

INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE



**REPORT OF THE SPECIAL COORDINATION MEETING FOR THE BAY OF BENGAL AREA
(SCM/BOB) AND THE SIXTEENTH MEETING OF THE BAY OF BENGAL
ATS COORDINATION GROUP (BBACG/16)**

Bangkok, Thailand, 31 January to 4 February 2005

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

Approved by the Meeting
and Published by the ICAO Asia and Pacific Regional Office

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Special Coordination Meeting for the Bay of Bengal area (SCM/BOB) and the Sixteenth Meeting of the Bay of Bengal ATS Co-ordination Group (BBACG/16) were held jointly at the Kotaite Wing, ICAO Asia and Pacific Regional Office, Bangkok, Thailand from 31 January to 4 February 2005.

2. Attendance

2.1 The meeting was attended by 36 participants from Australia, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Singapore, Sri Lanka, Thailand, United States, IATA and IFALPA. A list of participants is at **Attachment 1**.

3. Officers and Secretariat

3.1 Mr. David J. Moores, Regional Officer ATM from the ICAO Asia and Pacific Regional Office, acted as the Moderator and Secretary for the meeting. He was assisted by Mr. Kyotaro Harano, Regional Officer ATM.

4. Opening of the Meeting

4.1 Mr. David Moores, on behalf of Mr. Lalit B. Shah, Regional Director, ICAO Asia and Pacific Regional Office welcomed the participants to Bangkok. This being the first meeting of States in the Bay of Bengal area who were tragically affected by the tsunami on 26 December 2004, Mr. Moores expressed on behalf of ICAO and the meeting, sincerest condolences for the extreme loss of life and suffering being experienced.

4.2 The SCM-BOB was convened in conjunction with the BBACG/16 meeting in follow-up to the recommendation of the Twenty-fourth Meeting of the RVSM Task Force, (RVSM/TF/24, BOB one-year review), 8-12 November 2004 to progress the establishment of an air traffic flow management (ATFM) plan and implementation of ATFM automated systems for the Bay of Bengal traffic flows. This matter is considered a high priority by users and ATS providers, and should be progressed in a timely manner. The meeting would also address data link implementation, a key priority of the Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG), and airspace safety arrangements for the airspaces concerned.

4.3 The tsunami disaster and subsequent international humanitarian aid effort has had a significant impact for civil and military operations in the disaster areas. ICAO is taking a close interest in these activities, and lessons learnt that could be invaluable in enhancing ICAO provisions and guidance to States on contingency planning and search and rescue arrangements.

5. Documentation and Working Language

5.1 The working language of the meeting and the language for all documentation were in English. Five (5) Working Papers and one (1) Information Paper were presented to the SCM/BOB meeting and nine (9) Working Papers and seven (7) Information Papers were presented to the BBACG/16 meeting. The list of papers is shown at **Attachment 2**.

SCM/BOB

REPORT OF THE SCM/BOB MEETING

Agenda Item 1: Adoption of Agenda

1.1 The meeting adopted the following Agenda for the meeting:

Agenda Item 1: Adoption of Agenda

Agenda Item 2: Air Traffic Flow Management System

Agenda Item 3: Establishment of an Operational Trial

Agenda Item 4: Any other business

Agenda Item 2: Air Traffic Flow Management System

Background considerations

2.1 The meeting recalled that at recent meetings of APANPIRG, the BBACG and the RVSM/TF all recognized a need to improve the overall management of traffic flows across the Bay of Bengal area. In particular for the westbound traffic flows to Europe through Afghanistan airspace.

2.2 The APANPIRG/15 meeting (August 2004) had noted the considerable efforts being made by States to collaborate together with IATA to improve the ATFM over the Bay of Bengal area. It was recognized that considerable constraints on the airspace were beyond the control of the States concerned. However, the APANPIRG/15 meeting encouraged all parties to continue their efforts and to take into account the benefits to be derived from ATM automated systems.

2.3 During the RVSM/TF/24 meeting extensive discussion took place regarding aspects of ATFM. The Task Force/24 meeting was briefed by the FAA on the *DOTS+* automated flow management system, and Airservices Australia made a presentation on general flow control techniques and their Central Traffic Management System (CTMS) that was being used to manage traffic into Sydney, using software called *SKYFLOW*. In regard to the Airservices system, they had elected to remove the *CTMS/SKYFLOW* system from further consideration as an alternative ATFM system tool for deployment in the Bay of Bengal area. RVSM/TF/24 recommended that a special coordination meeting should be convened to study the matter in greater detail, and consideration be given to conducting an operational trial to enable the States concerned to assess the effectiveness of any automated ATFM system selected and the corresponding ATFM plan.

Thailand's ATFM developments

2.4 Thailand advised the meeting of its air traffic flow management developments for the Bay of Bengal area, since the need to establish this service had been identified following the implementation of the EMARSSH revised route structure on 28 November 2002 and RVSM on 27 November 2003. As a result of these improvements, airspace capacity had increased significantly, but a negative side effect was the increasing number of aircraft, which could now plan to depart from South East and South Asian airports during the evening westbound peak period.

2.5 Over a relatively short period of time, it had become evident that flight level and routing restrictions within Afghanistan airspace due to military operations, as well as other impediments such as RVSM transition to conventional flight levels prior to entering the Kabul FIR (non-RVSM airspace), some type of ATFM would be required to manage aircraft traffic through this area.

2.6 The meeting was advised that according to IATA's forecast traffic growth in the Asia/Pacific region, 6 per cent per annum increase in traffic was forecast for the next 15 years. This effectively would double air traffic in the next 13 years. However, over the past 12 months, this figure had been significantly exceeded in many Asian States. In addition, the increase in low-cost airlines entering service, as well as many airlines indicating that their fleet size would substantially increase over the next few years, it could be expected that the doubling of traffic would be much earlier than previously forecast.

2.7 Taking all factors into account, Thailand supported the introduction of a robust ATFM system to overcome the present and future traffic requirements over the Bay of Bengal area, and would fully support and assist ICAO, other States concerned and IATA to move forward quickly on this important issue.

2.8 Thailand informed the meeting that they had already commenced work on developing an ATFM computer model and had set a target date to complete testing, acceptance and completion by the third quarter of 2005. In recognizing work being done in this area by other States involved, Thailand was prepared to take a proactive role in the establishment of an effective ATFM system for the area under consideration.

2.9 In view of the complexities and size of this project, as well as the urgency in overcoming the airspace management problems, Thailand was also interested in working with partners to share ideas and workload for the purpose of putting in place a system or systems to meet present and future airspace management requirements, and allow for a smooth flow of traffic for the foreseeable future.

2.10 Thailand reminded the meeting that any system or systems implemented to increase the efficiency of traffic movements in the area under consideration, should not only be practical and robust, but also have the flexibility to adapt to changing circumstances such as adverse weather conditions, which occurs frequently in the Bay of Bengal area as well as restrictions and special requirements that may be imposed by States as in the case of Afghanistan.

Users perspective

2.11 IATA reminded the meeting that the problem of lengthy delays and uneconomic routes and flight levels for long haul flights from South East Asian airports to Western Europe across the Bay of Bengal and Indian Continental airspace were well known. Much effort had been directed by all concerned towards addressing these issues such as the implementation of the EMARSSH routes, RVSM and various other measures among States to coordinate the traffic flow. While there had been some relief, the meeting recognized that the problem of congestion on a single preferred route being used by the airlines, still continued to occur from time to time.

2.12 The full benefits of the EMARSSH were not realized because the full route structure as originally agreed to by States, could not be implemented. This provided for four independent Asia – Europe flows across the northern half of the Bay of Bengal and through India, Pakistan and Afghanistan. Instead, only two independent flows via TIGER or SAMAR could be implemented.

2.13 In regard to RVSM implementation on 27 November 2003, the number of available levels doubled over the Bay of Bengal and the Indian and Pakistan FIRs. However, a good percentage of these levels were lost through the non-implementation of RVSM in Afghanistan airspace through which the bulk of the long haul traffic had to transit. As only FL310 and FL350 could be operated in the Kabul FIR, the additional capacity afforded by the implementation of RVSM could not be realized.

2.14 The non-implementation of RVSM in Kabul FIR and the consequent requirement for Pakistan to provide transition between RVSM and CVSM flight levels, also led to the loss of capacity in the Lahore FIR, where A466 and N644 were taken as a single route by ATC for traffic separation purposes, even though they diverge at Dera Ismail Khan (DI) into Kabul FIR. Now that ATS service providers have had more than

one year of experience after RVSM implementation, IATA considered it timely for the restrictions along these routes to be reviewed and relaxed, thereby providing more capacity.

2.15 A significant improvement was made through the release of FL280 for civil flights overflying the Kabul FIR for three routes, A466, N644 and L750 for a period of four hours (2000-2400UTC) at night, and India lowering the minimum en-route level from FL310 to FL300 on L333 in the Delhi FIR.

2.16 Additional improvements were made with P628 being extended from ASOPO in India, first to Rahim Yar Khan (RK) in Pakistan, and thereafter direct to Kandahar on 1 November 2004. This was a significant improvement as it reduced flying time for as much as 100 NM, and also reduced fuel burn making this route a viable alternative to the preferred route L759/L750. Spreading some of the traffic onto this route during the peak period when the upper winds were not a major problem, had eased traffic congestion and reduced some delays at departure airports.

2.17 The measures implemented to date have led to an easing of the traffic congestion over the Bay of Bengal during the peak night time period. However, in IATA's view this was a temporary respite and it would be unrealistic to assume that this situation would last very long. Increase in traffic volumes not just from the South East Asian airports but possibly more dramatically from the airports in the Indian continent itself, was inevitable. As the number of slots in Kabul FIR were unlikely to increase significantly, the problem of traffic congestion would return. Ultimately, a comprehensive air traffic management plan including the implementation of ATFM automation for the whole of the Bay of Bengal was the only viable long-term solution. However, there continued to be an immediate need to manage the evening bunching of traffic overflying Kabul FIR.

2.18 IATA expressed its gratitude to all who had contributed to implementing measures to improve the traffic flow over the Bay of Bengal. In particular IATA appreciated the efforts of India, Pakistan and the Afghanistan authorities for their outstanding cooperation in making the route improvements. Also IATA thanked ICAO for providing the leadership, and for facilitating the meetings and guiding the discussions.

2.19 In regard to the traffic management arrangements for A466 and N644, Pakistan advised the meeting that they would look into the matter.

2.20 The meeting recognized the efforts made by States to date to improve the efficiency of air traffic management for the peak westbound traffic across the Bay of Bengal and transiting Afghanistan airspace. It was also recognized that providing operators with a comprehensive picture of the availability of ATS routes and flight levels prior to departure to allow operators to plan their flights accordingly was the core issue. Tactical solutions applied after aircraft departed did not have a significant effect on reducing departure delays. Therefore, making use of automated tools to provide a comprehensive picture to operators in advance of the level and route availability was the most effective way to reducing departure delays and to optimize airspace utilization.

Establishment of ATFM Plan and automated system

2.21 The meeting on reviewing the issues described above agreed to support Thailand's initiative to develop and operate an automated ATFM system to address the westbound traffic flow problems. The meeting also agreed that in the longer term, it would be necessary to put in place a more comprehensive ATFM system to cater for the increasing traffic.

2.22 To progress this work, the meeting agreed that a dedicated Task Force should be established under BBACG. To examine this in more detail, the meeting formed a Special Working Group to prepare Terms of Reference for a Task Force to plan and develop an ATFM service for the Bay of Bengal and South Asia.

2.23 Following discussion on this item, the Working Group drafted the following Terms of Reference of the ATFM Task Force for the Bay of Bengal and South Asia region:

Objectives:

The objectives of the Task Force are to:

1. To enhance and facilitate the orderly and efficient flow of Air Traffic across the Bay of Bengal and South Asia;
2. To minimize ground and enroute delays;
3. To maximize capacity and optimize the flow of air traffic within the area;
4. To plan for and manage future ATS workload in the light of forecast increased traffic flow within the area; and
5. To assess the economic and environmental impact of the implementation of the ATFM system.

