



International Civil Aviation Organization

**The Twenty-First Meeting of the APANPIRG ATM/AIS/SAR Sub-Group
(ATM/AIS/SAR/SG/21)**

Bangkok, Thailand, 27 June – 01 July 2011

Agenda Item 5: Review of other relevant meetings

**THE TWENTY-FIRST MEETING OF THE BAY OF BENGAL ATS
COORDINATION GROUP (BBACG/21)**

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes of the Bay of Bengal ATS Coordination Group (BBACG/21, 7-10 March 2011, Bangkok).

This paper relates to –

Strategic Objectives:

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

Global Plan Initiatives:

- GPI-1 Flexible use of airspace
- GPI-3 Harmonization of level systems
- GPI-4 Alignment of upper airspace classifications
- GPI-5 RNAV and RNP (Performance-based navigation)
- GPI-6 Air traffic flow management
- GPI-7 Dynamic and flexible ATS route management
- GPI-8 Collaborative airspace design and management
- GPI-10 Terminal area design and management
- GPI-11 RNP and RNAV SIDs and STARs
- GPI-12 Functional integration of ground systems with airborne systems
- GPI-17 Data link applications
- GPI-21 Navigation systems
- GPI-22 Communication infrastructure

1. INTRODUCTION

1.1 The Twenty-first Meeting of the Bay of Bengal ATS Coordination Group (BBACG/21) was held at the ICAO Asia and Pacific Regional Office from 07 to 10 March 2011. The meeting was attended by 31 participants.

2. DISCUSSION

2.1 The BBACG/21 Meeting discussed the outcomes of the following meetings.

APANPIRG/21 Outcomes

2.2 The twenty-first meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/21) was held at Bangkok from 6-10 September 2010. India noted that with regard to Conclusion 21/1, their extensive modernization programme would be fully compliant with ICAO SARPs. Regarding Conclusion 21/39, IATA advised that they were comfortable with exclusive airspace for ADS-B equipped aircraft, but an appropriate approval process and priority for ADS-B aircraft within non-exclusive airspace were natural steps towards exclusive status.

BOB-RHS/TF/5 Outcomes

2.3 Five Meetings of the Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS TF) had been held during the period from November 2009 until February 2011. BBACG/21 agreed with the revised BOB-RHS/TF Terms of Reference (TORs) as shown in **Appendix A** and approved the 30 June 2011 Phase One implementation date for 50NM longitudinal separation on selected routes in the Bay of Bengal, Arabian Sea and parts of Pakistan and Afghanistan airspace. It was also agreed that, where necessary to do so, conventional ATS routes would be changed to RNAV routes where this procedure was applied.

2.4 India discussed the matter of crossing tracks in Bay of Bengal/Arabian Sea and Indian continental airspace. In Bay of Bengal/Arabian Sea most traffic operated on parallel routes, and any crossing traffic was managed tactically. The meeting was reminded that 50NM longitudinal separation can apply to tracks that cross at 44 degrees or less, and 50NM lateral separation could be applied on tracks that cross at 45 degrees or more, using either pre-determined waypoints or ATM systems that can determine the required 50NM spacing.

FIT-BOB/13

2.5 The review of the FIT-BOB Terms of Reference (TORs) from the Thirteenth Meeting of the FANS Implementation Team for the Bay of Bengal (FIT-BOB/13, 07 – 11 February 2011) was expected to take place at BBACG/22, after considering the results of the APANPIRG Contributory Bodies Structure Review Task Force (ABSRTF/1, 23-24 May 2011).

Bay of Bengal Operations

2.6 Meeting participants were requested to advise of any significant ATM developments and problem areas. Bangladesh noted the need for coordination with India to enhance the safety and efficiency of current procedures. Bangladesh advised that they planned to upgrade the radar service in Dhaka. Bangladesh and India met during the BBACG/21 Meeting to immediately improve the coordination processes between Kolkata and Dhaka ATC Centres. The States involved reported progress and advised that, in view of the increased traffic density across the Dhaka/Kolkata FIR boundary, they would be meeting again in the near future to update their Letter of Agreement (LOA). The Secretariat commended the positive manner in which this coordination was conducted.

