup>.

3.5 As a result of the SAIOACG/SEACG COM SWG discussion, the following Draft Conclusions were agreed, for consideration by the ATM Sub-Group and APANPIRG:

**Draft Conclusion SAIOACG3/SEACG20-4: South China Sea ATS Facilities**

That the provision of surveillance and communications services in the South China Sea area, where radar, ADS-B and/or VHF voice communications are currently not provided, be reviewed by China, Hong Kong China, Malaysia, Philippines, Singapore and Viet Nam, to consider:

- a) enhancement of current services;
- b) delegation or amendment of airspace service volumes; and
- c) cooperative agreements to exchange communications and surveillance capability.

**Draft Conclusion SAIOACG3/SEACG20-5: AIDC Implementation**

Recognizing that:

- States implementing AIDC messaging may be doing so without previous knowledge or experience;
- States may be implementing AIDC within a sub-regional environment without AIDC having previously been implemented; and
- Significant safety, ATC capacity and workload benefits will immediately arise from implementation of an appropriately selected initial suite of AIDC messages;

---

<sup>1</sup> AIDC messages exchanged between ANSPs must be agreed and formalized in either Memoranda of Understanding (MOU) or Letters of Agreement (LOA). Discussion of AIDC MOU and LOA and agreed templates for the Asia/Pacific Region can be found in the Asia/Pacific Regional ICD for AIDC.

States be urged to:

- a) engage as soon as possible in AIDC trials to develop knowledge and address any related ATM or communications system issues;
- b) implement operational AIDC messaging as a matter of priority, in accordance with APANPIRG Conclusion 19/19; and
- c) implement as a minimum, the AIDC messages Advanced Boundary Information (ABI), Coordinate Estimate (EST), Acceptance (ACP), Transfer of Control (TOC) and Assumption of Control (AOC).

3.6 In summary, recommendations identified by the SAIOACG and SEACG SUR SWGs were as follows.

- 1) States with overlapping surveillance coverage should implement direct speech circuit to allow tactical coordination between surveillance controllers, in addition to AIDC, instead of relaying the information.
- 2) States with overlapping surveillance coverage should consider introducing surveillance handoff procedures.

A reduction in spacing at the transfer of control point could be reviewed on a step by step basis, starting with a comfortable agreed spacing for a period of time before reducing the spacing further. This should be subject to the safety assessment of each individual State, which should consider radar handoff requirements. Several States agreed to examine the current spacing requirements at the transfer of control points.

- 3) ADS-B with VHF Communications should be considered in areas where there was a lack of infrastructure. Sharing of ADS-B data and VHF Communications between adjacent States should also be considered to improve safety and efficiency. In this regard, India will continue liaison with Myanmar to conclude a data sharing agreement (see SAIOACG Task List). China and Hong Kong China expressed concern regarding ADS-B training for aircrew. IATA would reinforce among airlines China's request for airlines to participate in their ADS-B tests within the Sanya FIR.
- 4) The SWG would continue developing the current charts. India agreed to provide more information. ICAO would request Vietnam to provide information on their coverage to complete the picture.

3.7 The complete SWG reports are at **Appendix C, D and E**.

Airspace Capacity and ATM Service Enhancement (WP04)

3.8 ICAO requested that States optimize utilization of existing facilities and capabilities to enhance route capacity, suggesting that the current Communications, Navigation Surveillance (CNS) capabilities be used to provide surveillance separation or RNP10 separation where surveillance or ADS/CPDLC is available. The SAIOACG/SEACG meeting noted that 50/50NM separation had been implemented in 2005 and RNP4 30/30NM separation since 2007 in the South Pacific.

3.9 The SAIOACG/SEACG meeting noted that in South Asia, traffic continued to be separated by 50NM or even 80NM at some identified transfer of control points within ATS surveillance coverage. Moreover, WP04 noted that in the South China Sea 30NM to 40NM was applied within ATS surveillance capability, while conservative procedural separations such as 60NM and 80NM were applied outside ATS surveillance coverage, and not in accordance with the Asia/Pacific Air Navigation Concept of Operations.

3.10 The reports of the Small Working Groups in WP03 indicated that there was multiple overlapping surveillance coverage in a large part of both the airspaces under review, except for some small segments in the oceanic areas. The meeting noted that ADS/CPDLC was also available. Hence, even without further enhancement from ADSB work currently taking place, there was huge potential to enhance the capacity of the airspace further through implementing surveillance separation in the areas already under surveillance, and RNP10 or RNP4 in the areas with ADS/CPDLC.

3.11 Given the fact that the traffic had more than doubled in the last ten years and the increasing delays for arriving as well as departing traffic at airports in the area, meeting should be focusing its attention on the outcomes of these infrastructure improvements. It was recalled that at the SEACGG/19 meeting, States were requested to give consideration to, and agree to commit to:

- a) ATS surveillance separation within surveillance coverage;
- b) seamless surveillance separation between the busy city pairs using radar hand-off procedures;
- c) 50/50NM separation where there was Direct Controller Pilot Communications (DCPC) but no ATS surveillance; and
- d) 30/30NM separation where Automatic Dependent Surveillance-Contract (ADS-C)/CPDLC capability existed for RNP4 approved aircraft.

3.12 Thailand noted the continued work of the APSAPG to try and identify ATS surveillance gaps. IATA emphasised that we should start setting service goals, then could work on the barriers. The SAIOACG/SEACG Co-Chairperson noted the continued work of the APSAPG to set goals.

3.13 Hong Kong, China noted that the lack of coordinated ATFM processes in the region often made it necessary for procedural separation standards to be applied as pseudo ATFM measures. Thailand supported the comment from Hong Kong, China, noting that controller workload and resources could be a constraining factor, and which may be reflected in an agreed spacing across an FIRB, similar a pseudo-ATFM measure.

3.14 IATA stated that a big advantage of a sub-regional ATFM system was the involvement of, and transparency for users. The United States emphasised a systems approach, using an integrated planning methodology internally and between neighbours.

3.15 The United States believed that it was necessary to understand what our capacity was in order to facilitate the capacity-demand balance, and that such a study could start now. They stated that capacity was a complex calculation, with complexity being a key factor.

3.16 The meeting noted that to improve the seamless delivery of ATS services across boundaries, key issues such as the need for close coordination, surveillance and flight plan data, and hand-over procedures (preferably automated). Hong Kong, China stated that confidence in data was an issue for neighbours.

3.17 India stated that they would like to accommodate all aircraft at their optimal levels, and it would require extra ATC sectors and systems to support a reduction in separation. India stressed that this required a collaborative approach. ICAO suggested that a smaller separation did not necessarily equate to an increase in controller workload.

#### BOBCAT Operational Updates and Future Arrangement (WP20)

3.18 Thailand presented an analysis and overview of westbound flights through the Kabul FIR associated with the Air Traffic Flow Management (ATFM) Bay of Bengal Cooperative Air Traffic Flow Management (BOBCAT) system from the commencement of its operation in July 2007 to December 2012, as well as the need to extend BOBCAT operations during other periods of the day. SAIOACG/2 had felt that there was a need to extend ATFM through BOBCAT during other periods of the day, practically during daytime, to accommodate overflying and departure traffic as suggested by India.

3.19 The SAIOACG/SEACG meeting was advised that the average traffic volumes each night from January 2012 until December 2012 was 57, with a peak of 71 in March. A total of 56 airlines had participated in the BOBCAT system. Eight major airports contributed 97% of total BOBCAT traffic:

- (1) Singapore 29%;
- (2) Bangkok Suvarnabhumi 29%;
- (3) New Delhi 17%;
- (4) Kuala Lumpur 9%;
- (5) Mumbai 5%;
- (6) Noi Bai – Ha Noi 3%;
- (7) Tan Son Nhat – Ho Chi Minh City 3%; and
- (8) Hong Kong, China 2%.

3.20 Thailand had analysed traffic sample data of average and peak westbound flights transiting the Kabul FIR during the month of December 2012. Data indicated peak traffic volumes during 2000-2359 UTC, which was the BOBCAT period of interest. The next peak period that might need ATFM through BOBCAT slot allocation was during 0900 – 1159UTC. The meeting did not come to a conclusion whether there was a requirement for a BOBCAT extension, based on this data.

3.21 The SAIOACG/SEACG meeting was also advised that the software development progress of the BOBCAT system in Stage 1 included flight plan and ATS message processing, along with Flexible Taxi Time, and was progressing as planned. The flight plan processing component of the update was expected to be trialled by April 2013, supporting expansion to enable City Pair Collaborative Decision-Making (CDM) data exchange.

3.22 India stated that it was unfortunate that both Pakistan and Afghanistan were not present at the meeting, noting that without these States the meeting could not discuss the issues concerning airspace west of India. The meeting agreed, and requested the Secretariat to consider ways of facilitating a meeting between Afghanistan, Pakistan and India to address these issues.

**Agenda Item 4: Implementation of New CNS/ATM Systems**Global ATFM-7 (WP05)

4.1 The Seventh Global ATFM Conference (Global ATFM-7, Bali, Indonesia, 28 – 30 January 2013) involved States, ANSPs, airport operators and industry representatives to share updated information on ATFM implementation. Information on ASBU and ATFM-related outcomes (including an overview of ICAO Manual on Collaborative ATFM (Doc 9971)) from the 12<sup>th</sup> Air Navigation Conference (Montreal, Canada, 19 – 30 November 2012) was also presented at ATFM-7.

ATFM Manual (WP06)

4.2 An Ad-hoc group of ATFM experts from various ICAO States and other international organizations had been formed under the aegis of ICAO HQ to progress the development of global ATFM guidance material. Participants included Asia/Pacific State representatives from Hong Kong, China, India, Japan, Thailand, and the ICAO Asia/Pacific Regional Office.

4.3 The meeting was apprised of development regarding Doc 9971, which included Part I – CDM, and Part II – AFTM. Part II of the document was now in its final draft form, and was expected to be finalized and published during the third quarter of 2013. States were requested to provide feedback to ICAO on the draft.

ADS-B Implementation and Data Sharing (WP17)

4.4 WP17 provided the status of ADS-B implementation in India. The Indian ADS-B plan was aimed at providing redundancy where radar coverage existed and also to fill the surveillance gaps, where radar coverage was not possible due to high terrain and remote areas. This paper also presented the possible exchange of ADS-B data between India and its neighbouring States.