To meet these objectives the Task Force shall adopt a phased implementation program me as per the following:

Phase One: Flights planning to transit the Kabul FIR

Phase Two: Other international flights crossing the Bay of Bengal and/or South and South East Asia areas

Phase Three: Future planning for increased traffic within the Bay of Bengal and South and South East Asia areas

(For the purposes of the ATFM/TF, South Asia includes , India, Nepal, Pakistan and Sri Lanka)

Phase One

2.24 The meeting agreed that priority should be given to resolving the immediate problems encountered by westbound traffic operating to Europe during the nighttime period. In order to achieve a solution, the following steps were identified to assist in the implementation of ATFM by the third quarter of 2005:

- a) complete an analysis of the traffic data including Departure/Arrival data;
- b) identify bottleneck areas;
- c) develop an ATFM tool to optimize the usage of all ATS routes and levels available through the Kabul FIR;
- d) Undertake a series of trials and demonstrations of the ATFM tool; and
- e) Develop an Action Task List, as shown at **Appendix A**.

ICAO Reference Documents:

- *Procedures for Air Navigation Services ? Air Traffic Management* (Doc 4444, 3.2 - Air Traffic Flow Management)
- *Air Traffic Services Planning Manual* (Doc 9426,)

2.25 In view of the timeframe for Thailand to develop an operational system by the third quarter of 2005, the meeting agreed that the Task Force should hold its first meeting as soon as practicable. In this regard, the Secretariat advised that the joint FIT-BOB/SEA seminar and meeting was scheduled for 18-22 April 2005, and if States included the ATFM/TF member in their delegation, it would be possible to arrange an initial meeting of the Task Force during the period of the seminar (18-19 April). Also, States were urged to nominate a person to serve on the Task Force and provide contact details to the Secretariat.

2.26 The meeting agreed that in view of the tight timescale, the Task Force would need to perform its tasks in an efficient and timely manner, and a core team approach would be adopted. In consideration of appointing a chairperson, the meeting requested Australia if they would be prepared to make Mr. Ron Rigney available to chair the Task Force as he had considerable experience in a leadership role with ICAO regional projects such as Y2K contingency planning, EMARSSH and RVSM. Australia supported the request, subject to the normal Airservices Australia approval process.

2.27 The meeting requested Thailand to provide more details on the concept of operations of the ATFM system being developed. Thailand agreed to make this available to the Regional Office by early April 2005 for circulation to States and users concerned, and to update the third meeting of the Regional Airspace Safety and Monitoring Advisory Group (RASMAG/3) scheduled to be held on 6-10 June 2005 at the Regional Office, Bangkok.

2.28 The meeting requested the Task Force members to continue discussions over next the few weeks "off-line" with key organizations/industry stakeholders to consider/evaluate options for an ATFM tool and to update FIT-BOB/SEA at its April meeting.

Agenda Item 3: Establishment of an Operational Trial

3.1 In regard to implementation of a Bay of Bengal ATFM system, the meeting agreed that an operational trial would be required and this matter would be considered further by the ATFM/TF.

Agenda Item 4: Any other business Tsunami disaster briefing by States

4.1 States present, India, Indonesia, Malaysia, Thailand and Sri Lanka affected by the Tsunami disaster that struck the Bay of Bengal coastal areas on 26 December 2004 were requested to provide information on the impact of the disaster on aviation activities. Both Malaysia and Singapore supported the movement of humanitarian flights arriving and departing from the disaster areas in Indonesia and Thailand, and provided information on air traffic arrangements in their respective airspaces. They regulated traffic by imposing a slot control system, which was difficult to operate due to uncertainties of aircraft movement times. ATC workload had increased considerably with this sudden increase in traffic and many flight crews were not familiar with the airspace and operating environments. In general, air traffic of the international airspaces concerned was well managed and all humanitarian flights were expeditiously approved and handled within the constraints of the disaster areas.

India

4.2 India informed the meeting that their coastal areas from Chennai southwards and the Andaman-Nicobar islands were severely hit. The worst affected areas were the Andaman Islands in the Bay of Bengal close to the epicenter of the earthquake where the airfield at Car Nicobar was completely submerged

by sea water resulting in great loss of lives and assets. A high level National Disaster Management Group immediately got activated and Rescue & Relief operations were commenced in an organized manner with all agencies involved at the National level. A major difficulty was relief reaching the disaster affected areas, which at first had to be brought by sea. Helicopters for Search and Rescue including air dropping of relief to remote affected areas were sent from the Indian mainland via Myanmar to the Andamans.

4.3 The airport at Port Blair on the Andaman Island was brought into service but only 5,500 ft of the 10,000 ft runway could be made available due multiple cracks on the runway surface and the largest civil aircraft that could be operated was the B737 type. Only two aircraft could be accommodated on the apron simultaneously at this airport and civil relief flights from the airports in mainland had to be planned and coordinated for their arrivals at the Port Blair airport and their fuelling requirements had to be considered. Approximately 10,000 people were flown out from the Andaman Islands and 500 tons of relief material delivered by civil aircraft at Port Blair airport. India was facilitating without delay all humanitarian flights transiting their airspace to airports in other Tsunami hit States in the Region. Other civil airports in the mainland close to the affected areas were put into 24 hrs operational status to accommodate operation of rescue and relief flights including international flights. Air Traffic Services throughout Indian FIRs and airport operations in India remained unaffected. Immediate action was also initiated to send relief material and services by sea to Sri Lanka which was also affected severely.

Indonesia

4.4 Indonesia advised that from a civil aviation perspective, the main problems in the emergency relief effort to the Banda Aceh area, one of the worst hit areas of Sumatra, were associated with ground handling and parking spaces at the two main airports involved Polonia Airport Medan, the main hub for humanitarian aid to Aceh and Blang Bintang Airport, Banda Aceh. Both airports handled major increases in aircraft and cargo far in excess of airport capacity. For example, Banda Aceh which normally handled about 3 flights a day experienced a highest daily total of 180 flights not including helicopters. This placed an enormous burden on the limited airport services, resulting in lengthy delays in turning aircraft around and unloading cargo. Also, the increased size of aircraft was a major problem. The Banda Aceh control tower was damaged by the earthquake and several days later a mobile tower was airlifted from Singapore. The airport aerodrome control service had been downgraded to flight information service and the operating hours increased from 12 hours a day to 24 hours. Extra personnel to operate all airport services had to be brought in from outside. To date 132,197 persons lost their lives and 96,232 are missing. The scale of the disaster was unimaginable and the response of the international community has been overwhelming.

Malaysia

4.5 In Malaysia the most affected areas were the northwestern coastal areas of Peninsular Malaysia (Penang Island, Kuala Muda and Kedah) where the death toll was 68. Official Support Centres for humanitarian flights were established at: Subang (Kuala Lumpur International Airport), Penang, and Langkawi. Other Centres used were at Butterworth, Sepang and Johor. During the first week of January only 3 humanitarian flight movements were recorded at Subang but on 20th January onwards, traffic increased to 37 movements per day. For overflying humanitarian flights crossing the Kuala Lumpur TMA for January alone, there were 30 movements per day. For the first week, schedule flights departing from Kuala Lumpur International Airport (WMKK) to Medan airport (WIMM) in Indonesia were affected as a result of insufficient parking bays. Also, flights to Medan and Banda Aceh (WITT) airports required prior coordination for arrival slot times. During the first few days of operations, delays were approximately 12 hours. Currently, the situation was under control and flights proceeding into the two airports still required coordination for slot times but delays were not extensive. Medan airport provides slot times through an AFTN message and AIS informs airlines planning to land there. For flights to Banda Aceh airport, it is still necessary to coordinate via direct telephone for slot times.

Sri Lanka

4.6 Sri Lanka was shocked by the sudden scale of destruction as previously in their country's history they had not experienced major natural disasters of this scale. Nearly 40,000 people lost their lives in a matter of minutes and their disaster plan could not have foreseen this occurring. For a small country with so many casualties, the resources available to cope with the size of the disaster were inadequate. Also, being a holiday period and the popularity to Sri Lanka's resort areas, this was a peak tourist period. Therefore, it took some time to bring emergency services to the areas affected and an international appeal for assistance was made by the government. The immediate need, as in all the areas affected, was for search and rescue, health, medicine, food, clothing and clean water and sanitation. The restoration of electricity, telephone, transportation, and permanent shelter for the homeless would follow.

4.7 As for civil aviation aspects, Sri Lanka advised that air traffic control services were fully geared to handle the increased number of aircraft which flew in to the country with humanitarian relief aid, and also the large number of overflights to other affected States. The major concern was the lack of adequate parking space at Colombo International Airport which had only 21 parking stands available. The unloading time varied depending on the size of aircraft and the type of cargo, thus some aircraft remained on the ground for several hours. A slot system was effected to overcome the parking difficulties, and this proved to be successful.

Thailand

4.8 Thailand advised in respect to civil aviation activities at Phuket Airport, the airport runway is 300 metres from the beach and the tsunami wave flooded about 300 metres of the runway. An aircraft on final approach at the time the wave struck, executed a go around and diverted. The runway quickly drained after the waves subsided and the airport was put back into full operational service. A total of 29 flights were cancelled that first day. The main problem at the airport was capacity constraints due to the large number of search and rescue and humanitarian flights that were quickly mounted. The Utopao naval base near Pattaya was also used to handle a large number of humanitarian aid flights. It was necessary to impose a slot control system to regulate the flights operating to/from Phuket airport. Overall, there was not much adverse affect on the air traffic services in Thailand.

4.9 All the States affected, brought their emergency disaster plans into effect with senior officials in attendance which facilitated decision making and avoided any delays to approving international operators involved in disaster relief. A common observation was the lack of prior planning of aircraft operators for the conditions experienced at the airports serving the disaster areas. This resulted in some aircraft not having sufficient fuel for immediate departures after unloading and being stuck on the ground for some time, thus blocking parking spaces. Also, some long haul crews did not bring relief crews and crew hours led to some aircraft being grounded for crew rest periods. With many aircraft types operating for the first time at some airports, there were no ground handling facilities such as tow bars and unloading equipment. If operators did not bring all aircraft support services, this led to excessive delays and blockage of parking spaces.

4.10 The meeting expressed its appreciation for the information shared by the States concerned and, as this was not a pre-planned briefing, it was not possible to look into the aviation issues in any great detail. The meeting suggested that the opportunity should be taken to make use of the ICAO SAR seminar at Chennai on 7-11 March 2005 to consider the aviation related activities in greater detail as there were valuable lessons to be learnt from this unprecedented human tragedy.

ATFM Task List

The Implementation Task Force activities were planned via the following task list.

