INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF THE SIXTEENTH MEETING OF THE APANPIRG ATM/AIS/SAR SUB-GROUP (ATM/AIS/SAR/SG/16)

Bangkok, Thailand, 26 – 30 June 2006

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

Approved by the Meeting
And published by authority of the Secretary General

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Sixteenth meeting of the APANPIRG Air Traffic Management/Aeronautical Information Services/Search and Rescue Sub-Group (ATM/AIS/SAR/SG/16) was held at the Kotaite Wing of the ICAO Asia and Pacific Regional Office, Bangkok, Thailand on 26 to 30 June 2006.

2. Attendance

2.1 The meeting was attended by 67 participants from 18 States, 2 Special Administrative Regions of China and 2 International Organizations. A list of participants is provided at **Attachment 1** to this Report.

3. Officers and Secretariat

3.1 Mr. Colman Ng, Acting Assistant Director-General of Civil Aviation (Air Traffic Management), Civil Aviation Department of Hong Kong, China acted as Chairman of the Sub-Group and presided over the meeting throughout its duration.

3.2 Mr. Andrew Tiede, Regional Officer ATM, ICAO Asia/Pacific Office, was Secretary of the meeting and was assisted by two Regional Officers ATM, Mr. Kyotaro Harano and Mr. Polawat Chootai, and Mr. David Moores, ICAO ATM Expert.

4. Language and Documentation

4.1 The discussions were conducted in English. Documentation was issued in English with a total of 38 Working Papers and 24 Information Papers being considered by the meeting. A list of papers from the meeting is included in **Attachment 2** to this report.

5. Opening of the Meeting

ICAO Regional Director

5.1 The meeting was opened by Mr. L. B. Shah, Regional Director, Asia and Pacific Regional Office, who welcomed participants to the meeting. Mr. Shah commented that, as one of the two Sub-Groups of APANPIRG, the ATM/AIS/SAR Sub-Group played a vital and increasingly important role in ensuring the continuing, coherent development and implementation of the ASIA/PAC Regional Air Navigation Plan.

5.2 Mr. Shah highlighted the current resource issues being faced by the Regional Office compounded further by retirements of experienced staff. Mr. Shah requested that, in setting the future directions of the Sub-Group, delegates remain fully aware of the Regional Office resource limitations and set the work programme accordingly.

5.3 In describing the change in ICAO direction from the creation of new SARPS to the widespread implementation of existing SARPS, Mr. Shah drew the attention of delegates to the two pivotal global meetings that had been held during March 2006 - the Directors General of Civil Aviation Conference on a Global Strategy for Aviation Safety (DGCA/06) and the Fifth Meeting of the ALLPIRG/Advisory Group (ALLPIRG/5). Both meetings had produced very relevant conclusions and recommendations that would guide the global work programme in respect of civil aviation matters and were worthy of the attention of the Sub-Group.

5.4 Mr. Shah noted that there had been much activity in respect of ATM, AIS and SAR matters regionally over the past 12 months, including the following highlights:

- Last international oceanic airspace in the region became RVSM with the implementation of RVSM in Japan/Republic of Korea in September 2006;
- A combined MET/ATM Seminar was held in February 2006, the first such regional MET/ATM Seminar for 20 years;
- After much delay, the AIS Task Force and Seminar had been held in March this year in accordance with the long standing wishes of APANPIRG;
- First large scale regional attempt at international flow management would commence ghosting this week (on 29 June 2006) in the Bay of Bengal area;
- A Search and Rescue Special Implementation Project for a SAREX in the Pacific Islands had been approved by the ICAO Council for conduct during 2006;
- The USOAP Audit programme was making its presence felt regionally, a number of Asia/Pacific States had already been audited and there were a number of additional States on the audit schedule for the next 18 months; and
- Two ICAO Safety Management Systems Training Courses would be conducted on a pass/fail basis at the Regional Office during September 2006.

5.5 Mr. Shah, recognizing that hard work was necessary to produce results, wished the meeting every success

Chairman of the Sub-Group

5.6 In his opening remarks, the Chairman, Mr. Colman Ng, expressed that he valued the opportunity of being able to work closely with member states of the Asia/Pacific Region to discuss and resolve the various issues relating to those items under the Terms of Reference of the ATM/AIS/SAR SG. He was honoured to be in a position to contribute to the development and implementation of the various initiatives in the ATM/AIS/SAR fields.

5.7 The Chairman was hopeful that the efforts of the ATM/AIS/SAR Sub-Group in the coming week would serve to sustain the previous progress made and he looked forward to further joint efforts in making sure that the Sub-Group would continue to play an active role in steering the work of the APANPIRG for the benefit of the development of the aviation industry in the Region.

5.8 The Chairman highlighted that the long list of Working and Information papers and the number of items on the agenda was indeed daunting – altogether 38 WP and 24 IP. That was also indicative of the pressure being experienced by the ICAO Regional Office, particularly in light of the very stringent manpower constraints that they were facing. The sheer volume of paper work that has been put into this meeting only went to show that members of the Sub-Group would have to work harder and smarter in the following few days.

5.9 The Chairman noted that the APANPIRG Procedural Handbook stated that the Chairperson, in close coordination with the Secretary, shall arrange for the most efficient working of the Group and that the Group shall always work with a minimum of formality and paperwork. In this respect, he pointed out that we needed to do better in future in terms of cutting down in paper work.

5.10 Having taken up the role of Chairman since last year, the Chairman informed the meeting that it was his intention to steer the Sub-Group towards a gradual process of evolution to refine on the overall efficiency, effectiveness and, where possible, to re-prioritize the work items of the Sub-Group with a view to delivering results. He reminded the meeting that, to achieve this, all parties concerned must keep their commitments — to do what had been promised in resolving specific problem areas in the ATM/AIS/SAR fields.

5.11 The Chairman also pointed out that the final outcomes could only be as good as the efforts of all parties concerned jointly put into the Sub-Group in addressing problems with a disciplined and targeted approach. Lastly, the Chairman looked forward to the valuable input from all members in the forthcoming discussions. He also expressed thanks to all members for their trust bestowed upon him as the Chairman of the Sub-Group and was hopeful that the meeting would be both constructive and productive.