4.5 India reiterated its willingness to share ADS-B data with Myanmar, Maldives, Sri Lanka, Malaysia and Indonesia. Site acceptance tests were successfully carried out at all the fourteen stations. In addition to the fourteen stations, India planned to install seven ADS-B ground stations by mid 2013. This plan was consistent with the Upper Airspace Harmonisation plan of the Kolkata and Delhi FIRs, and to supplement surveillance coverage in the Kolkata and Chennai FIRs.

4.6 India asked for a copy of any LOA regarding sharing of ADS-B data that could be used as a benchmark. India thanked CANSO and Singapore for facilitating the effort thus far, and requested a side meeting during the week to manage the coordination aspects. Hong Kong, China provided the meeting with a PowerPoint presentation of the status and progress of ADS-B implementation in Hong Kong, China.

Implementation of Data-Link Services in India (WP14)

4.7 India had implemented Data-link Departure Clearance, D-ATIS and D-VOLMET services to enhance ATM operational efficiency in the provision of ATS. The intent of these services was to provide an efficient and reliable departure clearance services at Mumbai, Delhi, Kolkata, Chennai, Bangalore and Hyderabad, D-ATIS messages from more than 55 airports and D-VOLMET messages from Mumbai and Kolkata airport, thereby reducing the workload for both pilots and air traffic controllers.

4.8 India advised that ATC would continue to provide a standard service for departure clearance on the notified Very High Frequency (VHF), and VOLMET service would be available via notified High Frequency (HF) for those operators not participating in the data-link service.

4.9 India expressed disappointment that despite extensive efforts in briefing and highlighting the many advantages and benefits, the uptake by airlines, both low cost carriers as well as others, was low. Most of the low cost airlines had expressed reservations regarding upgrades due to the cost. Airlines preferred VHF to data-link over continental airspace, which resulted in radiotelephony congestion. Moreover, India noted that many aircraft equipped with an Aircraft Communications Addressing and Reporting System (ACARS) were not logging in to get departure clearance via data-link.

4.10 IATA shared India's disappointment, and would support India to improve the uptake of these data-link services. The SAIOACG/SEACG Co-Chairperson agreed that data-link services were beneficial in terms of a reduction in workload.

## Agenda Item 5: ATS Route Developments

### Improvement of Southeast-MID-EUR/NAT Inter Regional ATS Route Network (WP10)

5.1 The Islamic Republic of Iran proposed a new direct and more economical ATS route network for the flow of traffic crossing the Tehran FIR to and from Europe. Tehran ACC was ready to accept traffic from Kabul FIR via CHARN (ATS route G792), SOKAM (ATS route UL333) and KAMAR (ATS route G202), based on RNAV separation (50NM), but this would require changes within the Kabul FIR affecting ATS route UL333 and routing via KAMAR to SERKA.

5.2 The Islamic Republic of Iran also proposed a new bidirectional ATS route L430 intended to be more efficient for traffic departing from South Asia to European countries, and vice versa.

5.3 IATA asked for clarification of the safety issue regarding the request to create a new route from KAMAR-SERKA, and was concerned by the extra 24NM track miles this would require. The I.R. Iran had a side meeting with IATA to discuss this, and some alternative route suggestions were made (**Flimsy 1**). IATA would assist in updating the ATS route catalogue with their preferred proposal and this could be discussed at a Special Coordination Meeting.

### ATS Route Establishment Proposal (WP11)

5.4 Brunei Darussalam presented a proposal for a more efficient route northbound between Brunei and Hong Kong, China, which would involve extending ATS route R223 northwards from the Brunei VOR to waypoint LAXOR on ATS route M772. This would require the amendment of Restricted Airspace WBR519 in the Kota Kinabalu FIR from being active 22:30 until 15:30 UTC daily to 'active by NOTAM', and lifting any departure aerodrome restrictions on ATS route M772. Hong Kong China, Malaysia and Singapore did not raise any objections to the proposal, while the Philippines advised that they had some difficulties regarding their HF communications. The meeting noted that consideration of this issue would be the subject of the formal BANP amendment process.

### Southeast Asia User Requirements Route Catalogue Review (WP07)

5.5 IATA presented a review of Chapter 2 (User Route Requirements) of the Asia/Pacific ATS Route Catalogue for the South East Asia area, and recommended amendments. States were requested to provide an update on progress in considering implementation of the requested routes.

### South Asia User Requirements Route Catalogue Review (WP08)

5.6 IATA also presented a review of Chapter 2 (User Route Requirements) of the Asia/Pacific ATS Route Catalogue for the South Asia area, and recommended amendments. States were requested to provide an update on progress in considering implementation of the requested routes.

### ATS Route Catalogue (WP09)

5.7 The Secretariat presented draft Version 12 of the *Asia and Pacific Region ATS Route Catalogue* for review and update. It was intended that all ATS route change proposals, including those submitted by WP07, WP08, WP10, WP11, and IP02 would be incorporated into this iteration as required and presented to the ATM Sub-Group for consideration. The meeting agreed to the following Draft Conclusion for consideration by the ATM Sub-Group and APANPIRG:

#### **Draft Conclusion SAIOACG20/SEACG3-6: ATS Route Catalogue Version 12**

That Version 12 of the *Asia and Pacific Region ATS Route Catalogue* replace Version 11 on the Asia/Pacific Regional Office's web site.

Forward Planning South China Sea Routes M771 and L642 (WP12)

5.8 IATA proposed that ANSPs implement ATS surveillance-based 20NM separations on South China Sea ATS routes M771 and L642 by the first quarter of 2015. They noted that the routes were already covered by surveillance, and bearing in mind the upgrades to the ATM systems at Hong Kong China were expected to be complete by the end of 2014, urged the use of a more efficient standard as a step towards the normal ATS separations in Doc 4444 (PANS ATM). Hong Kong, China emphasized that a period of a six month 'no procedure change' after commissioning of the new ACC and ATM system was required before the application of ATS surveillance-based separations with other ANSPs. Hong Kong, China and Singapore indicated agreement for ATS surveillance-based separations within the 2015 timeline.

5.9 The meeting noted the preference for a defined airspace, rather than specific routes to be designated, in order to reduce the possibility of human error in applying different standards within the same ATC sector. The Secretariat recalled that the implementation of ATS surveillance-based separations was a focus of the APSAPG and the Seamless ATM Plan.

5.10 IATA suggested a small group be established involving Hong Kong China, Singapore, Viet Nam and China (Sanya), together with IATA and ICAO to work through the logistical issues and plan for implementation of ATS surveillance-based 20NM separation. The meeting agreed that this item could be progressed through the SUR SWG, rather than creating a new group.

Proposal to Implement 30NM Separation within Bay of Bengal Arabian Sea Airspace (WP15)

5.11 India presented a proposal to introduce 30NM longitudinal separation within the Bay of Bengal Arabian Sea and Indian Ocean Airspace in a phased manner, which was a residual task from the Bay of Bengal Reduced Horizontal Separation Task Force (BOB-RHS/TF). India suggested that 30NM longitudinal separation be used on four routes: N571, M300, P570 and P574. Furthermore, India suggested a complete restructuring of the RNP routes in the airspace concerned to support 30/30NM separation. The meeting congratulated India on the advancement of this more efficient standard, but noted that it was unnecessary to restructure the routes themselves at this time. Moreover, the meeting noted that it was preferable to designate portions of airspace, rather than routes in a piecemeal fashion.

5.12 India emphasized that although 50NM longitudinal separation had been introduced since December 2011, not many states were actually using it. India had conducted an analysis of the data-link capability of aircraft on the four routes suggested within the Mumbai and Chennai FIRs, which showed between 55% and 35% capability, although a lesser proportion were actually logged on. The data indicated that the majority of data-link capable flights were not Indian registered airlines. India urged airline operators to equip aircraft with FANS/1A data-link capability.

5.13 The meeting discussed the possibility of airspace mandates to improve the incidence of data-link equipment and usage, noting the APANPIRG Conclusion in this regard (23/5). It was further noted that mandates for data-link and for RNP4 approval were two different matters, although they were linked. The meeting agreed that should India decide to mandate its airspace to facilitate a priority for RNP4 and data-link equipped aircraft, then this was consistent with regional expectations, and it would have a positive consequence for other airspace to have a higher equipment of this nature. Malaysia, Indonesia and IATA supported the initiative, in order to have seamless flow across the region with uniform separation standards. India requested the meeting to include this as an action item in the Task List.

Implementation of ATS Route R202 (IP02)

5.14 Thailand and Viet Nam presented background information on the development details of a new conventional ATS route R202 between PAE and TATEL within Bangkok FIR, which was a more direct route from Ha Noi to Yangon. The meeting noted that the intention was to change to an RNAV route once RNAV aircraft started to utilize it. The meeting congratulated Thailand for the positive manner in which they had facilitated the proposal from Viet Nam.

Airspace Harmonization and Route Developments (WP18)

5.15 India provided information on the restructuring of Indian airspace and ATS routes to improve efficiency, and reduce adverse environmental impacts through improved ATS automation systems and implementation of PBN-based RNP10 and RNAV5 city pair ATS routes.

5.16 India's Master Plan was to restructure the entire Indian airspace, with each FIR having only one Upper Area Control Centre (ACC) with multiple sectors to be operated from four major cities, thereby amalgamating 11 ACCs into four ACCs initially and subsequently into 2 ACCs. The surveillance data from radar/ADS-B would be networked and electronically processed with relevant flight data from the flight data processor, to provide an integrated track data output correlated with flight plan combined with matching air-ground communication. This would enable application of uniform radar separation throughout the FIRs concerned. Advanced safety nets would be employed such as Short Term Conflict Alert (STCA), Airspace Proximity Warning (APW), and Minimum Safe Altitude Warning (MSAW).

5.17 India was willing to cooperate and support its neighbouring States to jointly develop PBN RNAV5 routes and arrival/departure procedures to form a seamless network of PBN routes and arrival/departure procedures in the sub-continent. The meeting congratulated India on its plans and efforts to work constructively with its neighbours. The meeting noted that the use of RNAV5 routes should be considered with respect to RNAV2 and RNP2 navigation specifications, which would become increasingly preferred in the near future.