ID	Task	Start Date	Finish Date	Completion Date	Reference Source/Remarks
1.0	Identify Operational Needs				
1.1	Develop the operational concept document				
1.2	Co-ordinate and update operational concept				
1.3	Define airspace affected				
1.4	Define data collection plan				
1.5	Examine the operational factors and workload associated with implementation				
2.0	Conduct Cost Benefit Analysis				
2.1	Determine need for CBA				
3.0	Safety Assessment				
3.1	Data to be provided to SMA for ongoing safety assessment updating				
3.2	Risk assessment of Traffic Flow proposed under ATFM plan				
3.3	Collect safety analysis data				
3.4	Prior to implementation verify with SMA results of Safety Assessment as required				
4.0	Review Large Scale Weather Deviation Procedures				
4.1	Collect weather and turbulence data in Oceanic FIRs in preparation for analysis				
5.0	Determination of Systems and Performance Requirements				

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ID	Task	Start Date	Finish Date	Completion Date	Reference Source/Remarks
5.1	Establishment of coordination links between Central Flow Management Unit and ACCs				
5.2	Determine and develop interface requirements between Airlines and Central ATFM Unit				
5.3	Assess workload and procedures				
6.0	Complete coordination with adjoining States and Industry Organisations				
6.1	Publish necessary AIP amendments				
6.2	Communicate with States, ATS providers, communications service providers, and international airspace users				
6.3	Confirm common understanding of published requirements				
6.4	Develop, co-ordinate and submit necessary ATFM documentation				
7.0	Develop Airline Procedures				
7.1	Review contingency procedures for applicability				
8.0	Develop ATC Procedures				
8.1	Develop and publish ATFM procedures				
8.2	Determine need for simulations				
9.0	Training				
9.1	Conduct training for air traffic controllers				
9.2	Information dissemination to Airline Operators				
10.0	Perform Initial System Verification				
10.1	Complete trials and evaluation of ATFM tool and coordination procedures with ATFM Unit				
11.0	Final Implementation Decision				
11.1	Review all factors affecting implementation decision				

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ID	Task	Start Date	Finish Date	Completion Date	Reference Source/Remarks
11.2	Declare full operational capability within defined area				
11.3	Develop post-implementation follow-up plan for expansion of ATFM				
12.0	Monitor System Performance				
12.1	Perform follow-on monitoring				

BBACG/16

REPORT OF THE BBACG/16 MEETING

Agenda Item 1: Adoption of Agenda

1.1 The meeting adopted the following agenda as the Agenda for the meeting:

<u>Agenda Item 1:</u>	Adoption of Agenda
<u>Agenda Item 2:</u>	Review and update BBACG/15 Work Plan
<u>Agenda Item 3:</u>	Review current operations across the Bay of Bengal and identify problem areas
<u>Agenda Item 4:</u>	Air traffic flow management plan
<u>Agenda Item 5:</u>	ATS route developments
<u>Agenda Item 6:</u>	State Contingency Planning
<u>Agenda Item 7:</u>	Any other business
<u>Agenda Item 7:</u>	Date and venue for the BBACG/17 meeting

Agenda Item 2: Review and update BBACG/15 Work Plan

2.1 The meeting reviewed and updated the Work Plan agreed upon at the BBACG/15 meeting held at Bangkok on 13-17 September 2004. The meeting agreed that as the items related to ATS routes were being dealt with by the ARNR/TF, these would be removed from the Work Plan. However, the meeting would be kept up to date with progress being made by the APANPIRG ATS Route Network Review Task Force (ARNR/TF).

2.2 The Secretariat drew attention to Items 8 and 13 concerning the SAR Seminar and SAREX to be hosted by Airports Authority of India at Chennai, India on 7-11 March 2005. This seminar would provide an opportunity for States to progress their SAR agreements and arrangements, and in particular to take into account the lessons learnt from the tsunami disaster.

2.3 In regard to Item 17 – “Introduce flexible use of FL300 on Bay of Bengal Routes”, Thailand advised that since 1 October 2004 a trial was being conducted and some improvement had been experienced in sharing of flight levels between 1330-1930 UTC between Bangkok, Kuala Lumpur and Singapore ACCs. However, there was still room for further improvement and the States concerned would continue their coordination effort to further refine procedures. IATA, whilst appreciating the efforts to apply more flexible use of levels tactically, reiterated that the primary problem remained ground delays, which were not being reduced due to a lack of information available to operators for pre-departure planning. The ATFM system being considered would need to fully address this issue.

2.4 The meeting was advised that in regard to the flexible use of FL300, there had been occurrences of ATC loop errors. The States concerned agreed to examine the causes in detail and the operational trial would continue to the end of March 2005. The issues involved would be thoroughly examined and appropriate mitigating action taken. Further, the meeting was advised that a coordination meeting was being planned between States concerned as recommended by the ICAO SIP.

2.5 Concerning Item 19 on the use of M 0.84 on L759, there had been considerable discussion at previous meetings on the limitation of some aircraft types to operate above M 0.82 at FL280, and M 0.83 and above at FL300. Controllers need to be made aware of these restrictions and avoid assignment of M 0.84

in these cases. The Mach number technique (MNT) would need to be applied using the differential time adjustments prescribed. The use of the fixed speed restriction of M 0.84 on this route should be reviewed, as not all aircraft can fly this speed at all levels.

2.6 Item 24 required the collection of traffic movement data for the Bay of Bengal routes for the month of July 2004 for updating of the safety assessment. However, it had been reported by MAAR to RASMAG that not all States had submitted the data, even after the Regional Office had sent reminders. After persistent reminders, most of the data has now been collected. The meeting reminded the States concerned of the importance of keeping the safety assessment up to date. This is to be carried out annually and in the future, traffic sample data for all airspace concerned, including the Bay of Bengal airspace, would be based on the December traffic, as this was one of the busiest months. One of the problems in coordinating collection and compilation of data was the change in office bearers and notification to MAAR of new contact persons.

2.7 The meeting urged States to keep MAAR and the Regional Office informed of any changes to the principal point of contact. This was also relevant to changes to representatives attending ICAO implementation meetings and for follow-up activities.

2.8 In regard to Item 25 on implementing 2 NM offset procedures, most States concerned in the Asia/Pacific region were able to meet the agreed AIRAC date, 20 January 2005. Australia advised that after consideration of a number of issues, a decision had been taken to defer implementation to align with New Zealand's decision to implement the 2 NM offset procedure on 17 March 2005. Australia also informed the meeting that in view of the proposed introduction of the 2 NM offset procedure, the existing ADS Route Conformance Warning (ARCW) parameter within the Australian TAAATS System would most likely be expanded from 2 NM to 4 NM.

2.9 IATA requested that ATS route G792 from Kandahar – ASLUM (position on the Kabul/Lahore FIR boundary) available from FL310 to FL390 be approved for 24 hour operations. G792 was implemented by the Collation Forces Air Component Command (CFACC), the control authority for Afghanistan airspace for a limited period at night between 1900-2359 UTC and completed the route extension of P628 ASOPO – RK. The meeting agreed that this would be of considerable benefit to civil operators as it would avoid aircraft having to route via Kandahar – B466 – G452 – RK during the hours of closure, thus negating the benefits of the P628 route extension. The Regional Office would coordinate with the parties concerned.

2.10 The updated Work Plan is shown at **Appendix A**.

Agenda Item 3: Review current operations across the Bay of Bengal and identify problem areas

RVSM matters

3.1 The Secretariat informed the meeting of the activities of the RVSM/TF/2 meeting held on 8-12 November 2004, which carried out the one-year review of the implementation of RVSM in the Bay of Bengal and Beyond area on 27 November 2003. It was noted that in some cases States had experienced a few minor issues, however no major problems were evident.

3.2 The Monitoring Agency for the Asia Region (MAAR) had reviewed the safety assessment and verified that the TLS of 5×10^{-9} fatal accidents per flight hour had been met. The RVSM/TF/24 meeting declared full RVSM operational capability for the Bay of Bengal and Beyond area since RVSM operations were progressing well and the safety level continued to be met.

3.3 As the work of the RVSM/TF for the Bay of Bengal had been completed satisfactorily, it was agreed by RVSM/TF/24 that outstanding issues relating to RVSM operations in the Bay of Bengal and Beyond

area should be completed bi-laterally by the States concerned, in consultation with the ICAO Regional Office and IATA. Also, ATM/AIS/SAR/SG, BBCAG and RASMAG would continue to address relevant RVSM issues and take appropriate follow-up action.

3.4 The RVSM/TF/24 meeting also considered other air traffic management issues concerning the Bay of Bengal including: flexible use of RVSM flight levels, ATS route changes in Indian FIRs, improvement to the transition procedures between Yangon and Kunming FIRs, development of an ATFM plan and ATFM tools, and the adoption of RVSM phraseologies in Amendment 3 to the *Procedures of Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) applicable on 25 November 2004. States were reminded to note this amendment and adopt the phraseologies, which were previously in the Regional Supplementary Procedures (Doc 7030).

3.5 The meeting was reminded that MAAR was also responsible to establish and maintain a central registry of State RVSM operational approvals of operators and aircraft. This was part of a global database, which MAAR was required to keep up to date, and States were requested to provide RVSM approval records of all registered aircraft to MAAR. It was important that this information was kept up to date, as it was the only source of data available to ATS providers to check on RVSM approval status and provided a means to prevent non-compliant aircraft and operators from operating in RVSM airspace.

3.6 The meeting was updated by the Secretariat on the outcomes of the RVSM/TF/22 (September 2004), which undertook a review of the modified single alternate flight level orientation scheme (FLOS) operating in the West Pacific and South China Sea (WPAC/SCS) airspaces and the single alternate FLOS being applied in the Bay of Bengal and North-East Asia areas.

3.7 To address the operational difficulties being experienced by ATS providers for the transition of aircraft between the two flight level allocation schemes, RVSM/TF/22 considered a proposal to revise the RVSM flight level allocation scheme as shown below:

Class I	–	Both ways: FL310, FL320, FL350, FL360, FL390, FL400
Class II	–	Eastbound: FL290, FL330, FL370, FL410 Westbound: FL280, FL300, FL340, FL380
Class III	–	Eastbound: FL310, FL350, FL390 Westbound: FL320, FL360, FL400
Class IV	–	All flight levels in the RVSM flight level band subject to bilateral agreement between FIRs to avoid ‘bunching effect’

(A chart depicting the routes and categories is provided in **Appendix B**)

3.8 The proposed assignment of levels for the large scale weather deviation on the parallel routes agreed were as follows:

Northbound:	FL310, FL350, FL390
Southbound:	FL320, FL360, FL400

3.9 The next meeting of the Task Force (RVSM/TF/26) is scheduled for 25-29 April 2005, and it was intended that the meeting would adopt a revised flight level allocation scheme.

Special Implementation Project for the Bay of Bengal

3.10 The meeting was informed by the Secretariat of the Bay of Bengal Implementation Project (BOB-SIP) carried out by the Regional Office. The BOB-SIP activities involved experts from the Regional Office ATM and CNS disciplines visiting seven States and eight ACCs in the Bay of Bengal area during November/December 2004 in order to study and evaluate ATS coordination practices and procedures, including the effectiveness of point-to-point and air-ground communications. The States (ACCs) visited were Bangladesh (Dhaka), India (Chennai and Kolkata), Malaysia (Kuala Lumpur), Myanmar (Yangon), Singapore, Sri Lanka (Colombo), and Thailand (Bangkok).

3.11 In general terms, the SIP reports provided identification of specific problems with discussion and proposals to address the problems identified. In many instances, individual recommendations were formulated to assist States to focus on particular issues. The States involved were, in principle, committed to taking actions on SIP recommendations. In addition to State specific issues, the SIP report covered the following:

- a) Air Traffic Flow Management (AFTM) issues,
- b) ADS/CPDLC issues,
- c) Airspace Safety Services in the Asia region,
- d) ATS Coordination with Adjacent ACCs,
- e) Airspace Classification,
- f) Air Traffic growth and proposed Upper International Airspace Management within the Bay of Bengal,
- g) Aeronautical Fixed Service – AFTN,
- h) Aeronautical Fixed Service – ATS Direct Speech Circuits, and
- i) Aeronautical Mobile Service – HF and VHF.

3.12 The meeting supported and noted the value of conducting these SIPs and the assistance it provided to States. Further information on item f) is provided below.

Upper International Airspace Management within the Bay of Bengal

3.13 Thailand had considered the recommendation below made by the Bay of Bengal SIP project, which were pertinent to all States involved concerning the concept of a revised upper airspace management process over the international waters of the Bay of Bengal. The concept takes into account consideration of the expected traffic growth in this area and the capabilities of CNS/ATM solutions and other measures to cater for this increase. The SIP made the following recommendation:

Recommendation**UPPER AIRSPACE MANAGEMENT OVER THE INTERNATIONAL AIRSPACE OF THE BAY OF BENGAL**

That, taking into account the forecast increase of international flight operations over the Bay of Bengal, concerned States are requested to support an initiative to

investigate a process whereby a mechanism is established to look at all issues regarding this important area and develop procedures to safely, efficiently and expeditiously manage future aircraft operations in the upper airspace over the international waters of the Bay of Bengal.