6. Draft Conclusions, Draft Decisions and Decisions of the ATM/AIS/SAR Sub-Group

6.1 The ATM/AIS/SAR Sub-Group records its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

a) **Draft Conclusions** deal with matters that, according to APANPIRG terms of reference, merit directly the attention of States, or on which further action is required to be initiated by the Secretary according to established procedures.

b) **Draft Decisions** relate to matters dealing with the internal working arrangements but requires the prior agreement of the APANPIRG before it can be implemented or otherwise.

c) **Decisions** of ATS/AIS/SAR Sub-Group relate solely to matters dealing with the internal working arrangements of the ATS/AIS/SAR Sub-Group.

6.2 **List of Draft Conclusions**

Draft Conclusion 16/1 – Implementation of Conditional ATS Routes

Draft Conclusion 16/2 – Definition of Conditional ATS Route

Draft Conclusion 16/4 – Conduct of Comprehensive AIS Survey

Draft Conclusion 16/6 – Coordination of UAV Procedures Development

Draft Conclusion 16/7 – Establishment of the WPAC/SCS RVSM Scrutiny Group

Draft Conclusion 16/9 – Special Implementation Project to conduct a safety survey

Draft Conclusion 16/10 – Additional Asia/Pacific Office ATM Staff

6.3 **List of Draft Decisions**

Draft Decision 16/3 – Establish APANPIRG Regional Planning Review Task Force

Draft Decision 16/5 – Non Compliance with Annex 15 Provisions

Draft Decision 16/8 – Reconvening of the AIDC Task Force

Draft Decision 16/11 ATS/AIS/SAR Subject/Task List

AGENDA ITEM 1

PART II – REPORT ON AGENDA ITEMS

Agenda Item 1: Adoption of Provisional Agenda

1.1 The meeting reviewed the provisional agenda presented by the Secretariat, noting the inclusion of the new Agenda Item 9 "Review of Global DGCA Conference and ALLPIRG/5 Outcomes". The meeting also broadened the scope of Agenda Item 2 to include "and the outstanding conclusions and decisions of APANPIRG with respect to ATM/AIS/SAR issues". Accordingly, the meeting adopted the following agenda:

Agenda Item 1:	Adoption of Provisional Agenda
Agenda Item 2:	Review the APANPIRG/16 Report and subsequent ANC/Council Actions, and the outstanding conclusions and decisions of APANPIRG with respect to ATM/AIS/SAR issues
Agenda Item 3:	Review and progress the tasks assigned to the ATM/AIS/SAR/SG by APANPIRG
Agenda Item 4:	Consider problems and make specific recommendations concerning the provision of ATM/AIS/SAR in the Asia/Pacific Region
Agenda Item 5:	Review of ATS coordination group meetings
Agenda Item 6:	Review progress of the Regional Airspace Safety Monitoring Advisory (RASMAG)
Agenda Item 7:	Review developments relating to CNS/ATM implementation
Agenda Item 8:	Deficiencies in the Air Navigation field
Agenda Item 9:	Review of Global DGCA Conference and ALLPIRG/5 Outcomes
Agenda Item 10:	Any other business
Agenda Item 11:	Update the list of ATM/AIS/SAR Tasks together with priorities
Agenda Item 12:	Date and venue for next meeting

AGENDA ITEM 2

Agenda Item 2: Review the APANPIRG/16 Report and subsequent ANC/Council Actions, and the outstanding conclusions and decisions of APANPIRG with respect to ATM/AIS/SAR issues

Review of APANPIRG/16 Report and ANC/Council action

2.1 The meeting reviewed the Report of APANPIRG/16 (22 – 26 August 2005) and subsequent ANC/Council actions.

2.2 Summarized highlights from the Commission and ICAO Council reviews are provided below and more detailed comments are provided in **Appendices A and B** to the Report on Agenda Item 2 respectively.

Air Navigation Commission

a) RVSM was implemented in the domestic airspace of Naha and Tokyo FIRs by Japan, and in Incheon FIR by the Republic of Korea, effective 29 September 2005;

b) a study group has been established for the development of a proposal by June 2006 for providing guidance to States to organize and finance necessary safety monitoring mechanisms;

c) a thorough review of current and future Asia and Pacific ATS route network was conducted and, consequently, an ATS Route Catalogue was developed to serve as a planning tool;

d) a model will be developed for the States of the Asia and Pacific Regions in preparing their national contingency plans, which will identify and prioritize all contingency circumstances that may affect civil aviation operations;

e) the deficiencies of the Asia and Pacific Regions were reviewed and addressed. There have been substantial improvements in the elimination of deficiencies; and

f) any further regional implementation of reduced separation minima should only proceed when implementing States can demonstrate the ability to comply with provisions in Annex 11.

Council of ICAO

a) noted the APANPIRG/16 Report and the report of the Commission thereon as contained in C-WP/12620 and updated orally;

b) noted the summary of the most significant issues of the APANPIRG/16 Meeting as indicated in Appendix A to C-WP/12620 (paragraph 2.2 above refers);

c) noted the specific action taken by the Commission, under delegated authority, on the conclusions of the meeting as indicated in Appendix B to C-WP/1260 (Appendix A to the Report on Agenda Item 2 refers); and

d) urged the Secretary General to take specific action on the conclusions of the meeting as proposed in Appendix B to C-WP/1260, in conformity with the approved Business Plan.

Review of outstanding Conclusions and Decisions of APANPIRG

2.3 The meeting reviewed and updated the list of outstanding Conclusions and Decisions of APANPIRG with respect to ATM/AIS/SAR issues, incorporating the Conclusions and Decisions agreed to at APANPIRG/16, which would be presented to APANPIRG/17 to be held from 21 to 25 August 2006. The updated list is provided in **Appendix C** to the Report on Agenda Item 2.