**Agenda Item 6: Development of State Contingency Plans**Regional ATM Contingency Plan (WP19)

6.1 The Secretariat informed on progress in assessing the contingency preparedness of Asia/Pacific States, as part of the tasks assigned to the Asia/Pacific Regional ATM Contingency Plan Taskforce (RACP/TF).

6.2 A self-assessment questionnaire had been formulated by the Review Team to review Level 1 (domestic) and Level 2 (bilateral) Contingency Plans. While some Asia/Pacific States had responded to the questionnaire, many had not. SAIOCG and SEACG States were requested to complete the questionnaire, and forward it ICAO Asia/Pacific Regional Office as soon as possible, in preparation for RACP/TF/2 which would be held in Bangkok, Thailand, 12 – 15 March 2013.

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

7.1 There were no papers presented under this Agenda Item.

**Agenda Item 8: Review of SAIOACG / SEACG Task List**

SAIOACG and SEACG Task Lists (WP16)

8.1 The Secretariat presented WP16, which contained the Terms of Reference (TOR) and Task Lists (**Appendix F and G** respectively) of both SAIOACG and SEACG for review.

**Agenda Item 9: Any other business**

9.1 There was no other business conducted at the meeting.

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

10.1 The next meetings of the SAIOACG and SEACG were tentatively scheduled for early 2014 (date to be advised), at Bangkok.

**11. Closing of the meeting**

The Co-Chairpersons thanked the meeting participants for their significant work during a busy meeting program.

-----

SAIOACG/3 and SEACG/20  
Appendix A to the Report

---

**List of Participants**

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
1.	<b>BRUNEI DARUSSALAM (5)</b>		
1.	Hj. Junidi Bin Hj. Abd. Latif	Chief Operation Officer Regulatory Division, 3 <sup>rd</sup> Floor DCA Building Department of Civil Aviation Brunei International Airport Bandar Seri Begawan BB2513 Brunei Darussalam	Tel: +673-2-330 142 ext. 1110 Fax: +673-2-345 345 E-mail: junido_latif@civil-aviation.gov.bn
2.	Mr. Azdah Hj. Abbas	Air Traffic Control Officer Regulatory Division, 3 <sup>rd</sup> Floor DCA Building Department of Civil Aviation Brunei International Airport Bandar Seri Begawan BB2513 Brunei Darussalam	Tel: +673-2-330 142 ext. 1337 Fax: +673-2-345 345 E-mail: azdah.abbas@civil-aviation.gov.bn
3.	Mr. Ang Soh Hon	Air Traffic Control Officer Department of Civil Aviation Air Traffic Management Office, 2 <sup>nd</sup> Floor ATS Building Brunei International Airport Bandar Seri Begawan BB2513 Brunei Darussalam	Tel: +673-2-330 142 ext. 1850 Fax: +673-2-345 345 E-mail: sohhoncarvalho@hotmail.com
4.	Capt. Allan Richard Bradley	Navigation Officer – Flight Crew Flight Operations Royal Brunei Airlines P.O. Box 737 Bandar Seri Begawan BS 8671 Brunei Darussalam	Tel: +673-2-339 225 ext. 4186 Fax: +673-2-337 228 E-mail: foallanb@rba.com.bn

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
	5. Pg. Hamlee Nor Pg. Salleh	Manager Navigation Services Flight Operations Royal Brunei Airlines P.O. Box 737 Bandar Seri Begawan BS 8671 Brunei Darussalam	Tel: +673-2-337 202 Fax: +673-2-337 228 E-mail: anhamlee@rba.com.bn
2.	<b>CAMBODIA (2)</b>		
	6. Mr. Saichon Pingsakul	Director, ATSOD CATS CATS Building Opposite Phnom Penh International Airport Phnom Penh Cambodia	Tel: +855-16-771 135 Fax: +855-23-890 214 E-mail: saichonp@cats.com.kh
	7. Mr. Sivarak Chutipong	Senior Engineer Technical Department CATS CATS Building Opposite Phnom Penh International Airport Phnom Penh Cambodia	Tel: +855-16-771 138 Fax: - E-mail: sivarakc@cats.com.kh
3.	<b>CHINA (6)</b>		
	8. Mr. Yan Yonggang	Assistant ATC Division ATMB of Civil Aviation Administration of China Air Traffic Management Bureau (ATMB) Building No. 12 Zhonglu, Third Ring Road East Chaoyang District, Beijing 100022 China	Tel: +86-10-8778 6814 Fax: +86-10-8778 6810 E-mail: yanyonggang@atmb.net.cn

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
9.	Ms. Wang Ran	Assistant AMC ATMB of Civil Aviation Administration of China Air Traffic Management Bureau (ATMB) Building No. 12 Zhonglu, Third Ring Road East Chaoyang District, Beijing 100022 China	Tel: +86-10-8778 6835 Fax: +86-10-8778 6849 E-mail: wangran@atmb.net.cn
10.	Mr. Wei Song	Engineer ATMB of Civil Aviation Administration of China Air Traffic Management Bureau (ATMB) Building No. 12 Zhonglu, Third Ring Road East Chaoyang District, Beijing 100022 China	Tel: +86-10-8778 6567 Fax: +86-10-8778 6810 E-mail: weisong@atmb.net.cn
11.	Ms. Hu Huiling	Engineer of Middle & Southern Region ATMB of Civil Aviation Administration of China Air Traffic Management Bureau (ATMB) Building No. 12 Zhonglu, Third Ring Road East Chaoyang District, Beijing 100022 China	Tel: +86-20-8612 2223 Fax: +86-20-3622 9685 E-mail: hhl@atmb.org

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
	12. Mr. Mai Feng	Engineer of Middle & Southern Region ATMB ATMB of Civil Aviation Administration of China Air Traffic Management Bureau (ATMB) Building No. 12 Zhonglu, Third Ring Road East Chaoyang District, Beijing 100022 China	Tel: +86-10-8778 6835 Fax: +86-10-8778 6849 E-mail: flyingfishmf@163.com
	13. Mr. Huang Peng	Engineer of Middle & Southern Region ATMB ATMB of Civil Aviation Administration of China Air Traffic Management Bureau (ATMB) Building No. 12 Zhonglu, Third Ring Road East Chaoyang District, Beijing 100022 China	Tel: +86-10-8778 6835 Fax: +86-10-8778 6849 E-mail: -
4.	<b>HONG KONG, CHINA (3)</b>		
	14. Mr. LI Kwok-chu, Raymond	Chief Air Traffic Control Officer Air Traffic Management Division Civil Aviation Department Air Traffic Control Complex 1 Control Tower Road Hong Kong International Airport Chek Lap Kok, Lantau Hong Kong, China	Tel: +852-2910 6436 Fax: +852-2910 0186 E-mail: rkcli@cad.gov.hk

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
15.	Mr. Peter M. Chadwick	Senior Operations Officer, Air Traffic Management Air Traffic Management Division Civil Aviation Department Air Traffic Control Complex 1 Control Tower Road Hong Kong International Airport Chek Lap Kok, Lantau Hong Kong, China	Tel: +852-2910 6411 Fax: +852-2910 0186 E-mail: pmchadwick@cad.gov.hk
16.	Mr. Yeung Chiu-fung, Patrick	Senior Operations Officer Air Traffic Management Division Civil Aviation Department Air Traffic Control Complex 1 Control Tower Road Hong Kong International Airport Chek Lap Kok, Lantau Hong Kong, China	Tel: +852-2910 6466 Fax: +852-2910 0186 E-mail: pcfyeung@cad.gov.hk
5.	<b>INDIA (4)</b>		
17.	Mr. Sylvester Israel	General Manager (Air Traffic Management) Airports Authority of India Rajiv Gandhi Bhawan Safdarjung Airport New Delhi 110003 India	Tel: +91-11-2463 2950 Mob: +91-99 6868 6900 Fax: +91-11- 2464 2236 E-mail: sylvester@aai.aero
18.	Mr. S.B. Sharma	Joint General Manager (Air Traffic Management) Indira Gandhi International Airport (IGIA) Airports Authority of India New Delhi India	Tel: +91-11-2565 4372 Fax: - E-mail: sbsharma.aai@gmail.com

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
19.	Mr. Kala P. Nair	Joint General Manager (Air Traffic Management) Kolkata Airport Airports Authority of India Kolkata India	Tel: +91-4842 6110 33 Mob: +91-98 4749 7720 Fax: - E-mail: dgmataccochin@aai.aero
20.	Mr. V. Karvarnan	Deputy General Manager (ATM) Chennai Airport Airports Authority of India Chennai India	Tel: - Fax: - E-mail: -
6.	<b>INDONESIA (2)</b>		
21.	Mr. Indra Gunawan	Chief of Air space Management Air Traffic Management Division Directorate General of Civil Aviation Ministry of Transportation 23 <sup>rd</sup> Floor, Karya Building Jl. Medan Merdeka barat No. 8 Jakarta Pusat 10110 Indonesia	Tel: +62-21-350 6451 Fax: +62-21-350 7569 E-mail: ind124gunawan@yahoo.com; indra.gunawan@dephub.go.id
22.	Mr. Tian Kusdinar	Air Navigation Inspector Traffic Control Section, Air Traffic Management Division Directorate General of Civil Aviation Ministry of Transportation 23 <sup>rd</sup> Floor, Karya Building Jl. Medan Merdeka barat No. 8 Jakarta Pusat 10110 Indonesia	Tel: +62-21-350 6451 Fax: +62-21-350 7569 E-mail: tian_231182@yahoo.fo.id
7.	<b>IRAN (1)</b>		