2.7 India had many on-going development projects. India particularly noted the 24-hour availability of CPDLC (Controller Pilot Datalink Communications), new automated ATM systems in Delhi and Mumbai, new radar systems, and the preliminary testing operations being conducted for the Indian GNSS (Global Navigation Satellite System) called GAGAN (GPS-Aided Geo Augmented Satellite Navigation System). It was expected that the test of GAGAN would be completed by mid-2011. Moreover, AIDC (ATS Inter-facility Datalink Communications) would continue to be tested between Delhi and Karachi ACCs, and later between Mumbai and Muscat ACCs.

2.8 India also presented two Information Papers regarding the restructuring of ATS routes in the Kolkata FIR, and other ATM development activity being undertaken in India. The meeting acknowledged the work being undertaken in order to improve safety and efficiency, given the rapid increase in Indian aviation activity.

2.9 Indonesia had a side-bar discussion with Malaysia, which resulted in good progress towards solutions to the issue of major traffic routes crossing RNAV route P627.

2.10 Malaysia advised that all area radar and non- area radar controllers in Kuala Lumpur ACC were now trained and ready for ADS-C and CPDLC (Automatic Dependent Surveillance – Contract). Training was on-going and Malaysia was expected to be ready for Phase 1 of reduced horizontal separations. The meeting noted that the ADS-C/CPDLC installation in Kuala Lumpur was not yet operationally stable however this matter was being worked on to meet the target date for implementation for the reduction of these reduced horizontal separation standards.

2.11 Sri Lanka had fully operational ADS-C and CPDLC, and was in the process of integrating these systems by the end of 2011. It was also noted that flex tracks were being implemented in cooperation with the Maldives.

2.12 Sri Lanka advised that they had experienced some difficulties with the quality of inter-unit voice communication with Trivandrum and Chennai using the VOIP (Voice Over Internet Protocol) system. India confirmed that they are not using the VOIP system for communication with Colombo ACC. The system was being tested on both sides to rectify the problem. Furthermore, Sri Lanka questioned the need for eastbound aircraft overflying Colombo from Africa to be descended from high level such as FL390 to sometimes FL290 before they entered Chennai airspace. Sri Lanka and India met at a sidebar meeting to rectify these issues. Regarding the matter of Southeast Asia bound aircraft being descended, the sidebar meeting agreed that there were a number of steps that should be undertaken to minimise the problem:

- a) Data on aircraft using the Major Northwest/Southeast Traffic Flow and crossing routes must be collected and analysed, as well as data on aircraft NAV/COM capability, and how often the problem of early descents occurred;
- b) India should consider an agreed upper airspace Operational Concept, which can provide a mandate to allow designation of certain requirements such as use of ADS-B and ADS-C as appropriate, RNP, and CPDLC for those portions outside VHF (Very High Frequency) coverage; and
- c) India should consider the installation of an ADS-B system at Port Blair, to provide surveillance services which may allow tactical solutions on the crossing tracks, and an appropriate safety net.

2.13 Thailand advised of the completed installation of the Hat Yai radar site in 2010 and planned installation of five new radar sites before the end of 2013. An ADS-B system was also planned to be installed during the period 2013-14. At the same time, a new ATC Centre was expected to be completed. A surveillance data sharing initiative was commenced with Malaysia during the 13th Malaysia-Thailand ACC Coordination Meeting.

BOBCAT Operational Updates and Enhancements

2.14 Thailand presented information on the enhanced data capability being developed for BOBCAT updates on BOBCAT Operations, the proposal to enhance capability of BOBCAT software and Collaborative Decision Making (CDM) development in Thailand. These enhanced BOBCAT capabilities included slot swapping, slot compression and the ability to allow airline CDM. IATA emphasized that the data indicating poor departure punctuality was a matter of pilot discipline.

2.15 The meeting supported phased implementation of BOBCAT software capability enhancement in the following order of priority:

- a) Stage 1: High Priority
 - (i) Flight Plan and ATS Message Processing;
 - (ii) Flexible Taxi Time
- b) Stage 2: Medium Priority
 - (i) Slot Swapping;
 - (ii) Automatic Slot Compression
- c) Stage 3: Low Priority
 - (i) Slot Allocation Page changes and gate delay calculation;
 - (ii) Integration of data collection and analysis

2.16 Since Slot Swapping and Automatic Slot Compression were to be implemented in Stage 2, detailed parameters may not need to be finalized at this time, pending consideration by ANSPs and airlines involved.