3.14 Thailand reminded the meeting that the 35th Session of the ICAO Assembly held at ICAO Headquarters, Montreal from 28 September to 8 October, 2004 included in its report on update of the 33rd Assembly Resolution A33-14, Appendices A to X inclusive under Assembly Resolution A35-14 ? **Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation under, *inter alia*:**

Appendix X

The provision of air traffic services

Whereas cooperative efforts between Contracting States could lead to more efficient air traffic management;

The Assembly resolves that:

2. taking into account the need for cost-effective introduction and operation of CNS/ATM systems, States give consideration to cooperative efforts for introducing more efficient airspace management, in particular, the upper airspace.

Associated practice

Contracting States should consider as necessary establishing jointly a single air traffic services authority to be responsible for the provision of air traffic services within ATS airspace extending over the territories of two or more States or over the high seas.

3.15 The traffic growth in the Bay of Bengal area was expected to significantly increase above IATA's recent forecast of 6 per cent annually over the next 15 years. To cope with increasing demand, implementation of data link services has been given priority within APANPIRG's CNS/ATM plan for the region. This will enable greater airspace capacity by improving surveillance and communications in the non-radar airspace of the region, and support a reduction in horizontal separation, eventually to 30 NM. As noted elsewhere in this report, the present air traffic management structure in the Bay of Bengal was not providing for optimum efficiency and utilization of airspace, and was unlikely to efficiently cater for this significant increase in traffic. A major problem with the present system of operations was the number of FIRs (8) and ACCs involved in the control and management of air traffic in the upper airspace across the Bay of Bengal.

3.16 In line with Assembly Resolution A35-14, Thailand invited States to consider this matter with a view to improving the airspace air traffic management in the Bay of Bengal by allocating the international upper airspace to fewer controlling authorities, which would in turn streamline coordination and ATS procedures, especially with the use of ADS/CPDLC. This type of airspace management would significantly simplify and enhance operations in this airspace. It should also be noted that, if ADS and CPDLC were introduced under the present airspace arrangements, several impediments including additional log-on requirements would negate to some degree benefits of introducing these valuable ATM tools.

3.17 The meeting was also advised that in restructuring airspace and air traffic management it was not intended that there would be any changes to FIRs in this area under this proposed solution.

3.18 The meeting appreciated the information provided by Thailand and agreed that this should be studied further by States. The Secretariat pointed out that reorganization of airspace had been carried out or was being planned by a number of States in the region to reduce the number of FIRs and ACCs, e.g.

Australia, Indonesia and Japan. ICAO was encouraging States to adopt a proactive approach along these lines as this was a cornerstone to the ICAO ATM operational concept, which would allow for the maximum benefits in using data link services in the international non-radar airspaces.

3.19 IATA expressed full support for Thailand's proposal and encouraged States to take the next step and examine how such changes could be implemented, which would have significant benefits for international civil aviation operations as well as further enhancing safety.

Regional Airspace Safety Monitoring Advisory Group (RASMAG)

3.20 The meeting was updated by the Secretariat on the outcomes of the RASMAG/2 meeting held on 4 – 8 October 2004. The meeting recalled that the RASMAG was established by APANPIRG/14 (2003, Conclusion 14/48 refers) to provide a regional body mainly made up of safety management experts drawn from the regional monitoring agencies and States involved in these activities. RASMAG meets bi-annually and reports to APANPIRG on the outcomes of safety monitoring activities. It would also advise States, when requested, on the setting up of airspace safety monitor services.

3.21 RASMAG had reviewed the requirements for providing safety management services for the ATS routes and airspaces in the APAC region. It had been determined that a number of areas were not being provided with these services and the updating of safety assessments had not been done for some time. The Bay of Bengal area was one of those areas affected.

3.22 RASMAG called upon those States responsible to establish the required safety management services and undertake the safety assessment updates as soon as practicable. Details of the safety management services and arrangements established for the region are shown in **Appendix C**.

3.23 In regard to its reporting procedures, RASMAG had agreed to an annual review of safety assessments to verify that the TLS was being met for all international airspaces in the Asia /Pacific region where this was required. The results of this review would be reported to APANPIRG.

Establishment of a Safety Monitoring Agency (SMA)

3.24 The meeting was presented information by CSSI on its interest to assume the duties and responsibilities associated with the provision of airspace monitoring in connection with RNP-based horizontal-plane separation minima. The meeting was informed of CSSI's capabilities and experience as they related to the region's need for safety monitoring. CSSI specialized in system analysis and engineering, application development, information technology, and technical program management. Its principal clients include the Federal Aviation Administration (FAA), the National Aeronautics and Safety Administration (NASA), and the U.S. Department of Defense (DoD).

3.25 The meeting also was advised that CSSI has been an active participant in ICAO regional and safety forums, which developed RNP requirements and the associated criteria for establishing separation minima based on RNP and RVSM.

3.26 CSSI advised the meeting that current capabilities and prior experience allowed it to immediately fulfill the roles and responsibilities of the SMA, and was willing to start work as soon as Asia/Pacific States may require. As CSSI was a private business company, it would be necessary to charge for its services.

3.27 The meeting noted and appreciated the information provided by CSSI.

3.28 The Secretariat asked the meeting if there was any other body present that also had an interest in providing such services. Thailand advised that AEROTHAI, who had been appointed by

APANPIRG to operate the RVSM regional monitoring agency (MAAR) for the Asia Region was also interested in providing SMA services for the Bay of Bengal area. However, as they were not aware that this subject would be raised at this meeting, information had not been prepared for presentation, but they would prepare information for the next RASMAG/3 meeting to be held on 6-10 June 2005, which would be reviewing this matter.

3.29 The meeting expressed support for Thailand's interest to provide SMA services for the Bay of Bengal area, as they were already familiar with the airspace concerned through the RVSM monitoring activities being provided by MAAR within the Asia region i.e. South China Sea, Bay of Bengal and Arabian sea. Thailand agreed to study the issues concerning the setting up of SMA services for the safety assessment work and monitoring activities related to the horizontal plane (i.e. RNP 10 and 50 NM lateral and longitudinal separation), and to include consideration of future separation reduction of 30 NM based on ADS and RNP 4.

3.30 The meeting requested that the States concerned indicate to the Regional Office prior to the RASMAG/3 meeting, their position on the establishment of SMA services for the Bay of Bengal area bearing in mind that Annex 11 required States to establish ATS safety management programmes. In this regard, the Regional Office would write to States concerned to provide detailed information on the requirements to establish an SMA and the offers made by Thailand and CSSI.

3.31 In regard to funding of SMA services, Thailand advised that they would study this matter further. At this stage, it was not possible to determine how the cost of providing SMA services would be met or if funding would be required in the future. The States, concerned would be kept informed of developments and the RASMAG/3 meeting would be updated on Thailand's position.

3.32 The Secretariat reminded the meeting that ICAO provisions required that implementation of specified reduced separation minima, e.g. 50 NM lateral and longitudinal separation using RNP 10, and 30 NM horizontal separation based on ADS using RNP 4, required a TLS to be established for the airspace and safety assessments including collision risk modeling performed prior to implementation and periodically for ongoing operations.

3.33 The Secretariat pointed out that ongoing safety monitoring services and updating of safety assessments had not been put in place for the Bay of Bengal RNP 10 routes where 50 NM route spacing was applied. As the route system had been implemented on 28 November 2002, updating of the safety assessment was overdue. This was primarily due to States not being able to obtain airspaces safety monitoring services. As this was a responsibility of States under Annex 11s, in ICAO's view, it was now an urgent matter to meet this requirement and the interest of both parties expressed at this meeting to provide such services was timely and welcomed.

3.34 In consideration of a possible need for States to recover costs of providing these services through air navigation charges, the Regional Officer, Air Transport (RO/AT) was invited to brief the meeting on financing arrangements that could be adopted. The meeting was reminded that in establishing the Central Reporting Agency (CRA) for implementation of data link services for the Bay of Bengal, the States concerned agreed that these services would be provided by a commercial company under a contract managed by IATA and a special levy would be charged on operators for using the data link services (ADS and CPDLC).

3.35 The RO/AT briefed the meeting on ICAO's policies and guidelines for charging for air navigation services and presented various options that could be adopted. The traditional approach to funding air navigation services has been for each State to calculate, bill and collect itself such air navigation services charges as it might levy. However, the establishment and operation of the CRA for the Bay of Bengal FIRs was an example of a service that can be provided more effectively and efficiently through cooperation among several States.

3.36 In considering what mechanism would be most suitable, States have the option of providing the services themselves, perhaps after contracting out to a service provider. They also have the option to request another State to provide the services, who may in turn contract these services out to a service provider. Whatever approach is taken, the State responsible for the airspace remains responsible for ensuring that ICAO requirements were being complied with and the safety level was being met.

3.37 In some cases, it would be possible to make progress on the simple basis of a coordination and harmonization process initiated as a sub-regional activity between limited numbers of States. But in those cases where a formal mechanism needed to be established, the broad options were:

- a) International Operating Agency;
- b) Joint Charges Collection Agency;
- c) Multinational Facilities and Services; or
- d) ICAO Joint Financing Agreement.

3.38 The following are the main characteristics of the funding arrangements above:

- a) an international operating agency was a separate entity assigned the task of providing air navigation services, principally route facilities and services, within a defined area on behalf of two or more sovereign States (e.g. EUROCONTROL);
- b) a joint charges collection agency was a less encompassing means for States to benefit from international cooperation. A joint collections agency collects route air navigation service charges on behalf of all of the participating States, including those that were over-flown;
- c) a multinational ICAO navigation facility/services was one included in an ICAO regional air navigation plan for the purpose of serving international air navigation in airspace extending beyond the airspace services by a single State in accordance with that regional air navigation plan. The participation of States in the provision of a multinational facility/services is based on the assumption that any State having supported and agreed to the implementation of such a facility/service and making use of it, should shoulder its share of the costs involved. Having done this, the participating States would need to formalize in an agreement the terms under which the multinational facility/service was to be provided; and
- d) Joint Financing (JF) involved two or more States agreeing to share in the costs of implementing and operating air navigation facilities and services for international air transport operations. Several agreements for the JF of air navigation facilities and services were administered by ICAO on behalf of the contracting governments concerned.

3.39 The establishment and operation of a SMA for the Bay of Bengal FIRs was an example of a service best performed through cooperation among several States. In this regard, it was matter for States to agree on what arrangements to establish and how to pay for the cost of providing these services, if cost recovery became necessary.

3.40 The meeting noted that to progress this matter would require expertise and management decisions not present at this level of meeting, which deals with operational and technical matters. Therefore, States were requested to raise this matter within their administrations, stressing the safety issues involved and urgency to provide the safety management services for the airspaces concerned. The matter would be referred to the RASMAG/3 meeting on 6-10 June 2004 and States were requested to be prepared to resolve this issue at that meeting.

Agenda Item 4: Air traffic flow management plan

4.1 The meeting noted that matters under this agenda item were covered by the AFTM Special Coordination Meeting as reported in the first part of this report.

Agenda Item 5: ATS route developments

5.1 The meeting was advised that the ARNR/TF/2 meeting would be held from 14-18 February 2005 at the Regional Office to review and update the APANPIRG list of deficiencies on ATS route implementation, current requirements of ATS routes contained in the *Basic Air Navigation Plan* (BANP, Doc 9673), and future route requirements. In this regard, the States concerned were requested to take action to resolve the deficiencies and report to the ARNR/TF/2 meeting.