Fuel Savings Workshop

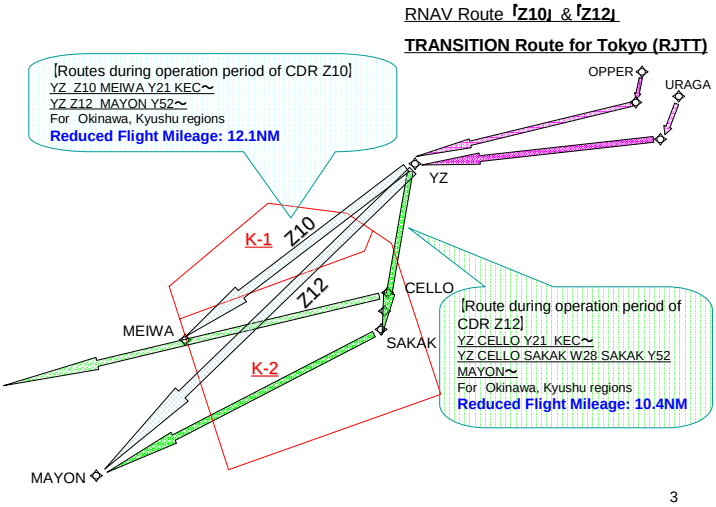
2.4 The meeting noted that APANPIRG/16 (Conclusion 16/5) called for a workshop to be carried out in 2006 for Asia/Pacific States focusing on best practices for achieving fuel efficiencies in airport, TMA and en-route environments. However, although a number of attempts had been made to organize this workshop in company with IATA, difficulties had been experienced in scheduling the workshop and no date had yet been set. The workshop would be considered for inclusion in the Regional Office's work programme in 2007 subject to available resources.

Fuel Saving Measures ─ Implementation of Conditional Routes (CDRs) and RNAV Routes

2.5 Japan informed the meeting that in response to APANPIRG/16 (paragraph 2.4.16-2.4.19 of the Report on Agenda Item 2.4 refers) discussions on areas where ATS providers and State ATS authorities could assist in developing more efficient systems thereby contributing to airlines internal fuel efficiency strategies, Japan recognized that a wider implementation of conditional and RNAV routes would result in fuel savings, flight distance and time reduction, and reduction in CO_2 emissions.

2.6 The meeting was advised by Japan that as of 11 May 2006, there were two conditional ATS routes (CDRs) implemented to the southwest of Tokyo (as depicted below), and five more CDRs were planned to be implemented in the domestic airspace by March 2007. Further expansion of CDRs would be considered based on operational experiences and benefit analysis.

Operation of CDRs Z10 & 12



2.7 The United States and IATA thanked Japan for their work in this area, noting that the establishment of the CDRs was as a result of effective civil-military coordination.

2.8 Japan reminded the meeting that ATM/AIS/SAR/SG/15 had been informed of the Japan Civil Aviation Bureau's RNAV implementation plan, known as the *RNAV Roadmap for Japan*, which was designed to provide safer and more efficient operations, and accommodate growing traffic in Japanese airspace. As was the case with CDRs, the effects of RNAV implementation on achieving operating benefits had been analyzed. Once nationwide implementation of RNAV routes was completed in the future, significant overall benefits would be achieved.

2.9 In addition to the CDRs already implemented by Japan, the meeting recalled that India had also been very proactive in implementing conditional routes in a number of areas in India. Using similar philosophies to those adopted by Japan, as a result of successful coordination with the Indian defense force authorities India had decided to implement a number of new route segments, to be available for civil flight operations over a six hour night time period between 2200 and 0400 Delhi local time. The routes were also restricted to a certain flight level band, generally between FL 280 and FL 460.

2.10 IATA expressed its appreciation to Japan and India for their work completed in the implementation of these new conditional ATS routes which were expected to immediately deliver additional airspace capacity with associated fuel savings and reduction in environmental impact.

2.11 The meeting considered that the progress by Japan and India in this regard addressed the intent of work into fuel savings measures initiated under APANPIRG Conclusion 16/57 and the subsequent call by the Secretary General for all PIRGs to accord priority to the revision of procedures and ATS route structures in order to achieve maximum efficiency. The work also addressed APANPIRG Conclusion 16/17 in terms of the adoption of the equitable sharing of both convenience and inconvenience in the use of airspace and facilities by civil and military users.

2.12 In addition, the meeting was informed that these types of conditional route implementations directly addressed Global Planning Initiative # 1 (GPI-1 *Flexible use of airspace*) from the Global Plan.

2.13 As a consequence of the above, the meeting concluded that the conditional route implementations undertaken by Japan and India provided valuable practical every day experiences and examples of what was intended by the related APANPIRG Conclusions and GPI-1. In order to ensure a wide dissemination of these practical examples amongst States regionally, the meeting formulated the following Draft Conclusion:

Draft Conclusion 16/1 – Implementation of Conditional ATS Routes

That, recognizing the valuable practical examples established by recent regional implementations of enhanced ATS route segments in which the hours of operation, flight levels available and other parameters were subject to operating conditions, the Regional Office draws the attention of States to the effectiveness and benefits of the implementation of conditional ATS routes and route segments in meeting the provisions of Global Planning Initiative # 1 (GPI-1) *Flexible use of airspace* from the Global Plan.

2.14 In reviewing the circumstances relating to the ‘conditional routes’ described by Japan and India, the meeting noted that there was no definition of an “ATS Conditional Route” in ICAO documentation. Additionally, no specific ATS route designator was identified by ICAO for use in naming conditional routes, so States had adopted a variety of different route names. In light of the increasing usage of this term regionally and the likelihood that, in their attempts to address GPI-1, other regions were also introducing ATS route segments of the type referred to by Japan and India as “conditional” the meeting considered that ICAO should be encouraged to formally define this type of route and nominate an ATS route designator. The meeting drafted the following Conclusion to this effect

Draft Conclusion 16/2 – Definition of Conditional ATS Route

That, noting that States were addressing Global Planning Initiative #1 (*Flexible use of airspace)* by the increasing implementation of ATS route segments that were subject to restricted operational conditions in terms of hours/days of operation, usable flight levels available and/or other parameters, ICAO be encouraged to promulgate an appropriate ATS route designator and definition of conditional ATS routes.