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
	23. Mr. Ebrahim Shoushtari	Deputy CEO for Aeronautical Operations Iran Airports Company (IAC) Central Building of Iran Airports Company Mehrabad International Airport Tehran Islamic Republic of Iran	Tel: +98-21-6314 8900 Mob: +98-912 186 1900 Fax: +98-21-6314 8906 E-mail: e.shoushtari@airport.ir; e_shoushtari@yahoo.com
8.	<b>LAO PDR (4)</b>		
	24. Mr. Inthanousone Sisanonh	Deputy Director General Department of Civil Aviation Ministry of Public Works and Transport Wattay International Airport P.O. Box 119 Vientiane Lao PDR	Tel: +856-21-513 163 Fax: +856-21-513 177 E-mail: laodca@laotel.com; inthanousorn@yahoo.com
	25. Mr. Bountaeng Symoon	Director of Air Navigation Division Department of Civil Aviation Ministry of Public Works and Transport Wattay International Airport P.O. Box 119 Vientiane Lao PDR	Tel: +856-21-512 164 Fax: +856-21-520 237 E-mail: bountaeng@gmail.com
	26. Mr. Amdounla Salinthone	Director of Air Traffic Services Center LAO Air Traffic Management (LATM) Wattay International Airport P.O. Box 2985 Vientiane Lao PDR	Tel: +856-21-512 006 ext. 207 Mob: +856-20-5566 8240 Fax: +856-21-512 216 E-mail: asalinthone@gmail.com; amdounla@hotmail.com

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
	27. Mr. Somchith Vinitkeophavanh	Director General LAO Air Traffic Management (LATM) Wattay International Airport P.O. Box 2985 Vientiane Lao PDR	Tel: +856-21-513 036 Mob: +856-20-520 2254 Fax: +856-21-512 216 E-mail: laoats@yahoo.com
9.	<b>MALAYSIA (3)</b>		
	28. Mr Nasuruddin Zainol Abidin	Principal, Airspace & ATC Procedures for Director Air Traffic Management Sector Department of Civil Aviation Kuala Lumpur Air Traffic Control Center Complex, LTSAAS 47200 SUBANG. Selangor Malaysia	Tel: +60-3-7846 5233 ext. 324 Mob: +60-19 280 8171 Fax: +60-3-7845 6950 E-mail: nasuruddin@dca.gov.my; nbza@yahoo.com
	29. Mr. Wong Sie Tzen	Deputy Director Department of Civil Aviation Wilayah II, JW Kepayan Kota Kinabaju, Sabah Malaysia	Tel: +60-8822 4404 Fax: +60-8821 9170 E-mail: stwong@dca.gov.my
	30. Mr. V. P. R. Nathan	Deputy Director Air Traffic Management Sector Department of Civil Aviation 27 Persiaran Perdana Level 4, Block Podium B, Precinct 4 Federal Government Administration Centre 62618 Putrajaya Malaysia	Tel: +60-3-8871 4228 Mob: +60-12-224 6438 Fax: +60-3-8881 0530 E-mail: vprnathan@dca.gov.my

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
10.	<b>MALDIVES (1)</b>		
	31. Mr. Ibrahim Thoha	General Manager, Air Traffic Services Maldives Airports Company Limited Corporate Office Hulhule 22000 Republic of Maldives	Tel: +960-333 8800 Fax: +960-333 1515 E-mail: a.shifa@macl.aero; thoha@macl.aero
11.	<b>MYANMAR (2)</b>		
	32. Mr. Tin Maung Kyi	Assistant Director (ATM) Department of Civil Aviation Yangon International Airport Mingaladon 11021 Yangon Myanmar	Tel: +95-1-533 040 Fax: +95-1-533 016 E-mail: ats@dca.gov.mm; tmk12366@gmail.com
	33. Mr. Aung San Oo	Air Traffic Control Officer Grade I (ATM) Department of Civil Aviation Yangon International Airport Mingaladon 11021 Yangon Myanmar	Tel: +95-1-533 040 Fax: +95-1-533 016 E-mail: ats@dca.gov.mm
12.	<b>PHILIPPINES (2)</b>		
	34. Ms. Anna Joy C. Papag	Facility Chief, Manila Area Control Center Civil Aviation Authority of the Philippines Airways Facilities Complex MIA Road, Pasay City Philippines 1300	Tel: +632-879 9182 Fax: +632-879 9182 E-mail: ae_jae0627@yahoo.com

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
	35. Mr. Renato D. Campaña Jr.	Senior Air Traffic Management Civil Aviation Authority of the Philippines MIA Road, Pasay City 1300 Philippines	Tel: +632-879 9181 Fax: +632-879 9181 E-mail: ar_eks13@yahoo.com
13.	<b>SINGAPORE (4)</b>		
	36. Mr. Peter Rabot	Head (Air Navigation Services Safety Office) Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: +65-6541 3467 Fax: +65-6545 6516 E-mail: peter_rabot@caas.gov.sg
	37. Mr. Edmund Heng	Deputy Chief of Singapore Air Traffic Control Centre (Area) Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: +65-6541 2430 Fax: +65-6545 6516 E-mail: edmund_heng@caas.gov.sg
	38. Mr. Michael Shee	ATC Manager (Air Traffic Management Operations Planning) Air Traffic Services Division Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: +65-6541 2454 Fax: +65-6545 6516 E-mail: michael_shee@caas.gov.sg
	39. Mr. Sivapirakasam s/o Rengasamy	ATC Manager (Air Traffic Management Operations Planning) Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: +65-6595 6063 Fax: +65-6545 6516 E-mail: sivapirakasam_r@caas.gov.sg

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
14.	<b>THAILAND (11)</b>		
	40. Mr. Nopadol Sang-ngurn	Air Traffic Control Specialist Airport Standards Bureau Department of Civil Aviation 71 Soi Ngarmduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66-2-287 0320 – 9 ext. 2846 Fax: +66-2-286 8159 E-mail: -
	41. Mr. Sunan Nimfuk	Director, Services Standards Department Aeronautical Radio of Thailand Limited 102 Ngarmduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66 (2) 287 8650 Fax: +66 (2) 287 8645 E-mail: sunan.ni@aerothai.co.th
	42. Mr. Chumnan Ruechai	Director, Safety Management Department Aeronautical Radio of Thailand Limited 102 Ngarmduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66 (2) 287 8650 Fax: +66 (2) 287 8645 E-mail: chumnan.ru@aerothai.co.th
	43. Mr. Visut Dechpokket	Chief, Policy and Strategy Management Bureau (Group of Policy Analysis and Strategy Planning) (Acting) Aeronautical Radio of Thailand Limited 102 Ngarmduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66 (2) 287 8650 Fax: +66 (2) 287 8645 E-mail: visut.de@aerothai.co.th

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
44.	Mrs. Pantip Changpradit	Senior Air Traffic Controller (Bangkok Area Control Centre) Aeronautical Radio of Thailand Limited 102 Ngamduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66-2-287 8650 Fax: +66-2-287 8645 E-mail: pantip.ch@aerothai.co.th
45.	Mr. Piyawut Tantimekabut	Executive Officer, Systems Engineering Aeronautical Radio of Thailand Limited 102 Ngamduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66-2-287 8650 Fax: +66-2-287 8645 E-mail: piyawut.ta@aerothai.co.th
46.	Mr. Kittipong Pongswasdi	Executive Officer, Administration Aeronautical Radio of Thailand Limited 102 Soi Ngamduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66-2-287 8650 Fax: +66-2-287 8645 E-mail: kittipong@aerothai.co.th
47.	Mr. Dolsarit Somseang	Aeronautical Radio of Thailand Limited 102 Soi Ngamduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66-2-287 3531 to 41 Mob: +6689-0986 7894 Fax: - E-mail: dolsarit@gmail.com
48.	Ms. Piyajit Phanaphat	Executive Officer, Systems Engineering Aeronautical Radio of Thailand Limited 102 Ngarmduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66-2-287 8289 Fax: - E-mail: piyajit.ph@aerothai.co.th

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
	49. Mr. Supreecha Samansukumal	Engineer Aeronautical Radio of Thailand Limited 102 Ngarmduplee, Rama IV Road Tungmahamek, Sathorn, Bangkok 10120 Thailand	Tel: +66-2-287 3531 to 41 Fax: - E-mail: -
	50. Mr. Tanaset Chantavasan	Manager, Operations Control Department Flight Operations Department Thai Airways International Public Company Ltd. BKKOP-O 9 <sup>th</sup> Floor OPC Building Suvarnabhumi International Airport Samutprakarn Thailand	Tel: +66-2-137 1214 Fax: +66-2-137 1224 E-mail: tanaset.c@thaiairways.com
15.	<b>UNITED STATES (1)</b>		
	51. Mr. Brian Bagstad	Senior ATO Representative, Asia Pacific Region Federal Aviation Administration c/o American Embassy Singapore INTL	Tel: +65-6476 9462 E-mail: brian.bagstad@faa.gov
16.	<b>IATA (6)</b>		
	52. Mr. David Rollo	Assistant Director – Safety, Operations & Infrastructure – Asia/Pacific International Air Transport Association 111 Somerset Road, #14-05 Triple One Somerset Singapore 238164	Tel: +65-6499 2251 Fax: +65-6233 9286 E-mail: rollod@iata.org

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
53.	Mr. Haruhiko Inukai	Manager Route Planning, Flight Operation Standards IATA/ All Nippon Airways 3-3-2, Haneda Airport Ota-ku, Tokyo 144-8515 Japan	Tel: +81-3-5757 5296 Fax: +81-3-5757 5404 E-mail: h.inukai@ana.co.jp
54.	Mr. Owen Dell	Manager International Operations IATA/Cathay Pacific Airways Limited International Affairs Department 9 <sup>th</sup> Floor, Central Tower, Cathay City Hong Kong International Airport Lantau Hong Kong, China	Tel: +852-2747 8829 Fax: +852-2141 3818 E-mail: owen_dell@cathaypacific.com
55.	Mr. Hironori Shimauchi	Route Planning, Flight Operations IATA/ Japan Airlines Japan Airlines Company Limited JAL Technical Center 2 4 F, 3-6-8 Haneda Airport Ota-ku, Tokyo 144-0041 Japan	Tel: +81-3-5756 3134 Fax: +81-3-5756 3527 E-mail: hironori.shimauchi@jal.com
56.	Capt. Aric Oh	Deputy Chief Pilot (Flight Ops Technical) IATA/Singapore Airlines Flight Operations Technical SIA Training Centre 04-C 720 Upper Changi Road East Singapore 486852	Tel: +65-6540 3694 Fax: +65-6542 9564 E-mail: aric_oh@singaporeair.com.sg