5.2 The ARNR/TF/1 meeting distributed to each State a diskette containing a master database of the ATS route network in the APAC region, and States were requested to update the data and return it to the Regional Office by 31 December 2004.

5.3 In preparation for the ARNR/TF/2 meeting, States were reminded to provide an update on action taken on the list of deficiencies and to provide the updated route data.

5.4 IATA queried whether all route implementations had to be channelled through the ARNR/TF as this could take some time to process, and there were route improvements required by operators that could be implemented much sooner by States through meeting forums such as this or bi-laterally. The meeting was advised that the ARNR/TF did not replace the existing arrangements to implement new routes or make route changes. The main work of ARNR/TF was to update the APAC BANP, compile a master database of all ATS route characteristics in the region, and to produce a catalogue in a user friendly format containing all the ATS routes listed in the BANP, highlighting those not implemented and including new route requirements. Once this work was completed, the Task Force would be dissolved by APANPIRG.

Agenda Item 6: State Contingency Planning

6.1 The meeting was informed by the Secretariat of the ICAO provisions with regard to the requirements for States to have in place contingency measures for application in the event of disruptions to ATS and associated services. This matter was now of particular relevance in light of the tsunami disaster and States should review their overall national contingency arrangements taking into account lessons learnt by States involved.

6.2 It should be noted that on 27 June 1984, the ICAO Council approved the Guidelines for Contingency Measures for Application in the Event of Disruptions of Air Traffic Services and Related Supporting Services. The approved guidelines were subsequently included in the *Air Traffic Services Planning Manual* (Doc 9426), Part II, Section 1, Chapter 1, paragraph 1.3

6.3 During 2002, events which had required contingency planning were examined by ICAO in the context of the guidelines, and the following points were noted by the Air Navigation Commission:

- a) few States appeared to have developed contingency plans in anticipation of circumstances which will, or may, result in a disruption of air traffic services and/or related supporting services;
- b) contingency planning was often initiated only when occurrences which create disruptions were imminent or already a recognized fact;

- c) the time available for contingency planning and implementation is often so short that the necessary coordination between States, the operators and ICAO, and the timely promulgation of NOTAM is difficult to achieve; and
- d) when military activities are involved, coordination between military airspace users and air traffic services authorities is often inadequate.

6.4 In view of the foregoing, amendments to Annexes 11 and 15 were considered necessary in order to promote timely contingency planning and application as well as to provide for a variety of circumstances affecting the safety and regularity of international civil aircraft operations. Accordingly, amendments were incorporated, effective 27 November 2003, which introduced a Standard in Annex 11 (paragraph 2.28 refers) for States to develop and promulgate contingency plans, and introduced a provision to Annex 15 (paragraph 5.1.1.1, w) and x) refer) regarding the promulgation by NOTAM of contingency measures. Annex 11, Attachment D - *Material Relating to Contingency Measures* is provided in **Appendix D**.

6.5 The meeting was reminded that APANPIRG/12 had called for a survey of States in the Asia/Pacific Region to determine the status of contingency planning and the extent to which contingency plans are exchanged between neighbouring States. This survey had been delayed and would be carried out in the coming months to be reported to APANPIRG/16.

6.6 In regard to the above, the meeting urged States to take action to review their contingency arrangements and to provide copies of contingency plans to the Regional Office.

6.7 The meeting was advised of APANPIRG/13's consideration of instances in which restricted airspace had been declared (September 11, 2001 terrorist attacks) or was about to be declared (State industrial action) over the high seas that had an impact on the provision of air traffic services to international civil operations. The meeting was advised that while the closing of airspace was a State's decision in their sovereign airspace, the closure of air space over the high seas was in breach of the Convention on International Civil Aviation. Consequently, APANPIRG/13 formulated Conclusion 13/8 to address this matter.

Agenda Item 7: Any other business

ICAO language proficiency requirements

7.1 The meeting was presented with information on the new ICAO language proficiency provisions in Annexes 1, 6, 10 and 11 requiring that as of 5 March 2008, pilots, aeronautical station (radio) operators and air traffic controllers shall demonstrate the ability to speak and understand the language used for radiotelephony communications to the level specified in the language proficiency requirements of ICAO documentation. The minimum level that must be achieved by this group is Level 4.

7.2 ICAO published the *Manual on the Implementation of the ICAO Language Proficiency Requirements* (Doc 9835-AN/453) in September 2004 addressing the various training and evaluation issues related to the implementation of ICAO language proficiency provisions to assist States to comply with the provisions.

7.3 In implementing the proficiency provisions, the attention of States is drawn to considering aspects of:

- mechanisms to identify current proficiency levels amongst operational staff;
- mechanisms for the provision of language enhancement training;

- whether to establish in-house programs for assessment and enhancement training, or utilize external language services providers;
- if using external language services providers, mechanisms to identify appropriate providers;
- numbers of pilots or controllers that can be simultaneously taken off line, and for what period of time, for assessment and/or enhancement training;
- contingency considerations in the event that insufficient staff attain Level 4 proficiency; and
- whether language proficiency tests should be introduced as part of the initial recruiting process.

7.4 The meeting was advised that the language proficiency standards did not apply to personnel who were licensed prior to 5 March 2004, but applied to all personnel whose licences remain valid after 5 March 2008, and to personnel licensed after that date.

7.5 The meeting recognized that States could be expected to undertake substantial work in the preparation and application of language testing instruments in order to assess the present ability of pilots, radio operators and air traffic controllers to meet the SARPs. Also they would have to examine issues of aviation language training aimed at enhancing the language skills of operational staff to achieve at least the minimum Level 4.

7.6 The Secretariat advised the meeting, that in addition to ICAO's guidance material, an education programme has been launched in the form of a series of seminars to be held in all ICAO regions. The first global seminar was held at ICAO Headquarters, Montreal in September 2004 and the first regional seminar was held at Tokyo in December 2004. The Regional Office did not have language expertise and any further assistance to States would have to be sought from ICAO Headquarters or to make use of expertise in the public or private sectors.

Informal Indian Ocean ATS Coordination Group

7.7 Australia informed the meeting of the outcomes of the 4th meeting of the Informal Indian Ocean ATS Coordination Group (IIOACG/4) held at the Department of Civil Aviation ACC, Plaine Magnien, Mauritius in December 2004. The meeting was attended by representatives from regional ATS providers, airlines and other industry service providers and organisations.

7.8 The IIOACG reviewed the current ATM management structures, systems status and future plans. Of particular note to this meeting was the implementation of data link services (ADS and CPDLC) and flex tracks in the FIRs of the States concerned. As noted in the BBACG/15 Final Report (paragraph 6.1 – 6.4) and the Final Report of RASMAG/2 (paragraph 5.3), the introduction of ADS/CPDLC and other ATM initiatives into the Indian Ocean could be more effectively undertaken through the establishment of a "Whole of Indian Ocean ATS Coordination Group".

7.9 In noting the comments in the BBACG/15 Report, the IIOACG/4 meeting expressed the view that perhaps the IIOACG Forum could be the nucleus for a whole of Indian Ocean ATS Coordination Group.

7.10 Airservices Australia expressed their support for re-energizing of the South West Asia ATS Coordination Group (SWACG), with the inclusion of "North Indian Ocean" States and Organisations, to compliment the ongoing work and activities being undertaken by the existing IIOACG.

7.11 The Secretariat advised the meeting that the intent of the Regional Office was to find a means to bring together all parties involved in implementing data link services to improve airspace capacity, efficiency and enhance safety. This would require setting up CRAs and SMAs to undertake the technical performance evaluation of the systems being used by ATS providers and to carry out airspace safety assessments. In view of the complexity and scale of this work, it was highly desirable for many reasons to centralize and harmonize this effort in the interest of efficiency and economy, and ultimately to expedite implementation. Further, the lessons learnt and experienced gained by implementing in one area could readily be applied in another by working under one umbrella body. To this end, it was envisaged that there would be one coordinating body for the whole of the Indian Ocean, and a number of sub-groups responsible for sub-regional implementation. A single CRA and SMA ideally should cover this whole area.

7.12 The meeting supported in principle the idea of integrating all the various coordinating groups and implementation plans into a consolidated approach. The Regional Office was encouraged to develop this idea further, coordinate with the parties concerned and present a way forward to APNPIRG/16 for endorsement.

Civil military coordination

7.13 The meeting was informed by the Secretariat of the outcome of the Civil/Military Coordination Seminar held at the Regional Office in December 2004 attended by 67 civil and military participants from 12 States and 2 international organizations. This seminar had originally been intended to be held in 2002 but had to be postponed for a variety of pressing reasons. A previous Civil/Military Coordination Seminar had been held during May 1998.

7.14 The seminar had reviewed the *Asia/Pacific Regional Civil Military Co-operation Guidelines*, as contained in Part VIII 'Airspace management' of the ASIA/PAC FASID (Facilities and Services Implementation Document, Doc 9673, 2001), and had not identified any need to amend the existing provisions. However, the seminar urged States not to be complacent in regard to existing national provisions relating to civil/military coordination, to undertake a thorough review of current arrangements in the light of ICAO provisions and the deliberations of the seminar and to incorporate the FASID *Guidelines* in all current and future airspace planning.

7.15 The seminar had noted that effectual cooperation and coordination between civil and military agencies was essential for the safety, security and efficiency of international civil aviation and had endorsed the principle adopted by the previous regional Civil/Military seminar (1998), that of the *equitable sharing of both convenience and inconvenience* by civil and military users.

7.16 The seminar did not identify additional need for follow up sub-regional Civil/Military coordination workshops at this time and considered that workshops could always be arranged later, as and when required by prevailing circumstances.

7.17 The meeting emphasized the importance of fully engaging with the military authorities in implementation planning of airspace changes and recognized the excellent cooperation that had been achieved through the EMARSSH and RVSM projects. It was noted that in many States in the Asia Region, the military authorities controlled large portions of airspace not available for civil use. The opening up of portions of this airspace to benefit international civil flights was of a high priority and States were encouraged to foster relations with their military to seek ways to gain access to this airspace bearing in mind the ICAO principle of flexible use of airspace.

7.18 The meeting noted that there were positive indications of a number of military authorities taking an increasing interest in civil airspace requirements and there was much to be gained to encourage them to participate in ICAO forums such as this one.

7.19 India raised their concerns that had been expressed on a number of occasions to ICAO and States involved of the difficulties they had experienced especially in the Mumbai and Chennai FIR over the Arabian Sea and Bay of Bengal respectively of unknown military aircraft operating close to civil aircraft and in their view, posing a safety threat. Also, there were concerns over military aircraft operating VFR in RVSM airspace, which under the reduced 1 000 ft separation meant that they would likely on occasions be very close to civil aircraft and cause a safety threat.

7.20 India also expressed their view that there was also a problem with VFR aircraft being in RVSM airspace in respect to the ICAO airspace classification requirements. The Secretariat pointed out that under Article 3 to the Convention on International Civil Aviation, the Annexes to the Convention did not apply to State aircraft, and therefore were not applicable to military operations. However, Article 3 requires contracting States to undertake, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft. In regard to airspace classification requirements in Annex 11, these should be applied in respect to civil flights only. As Annex 2 does not permit VFR flights in RVSM airspace (FL290 to FL 410 inclusive), the appropriate airspace classification to be used for RVSM airspace is Class A. The meeting urged States who had not done so, to review their airspace classification for RVSM airspace and specify Class A.

Electronic Locator Transmitters (ELT)

7.21 The meeting was reminded of the Annex 6 amendment that defers the mandatory carriage of automatic ELTs operating simultaneously on 406 MHz and on 121.5 MHz to 1 January 2007. This had arisen because a number of States had not fully implemented the ELT requirements in their national regulations and were unable to comply with the original Annex 6 applicability date of 1 January 2005. Consequently, the Air Navigation Commission on reviewing comments from States to an amendment proposal to Annex 6, agreed to defer the applicability date, which was approved by the ICAO Council.