ACTION TAKEN BY THE AIR NAVIGATION COMMISSION ON REVIEWING THE REPORT OF APANPIRG/16

Matters related to ATM/AIS/SAR (Agenda Item 2.1)

a) The Commission noted (paragraph 2.1.16 of the meeting report refers) that reduced vertical separation minimum (RVSM) was implemented in the domestic airspace of Naha and Tokyo flight information regions (FIRs) by Japan, and in the Incheon FIR by the Republic of Korea, effective 29 September 2005. Continuing the discussion on RVSM, the Commission noted that APANPIRG had adopted different nomenclature for identifying various regional monitoring safety agencies viz. Regional Monitoring Agency (RMA) for monitoring the implementation of reduced vertical separation; Safety Monitoring Agency (SMA) for monitoring the implementation of reduced horizontal separation (Decision 16/1 refers); and Central Reporting Agency (CRA) for monitoring the implementation of automatic dependent surveillance-contract/controller-pilot data link communications (ADS-C/CPDLC). In this regard, the Commission recalled that adequate provisions already exist in Annex 11 — *Air Traffic Services* which require post-implementation monitoring of safety and that

b) On the subject of funding arrangements for regional monitoring mechanisms, the Commission agreed with the approach of APANPIRG (Conclusion 16/2 refers) for establishing a regional group to undertake a feasibility study. In this regard, the Commission recalled Conclusion 9/13 of MIDANPIRG/9 (MID Regional Monitoring Agency (MID RMA) re-establishment) reflecting a similar concern. As such, acknowledging that other regions are also experiencing such a situation, the Commission recommended, as reflected in Appendix B hereto, that the Council note Conclusion 16/2 and request the Secretary General to develop a global approach for establishing, funding and determining the basis for cost recovery for regional monitoring mechanisms.

c) The Commission noted with concern that some States had not adequately complied with safety management provisions and consequently supported the approach of APANPIRG that further regional implementation of reduced separation minima should only proceed when implementing States can demonstrate the ability to comply with provisions in Annex 11 (Conclusion 16/5 refers). Also, the Commission was concerned that a few States had failed to provide data to enable the assessment of mandated safety targets for the implementation of RVSM in the Asia and Pacific Regions. Accordingly, the Commission supported APANPIRG in Conclusion 16/6 requiring those States, which do not submit safety-related data to RMA, to be included in the deficiency list. Recognizing that such a difficulty exists in other regions also, the Commission requested, as shown in Appendix B hereto, that the Council note Conclusion 16/6 and call upon the Secretary General to urge States to submit safety-related data to regional safety monitoring agencies and, furthermore, to advise the remaining regions to consider adopting the same measures if they have not already done so.

d) The Commission appreciated the initiative of APANPIRG in reviewing the Asia and Pacific air traffic services (ATS) route network and thus developed an ATS Route Catalogue to serve as a planning tool (Decision 16/9 refers). The Catalogue is a consolidated reference document for the current regional ATS routes and future route requirements of States/airspace users and will be a living document maintained by the Regional Office. Furthermore, many of the new ATS routes have been assessed in terms of economic and environmental benefits. The Commission included Decision 16/9 in Appendix B hereto for action by the Secretariat.

e) The Commission supported the request of APANPIRG to establish a Special Implementation Project (Conclusion 16/15 refers) for the development of a model for States to prepare their contingency plans, which will take into account all contingency circumstances that may affect civil aviation operations in the area of air traffic management (ATM). The Commission also noted that APANPIRG had requested States to develop ATM contingency planning for volcanic ash cloud avoidance (Conclusion 16/13 refers) and further agreed to the development of a catalogue of regional contingency arrangements in support of the continuity of aviation operations in the event of natural disasters or other crisis situations (Conclusion 16/53 refers). Recognizing that the approach of APANPIRG is consistent with Strategic Objective E: Continuity ─ *Maintain the continuity of aviation operations*, the Commission included Conclusion 16/15 in Appendix B hereto for action by the Council.

f) The Commission noted that the APANPIRG had reviewed regional guidance material for end-to-end safety and performance monitoring of ATS data link systems and proposed that it be circulated in accordance with established procedures (Conclusion 16/20 refers). In this regard, the Commission also noted the association between this guidance material and the output of the First Meeting of the Operational Data Link Panel (OPLINKP/1, 12-23 September 2005), in terms of the development of Standards and Recommended Practices (SARPs), procedures and guidance material relating to the use of required communication performance (RCP) in the provision of ATS.

g) In response to Conclusion 16/21, calling on the Regional Office to conduct a survey of all Asia and Pacific States to assess the progress of implementation of language proficiency requirement with a view to ascertaining States' readiness for compliance with proposed ICAO provisions, the Commission was apprised that, in addition to the Asia and Pacific Regions, all the remaining regions have initiated a similar survey with a target date of completion by the end of March 2006. The survey contains two parts: core questions that is common to all regions and specific questions related to individual regions. Consequently, the Commission specifically included Conclusion 16/21 in Appendix B hereto.

ATS coordination groups' activities (Agenda Item 2.3)

a) The Commission complimented APANPIRG on its initiative for establishing an Air Traffic Flow Management (ATFM) Task Force for the Bay of Bengal and South Asia with an objective of enhancing and facilitating the orderly and efficient flow of air traffic in these areas. The programme, covering a three-phased approach, includes flights planning to transit the Kabul FIR, other international flights crossing the Bay of Bengal and/or South and South East Asia areas and future planning for increased traffic within the Bay of Bengal and South and South East Asia areas(paragraph

2.3.11 and 2.3.12 of the meeting report refer). Recognizing its importance, the Commission recommended, as reflected in Appendix B hereto, that the Council note these paragraphs 2.3.11 and 2.312 and requested the Secretary General to monitor progress.

Other air navigation matters (Agenda item 2.4)

a) The Commission noted that APANPIRG had reviewed the outcome of the 35th Session of the Assembly related to air navigation issues and had taken follow-up actions on the basis of the analysis of various recommendations (paragraph 2.4.7 of the meeting report refers).

b) APANPIRG received information that ICAO had developed a 5-letter name-code (5LNC) system so as to assist States and Regional Offices in allocating unique 5LN codes worldwide. This on-line 5LNC system, which uses web-based tools, has two major components: graphical user interface and geographic information system. The Commission welcomed the action taken by APANPIRH of inviting States to implement the ICAO 5LNC system as soon as it is made available (paragraph 2.4.15 of the meeting report refers).

c) Recognizing the benefits that can be achieved through fuel burn reduction, the Commission noted related Conclusion 16/57 and requested the Secretary General, as shown in Appendix B hereto, to call upon al the regional planning groups to accord priority to revision of procedures and ATS route structures in order to achieve maximum efficiency.