SAIOACG/3 and SEACG/20  
Appendix A to the Report

	<b>Name</b>	<b>Title/Organization</b>	<b>TEL/FAX/E-MAIL</b>
	57. Mr. Greg Dale	Manager International Operations Planning IATA/ United Airlines (South) United Continental Holding Inc. 233 South Wacker Drive – Suite 2868-K (CHIDD) Chicago, IL 60606 U.S.A.	Tel: +1-872-825 5095 Fax: - E-mail: Greg.Dale@united.com
17.	<b>ICAO (3)</b>		
	58. Mr. Len Wicks	Regional Officer, Air Traffic Management ICAO Asia and Pacific Office 252/1 Vibhavadi Rangsit Road Chatuchak, Bangkok 10900 Thailand	Tel: +66-2-537 8189 ext. 152 Fax: +66-2-537 8199 E-mail: LWicks@icao.int
	59. Mr. Shane Sumner	Regional Officer, Air Traffic Management ICAO Asia and Pacific Office 252/1 Vibhavadi Rangsit Road Chatuchak, Bangkok 10900 Thailand	Tel: +66-2-537 8189 ext. 159 Fax: +66-2-537 8199 E-mail: SSumner@icao.int
	60. Mr. Soon Boon Hai	ATM Expert, Air Traffic Management ICAO Asia and Pacific Office 252/1 Vibhavadi Rangsit Road Chatuchak, Bangkok 10900 Thailand	Tel: +66-2-537 8189 ext. 154 Fax: +66-2-537 8199 E-mail: BSoon@icao.int

SAIOACG/3 and SEACG/20  
Appendix A to the Report

---



*International Civil Aviation Organization*

**The Third Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/3) and the Twentieth Meeting of the South East Asian ATM Coordination Group (SEACG/20)**

Bangkok, Thailand, 18 – 22 February 2013

**LIST OF WORKING AND INFORMATION PAPERS**

**WORKING PAPERS**

<b>NUMBER</b>	<b>AGENDA</b>	<b>WORKING PAPERS</b>	<b>PRESENTED BY</b>
WP01	1	Provisional Agenda for SAIOACG/SEACG	Secretariat
WP02	2	Relevant Meeting Outcomes	Secretariat
WP03	3	SAIOACG/SEACG Small Working Group Reports	Secretariat
WP04	3	Airspace Capacity and ATM Service Enhancement	Secretariat
WP05	4	Global ATFM-7	Secretariat
WP06	4	ATFM Manual	Thailand
WP07	5	SEA User Requirements Route Catalogue Review	IATA
WP08	5	SA User Requirements Route Catalogue Review	IATA
WP09	5	ATS Route Catalogue	Secretariat
WP10	5	Improvement of Southeast-MID-EUR/NAT Inter Regional ATS Route Network	Iran
WP11	5	ATS Route Establishment Proposal	Brunei
WP12	5	Forward Planning South China Sea Routes M771 and L642	IATA
WP13	2	Outcomes Of ADS-B Focus Group, India-Bangladesh ATM Coordination/02 and ASIOACG/07 and Inspire 03	India
WP14	4	Implementation of Data-Link Services in India	India
WP15	5	Proposal to Implement 30NM Separation Within Bay of Bengal Arabian Sea Airspace	India
WP16	8	SAIOACG and SEACG Task Lists	Secretariat
WP17	4	ADS-B Implementation and Data Sharing	India
WP18	5	Airspace Harmonization and Route Developments	India
WP19	6	Regional ATM Contingency Plan	Secretariat
WP20	3	BOBCAT Operational Updates and Future Arrangement	Thailand

**INFORMATION PAPERS**

<b>NUMBER</b>	<b>AGENDA</b>	<b>INFORMATION PAPERS</b>	<b>PRESENTED BY</b>
IP01	-	List of Working and Information Papers	Secretariat
IP02	5	Implementation of ATS Route R202	Vietnam and Thailand

.....

## **JOINT REPORT OF THE SAIOCG ATFM SMALL WORKING GROUP (SAIOCG ATFM SWG) AND SEACG ATFM SMALL WORKING GROUP (SEACG ATFM SWG)**

### **1. INTRODUCTION**

#### SAIOCG ATFM SWG

1.1 The SAIOCG ATFM SWG was formed at SAIOACG/2 with the objectives to determine:

- a) current ATFM status and planning of implementation;
- b) identify barriers to implementation;
- c) make recommendations to assist harmonized ATM procedures and applications; and,
- d) make recommendations that assist implementation in accordance with the Asia/Pacific Air Navigation and ATFM Concept of Operations, and the Asia/Pacific Seamless ATM initiatives related to ATFM.

#### SEACG ATFM SWG

1.2 The SEACG ATFM SWG was formed at SEACG/19 with the objectives to determine:

- a) major capacity and demand issues within SEACG airspace;
- b) the status of ATFM development within SEACG airspace, including Collaborative Decision-Making (CDM);
- c) current Large Scale Weather Deviation procedures;
- d) barriers to effective ATFM, including CDM, and for effective response to LSWDs;
- e) recommendations to assist the development of ATFM, including CDM within the SEACG area; and
- f) recommendations to improve Large Scale Weather Deviation (LSWD) responses.

### **2. DISCUSSION**

#### Initial findings of SAIOCG ATFM SWG

2.1 Initial discussion of the SAIOCG ATFM SWG during SAIOACG/2 regarding information submitted by India on BOBCAT operations was as follows:

- a) changes of routes within the Delhi FIR: IATA stated that they supported the prioritization of BOBCAT approved routing and levels. India noted a reduction in the incidence of these events, but they remained a problem. India would ensure that it would reiterate to its controllers to take into account the BOBCAT approval for each aircraft wherever possible.
- b) time and level allocation at the Delhi FIR exit point in addition to Kabul FIR entry: this was not considered by the meeting to be required or useful, as the airspace operations were too tactical in nature, and depended upon both Pakistan and India to enact the restrictions.

- c) FL280 and FL300 exclusively reserved for Delhi and Lahore departures: the meeting agreed that restrictions of this nature were contrary to the need for flexibility and capacity enhancement.
- d) BOBCAT Slot allocations may be made mandatory for all flights: the meeting considered that BOBCAT approval status had already been promulgated, and that aircraft without BOBCAT approvals would have a lower priority.
- e) BOBCAT slot allocation extension beyond 2000 – 2359UTC: the meeting considered WP20, and on the data provided, and did not agree that BOBCAT hours needed to be extended. However, there was a need for Afghanistan to consider the availability of FL280 and FL310 outside BOBCAT hours.
- f) Traffic distribution evening on all four exit points: the meeting did not concur that traffic distribution was necessary, considering this could be counter to the need for a flexible system.
- g) 50NM should be accepted for all aircraft on routes P628, L333, M875 and L509: the meeting agreed that all States involved should be accepting 50NM separation when this was possible.

2.2 The Secretariat emphasized that we should not be engineering more complex procedural systems to solve a problem that had its genesis in tactical demand and capacity issues. It was recognized that there was a need to transition from a BOBCAT system to a more comprehensive ATFM solution, allowing more tactical and pre-tactical changes and CDM. It was suggested that South Asia sub-region needed one permanent H24 ATFM system just as Southeast Asia did to service Bangkok, Kuala Lumpur, Singapore and Jakarta as well as traffic flow among major ATFM areas.

2.3 India was ready to share the ATFM platform and expertise being developed with the FAA. Thailand would consider working with India to assist a seamless integration of BOBCAT into a synchronized regional ATFM implementation plan as it was not practical to have two different ATFM systems being run by two entities in the same airspace operating in the same phase of operation and/or phase of flight. The United States had been working with India for the past two years on developing ATFM and in particular CDM. Of importance was an ATFM stakeholder's meeting at the outset to involve airlines and ANSPs concerned. The FAA was committed and prepared to assist the region and had noted a major political change in India to support this. Thailand stated that there needed to be more sub-regional ATFM and tactical operations in the region. IATA stated that harmonization of implementation was important, so was a barrier.

2.4 India advised that they supported a sub-regional ATFM system, and would formally commit to such a project at a later date, possibly the ATFM/SG/2 meeting. India advised that their ATFM system had been planned with an open architecture, which should allow interaction with other States and their systems. The meeting agreed that it was important to establish a transitional plan to ensure the smooth change from BOBCAT operations to a sub-regional ATFM system, and that interoperability was the key for different ATM systems. The meeting agreed that this could be an item for the ATFM/SG to define (Draft Decision SAIOACG/SEACG 3 refers).

2.5 The meeting noted that a high level of traffic growth was expected for members of the Association of South-East Asia Nations (ASEAN) due to expected establishment of the ASEAN Economic Community in 2015 along with ASEAN Single Aviation Market (ASAM) and Seamless ASEAN Sky (SAS) initiatives, with some major cities resorting to dual- or multiple-airport operations to accommodate short- to medium-term traffic growth. The majority of SAIOACG States were servicing mainly international traffic, reducing the effectiveness of national ATFM implementation.

2.6 Exchanges prior to the joint meeting of the SAIOACG and SEACG ATFM SWGs resulted in identification of the following barriers to implementation:

- a) the multi-partner nature of CDM required involvement of many partners from the beginning;
- b) potential difficulties expected in aggregating data from key stakeholders such as airport operators, airlines, ANSPs and military operations to enable effective strategic ATFM planning;
- c) difficulties in exchanging necessary data to enable effective CDM/ATFM operations, such as effective surveillance data exchange;
- d) slow adoption of up-to-date digital AIM enabling automated data exchange; and
- e) lack of capacity planning and reporting (airport and airspace capacity measurement and sharing issues).