Implementation of 30/30 Separation Standards

7.22 Australia informed the meeting of the implementation for the first time of the 30/30 NM separation standard on 20 January 2005 in the following FIRs: Honiara FIR (Solomon Islands); Nauru FIR (Republic of Nauru); and the Tasman Sea area, which includes portions of the Brisbane FIR (Australia); Nadi FIR (Fiji); and Auckland FIR (New Zealand)

7.23 The application of 30/30 NM separation was based on ADS and RNP 4 and enabled suitably equipped and approved aircraft to operate in closer proximity to each other to utilise the airspace in a more effective manner. Aircraft would be able to obtain optimal flight paths and cruising levels leading to operational, economic and environmental benefits.

7.24 In addition to enhanced operating efficiencies, another benefit of the implementation of 30/30 undertaken by Australia, Fiji and New Zealand in the South Pacific was that States and organizations may wish to refer to the 30/30 implementation activities to facilitate their planning and implementation of 30/30 in other oceanic airspace areas.

7.25 The major activities undertaken by the ISPACG 30/30 Working Group for the implementation of the 30/30 NM lateral and longitudinal RNAV separation standard are summarized below.

- Creation of the Implementation Working Group task list
- Conducted safety assessment (Hazard Identification Workshop)
- Determination of airborne and ground system requirements
- Conducted rulemaking
- Performed industry, defence and internal coordination
- Conducted international coordination

- Developed pilot procedures
- Conducted training needs analysis
- Performed initial system verification
- Conducted system verification of navigation deviation incidents and events
- Conducted Target Level of Safety calculations for the airspace
- Established a monitoring procedure of post implementation System Performance
 - AGDP (Brisbane TAAATS)
 - OCS (Auckland Oceanic)
 - SITA (Data Link Service Provider)
- Conducted investigation of delayed ADS-C reports
- Established an ongoing monitoring program for navigation deviations
- Established an ongoing monthly reporting of all data link communication delays

7.26 A critical element of the implementation process concerned conducting a safety assessment. This involved a substantial body of ground breaking work, which would serve as a benchmark for all future implementations. This document that runs to over 300 pages has been made available to the Regional Office and may be used by States.

7.27 The meeting congratulated Australia and its partners on achieving this historic milestone and recognized the pioneering work that had been accomplished that would contribute significantly to other States and regions in their implementation efforts. The industry would derive considerable economic and environmental benefits and it demonstrated the improvements that have been made to data link services and the FANS 1/A aircraft systems over the past decade.

Agenda Item 8: Date and Venue for the BBACG/17 meeting

Venue for the Meeting

8.1 The meeting in recognizing that the establishment of the ATFM/TF had added additional meeting and resource burdens on those involved, agreed that the meeting scheduled should be kept to a minimum and where possible, to combine meetings and progress work by correspondence. Accordingly, the first meeting of the ATFM/TF would coincide with the joint FIT-BOB/SEA Seminar meeting on 18-22 April 2005 at the Regional Office, Bangkok. A decision to hold the BBACG/17 meeting in 2005 was deferred, and it would depend upon what issues arise from ATM/AIS/SAR/SG/15 (25-29 July 2005) and APANPIRG/16(22-26 August 2005).

8.2 The second meeting of the ATFM/TF is tentatively planned for 5-9 September 2005 at the Regional Office, Bangkok, and depending on progress of its work programme, consideration could be given to combining this with BBACG/17, if the need arises to hold that meeting.

Closing of the meeting

8.3 Mr. Moores, in closing the meeting, thanked States and international organisations for their excellent cooperation and participation in progressing the matters raised at this meeting. Substantial progress had been made in advancing the air traffic flow management plan for the Bay of Bengal area by establishing the ATFM/TF. States were strongly encouraged to give priority to implementing ADS and CPDCL services. The past few years have been extremely demanding with the implementation of many major airspace projects bringing substantial benefits to the industry as well as to the environment. However, there was a pressing need for some States to improve their safety management systems to provide the essential safety services for ongoing operations of these airspace changes, which included reduction in aircraft separation. The enthusiasm and commitment of all concerned to strive for continued improvement is commendable.

BBACG/16 ? WORK PLAN

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
— (ATS)	ATS route B203 (Amendment Proposal APAC 93/8-ATS)	Mid-Term	ICAO, Myanmar, China	On-going	APAC 93/8 approved on 9/2/99 and States to implement the route. ICAO to coordinate with States on implementation progress. Referred to the ARNR/TF for BANP processing. Update by Bangladesh, India, and Myanmar. At BBACG/15 States involved agreed to coordinate to ensure immediate action on this item.
— (ATS)	CNS/ATM route Gawahati – Kunming ICAO to advise China of the need for a CNS/ATM route Gawahati to Kunming, in addition to the Imphal – Kunming route, and request China to investigate the feasibility of such a route.	Long-Term	ICAO, China, India, Myanmar,	On-going	India has approved implementation. ICAO to coordinate with other States on implementation progress. Referred to the ARNR/TF for BANP processing. ICAO to follow up with China during Safety Seminar (Beijing) November 2005.

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
<u>1</u> (ATS)	Chennai/Colombo FIR boundary India and Sri Lanka will advise ICAO of the result of a bi-lateral meeting regarding: a) the withdrawal of delegation of airspace in the western portion of Chennai FIR; and b) the realignment of the FIR boundary between the Colombo and Chennai FIRs so that all the domestic airspace of Sri Lanka is encompassed by the Colombo FIR.	Immediate	India, Sri Lanka Regional Office	On-going	ICAO to coordinate with States for update. India is considering a proposal to change the FIR boundary. BBACG/15 advised that State providers have agreed a change and provided details to respective Governments for ratification.
2 (ATS)	Contingency Planning a) States in co-ordination with its neighbouring States, develop a contingency plan or plans for their airspace, taking into account the ICAO Framework for Contingency Plans mentioned in a) above; b) Regional office to conduct survey of States	Immediate	All States Regional Office	On going.	APANPIRG/14
—— (ATS)	ATS route A473 India will co-ordinate with Nepal for implementation of JALALABAD-NEPALGUNJ-KATHMANDU as A473 with necessary adjustment.	Immediate	India and Nepal	On-going	India unable to implement and Nepal has developed new route. ICAO to coordinate with States. Referred to the ARNR/TF. BBACG/15 advised that Nepal and India have reached

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
					agreement on modifications to proposal, documentation to be prepared and circulated by Nepal.
4 (ATS)	Introduce flexible use of FL300 on Bay of Bengal routes	2 February 2004 31 March 2005	Thailand, Malaysia, Singapore	On going	Thailand, Malaysia and Singapore to establish a common flight plan database for the peak westbound traffic flow. Trial is operating from 1 October 2004 to 31 March 2005 BBACG/17 to be updated. BBACG/15 agreed to trial of new ATS arrangements for 6 month commencing 1 October 2004 providing new NO-PDC levels and requirement for ACCs to coordinate to ensure use of all available levels.
———— (ATS)	Implement new segment on P628 ASOPO to RK	NOTAM 22 January 2004	India and Pakistan	On-going	Pakistan to coordinate lowering of the MEA to FL300. Route implemented, FL310 being used as MEA, by Pakistan due military

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
					restrictions.
5 (ATS)	Review the fixed mach number procedure using of Mach 0.84 on L759	Immediate	All States IATA	On-going	Fixed MNT to be applied only when required by ATC. Consideration to be given to aircraft Mach number display in the B777. At BBACG/15 IATA updated resulted in procedures for M0.82 for FL280 and above and M0.83 for FL300 and above being adopted for 6 month trial, commencing 1 October 2004. Controllers to be made aware of aircraft limitations to operated at mach numbers at various levels and to apply the MNT with due regard to aircraft operating capability.
6 (ATS)	Pursue additional flight levels in Kabul FIR	Immediate	Regional Office	On-going	Coalition considering approval of FL280. FL280 granted, but withdrawn on N644 by NOTAM for approx 1 month during Aug/Sept 2004 for military reasons. FL280 approved for use for the period and may be withdrawn for military purposes.

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
7 (ATS)	Use of L759/L750 and M770/A466 and N644 as separate routes	2 February- 28 March 2004 1 April 2005	Thailand, Malaysia, Singapore, India and Pakistan	On going	To enhance traffic management in the BOB and reduce ground delays. Update BBACG/15. At BBACG/15 agreed to finalise arrangement with India that allows same level on L759 and M770 where planned routing beyond Delhi does not converge. Update BBACG/17
8 (ATS)	Develop a westbound Air Traffic Flow Management Plan (ATFMP)	Immediate	All concerned States, IFATCA, IFALPA, IATA Regional Office	On-going	BBACG/15 agreed trial of amended ATC coordination arrangements and India Flow Procedures commencing 1 October 2004 for 6 months. BBACG/15 agreed to a SCM in late 2004 to study automated flow systems available, IATA to do the technical coordination with suppliers. See Item 26 BBACG/16 established the ATFM/TF to progress the ATFM Plan and implementation of automated

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
					tools
(ATS)	Establishment of route segment RK to KN	Immediate	ICAO	Pakistan approved introduction of route segment in Pakistan airspace RK-BIRJAND and will coordinate for RK-KN Completed	Coordination with all parties concerned for extension of the route in Afghanistan airspace. Agreements reached between all parties including CFACC; documentation being prepared; expect implement early 2005. Route segment implemented November 2004.
9 (ATS)	Collect traffic movement data for the Bay of Bengal routes	As determined by MAAR	States in Bay of Bengal who have not yet submitted data	On-going	Lateral safety assessment requires update re SMA to be established by RASMAG/3 (June 2005). Format TSD to be determined by MAAR. TSD required for month of July 2004 and annually thereafter for December and submit to MAAR for updating of RVSM safety assessments
10 (ATS)	Implement 2 NM Offset to the right procedures in accordance with APANPIRG Conclusion 15/8 and State Letter AN 13/11.6-04/85 (27 August 2004)	25 November 2004 20 January 2005	All States Regional Office	On-going	Regional Office to coordinate with States to meet AIRAC 25 November 2004. Implementation date deferred to 20 January 2005.