Matters related to communications, navigation, surveillance/air traffic management (CNS/ATM) implementation and related activities (Agenda Item 3)

a) The Commission noted that the ASIA/PAC Regional Plan for CNS/ATM Systems had been reviewed and now incorporates ADS-B for the surveillance systems (Conclusion 16/58 refers).

b) The Commission noted that the issue of unmanned aerial vehicles (UAVs) had been raised in APANPIRG and that, in the context of a mixed and complex traffic environment where pilot operated aircraft and UAVs were operating in the same airspace, appropriate separation standards and procedures to ensure safety would be required (Conclusion 16/61 refers). In this regard, the Commission noted its association with action already taken in respect of Conclusion 46/9 of the forty-sixth meeting of the European Air Navigation Planning Group (EANPG/46) and that the Secretariat intends to convene a meeting of experts on the subject of UAVs with the goal of developing a UAV programme plan.

Deficiencies in the air navigation field (Agenda Item 4)

Regarding deficiencies, the Commission noted that APANPIRG had reviewed, analyzed and prioritized the list of air navigation deficiencies. With efforts made by States, there have been substantial improvements in the elimination of deficiencies. Recognizing that considerable priority has been placed on identifying and rectifying deficiencies, the Commission agreed with APANPIRG that renewed effort should be made by States to take a proactive action in tackling such deficiencies. An important step in the process was the provision of a contact address and person who would respond in a timely and effective manner in dressing operational deficiencies (Conclusion 16/62 refers).

Other business (Agenda Item 7)

The Commission noted that APANPIRG, while considering safety and security aspects of economic liberalization of international civil aviation, observed that all parties, governments, service providers and air operators should have a clear understanding of their respective responsibilities for safety and security compliance and oversight (paragraph 7.4 of the meeting report refers).

APANPIRG/16 CONCLUSIONS/DECISIONS CONSIDERED FOR SPECIFIC ACTION BY THE AIR NAVIGATION COMMISSION AND/OR COUNCIL RELATED TO ATM/AIS/SAR MATTERS

Report Reference		Action by Council/ANC	Proposed Action
Concl./Dec. No.	Page		
16/2	2.1-5	C	**Funding arrangement for regional airspace safety monitoring** Noted the conclusion and acknowledging that other regions, such as the MID Region, are also experiencing a similar situation, requested the Secretary General to develop a global approach for establishing, funding and determining the basis for cost recovery for regional monitoring mechanisms.
16/6	2.1-10	C	**Non-provision of safety-related data by States** Noted the conclusion and requested the Secretary General to urge States to submit safety related data to regional safety monitoring agencies and furthermore advise the other regional planning groups to consider adopting the same measures if they have not already done so.
16/9	2.1-13	ANC	**Acceptance of the Asia and Pacific ATS Route Catalogue** Noted the decision and requested the Secretary General to explore whether other regions would benefit from a similar catalogue to serve as a planning tool.
16/15	2.1-19	C	**Special Implementation Projects for Development of a State Contingency Plan** Noted the conclusion and that the project would be submitted for the Council's approval through established procedures.
16/21	2.1-24	ANC	**Status of compliance with Language Proficiency requirements** Noted the conclusion and that, in addition to the Asia and Pacific Regions, all the remaining regions have also initiated a similar survey with a target date of completion by the end of March 2006.

Report Reference		Action by Council/ANC	Proposed Action
Concl./Dec. No.	**Page**		
Paragraphs 2.3.11 and 2.3.12	2.3-2	C	**Bay of Bengal Air Traffic Flow Management** Noted the paragraphs and invited the Secretary General to monitor the progress of the project for enhancing and facilitating the orderly and efficient flow of traffic in Bay of Bengal and South Asia.
16/57	2.4-4	C	**Workshop on fuel savings measures** Noted the conclusion and requested the Secretary General to call upon all regional planning groups to accord priority to the revision of procedures and ATS route structures in order to achieve maximum efficiency.

— END —

LIST OF OUTSTANDING CONCLUSIONS/DECISIONS OF APANPIRG IN ATM/AIS/SAR FIELDS

(Changes recommended by the APANPIRG/16 and ATM/AIS/SAR/SG/16 in redline and ~~strikeout~~. Items closed by APANPIRG/15 removed from the list)

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 10/4		**Implementation of Area Control Service and 10-Minute Longitudinal Separation using Mach Number Technique in the Bay of Bengal area** 1) That, States in the Bay of Bengal area a) Complete the upgrade of airspace from advisory and flight information services to area control service along ATS routes, as appropriate; b) identify ATS routes where 10-minute longitudinal separation minima for RNAV equipped aircraft without using MNT could be applied and implement such minima. 2) That, Sub-regional ATS Co-ordination Groups concerned place a high priority on items 1) a),and b) above.	a) Some routes in the Mumbai FIR remain under advisory service due to inadequate communications which is being remedied Note: LOAs of some States require updating. The Regional Office to coordinate b) Implementation subject to provisions of ICAO separation standards. 2) Implementation continues to be co-ordinated through the Bay of Bengal ATS Co-ordination Group (BBACG).	On-going On-going On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
~~C 12/10~~	~~C~~	~~**Special implementation project – International seminar and SAREX**~~ ~~That, ICAO urgently consider a proposal for an Asia/Pacific Special Implementation Project to be established with the primary objective to improve search and rescue services, co-ordination and cooperation between States.~~ ~~Noted the conclusion and that such a project would be put forward for the Council's approval through established procedures.~~	~~Note: The SIP was established but was unable to be actioned. SIP approval has expired.~~ ~~An ICAO Seminar and SAREX for the Bay of Bengal hosted by India took place in March 2005.~~ ~~The ATM/AIS/SAR/SG to keep under review and identify other candidates for SIPs.~~ ~~Superseded by APANPIRG Conclusion 16/23~~	~~Closed~~
C 13/34		**Strengthening the Civil/Military Coordination Programme** That, due to an increase in military activity within and adjacent to the Asia Pacific Region, 1. States are urged to: a) remain vigilant with regard to military activity within or near their area of responsibility; b) continue effective civil/military coordination with military authorities concerned; and, c) advise and coordinate with adjacent States and ICAO of any significant increase in military activity which may have an affect on international aircraft operations.	States are encouraged to strengthen activities in this area States are encouraged to strengthen activities in this area States are encouraged to strengthen activities in this area	Ongoing Ongoing Ongoing