### Findings

2.7 The combined SAIOACG/SEACG ATFM SWG discussion resulted in the following findings.

1. The pre-tactical determination of airport and airspace capacity on a daily basis, as opposed to strategic capacity, was not widespread within the SEACG region. This resulted in ATFM measures mostly being imposed reactively, rather than proactively. Major en-route capacity and demand issues were found to be centred on the widespread use of procedural longitudinal separation on major trunk routes. Moreover, the meeting noted that the use of separation based on ATS surveillance where this was possible was an important capacity building measure, and should be prioritized (SAIOACG/SEACG SUR SWG).
2. ATFM development in the SEACG airspace was found to be piecemeal and focused on protection of internal demand rather than a coordinated sub-regional approach. Acknowledging the challenges associated with a centralized type of Regional ATFM Unit in the short-medium term, participants felt that improved harmonization of ATFM measures through CDM could provide similar results. The meeting agreed that this would be a possible item for discussion at the ATFM Steering Group, if this was held.
3. Barriers to effective ATFM included a lack of data sharing to enable an overall traffic demand awareness and a low level of predictability and confidence to enable the appropriate level of ATFM measures to be applied. Some participants also voiced their opinion that there was an urgent need to review the SCS Flight Level Allocation Scheme (FLAS), as traffic patterns have changed significantly compared to when the current Schemes were devised. The meeting noted the FLAS issue could not be resolved until the communications and surveillance gaps in the South China Sea no longer existed, at which time the FLAS could be considered for removal and at the same time ATS surveillance-based separations implemented. Moreover, the meeting noted that on-going planning for South China Sea enhancements were a key part of the Asia/Pacific Seamless ATM Planning Group's work.
4. The meeting noted that LSWD procedures were clarified as not being ATFM measures in themselves, but the cause of a reduction in capacity which required associated ATFM measures to be developed to enable a more predictable and efficient application of available levels.

5. The meeting also noted that greater collaboration should exist between States to develop, in the near term, ATFM for short haul/regional flights, as some of these city pairs were very high density. IATA stated that their preference was for long haul aircraft to be provided with priority over aircraft operating up to 5 hours. The shorter haul aircraft could have CTOT restrictions if needed, and should be sequenced accordingly.
6. Examples of collaborative ATFM planning among members of the SWGs have been evident since SAIOACG/2 and SEACG/19.
7. City Pair CDM trials between Bangkok's Suvarnabhumi Airport and Singapore Changi Airport, including the participation of Malaysia, had demonstrated efficiency gains achievable through the integration of airport and en-route CDM. Combining this with the concept of Daily Capacity Notification Scheme and demand/capacity analysis developed for Hong Kong International Airport, Hong Kong, China, Singapore and Thailand had entered a 'tripartite agreement' to explore the concept of networked A-CDM to manage the traffic flows between their respective major hubs.
8. The Asia-Pacific Economic Cooperation (APEC) had agreed to fund an 'ATM Emissions Reduction' project evaluating benefits of cross-border ATFM/CDM implementation, with report expected by end of 2013. The European Aviation Safety Agency (EASA) had also agreed to fund a project to support ASEAN ATM development, including ATFM.
9. A number of SWG participants attended Global 7 ATFM Conference hosted by Indonesia in Bali on 28 – 30 January 2013. At the conference, there was a proposal to establish a non-ICAO Asia/Pacific Region ATFM/CDM Workgroup including: Australia; Hong Kong, China; Indonesia; Malaysia; Philippines; Singapore and Thailand. Japan also expressed interest in joining the proposed workgroup.
10. It was agreed at the Global 7 ATFM Conference that the ICAO Manual on Collaborative ATFM (Doc 9971) and Manual on Flight and Flow – Information for Collaborative Environment (FF-ICE) (Doc 9965) should form the basis of CDM/ATFM implementation globally.
11. The Global 7 ATFM Conference also agreed to establish a Global ATFM information sharing website <<http://www.globalatfm.net/>>, hosted by Indonesia with data support from Thailand and other States with ATFM expertise. The meeting noted that this would not be a real time flight data resource.
12. It was recognized that ATFM implementation was not a solution for long-term airspace capacity imbalance, and that there should be plans to enhance ATM/CNS capacity and infrastructure where necessary.

Proposed Solutions

2.8 Recognising the City Pair CDM trials between Bangkok's Suvarnabhumi Airport and Singapore Changi Airport, and the Daily Capacity Notification Scheme and demand/capacity analysis developed for Hong Kong International Airport, Hong Kong China, adjacent States were encouraged to support the tests and plan for future expansion and development; with the trial results reported to SEACG/21 (SEACG Task List).

2.9 With respect to LSWD, the tripartite agreement should include consideration of appropriate ATFM measures distributed via A-CDM ensuring maximum utilization of airport and en-route capacity during LSWD contingency procedures on L642 and M771; with the results reported to SEACG/21 (SEACG Task List).

2.10 A Pakistan-India-Afghanistan Special Coordination Meeting should be conducted by ICAO to address:

- Prioritisation of BOBCAT approved aircraft and their level allocation;
- acceptance of 50NM separation whenever this was possible;
- removal of unnecessary altitude and timing restrictions on ATS routes;
- availability of FL280 and FL310 within the Kabul FIR outside BOBCAT hours;
- the status of communications and ATS surveillance facilities to support ATS surveillance-based separations and procedures;
- the transition from a BOBCAT-based system to a more comprehensive ATFM system (SAIOACG Task List).

2.11 It was recommended that all States with traffic capacity issues commenced aerodrome and airspace capacity analysis at the earliest opportunity (Draft Conclusion SAIOACG/SEACG 1: ATFM Capacity Assessments refers).

2.12 With regard to demand and capacity balance, the following issues should be addressed:

- capacity of airports and congested airspace should be developed and shared in various weather conditions;
- Exchange of schedule information and flight data;
- efficient meteorology data exchange;
- collaborative pre-tactical daily ATFM planning, which included flexible sectorisation and runway configuration planning where possible (Draft Conclusion SAIOACG/SEACG 2: ATFM Planning Process refers).

2.13 It was recommended that implementation of ATFM at a sub-regional level would involve careful synchronization of individual A-CDM programs, tightly coupled with collaborative implementation of ATFM in the form of virtual ATFM Units serving catchment areas surrounding the major air-hubs. The project could start from sharing information on arrival capacity, common traffic demand and anticipated delay, then evolving into collaborative ATFM implementation among the virtual ATFMUs (Draft Conclusion SAIOACG/SEACG 3: ATFM Steering Group refers).

<b>Combined ATFM SWG Participant</b>	<b>Organisation</b>
1. Peter Chadwick (SWG Co-Leader)	Hong Kong, China
2. Piyawut Tantimekabut(SWG Co-Leader)	Thailand
3. Saichon Pingsakul	Cambodia
4. Raymond Li	Hong Kong, China
5. Sylvester Israel	India
6. S. B. Sharma	India
7. Bountaeng Symoon	Laos
8. Amdounla Salinthone	Laos
9. V P R Nathan	Myanmar
10. Aung San Oo	Myanmar
11. Michale Shee	Singapore
12. Nopadol Sang-Ngurn	Thailand
13. Chuman Ruechai	Thailand
14. Haruhiki Inukai	IATA (Japan)
15. Hironori Shimauchi	IATA (Japan)
16. Greg Dale	IATA (USA)
17. Owen Dell	IATA (Hong Kong, China)
18. Aric Oh	IATA (Singapore)
19. Len Wicks	ICAO

.....

**JOINT REPORT OF THE SAIOCG SMALL WORKING GROUP - COMMUNICATIONS  
(SAIOCG SWG - COMMS) AND SEACG SMALL WORKING GROUP –  
COMMUNICATIONS (SEACG SWG - COMMS)**

**1. INTRODUCTION**

SWG - Communications Report

1.1 The SAIOCG and SEACG Small Working Groups – Communications (SWG – Comms) were established to examine communications capabilities and plans impacting upon seamless ATM implementation among participant States and therefore impacting the wider South Asia – Indian Ocean and South East Asia areas. The objectives were to determine current CNS/ATM System communications capability and gaps, implementation plans and impediments to successful implementation, and to make recommendations for improvement.

1.2 This report summarizes the findings of the SWGs – Comms at the combined meeting of SAIOCG/3 and SEACG/20.

**2. DISCUSSION**

VHF Air-Ground

2.1 The group considered that collation of VHF coverage data, and recommendations for enhancement of coverage, reliability and availability are determined by the requirement to provide direct controller – pilot voice communications, to support current and proposed radar and ADS-B surveillance coverage. As such, these activities should more appropriately be conducted by the Small Working Group – Surveillance.

HF Air-Ground

2.2 Several States did not provide information on whether HF was in use, and no information was provided on any limitations, reliability or coverage issues.

2.3 The meeting noted that there were ongoing issues with the provision of HF communications in the western part of the Manila FIR, in the busy South China Sea area (**Attachment A**), particularly on ATS route M772. Philippines advised that there was a project being considered for upgrading of HF equipment, but there had been no further movement.

2.4 The meeting further noted that the proposed deployment of ADS-B and supporting VHF voice communications facilities on two islands in the South China Sea, one in the Ho Chi Minh FIR and one in the Sanya FIR, both of which would provide substantial surveillance and communications coverage of that portion of the Manila FIR outside Philippines' current surveillance and VHF range. There was some discussion of whether the issue should be managed by:

- i) Urgent attention to Manila FIR HF capability (TASK); and/or
- ii) Review of the service provision in airspace over the South China Sea in areas currently without ADS-B or radar surveillance or VHF voice communications; or
- iii) Cooperative agreements to exchange communications and surveillance capability in the South China Sea.

2.5 The SWG – COMMS agreed to the following draft Conclusion:

**Draft Conclusion X/X:**

That the provision of surveillance and communications services in the South China Sea area, where radar, ADS-B and/or VHF voice communications are currently not provided, be reviewed by China, Hong Kong China, Malaysia, Philippines, Singapore and Viet Nam, to consider:

- a) Enhancement of current services;
- b) Delegation or amendment of airspace service volumes; and
- c) Cooperative agreements to exchange communications and surveillance capability.

CPDLC

2.6 Several participating States indicated having CPDLC capability, but some have also indicated that their CPDLC system is provided at a stand-alone position in their ATC facility. In order to provide direct controller – pilot communications (DCPC) between the aircraft and the controller responsible for its separation, CPDLC systems must be integrated with the workstation of the controller responsible for the relevant sector of airspace. Without DCPC improved RNP separations outside radar or ADS-B surveillance and/or direct voice communications coverage cannot be achieved.