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
					Many Bay of Bengal Sates implemented on 20 Jan 2005. Australia and New Zealand to implement on 17 March 2005. BBACG/17 to be updated
——— (Admin)	Determine date for the FIT BOB/5 and BBACG/16 joint meeting and inform participants.	As soon as practicable	ICAO	On-going	FIT BOB/5 meeting – 5 days in March 2005, to include seminar/workshop re ADS/CPDLC for States and operators. Combined FIT BOB & FIT SEA meeting /seminar scheduled 18-22 April 2005 SCM on automated flow equipment in Nov/Dec 2004, Regional Office to coordinate BBACG/16 – 3 day meeting June 2005. Regional Office to confirm dates. SCM BOB Flow held in combination with RVSM/24 meeting September 2004. Additional SCM BOB FLOW convened to be held in

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
					conjunction with BBACG/16 January 2005
11 (ATS)	Coordinate with CFACC, Afghanistan and ICAO MID Office to extend operating hours of G792 to H24.	Immediate	Regional Office	On going	BBACG/16. Update States and IATA as soon as possible when approval obtained. Inform BBACG/17 of results
12 (ATS)	Provide BBACG/17 with update on ARNR/TF/3 results on ATS routes related to the Bay of Bengal area	BBACG/17	Regional Office	On going	BBACG/16 agreed
13 (ATS)	Secretariat to develop rationale for establishment of the Whole of India Ocean ATS Coordination Group for implementation of data link services	Immediate	Regional Office, States and organizations involved	On going	BBACG/16 agreed in principle To enhance efficiency and timeliness of completing data link implementation Plan for the India Ocean To update BBACG/17
14 (ATS)	Thailand to provide concept of use and details of the ATFM automated tools being developed to the Regional Office for distribution to BBACG participants	1 April 2005	Thailand Regional Office	On-going	BBACG/16
15 (ATS)	States to review RVSM airspace classifications and specify Class A as appropriate	Immediate	All States	On-going	BBACG/16
16 (ATS)	ATFM/TF members to coordinate on developments of ATFM Plan and requirements for ATFM Automated tools	Immediate	All Task Force members	On-going	BBACG/16 To update ATFM TF/1
17 (ATS)	Review and establish requirements for setting up the SMA for the Bay of Bengal horizontal safety management	Immediate	Thailand All other States Regional Office	On-going	BBACG/16 To update RASMAG/3 in June 2005

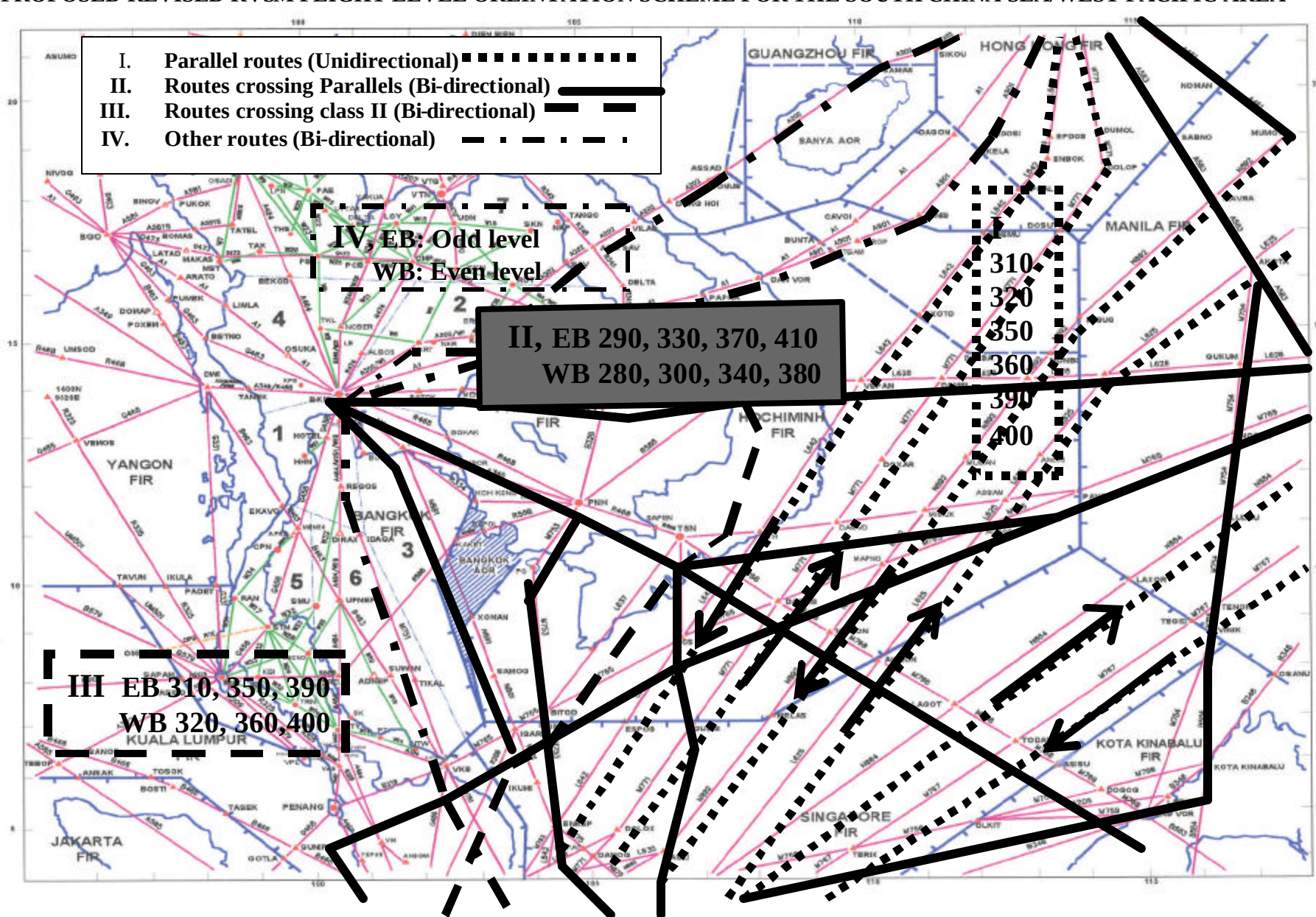
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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
					Regional Office to inform States of the establishment of the SMA in regard to Thailand providing services
18 (ATS)	Operate A466 and N644 as separate routes	Immediate	Pakistan Regional Office	On-going	Pakistan to review ATC practices and advise Regional Office of any changes. Regional Office to coordinate with all parties concerned.
19 (ATS)	Specify RVSM airspace as Class A	Immediate	All States	On going	States to review airspace classification for RVSM airspace and apply Class A as appropriate.
20 (SAR)	Coordinate with India on ICAO SAREX/Seminar for the Bay of Bengal area	As soon as practicable	India Regional Office	On going	Seminar/SAREX will be held in Chennai, India on 7-11 March 2005
21 (SAR)	Search and Rescue Agreements between States 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;	Long-Term	All States Regional Office	On-going	Regional Office maintains a SAR register of agreements between States who are requested to notify the APAC Office when agreements are signed.

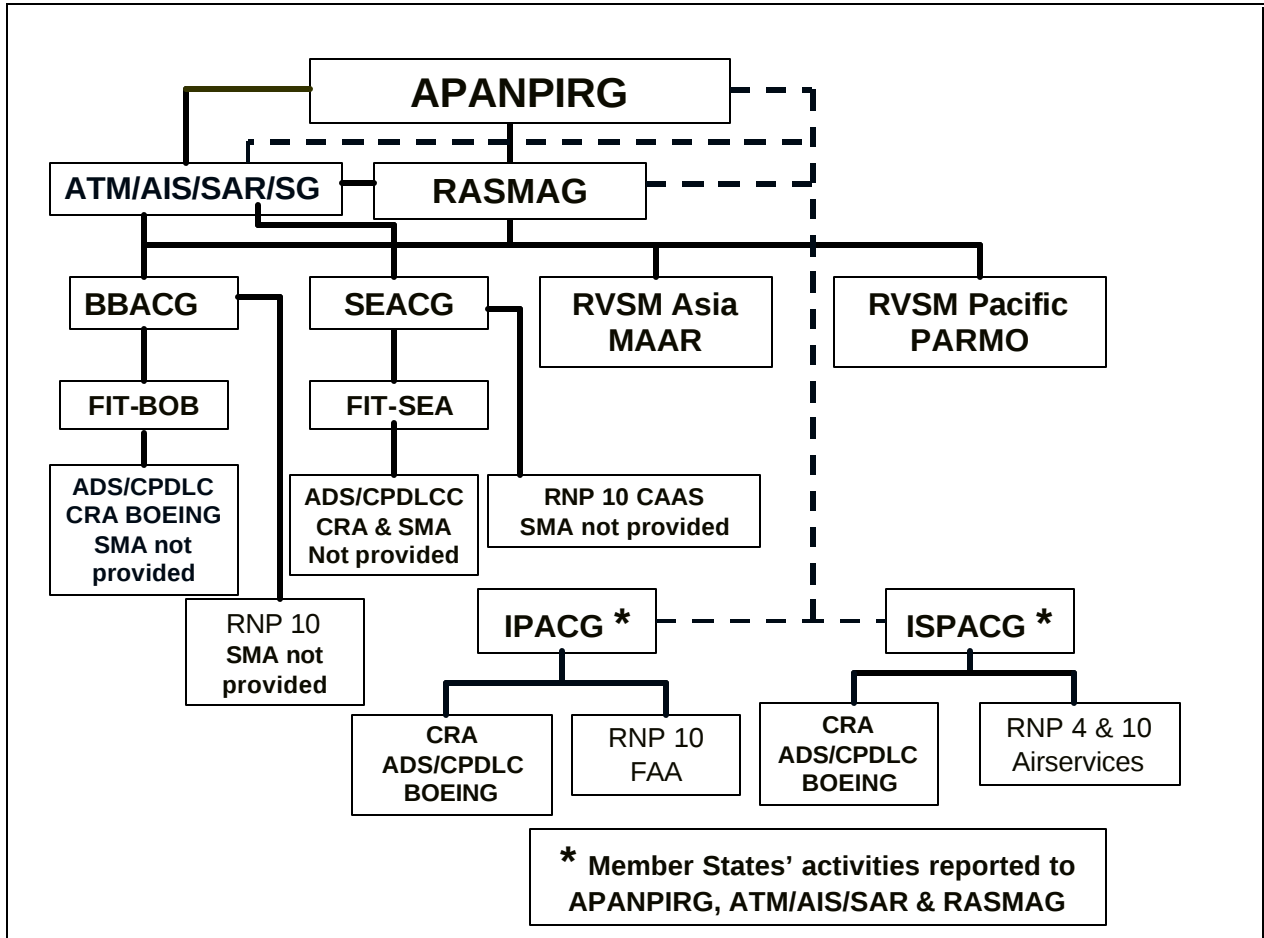
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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
	b) a State, together with a neighbouring State, establish common SAR procedures, where practicable; and c) a State, together with a neighbouring State, establish common SAR procedures, where practicable.				

PROPOSED REVISED RVSM FLIGHT LEVEL ORIENTATION SCHEME FOR THE SOUTH CHINA SEA/WEST PACIFIC AREA



**ASIA/PACIFIC AIRSPACE SAFETY MONITORING
ORGANIZATIONAL CHART**



ATTACHMENT D. MATERIAL RELATING TO CONTINGENCY PLANNING

(see 2.28)

1. Introduction

1.1 Guidelines for contingency measures for application in the event of disruptions of air traffic services and related supporting services were first approved by the Council on 27 June 1984 in response to Assembly Resolution A23-12, following a study by the Air Navigation Commission and consultation with States and international organizations concerned, as required by the Resolution. The guidelines were subsequently amended and amplified in the light of experience gained with the application of contingency measures in various parts of the world and in differing circumstances.

1.2 The purpose of the guidelines is to assist in providing for the safe and orderly flow of international air traffic in the event of disruptions of air traffic services and related supporting services and in preserving the availability of major world air routes within the air transportation system in such circumstances.

1.3 The guidelines have been developed in recognition of the fact that circumstances before and during events causing disruptions of services to international civil aviation vary widely and that contingency measures, including access to designated aerodromes for humanitarian reasons, in response to specific events and circumstances must be adapted to these circumstances. They set forth the allocation of responsibility among States and ICAO for the conduct of contingency planning and the measures to be taken into consideration in developing, applying and terminating the application of such plans.

1.4 The guidelines are based on experience which has shown, *inter alia*, that the effects of disruption of services in particular portions of airspace are likely to affect significantly the services in adjacent airspace, thereby creating a requirement for international coordination, with the assistance of ICAO as appropriate. Hence, the role of ICAO in the field of contingency planning and coordination of such plans is described in the guidelines. They also reflect the experience that ICAO's role in contingency planning must be global and not limited to airspace over the high seas and areas of undetermined sovereignty, if the availability of major world air routes within the air transportation system is to be preserved. Finally, they further reflect the fact that international organizations concerned, such as the International Air Transport Association (IATA) and the International Federation of Airline Pilots' Associations (IFALPA), are valuable advisers on the practicability of overall plans and elements of such plans.

2. Status of contingency plans

Contingency plans are intended to provide alternative facilities and services to those provided for in the regional air navigation plan when those facilities and services are temporarily not available. Contingency arrangements are therefore temporary in nature, remain in effect only until the services and facilities of the regional air navigation plan are reactivated and, accordingly, do not constitute amendments to the regional plan requiring processing in accordance with the "Procedure for the Amendment of Approved Regional Plans". Instead, in cases where the contingency plan would temporarily deviate from the approved regional air navigation plan, such deviations are approved, as necessary, by the President of the ICAO Council on behalf of the Council.