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
		2. ~~ICAO to arrange an Asia/Pacific Regional Seminar on Civil/Military Coordination and, if considered necessary, to follow up with sub-regional Civil/Military Co-ordination Workshops in areas as deemed appropriate.~~	Note: APANPIRG/16 raised Conclusion 16/17 in respect of the equitable sharing of airspace and facilities, and Decision 16/16 to include Civil Military Coordination on the Agendas of ATS Coordination Groups. Both were actioned during 2005/2006. APANPIRG/16 tasked Regional Office to issue State Letter highlighting the concerns in a), b), and c) ~~A Seminar had been planned for 2003, but postponed due to disrupted meeting schedule, and to be re-scheduled for 2004~~. ~~Regional Office has scheduled a Seminar for December 2004.~~ ~~(Note: A Civil Military seminar was held on 14-17 December 2005 at the Asia/Pacific Office~~	~~Completed~~ Ongoing Completed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
~~C14/5~~		~~**ATS Route Network Review Task Force (ARNR/TF)**~~ ~~That, a Task Force comprising representatives from States and appropriate International Organizations be formed to review the ATS route network for the Asia/Pacific Region with draft Terms of Reference as shown in Appendix B to the Report on Agenda Item 2.1.~~	~~The Regional Office requested States and users by letter to identify present and future route requirements to be considered by ARNR/TF/1 to be held in September 2004.~~	~~On-going~~ ~~Completed~~
~~C14/7~~		~~**Implementation of a 2 NM lateral offset procedure**~~ ~~That, subject to the ICAO guidelines being revised, States should develop a 2 NM lateral offset procedure to be implemented in all relevant airspace in the Asia/Pacific Region, and the Regional Supplementary Procedures amended as appropriate. This procedure to be harmonized with other regions to ensure uniform application globally.~~	~~A State Letter is under preparation by ICAO Headquarters to revise the guidelines for 2 NM offset procedures to be applied globally .~~ ~~Based on the ICAO revised guidelines, States to promulgate in State AIPs the routes and airspace where offsets are authorized as required by Annex 2 (Chapter 3, 3.6.2.1.1).~~ ~~Superseded by C15/8~~	~~On-going~~ ~~Closed~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C14/9		**AIRAC provisions** That, ICAO be requested to again reinforce to States the critical safety nature of AIS and adherence to Annex 15 provisions, particular those relating to AIRAC, as well as the need to ensuring accurate and timely publication of AIS data.	Timelines for the dissemination of changes to AIS are contained in Annex 15. The AIS Implementation Task Force (AIS/TF) to undertake a study of the application of Annex 15 requirements by the end of ~~2005~~. 2007 First meeting of AIS Task Force (AITF/1) held 20-24 March 2006, second meeting to be scheduled in March 2007	On-going
C14/45	*C*	**Fostering of exchanges between MET and ATM** a) the MET Authorities/Providers of the States, be encouraged to continually assess with the corresponding ATM authorities the requirements for MET information with the aim of developing new products/information to support the ATM, bearing in mind the potential costs and benefits involved; and ~~b) ICAO be invited, in coordination with WMO, to organize a MET/ATM coordination seminar in ASIA/PAC Region in 2004, to foster the exchanges between the MET and ATM experts in order to facilitate further development of the MET component of the CNS/ATM systems in the ASIA/PAC Region.~~ ~~*Noted the conclusion and invited the Secretary General, in coordination with WMO, to organize a MET/ATM coordination seminar in the ASIA/PAC Region during 2004.*~~	~~A draft seminar programme was agreed by CNS/MET/SG/9 and ATM/AIS/SAR/SG/15 in July 2005. The MET/ATM Seminar has been scheduled for 8-10 February 2006.~~ ~~MET/ATM Seminar conducted 8-10 February 2006. WP/7 to ATM/AIS/SAR/SG/16 refers~~	On-going ~~Completed~~ ~~Completed~~

APANPIRG/16 LIST OF CONCLUSIONS IN THE ATM/AIS/SAR FIELDS

Report Reference ---------- Conc/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
C16/2		**Funding arrangements for regional airspace safety monitoring** That, a study group be convened to develop a feasible and sustainable proposal to equip States to organize and finance necessary safety monitoring mechanisms for the provision of safety services for the international airspaces in the Asia/Pacific region and that States be represented at that meeting by their appropriate legal, financial and organizational experts who would be best equipped and empowered to resolve any difficulties. The study group should report to RASMAG not later than the end of June 2006.	State Letter Ref.: T3/10.1.17 – AP021/06 (ATM) on 24 March 2006 Matter addressed during RASMAG/5 5-8 June 2006. Draft working paper prepared by RASMAG/5 for APANPIRG/17 detailing proposal for funding of regional RMAs, reviewed and endorsed by ATM/AIS/SAR/SG/16	On-going Completed, needs APANPIRG - 17 review
~~**C16/3**~~		~~**Large Height Deviations – Western Pacific/South China Sea area**~~ ~~That, in noting the prevalence of RVSM large height deviation occurrences in the Western Pacific/South China Sea area, the Regional Office draw the attention of all States concerned to identify and put in place remedial actions to mitigate such significant errors on an urgent basis.~~	~~Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05 (ATM), dated 21 Nov 2005 advising States of a standardized approach to the collection of vertical and horizontal traffic sample data, and emphasizing a number of relevant Conclusions adopted by APANPIRG 16 (August 2005):~~	~~On-going~~ ~~Completed~~

Report Reference ---------- Conc/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
~~C16/4~~		~~**Traffic Sample Data Collection**~~ ~~That, States be advised by the Regional Office that December every year had been adopted for the routine collection of 30 days of traffic sample data to satisfy airspace safety monitoring requirements~~	~~Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05 (ATM), dated 21 Nov 2005 advising States of a standardized approach to the collection of vertical and horizontal traffic sample data, and emphasizing a number of relevant Conclusions adopted by APANPIRG 16 (August 2005).~~	~~On-going~~ ~~Completed~~
~~C16/5~~		~~**Non-implementation of reduced separation unless compliant with Annex 11**~~ ~~That, recognizing that some States had not adequately complied with safety management provisions, the Regional Office advise States of the Asia/Pacific Region that further regional implementation of reduced separation minima should only proceed in circumstances where implementing States can demonstrate an ability to comply with Annex 11, Chapter 2, safety management provisions for the continuous monitoring and regular assessment of the safety level achieved.~~	~~Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05 (ATM), dated 21 Nov 2005 advising States of a standardized approach to the collection of vertical and horizontal traffic sample data, and emphasizing a number of relevant Conclusions adopted by APANPIRG 16 (August 2005).~~	~~On-going~~ ~~Completed~~