2.7 The SWG proposed the following draft Conclusion:

**Draft Conclusion X/X**

That, States are urged to ensure that CPDLC systems are integrated with ATM Systems to provide DCPC at the ATC workstation controlling the aircraft concerned.

AIDC

2.8 The SWG – Comms noted that only limited implementation of AIDC messaging has occurred among SAIOCG and SEACG States. Current operational implementation is confined to internal messaging between the FIRs of only one SAIOCG State, and the exchange of a limited set of AIDC messages between 3 FIRs in 2 SEACG States. A significant number of administrations were either not planning to use ATS Inter-facility Data-link Communications (AIDC) or did not have this capability planned in the near future. This was in spite of the previous APANPIRG Conclusion urging States to implement AIDC due to its effectiveness in reducing human transfer errors.

2.9 Technical limiting factors reported include ATM automation system capability and configuration, AIDC version compatibility<sup>1</sup> and AFTN/ATN reliability.

2.10 The SWG discussed the considerable safety, capacity and ATC workload benefits of AIDC messaging. Consideration was also given to the core AIDC messages defined in the *Asia/Pacific Regional Interface Control Document (ICD) for ATS Interfacility Data Communications (AIDC)*, and the identification of a minimum suite of these core messages which may be suitable for initial implementation in States with little or no prior experience in AIDC messaging (Draft Conclusion refers).

---

<sup>1</sup> The first meeting of a EUR – Asia/PAC pan-Regional AIDC ICD Task Force was held in Paris in January 2013. The second meeting will be held in Bangkok in November 2013. The expected output of this Task Force is a standardized AIDC ICD for global use.

**JOINT REPORT OF SAIOCG SUR SMALL WORKING GROUP (SAIOACG SUR SWG)  
AND SEACG SUR SMALL WORKING GROUP (SEACG SUR SWG)**

**1. INTRODUCTION**

**SAIOACG SUR SWG & SEACG SUR SWG**

1.1 At the SAIOACG/2 and SEACG/19 Meetings , Surveillance Working Groups (SWG) were established to look into the surveillance capabilities of each State. The objectives were to determine:

- a) The horizontal separation standards used within Bay of Bengal and Indian Ocean airspace, especially at the transfer of control point;
- b) The status of ANSP's surveillance capability within Bay of Bengal and Indian Ocean airspace;
- c) The gaps in Radar, MLAT and ADS-B coverage;
- d) Planned ATS surveillance installations;
- e) Make recommendations to harmonise surveillance based separations; and
- f) Make recommendations to assist the regional application of ATS surveillance facilities.

**2. DISCUSSION**

**South Asia - SAIOACG SUR SWG**

2.1 The SAIOACG SUR SWG discussed issues relating to surveillance during the inaugural meeting including new installations, confirmation of radar coverage in the respective FIRs and separation minima currently employed in both the en-route and terminal airspace of the FIRs (Please see attached). Some of the problem areas identified were:

- a) Lack of direct speech circuit between the surveillance controllers to allow coordination for surveillance separation to be applied even with overlapping surveillance coverage;
- b) Lack of surveillance handoff procedures between adjacent ANSPs with overlapping surveillance coverage;
- c) Infrastructure is absent in areas with surveillance gaps;
- d) Interface issues on different systems used by adjacent ANSPs thus leading to higher costs; and
- e) Application of larger surveillance separation (eg. 15NM or more) within the FIR due to reliability of systems.

2.2 The SAIOACG SUR SWG agreed that States would be provided with the appropriate charts and the table showing the routes (and FIRs' involved), the current separation and proposed future separation, and a table showing the initiatives and the reasons for the provision of procedural separation where surveillance coverage currently exists.

2.3 The following charts were developed using State's Aeronautical Information Publication (AIP) and also inputs provided by some States on their future developments (charts were provided as Appendices to WP03):

- a) Coverage Chart with ADS-B (Pink), SSR (Blue – when ADS-B layer overlaps, it looks purple) and VHF (Green);
- b) Coverage Chart with ADS-B and SSR;
- c) Coverage Chart with ADS-B only;
- d) Coverage Chart with SSR only; and
- e) Coverage Chart with VHF only.

2.4 India clarified that coverage areas are more extensive than shown in the charts. India highlighted that there is a small area in BOB which they are addressing with ADS-C and CPDLC. With regard to ADS-B coverage, India had extended VHF range cover in some areas in the Bay of Bengal. They will provided updated information accordingly.

#### Recommendations

2.5 The SWG agreed to the following recommendations:

- a) Direct Speech Circuit (hotline between controllers transferring control)
  - States with overlapping surveillance coverage should implement direct speech circuit to allow direct coordination between the surveillance controllers instead of relaying the information through third parties.
- b) Radar Handoff Procedures
  - States with overlapping surveillance coverage should introduce surveillance handoff procedures. This could be done on a phase-by-phase basis, starting with a comfortable longitudinal distance for a period of time before reducing the longitudinal distance further. This will be subject to the safety assessment of each individual State. The SWG discussed the issue of agreed longitudinal spacing between aircraft at the transfer of control point between two FIRs and was of the view that there was no need to link it to the applicable separation minima in the concerned FIR.
  - India informed the meeting that it was using AIDC for internal coordination currently and planned to use it with external FIR's. AIDC was the primary means and Direct Speech Circuit was used as a back up. However, in cases of emergency, DSC could still be used. For radar handoff DSC is used between radar controllers.

c) ADS-B data sharing

- ADS-B with VHF Communications should be considered in areas with lack of infrastructure. Sharing of ADS-B data and VHF Communications between adjacent States should also be considered to improve safety and efficiency. India requested that a copy of ADS-B agreement between states be provided to them so that it could be used as an example or model to assist them in their internal processes. Singapore advised that they had provided a copy of their documentation sans sensitive information to the ADSB focus group. India will check and revert. India also highlighted that they had encountered some difficulties in coordinating data exchange agreements with Myanmar.
- Maldives advised that they have installed ADS-B and tables/charts will be updated. Trials have begun. SWG also discussed mandating the use of ADSB as the way forward to ensure that all airlines including LCC's to ensure that the ATC has the full air traffic picture.
- In relation to VHF coverage over the Bay of Bengal, Malaysia informed that they had conducted trials with an "over the horizon" VHF and indications are that they might have the capability to provide VHF cover over the entire western side of the KL FIR.

**Southeast Asia - SEACG SUR SWG**

2.6 The SEACG SUR SWG discussed various issues during the inaugural meeting including new installations, confirmation of radar coverage in the respective FIRs and separation minima currently employed in both the en-route and terminal airspace of the FIRs (Please see attached). Some of the problem areas identified were:

- a) Lack of direct speech circuit between the surveillance controllers to allow coordination for surveillance separation to be applied even with overlapping surveillance coverage;
- b) Lack of surveillance handoff procedures between adjacent ANSPs with overlapping surveillance coverage;
- c) Infrastructure is absent in areas with surveillance gaps;
- d) Interface issues on different systems used by adjacent ANSPs thus leading to higher costs; and
- e) Application of larger surveillance separation (eg. 15NM or more) within the FIR due to reliability of systems.

2.7 The SWG agreed that States would be provided with the appropriate charts and the table showing the routes (and FIRs' involved), the current separation and proposed future separation, and a table showing the initiatives and the reasons for the provision of procedural separation where surveillance coverage currently exists.

2.8 The following charts have been developed using State's Aeronautical Information Publication (AIP) and also inputs provided by some States on their future developments (charts were provided as Appendices to WP03):

- a) Coverage Chart with ADS-B (Pink), SSR (Blue – when ADS-B layer overlaps, it looks purple) and VHF (Green);
- b) Coverage Chart with ADS-B and SSR;
- c) Coverage Chart with ADS-B only;
- d) Coverage Chart with SSR only;
- e) Coverage Chart with VHF only

#### Recommendations

2.9 The SWG agreed to the following recommendations:

- a) Direct Speech Circuit (hotline between controllers transferring control)

States with overlapping surveillance coverage should implement direct speech circuit to allow direct coordination between the surveillance controllers instead of relaying the information through third parties.

- b) Radar Handoff Procedures

States with overlapping surveillance coverage should introduce surveillance handoff procedures. This could be done on a phase-by-phase basis, starting with a comfortable longitudinal distance for a period of time before reducing the longitudinal distance further. This will be subject to the safety assessment of each individual State. The SWG discussed the issue of agreed longitudinal spacing between aircraft at the transfer of control point between two FIRs and was of the view that there was no need to link it to the applicable separation minima in the concerned FIR.

- Singapore informed the meeting that there was a radar handoff procedure, and the agreed spacing between aircraft without pre-coordination between Kuala Lumpur and Singapore FIR was 15NM. However, the current agreed spacing between aircraft between Singapore and Jakarta was 40NM, but this was under review.
- The agreed spacing between aircraft between Hong Kong FIR and Taibei FIR was 30NM without precoordination. They had a radar hand-off procedure with Taibei. Hong Kong also had a similar agreement Sanya FIR with the same agreed spacing. AIDC was on trial between HK and Sanya and Taibei . Sanya was ready to implement AIDC with Hanoi and Ho Chi Minh ACCs.
- HK & China agreed that subject to ADS-B and new ACC operations coming on line at around the first half 2015, they would be prepared to implement 30NM longitudinal separation on L642/M771 pair of routes. Singapore agreed. ICAO was requested to inform Vietnam. SEACG 21 will begin the process to implement this.

c) ADSB data sharing

ADS-B with VHF Communications should be considered in areas with lack of infrastructure. Sharing of ADS-B data and VHF Communications between adjacent States should also be considered to improve safety and efficiency.

## Tasks for SEACG/SAIOACG

1	Identify areas to implement radar hand-off procedures so that the agreed spacing between FIRs can be reduced	Singapore, Malaysia
2	Reduce the agreed spacing at the Transfer of Control point between Singapore and Jakarta FIR	Singapore Indonesia
3	Reduce longitudinal separation from 50NM to 30NM on L642/M771	Hong Kong, China, Vietnam, Singapore
4	Reduce the agreed spacing at the Transfer of Control point between Kuala Lumpur and Bangkok FIR	Malaysia, Thailand
5	Develop further the coverage charts to incorporate new ADSB data by Hong Kong and India. To obtain more information from Vietnam relating to their coverage in VHF and surveillance capabilities	Hong Kong, India, Singapore (SWG lead)
6	Continue efforts to conclude LOA for ADSB data sharing between India and Myanmar	India, Myanmar
7	Spread the information among IATA member airlines to assist in the Sanya FIR ADSB trials.	IATA, China

**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>

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>

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

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  <del>Between Pakistan and India</del>	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.  <b>LOA Delhi Lahore signed 12 January 2012.</b>
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	<del>Open</del> Closed	India to consider. To conduct safety assessment as appropriate. <b>Safety assessment completed. On ATS Route M890. 50NM longitudinal separation in India is implemented.</b>

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.