3. Responsibility for developing, promulgating and implementing contingency plans

3.1 The State(s) responsible for providing air traffic services and related supporting services in particular portions of airspace is (are) also responsible, in the event of disruption or potential disruption of these services, for instituting measures to ensure the safety of international civil aviation operations and, where possible, for making provisions for alternative facilities and services. To that end the State(s) should develop, promulgate and implement appropriate contingency plans. Such plans should be developed in consultation with other States and airspace users concerned and with ICAO, as appropriate, whenever the effects of the service disruption(s) are likely to affect the services in adjacent airspace.

3.2 The responsibility for appropriate contingency action in respect of airspace over the high seas continues to rest with the State(s) normally responsible for providing the services until, and unless, that responsibility is temporarily reassigned by ICAO to (an)other State(s).

3.3 Similarly, the responsibility for appropriate contingency action in respect of airspace where the responsibility for providing the services has been delegated by another State continues to rest with the State providing the services until, and unless, the delegating State terminates temporarily the delegation. Upon termination, the delegating State assumes responsibility for appropriate contingency action.

3.4 ICAO will initiate and coordinate appropriate contingency action in the event of disruption of air traffic services and related supporting services affecting international civil aviation operations provided by a State wherein, for some reason, the authorities cannot adequately discharge the responsibility referred to in 3.1. In such circumstances, ICAO will work in coordination with States responsible for airspace adjacent to that affected by the disruption and in close consultation with international organizations concerned. ICAO will also initiate and coordinate appropriate contingency action at the request of States.

4. Preparatory action

4.1 Time is essential in contingency planning if hazards to air navigation are to be reasonably prevented. Timely introduction of contingency arrangements requires decisive initiative and action, which again presupposes that contingency plans have, as far as practicable, been completed and agreed among the parties concerned before the occurrence of the event requiring contingency action, including the manner and timing of promulgating such arrangements.

4.2 For the reasons given in 4.1, States should take preparatory action, as appropriate, for facilitating timely introduction of contingency arrangements. Such preparatory action should include:

- a) preparation of general contingency plans for introduction in respect of generally foreseeable events such as industrial action or labour unrest affecting the provision of air traffic services and/or supporting services. In recognition of the fact that the world aviation community is not party to such disputes, States providing services in airspace over the high seas or of undetermined sovereignty should take appropriate action to ensure that adequate air traffic services will continue to be provided to international civil aviation operations in non-sovereign airspace. For the same reason, States providing air traffic services in their own airspace or, by delegation, in the airspace of (an)other State(s) should take appropriate action to ensure that adequate air traffic services will continue to be provided to international civil aviation operations concerned, which do not involve landing or take-off in the State(s) affected by industrial action;
- b) assessment of risk to civil air traffic due to military conflict or acts of unlawful interference with civil aviation as well as a review of the likelihood and possible consequences of natural disasters. Preparatory action should include initial development of special contingency plans in respect of natural disasters, military conflicts or acts of unlawful interference with civil aviation that are likely to affect the availability of airspace for civil aircraft operations and/or the provision of air traffic services and supporting services. It should

be recognized that avoidance of particular portions of airspace on short notice will require special efforts by States responsible for adjacent portions of airspace and by international aircraft operators with regard to planning of alternative routings and services, and the air traffic services authorities of States should therefore, as far as practicable, endeavour to anticipate the need for such alternative actions;

- c) monitoring of any developments that might lead to events requiring contingency arrangements to be developed and applied. States should consider designating persons/ administrative units to undertake such monitoring and, when necessary, to initiate effective follow-up action; and
- d) designation/establishment of a central agency which, in the event of disruption of air traffic services and introduction of contingency arrangements, would be able to provide, 24 hours a day, up-to-date information on the situation and associated contingency measures until the system has returned to normal. A coordinating team should be designated within, or in association with, such a central agency for the purpose of coordinating activities during the disruption.

4.3 ICAO will be available for monitoring developments that might lead to events requiring contingency arrangements to be developed and applied and will, as necessary, assist in the development and application of such arrangements. During the emergence of a potential crisis, a coordinating team will be established in the Regional Office(s) concerned and at ICAO Headquarters in Montreal, and arrangements will be made for competent staff to be available or reachable 24 hours a day. The tasks of these teams will be to monitor continuously information from all relevant sources, to arrange for the constant supply of relevant information received by the State aeronautical information service at the location of the Regional Office and Headquarters, to liaise with international organizations concerned and their regional organizations, as appropriate, and to exchange up-to-date information with States directly concerned and States which are potential participants in contingency arrangements. Upon analysis of all available data, authority for initiating the action considered necessary in the circumstances will be obtained from the State(s) concerned.

5. Coordination

5.1 A contingency plan should be acceptable to providers and users of contingency services alike, i.e. in terms of the ability of the providers to discharge the functions assigned to them and in terms of safety of operations and traffic handling capacity provided by the plan in the circumstances.

5.2 Accordingly, States which anticipate or experience disruption of air traffic services and/or related supporting

services should advise, as early as practicable, the ICAO Regional Office accredited to them, and other States whose services might be affected. Such advice should include information on associated contingency measures or a request for assistance in formulating contingency plans.

5.3 Detailed coordination requirements should be determined by States and/or ICAO, as appropriate, keeping the above in mind. In the case of contingency arrangements not appreciably affecting airspace users or service provided outside the airspace of the (single) State involved, coordination requirements are naturally few or non-existent. Such cases are believed to be few.

5.4 In the case of multi-State ventures, detailed coordination leading to formal agreement of the emerging contingency plan should be undertaken with each State which is to participate. Such detailed coordination should also be undertaken with those States whose services will be significantly affected, for example by re-routing of traffic, and with international organizations concerned who provide invaluable operational insight and experience.

5.5 Whenever necessary to ensure orderly transition to contingency arrangements, the coordination referred to in this section should include agreement on a detailed, common NOTAM text to be promulgated at a commonly agreed effective date.

6. Development, promulgation and application of contingency plans

6.1 Development of a sound contingency plan is dependent upon circumstances, including the availability, or not, of the airspace affected by the disruptive circumstances for use by international civil aviation operations. Sovereign airspace can be used only on the initiative of, or with the agreement or consent of, the authorities of the State concerned regarding such use. Otherwise, the contingency arrangements must involve bypassing the airspace and should be developed by adjacent States or by ICAO in cooperation with such adjacent States. In the case of airspace over the high seas or of undetermined sovereignty, development of the contingency plan might involve, depending upon circumstances, including the degree of erosion of the alternative services offered, temporary reassignment by ICAO of the responsibility for providing air traffic services in the airspace concerned.

6.2 Development of a contingency plan presupposes as much information as possible on current and alternative routes, navigational capability of aircraft and availability or partial availability of navigational guidance from ground-based aids, surveillance and communications capability of adjacent air traffic services units, volume and types of aircraft to be accommodated and the actual status of the air traffic services, communications, meteorological and aeronautical information

services. Following are the main elements to be considered for contingency planning depending upon circumstances:

- a) re-routing of traffic to avoid the whole or part of the airspace concerned, normally involving establishment of additional routes or route segments with associated conditions for their use;
- b) establishment of a simplified route network through the airspace concerned, if it is available, together with a flight level allocation scheme to ensure lateral and vertical separation, and a procedure for adjacent area control centres to establish longitudinal separation at the entry point and to maintain such separation through the airspace;
- c) reassignment of responsibility for providing air traffic services in airspace over the high seas or in delegated airspace;
- d) provision and operation of adequate air-ground communications, AFTN and ATS direct speech links, including reassignment, to adjacent States, of the responsibility for providing meteorological information and information on status of navigation aids;
- e) special arrangements for collecting and disseminating in-flight and post-flight reports from aircraft;
- f) a requirement for aircraft to maintain continuous listening watch on a specified pilot-pilot VHF frequency in specified areas where air-ground communications are uncertain or non-existent and to broadcast on that frequency, preferably in English, position information and estimates, including start and completion of climb and descent;
- g) a requirement for all aircraft in specified areas to display navigation and anti-collision lights at all times;
- h) a requirement and procedures for aircraft to maintain an increased longitudinal separation that may be established between aircraft at the same cruising level;
- i) a requirement for climbing and descending well to the right of the centre line of specifically identified routes;
- j) establishment of arrangements for controlled access to the contingency area to prevent overloading of the contingency system; and
- k) a requirement for all operations in the contingency area to be conducted in accordance with IFR, including allocation of IFR flight levels, from the relevant Table of Cruising Levels in Appendix 3 of Annex 2, to ATS routes in the area.

6.3 Notification, by NOTAM, of anticipated or actual disruption of air traffic services and/or related supporting

services should be dispatched to users of air navigation services as early as practicable. The NOTAM should include the associated contingency arrangements. In the case of foreseeable disruption, the advance notice should in any case not be less than 48 hours.

6.4 Notification by NOTAM of discontinuance of contingency measures and reactivation of the services set forth in the regional air navigation plan should be dispatched as early as practicable to ensure an orderly transfer from contingency conditions to normal conditions.

— END —

ATTACHMENTS

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SCM/BOB & BBACG/16
Attachment 1 to the Report

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SCM/BOB – LIST OF PAPERS

WORKING PAPERS

WP/No.	Agenda Item	Subject	Presented by
1	1	Provisional Agenda for SCM/BOB	Secretariat
2	2	Air Traffic Flow Management in the Bay of Bengal and Beyond	Secretariat
3	2	Air Traffic Flow over the Bay of Bengal	IATA
4	2	Need for Air Traffic Flow Management System	IATA
5	3	Air Traffic Flow Management (ATFM) in the Bay of Bengal and Westwards	Thailand

INFORMATION PAPER

IP/No.	Agenda Item	Subject	Presented by
1	-	List of Papers	Secretariat

BBACG/16 – LIST OF PAPERS

WORKING PAPERS

WP/No.	Agenda Item	Subject	Presented by
1	1	Provisional Agenda for BBACG/16	Secretariat
2	3	Review of the 24 th Meeting of the RVSM Task Force on the One - Year Review of the Bay of Bengal RVSM Implementation	Secretariat
3	7	Report on the 4 th Informal Indian Ocean ATS Coordination Group (IIOACG4) and the Proposed Establishment of a “Whole of Indian Ocean ATS Coordination Group”	Australia
4	6	Review of State Contingency Planning Requirements	Secretariat
5	7	Review of Civil/Military Seminar 2004	Secretariat
6	7	Language Proficiency	Secretariat
7	2	Work Plan from BBACG/15	Secretariat
8	5	Preparation for the Second Meeting of the ATS Route Network Review Task Force (ARNR/TF/2)	Secretariat
9	3	Proposed International Upper Airspace Management in the Bay of Bengal	Thailand

INFORMATION PAPER

IP/No.	Agenda Item	Subject	Presented by
1	-	List of Papers	Secretariat
2	3	Review of the Outcomes of the Twenty-second Meeting of the RVSM Task Force on the Operation of Different RVSM Flight Level Orientation Schemes in the Asia/Pacific Region	Secretariat
3	7	Delay to the Applicability Date for Mandatory Carriage of Electronic Locator Transmitters (ELT) Operating Simultaneously on 406 and 121.5 MHz	Secretariat
4	3	Bay of Bengal Special Implementation Project	Secretariat
5	3	Summary of the Second Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG)	Secretariat
6	7	Implementation of 30/30 Separation Standards in Ocean Airspace	Australia
7	3	CSSI, Inc.'s Interest in assuming the duties and responsibilities associated with the provision of airspace monitoring in connection with RNP-based horizontal-plane separation minimum	CSSI, Inc.