Flight Plan 2012 Implementation

2.17 The Secretariat presented a paper which reminded States of critical milestones for the implementation of Amendment 1, Doc 4444 (PANS ATM) – Flight Plan 2012. IATA advised that their airlines would only be filing in the NEW format from 15 November 2012, and that this amendment was a more fundamental and important change than those made during the period leading up to Y2K. The Secretariat took the opportunity to remind States that those that had not done so already needed to update the FITS (*ICAO Flight Plan Implementation Tracking System*) web site with current information about their Flight Plan 2012 Point of Contact and transition plan.

Indian Ocean Routes

2.18 IATA presented WP09, WP10 and WP11 regarding connector routes in the Mumbai FIR as a first stage towards User Preferred Routes (UPR), the application of UPR in the Indian Ocean, and uni-directional routes for crossing tracks between SE Asia and the Middle East and Africa. The meeting discussed and agreed to the general concept of UPR. It was agreed that there was a need for IATA in the first instance to work with the States involved, to develop the data required to support the concept of operations, and identify the ATM infrastructure that would enable flexible route structures.

2.19 India commented that they had received information about the Mumbai ‘connector routes’ which were presently being studied. India mentioned that they were continuing to discuss the implementation of connector routes to support the AUSOTS extension trial scheduled to commence in March 2011. India advised that recent data indicated that about 55% of aircraft operating in this airspace were not using ADS-C or CPDLC. India also mentioned that there were a number of State aircraft operating in this airspace that were not necessarily in contact with ATC. The meeting agreed that the best course of action was for IATA to informally work with the States involved (and if necessary with the Regional Office) and to report to the next meeting.

2.20 It was noted that the scope of the BBACG did not extend to the total area of interest of the IATA WPs, but the meeting scope may change in the future to allow the AR-1 routes to be dealt with effectively by BBACG.

Bay of Bengal Routes

2.21 Thailand presented IP02, which provided information on the coordination effort undertaken by India, Myanmar and Thailand to improve their ATM. The Secretariat commended the States involved and noted that this was an example of effective coordination, which did not depend on ICAO or ICAO meetings.

ATS Route Catalogue

2.22 The meeting reviewed ATS Route Catalogue, which was developed as a supplement to the Basic Air Navigation Plan (BANP, Doc 9673) and to assist with the amendment/ tracking process. Comments and updates were made to the following proposals which pertain to operations in the sub-region:

- ↗ Himalaya 1: CEA – NGK – INDEK - IATA will review the proposal with Nepal and coordinate a revision.
- ↗ Himalaya 2: KTM – BBD – GGT – KKK – IIM – KMG- The portion between Kathmandu and Imphal has been implemented. China is looking into the implementation of the portion in Chinese airspace.
- ↗ IND 1: BBS – BPL- This will provide a 25NM reduction in track mileage.
- ↗ IND 5: BUTOP – JHANG- Extension of available hours has been requested to 2359 UTC.
- ↗ IND 6: BBS – SERKA- This proposal is no longer required.
- ↗ IND 7: PRA – SERKA – KAMAR- Amendment should be made from KAMAR to SOKAM.
- ↗ SEA 13: HTY – RAN- Thailand acknowledged IATA’s proposal to remove the route from the route catalogue as it is already implemented as W17.
- ↗ THAI 1: KRT – DWI- Thailand will consider the proposal within the context of a holistic route review within the Bangkok FIR, with an expected time frame of 2012-2013. However, coordination will be needed with Myanmar, as the route terminates at DWI.
- ↗ IDO 1: SJ – MABIX- Singapore and Indonesia are already providing the direct routing as traffic permits under their radar coverage. Indonesia, Malaysia and Singapore will review the proposal over the next 12 months.
- ↗ IDO 5: VPG – GIVAL- The proposal can be deleted with the establishment of Y337 westbound.
- ↗ COL 1: KAT – TNV- IATA will review the requirement for this proposal.
- ↗ KAB 1: HANGU – GN- IATA intended to review the proposal as to whether it is still applicable.

Development of State Contingency plans

2.23 The meeting discussed important aspects of ATS Contingency Planning required by Annex 11. The meeting was informed of the need to ensure that each State had a current Contingency Plan that covered issues like Pandemics, and which was compatible with neighboring States. States advised that they had received the ICAO Draft Contingency Plan, based on the Indonesian model to assist them in preparations of their State Contingency Plans.

2.24 States were asked to describe their contingency planning efforts and it was noticeable that many were actively working together, such as the Special Coordination Meeting held involving the Philippines, Thailand, Indonesia, Singapore and IATA to harmonise State Contingency Plans. States were urged to send their plans to the Regional Office when completed.