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	<del>Open</del> Closed	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. <u>Data provided by India as part of WP03</u>

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	<del>Open</del> Closed	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. <b>Data provided by India as part of WP03</b>
2/17	WP07: ATFM SWG- Traffic distribution on all Delhi exit points should be balanced	2013	IATA	Open	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	Open	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. <b>Data collection in progress. To date India unable to find traffic for 50NM on LAJAK track during 1900 to 2130 UTC.</b>
3/1	<p>A Pakistan-India-Afghanistan Special Coordination Meeting should be conducted by ICAO to address:</p> <p>Prioritisation of BOBCAT approved aircraft and their level allocation;</p> <p>acceptance of 50NM separation whenever this was possible;</p> <p>removal of unnecessary altitude and timing restrictions on ATS routes;</p> <p>availability of FL280 and FL310 within the Kabul FIR</p>				ATFM SWG item

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
	outside BOBCAT hours; the status of communications and ATS surveillance facilities to support ATS surveillance-based separations and procedures; the transition from a BOBCAT-based system to a more comprehensive ATFM system; and new ATS route systems				
3/2	IATA would support India to improve the uptake of these data-link services.		IATA		SUR SWG item
3/3	IATA would assist in updating the ATS route catalogue with Iran's preferred proposal and this could be discussed at a Special Coordination Meeting		IATA		

.....

**Task List**

	<b>ACTION ITEM</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
2.	Update the Progress on State Contingency Plan Development	STATES	Closed	Raised at SEACG/16.  States to develop and promulgate contingency plans according to Annex 11 – <i>Air Traffic Services</i> and update the progress to the SEACG/19. Transferred to the RACPTF
3	Radar Data Sharing	Lao PDR/ Thailand	OPEN	Raised at SEACG/16.  Lao PDR and Thailand agreed to share the radar data. Lao PDR and Thailand will further coordinate.
6	FL 400 Restriction on G581	Hong Kong, China Japan	OPEN	Raised at SEACG/17  A tripartite meeting should be held to seek resolution to FL 400 by Hong Kong, China and report the outcome to the Regional Office as soon as possible.  Hong Kong, China has implemented an additional ATC sector in April 2011 and is developing a controller tool with a view to addressing the issue.  Hong Kong China will keep in view of the situation and update Japan towards end 2011.  Hong Kong discussed this at the EATMCG /5. Still some issues with conflict detection software under development and expected to be resolved by end 2012.

	<b>ACTION ITEM</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
7	Review of the Route Requirements Proposed to SEA-RR/TF by IATA (WP/6 of SEACG/18)	States	CLOSED	Raised at SEACG/18  Noting the SEA-RR/TF has not achieved a single output, States are invited to review Paragraph 2.3 of WP/6 before attending the next SEA-RR/TF. Completed.
8	Enhancement of Coordination and Awareness on LHD Occurrences	Indonesia, Philippines, Singapore and Viet Nam, Malaysia	CLOSED	Raised at SEACG/18  In order to reduce the LHD at the Manila FIR boundary, coordination should be enhanced between the ACCs and heightened the awareness of HF operators with regard to the high LHD occurrence rate at the identified reporting points.  Supervisor to Supervisor consultation is currently practiced.
9	Consideration of Implication of ADS-B Surveillance	States and IATA	Closed	Raised at SEACG/18  Deliverable should be the working paper from IATA and States at the next meeting. Updated at SEACG/20 Circular <b>XXX</b> has been published.
10	ADS-B and VHF Coverage Chart	Regional Office	OPEN	Raised at SEACG/18.  ADS-B and VHF coverage chart will be created basing on the radar coverage chart. Updated at SEACG/20
11	SEA Route Review Implementation Plan Proposals 2 and 9, A202 & A1	Thailand, Laos, Vietnam, China, Hong Kong China	CLOSED	Proposal 2 was already noted as complete. Regarding Proposal 9, China reiterated that route changes within the Sanya FIR in the foreseeable future were not possible, due to the interest of other stakeholders.
12	SEA Route Review Implementation Plan Proposal 5 M756 TSN-ENREP	Thailand, Laos, Vietnam, Singapore	OPEN	Singapore and Viet Nam would continue the dialogue on this proposal bilaterally. Both States expressed the view that agreement was possible by the end of 2012, and would advise the results of discussion by SEACG/20.

	<b>ACTION ITEM</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
13	SEA Route Review Implementation Plan Proposal 10, L628	Thailand, Cambodia, Viet Nam, Philippines	OPEN	The meeting discussed the reasons behind this proposal at length, describing the fact that although the route proposed to be duplicated had low traffic density, the change would allow a uni-directional flow to release some level restrictions on the main Southwest-Northeast traffic flow (at present, the crossing tracks utilised FL330, 370 and 410 eastbound and FL280 and 340 westbound). This proposal needed further consideration by the Airspace Authority of Viet Nam.
14	SEA Route Review Implementation Plan Proposal 11, M768	Thailand, Cambodia, Viet Nam, Malaysia, Singapore	OPEN	Viet Nam was concerned about the effect of several new reporting points created by the new ATS route proposal. The Secretariat clarified that the number of reporting points should not be a factor within ATS surveillance coverage, as a State was able to advise through the AIP that pilot reports were unnecessary in such airspace, unless specifically requested by ATC. Viet Nam would consider this and advise their position at a later date. .
15	SEA Route Review Implementation Plan Proposal 14 and 15, M771 and L642 realignment	Vietnam, Hong Kong China, China	Closed	China reiterated that route changes within the Sanya FIR in the foreseeable future were not possible, due to the interest of other stakeholders. The Secretariat reminded China about the concern from IATA regarding the need to be responsive to the economic and environmental drivers.
	Route Structure 6 CAB-BHY:	Bilateral: China, Vietnam	Closed	China did not attend SEA/RR/TF/5, but there had been high level meetings between China and Viet Nam. Due to civil/military reasons, this route was unlikely to be implemented in the foreseeable future, so it was agreed to remove this item as a SEA/RR/TF Task, as this would be managed bilaterally.
	Structure 7 LPB/CMA/BGO:	Mekong Thailand, Lao PDR, Myanmar	Open	Thailand advised that this route could not be approved unconditionally due to the presence of military airspace. Thailand's Airspace Panel would consider whether this route was able to be operated conditionally (i.e.: when the military were not using the airspace). Lao PDR had no objection to the route, and both Thailand and the Lao PDR would

	ACTION ITEM	RESPONSIBLE PARTY	STATUS	REMARKS
				continue discussing this at the Mekong Air Traffic Management (ATM) Coordination Group.
	Route Structure 8 NAN-TATEL-BGO:	Mekong ATM Coordination Group: Lao PDR, Myanmar, Thailand	Closed	<p>This route consideration was expected to be completed during 2012. The route would be discussed at the next Mekong ATM Coordination meeting. Myanmar would be invited to attend this group to facilitate this discussion. The Secretariat emphasized the importance of informal meetings, in that States could progress matters bi-laterally or multi-laterally in-between formal ICAO meetings, whether ICAO attended or not. IATA agreed with ICAO's comments, and was happy to support the Mekong ATM Coordination Group.</p> <p>IMPLEMENTED AS R202</p>
	Route Structure 12- Unidirectional parallel route A461:	Bilateral Philippines, Hong Kong	Open	<p>Hong Kong China advised that they had discussed the change to unidirectional routes with the Philippines, which was conditional on the implementation of ADS-C (Automatic Dependent Surveillance – Contract) and CPDLC (Controller Pilot Data-link Communications) at Manila. Hong Kong, China stated that they needed a six month 'no procedure change' either side of their new ATM system implementation in 2014</p>
	Route Structure 13-B462/B348 MNL/TPE :	EATMCG Philippines, IATA	Closed	<p>The Philippines advised that there was no update on this proposal. IFATCA stated that the Taipei Area Control Centre (ACC) did not prefer this solution due to the effect on their terminal airspace traffic flow. The proposal would continue to be discussed between both ACCs and further progressed by the East Asia Air Traffic Management Coordination Group (EATMCG), and was removed from the SEA RR TF list. Taipei apparently could not manage this as it was in conflict with their terminal procedures. The was discussed by SEACG20 and would be placed in the Route</p>

	<b>ACTION ITEM</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
				Catalogue
20/1	Hong Kong China, adjacent States were encouraged to support the tri-partite A-CDM/ATFM tests and plan for future expansion and development; with the trial results reported to SEACG/21	Hong Kong, Thailand and Singapore	Open	ATFM SWG Item
20/2	Hong Kong China, Singapore and Thailand should include consideration of appropriate ATFM measures distributed via A-CDM ensuring maximum utilization of airport and en-route capacity during LSWD contingency procedures on L642 and M771; with the results reported to SEACG/21	Hong Kong, Thailand and Singapore	Open	ATFM SWG Item
20/3	Urgent attention should be paid to rectification of HF air-ground service reliability and availability issues in the western portion of the Manila FIR over the South China Sea	Philippines	Open	COM SWG item
20/4	IATA will reinforce among airlines China's request for airlines to participate in their ADS-B tests in Sanya FIR	IATA, China	Open	SUR SWG item
20/5	ICAO to request Vietnam to provide information on their coverage to complete the SUR picture	ICAO	Open	SUR SWG item
20/6	Establish a small group involving Hong Kong China, Singapore, Vietnam and China (Sanya), together with IATA and ICAO to work through the logistical issues and plan for implementation of ATS surveillance-based 20NM separation	SUR SWG	Open	Monitoring of M771 and L642 by the SUR SWG, no need to form a separate group.