Report Reference ---------- Conc/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
~~C16/6~~		~~**Non-provision of safety related data by States**~~ ~~That the Regional Office advise that States not providing safety related data to approved regional safety monitoring agencies, including RMAs, in accordance with the requirements of safety monitoring agencies will be included in the APANPIRG List of Deficiencies in the ATM/AIS/SAR fields.~~	~~Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05 (ATM), dated 21 Nov 2005 advising States of a standardized approach to the collection of vertical and horizontal traffic sample data, and emphasizing a number of relevant Conclusions adopted by APANPIRG 16 (August 2005).~~	~~On-going~~ ~~Completed~~
~~C16/7~~		~~**Deletion of ATS Routes from the APANPIRG List of Deficiencies**~~ ~~That, the ATS routes in the APANPIRG List of Deficiencies, which are no longer applicable to the List as a result of revision of ATS route network and have been incorporated in the *Asia/Pacific ATS Route Catalogue*, be deleted from the APANPIRG List of Deficiencies in the ATM/AIS/SAR fields.~~	~~Routes deleted~~	~~On-going~~ ~~Completed~~
~~C16/10~~		~~**Review of ATS Route Catalogue by States**~~ ~~That, the States concerned study the routes in the *Asia/Pacific ATS Route Catalogue* in respect to the feasibility of the route requirements, in order to consider their implementation with appropriate priorities, and to raise route implementation proposals at relevant ATS Coordination Meetings in the Asia/Pacific Region.~~	~~Catalogue presented to all ATS Coordination Group meetings during 2005/2006 including, BBACG, SEACG; ISPACG, IPACG. Revisions included in Version 3 (June 2006) of the Catalogue. ATS Routes are a standing item on the agenda of ATS Coordination Groups~~	~~On-going~~ ~~Closed~~

Report Reference ---------- Conc/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
~~C16/12~~		~~**Implementation of 30/30 NM Separation Minima**~~ ~~That, recognizing the comprehensive planning and implementation processes, especially in regard to safety management practices, adopted by ISPACG to implement 30 NM lateral and 30 NM longitudinal separation minima in specific airspace in the Pacific Region, States be advised by letter from the Regional Office to use this as a model in implementing reduced separation applications.~~	~~State Letter Ref.: T3/10.0, T3/8.23 : AP061/06 (ATM) transmitted 23 June 2006~~	~~On-going~~ ~~Completed~~
C16/13		**ATM Contingency Planning for Volcanic Ash Cloud avoidance** That, Asia/Pacific States be urged by State Letter from the Regional Office to amend or develop ATM contingency plans, as necessary, that would: a) provide Air Traffic Management policy and coordination procedures that ensure safe and orderly flow of air traffic around areas of volcanic ash; b) promulgate the status of active volcanoes via the colour code system as specified in Annex 15, Aeronautical Information Service, and the Handbook on the International Airways Volcano Watch (Doc 9766); and c) provide templates and a rapid means of disseminating volcanic Ash SIGMETs, ASHTAM's, NOTAM's, Volcanic Ash Advisories and other flight information.	State Letter in preparation	On-going
C16/15		**Special Implementation Project for Development of a State Contingency Plan** That, in order to provide a model for States of the Asia/Pacific Region in preparing their national contingency plans, ICAO undertake a special implementation project (SIP) during 2006 to assist a State of the Region to prepare and implement a contingency plan in accordance with Annex 11, Appendix D, and in line with APANPIRG Conclusion 13/8. The SIP should also identify and prioritize other contingency circumstances that may affect civil aviation operations in the ATM context and make recommendations accordingly.	SIP proposal prepared by Regional Office and approved by Council of ICAO. SIP commences July 2006 in Indonesia	On-going

Report Reference ---------- Conc/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
~~**C16/17**~~		~~**Equitable Sharing by Civil and Military Users**~~ ~~That, noting that effective coordination between civil and military agencies was essential, States of the Asia Pacific Region be advised by State Letter on the need to adopt the principle of the ***equitable sharing of both convenience and inconvenience*** in the use of airspace and facilities by civil and military users.~~	~~State Letter Ref.: T3/10.0, T3/4.12 : AP063/06 (ATM) transmitted 23 June 2006~~	~~On-going~~ ~~Closed~~
C16/18		**Assistance to States to develop safety management systems** That, recognizing that many States in the Asia/Pacific Region require assistance to implement safety management programmes in accordance with Annex 11, States with expertise in implementing and operating ICAO compliant safety management systems inform ICAO by end of 2005 of their willingness to participate in a series of seminars/workshops to be arranged by ICAO during 2006-2007 to assist States.	Regional Office coordinating with CAD Hong Kong China fro conduct of AST Safety Management Workshop during first quarter 2007	On-going
C16/19		**Study of States' preparedness to implement safety management systems** That, a study of States' preparedness to implement ICAO safety management systems in accordance with Annex 11 be undertaken by the Asia/Pacific Regional Office in conjunction with the ATS coordination groups and RASMAG by the first quarter of 2006, and a plan of action developed to be reported to APANPIRG/17 in September 2006.		On-going
~~**C16/20**~~		~~**Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region**~~ ~~That the *Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region*, as shown in Appendix B to the Report on Agenda Item 2.1, be circulated as regional guidance material by the Regional Office, in accordance with established procedures.~~	~~Guidance Material distributed by State Letter Ref.: T 3/10.1.17 AP048/06 (ATM) dated 5 June 2006. 5 June 2006~~	~~On-going~~ ~~Completed~~