Seamless ATM

2.25 The meeting discussed the new emphasis on Seamless ATM. The paper promoted discussion on the need for BBACG to increase its scope to include Major Traffic Flows AR-1 and AR-4 (see **Figure 1**), while recognizing that the definition of these traffic flows was outdated and did not include important routes such as from the Middle East to Australia and SE Asia. In this regard, India suggested the inclusion of a new traffic flow (AR-XX) to represent the traffic from the Middle East to both Australia and SE Asia.

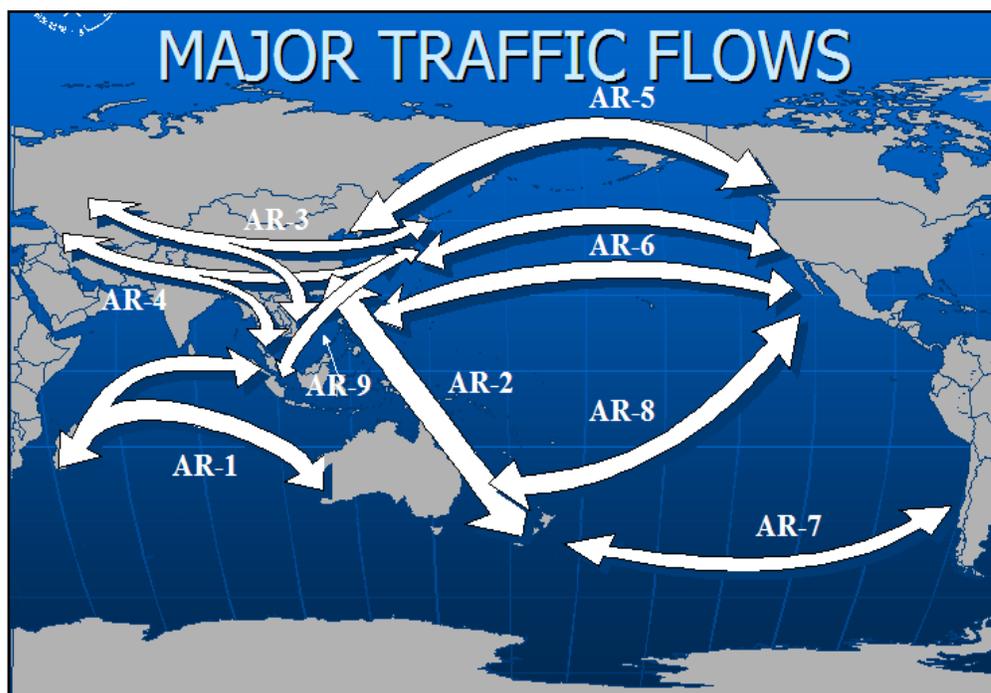


Figure 1: APAC Major Traffic Flows

2.26 IATA supported the Seamless ATM Concept and agreed with the need to amend the scope of the BBACG to cover the traffic flows discussed.

2.27 The Secretariat agreed with IATA that the APAC Region should receive the benefits of Seamless ATM as early as possible, based on more fundamental changes such as improved ATM Coordination Groups than relying on technological programmes. The meeting also discussed the importance of a BBACG meeting being conducted before the end of 2011, in order to maintain the excellent progress in ATM coordination that had been instigated at BBACG/21.

2.28 Recommendations for the ATM/AIS/SAR Subgroup were agreed by the BBACG/21 meeting as follows. The BBACG/21 recommended that the ATM/AIS/SAR SG:

- a) reviews and amends the description of the APAC Major Traffic Flows, to take into account recent route developments, such as the flows from the Middle East to Australia/SE Asia;
- b) reviews the BBACG TORs, to increase its scope to cover a geographical area that includes Major Traffic Flows AR-1 and AR-4;
- c) reviews the name of the BBACG so that it reflects any change in the TOR (suggested names are South Asia – SAACG, or Indian Ocean IOACG, or South Asia Indian Ocean ATM Coordination Group - SAIOACG); and
- d) notes that the BBACG expects to meet again before the end of 2011, and may meet more regularly than once a year if tasks require attention.

Jane's ATC Award – Enabling Technology

2.29 During the BBACG/21 Meeting it was announced by Thailand that the prestigious Jane's ATC Award 2011 – Enabling Technology had been awarded to the BOBCAT system on 7 March 2011. The meeting congratulated everyone that had been associated with the development and implementation of BOBCAT and in particular AEROTHAI.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) note the revised TORs of the BOB-RHS TF;
- c) review and amend the description of the APAC Major Traffic Flows, to take into account recent route developments, such as the flows from the Middle East to Australia/SE Asia;
- d) review the BBACG TORs, to increase its scope to cover a geographical area that includes Major Traffic Flows AR-1 and AR-4;
- e) review the name of the BBACG so that it reflects any change in the TORs (suggested names are South Asia – SAACG, or Indian Ocean IOACG, or South Asia Indian Ocean ATM Coordination Group – SAIOACG);
- f) note that the BBACG expects to meet again before the end of 2011, and may meet more regularly than once a year if tasks require attention; and
- g) discuss any relevant matters as appropriate.

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Appendix A: Amended Terms of Reference

Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF)

- 1) The objective of the ICAO BOB-RHS Task Force is:

In collaboration with affected stakeholders and ensuring inter-regional harmonization, develop and implement strategic, benefits-driven plans to improve en-route airspace efficiency by means of the implementation of reduced horizontal separation (lateral and longitudinal) based on the ICAO RNAV 10 (RNP 10) and RNP 4 PBN navigation specifications along the Major Traffic Flow AR4 (Southeast Asia to Europe, South of the Himalayas and the Middle East).

- 2) To meet this objective the Task Force shall:

- a) Review the existing Bay of Bengal and the Oceanic area of the Mumbai FIR route structures and examine suitability's for implementation of reduced horizontal separation.
- b) Identify areas/routes where the implementation of reduced horizontal separation would bring immediate operational efficiency
- c) Determine the reduced horizontal separation required, taking into account traffic volumes and disposition, approval status of the aircraft operating on the relevant routes, user expectations and the communication and surveillance capabilities of ATS providers involved.
- d) Examine the possibility of a step-by-step or phased implementation of reduced horizontal separation and detail the phases required and the areas/routes concerned.
- e) Develop and action the necessary strategic plans with appropriate timelines to implement reduced horizontal separations based on the APANPIRG Regional PBN Implementation Plan and ICAO Standards and Recommended Practices, whilst taking into account the need for inter-regional harmonization and user requirements.
- f) Ensure the conduct of Annex 11 compliant pre-implementation safety assessments and make arrangements for States to conduct ongoing post-implementation safety monitoring in accordance with ICAO provisions.
- g) Consider setting up appropriate teams/groups which might but not necessarily, include the entire Task Force, to address and implement specific agreed measures within specific airspaces.
- h) Cooperate with other Task Forces and groups which are involved with similar work in adjacent airspaces in order to achieve harmonized inter-regional solutions.
- i) Explore possibilities for further enhancements to operational efficiency of routes through reconfiguration and/or enhanced surveillance.

3) Scope of work:

The Task Force shall adopt a phased implementation programme, as follows:

Phase One: Implement 50NM longitudinal separation using CPDC or CPDLC communications in the Bay of Bengal and the Oceanic area of the Mumbai FIR as well as some portions of the Kabul FIR, on the following ATS routes:

- a) N571 across the Bay of Bengal and the Oceanic area of the Mumbai FIR into Muscat FIR;
- b) L510 across the Bay of Bengal into India airspace joining P628;
- c) P628 across the Bay of Bengal through India, G792 through Karachi FIR and Kabul FIR into Tehran FIR;
- d) UL333 from SERKA (Karachi FIR) through Kabul FIR to SOKAM (BDY Kabul/Tehran FIRs);
- e) B466 from SERKA (Karachi FIR) to PAROD (Kabul FIR)
- f) P762 from DAWEI (DWI) to KAT (Colombo)

Phase Two:

- a) Implement 50 NM longitudinal separation on all other RNAV routes across the Bay of Bengal, Arabian Sea and some portions of the Indian Ocean (for aircraft from Southeast and Southern Asia to South Africa);
- b) Implement 50NM longitudinal separation on L509 from SAMAR through Lahore and Kabul FIRs
- c) Implement 50NM longitudinal separation on N644, L750 through Lahore and Kabul FIRs

Phase Three: *To be determined*

The Task Force reports via the ICAO Bay of Bengal ATS Coordination Group (BBACG) to the ATM/AIS/SAR Sub Group of APANPIRG.

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