Report Reference ---------- Conc/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
~~C16/21~~		~~**Status of compliance with Language Proficiency requirements**~~ ~~That, the Regional Office urgently conduct a survey of all Asia/Pacific States for the purposes of ascertaining States' circumstances in respect of compliance by March 2008 with ICAO provisions in respect of Operational Level 4 language proficiency.~~	~~State Letter Ref.: T3/9.4 – AP128/05 (ATM) dated 7 December 2005~~ ~~Regional Office conducted survey during early 2006, results forwarded to ICAO HQ for consideration by ANC during June 2006~~	~~On-going~~ ~~Completed~~
~~C16/22~~		~~**Recommendations of the ICAO SAR Seminar and SAREX held at Chennai, India**~~ ~~That, the recommendations made by the ICAO SAR Seminar and SAREX held at Chennai, India on 7-11 March 2005, as shown in Appendix D to the report on Agenda Item 2.1, be disseminated by ICAO Regional Office to the States and International Organizations of the Asia and Pacific Region.~~	~~State Letter Ref.: T3/10.0, T3/11.6 : AP062/06 (ATM) transmitted on 23 June 2006~~	~~On-going~~ ~~Closed~~
C16/23		**Special Implementation Project International Seminar and SAREX** That, ICAO consider a proposal for an Asia/Pacific Special Implementation Project to be established with the primary objective to improve search and rescue services, coordination and cooperation between island States of the Pacific.	SIP proposal prepared by Regional Office and approved by Council of ICAO. SIP proposed to commence in last quarter 2006	On-going
~~C16/36~~		~~**ADS-B Implementation and Operational Guidance Document (AIGD)**~~ ~~That, the ADS-B Implementation and Operational Guidance Document as provided in Appendix G to the Report on Agenda Item 2.2 be adopted and circulated to States in the Asia/Pacific Region and International Organizations.~~	~~State Letter Ref: T8/9.1:AP-0053/06 (CNS) transmitted~~	~~On-going~~ ~~Completed~~

Report Reference ---------- Conc/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
C16/53		**Regional Contingency Arrangement in support to continuity of aviation operations in the events of natural disasters or other crisis situations** That, a) Asia/Pacific States be invited to provide data to the ICAO Regional Office regarding availability of resources and services which could be readily made available in the event of natural disaster and other crisis situations to the States in need and to support international humanitarian relief operations involving aviation; b) Based on the data received from the States, ICAO Regional Office develop a catalogue and act as a facilitator and coordinator of the international aviation operations in response to disasters and other crises. The catalogue would provide details regarding contact points, general description of facilities and services available and arrangements under which services would be provided (i.e. government to government, commercial, humanitarian, etc.); and c) States consider implementing RNAV (GNSS) approaches procedures as an alternate to ground-based radio navaids in particular for areas prone to natural disasters, such as tsunami, tropical cyclones, volcanic eruptions, etc.		On-going On-going On-going
C16/57		**Workshop on Fuel Savings Measures** That, ICAO consider arranging a workshop for Asia/Pacific States in 2006 that focuses on best practices for achieving fuel efficiencies in airport, TMA and en-route environment.	Difficulties experienced in scheduling this workshop, work continuing, will carry over to 2007 work programme if Regional Office resources permit	On-going

Report Reference ---------- Conc/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
C16/61		**UAV Operation** That, ICAO develop, as a priority, appropriate provisions and guidance material for the operation of UAV.	UAV Exploratory meeting held at ICAO HQ in May 2006. Working Paper 13 to ATM/AIS/SAR/SG/16 refers	On-going
~~**C16/62**~~		~~**State focal point for safety-related activities**~~ ~~That, Asia/Pacific States notify to the Regional Office by the first quarter of 2006 a responsible contact officer or position to act as a focal point for safety related activities and in particular for the submission and coordination of ATS incident reports.~~	~~State Letter Ref.: T3/10.0 – AP129/05 (ATM) transmitted 12 December 2005 List prepared and being maintained by Regional Offcie~~	~~On-going~~ ~~Completed~~

APANPIRG/16 LIST OF DECISIONS IN THE ATM/AIS/SAR FIELDS

Report Reference ---------- Decision/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
~~**D16/1**~~		~~**Safety Monitoring Agency (SMA)**~~ ~~That, the term Safety Monitoring Agency (SMA) be used to describe an organization approved by regional agreement to provide airspace safety monitoring and implementation services for international airspace in the Asia/Pacific region for implementation and operation of reduced horizontal separation.~~		~~On-going~~ ~~Completed~~
~~**D16/8**~~		~~**To Discontinue the Development of ATS Route Master Database**~~ ~~That, as the ATS route data required was provided in the *Asia/Pacific ATS Route Catalogue* and was available from other sources, the development of the ATS Master Database by the Asia and Pacific Regional Office be discontinued.~~		~~On-going~~ ~~Completed~~
~~**D16/9**~~		~~**Acceptance of the Asia/Pacific ATS Route Catalogue**~~ ~~That, the *Asia/Pacific ATS Route Catalogue* as shown in Appendix A to the Report on Agenda Item 2.1 be accepted as a regional planning tool and be maintained and updated on regular basis.~~		~~On-going~~ ~~Completed~~
~~**D16/11**~~		~~**To Disband the ARNR Task Force**~~ ~~That, as the ARNR/TF had completed the tasks assigned by APANPIRG/14, and all outstanding issues have been identified and follow-up actions completed or assigned to other ATS coordination groups as appropriate, the ARNR Task Force be disbanded.~~		~~On-going~~ ~~Completed~~

Report Reference ---------- Decision/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
~~**D16/14**~~		~~**Contingency Plans on ATS Coordination Group Agendas**~~ ~~That, the development of State Contingency Plans be included as an item on the agenda of State ATS coordination meetings.~~	~~Included as standing Agenda Item on BBACG and SEACG Agendas, considered by ISPACG, IPACG and ASIOCG~~	~~On-going~~ ~~Completed~~
~~**D16/16**~~		~~**Civil Military Coordination**~~ ~~That, "Civil Military Coordination" be included as an item on the agendas and/or task lists of regional ATS Coordination Groups.~~	~~Included as standing Agenda Item on BBACG, SEACG and ISPACG Agendas, considered by IPACG and ASIOCG~~	~~On-going~~ ~~Completed~~
~~**D16/58**~~		~~**Amendment to the Regional Plan for the CNS/ATM System to include ADS-B**~~ ~~That the ASIA/PAC Regional Plan for the New CNS/ATM System be amended to include ADS-B element for the surveillance systems as indicated in the Appendix C to the Report on Agenda Item 3.~~		~~On-going~~ ~~Completed~~
D16/59		**Review of the Regional Plan for the New CNS/ATM System** That, the CNS/MET, ATM/AIS /SAR Sub-groups and RASMAG be tasked to review the Global Air Navigation Plan for the CNS/ATM System and the ASIA/PAC Regional Plan for the New CNS/ATM system with a view to avoiding any duplication with the updated Global Plan. The work should commence immediately after issuance of new edition of the Global Plan.	Second Amendment to the Global Plan not yet published, expected late 2006. New proposal drafted by ATM/AIS/SAR/SG/16 for consideration by CNS/MET/SG/10 then APANPIRG/17	On-going

Report Reference ---------- Decision/No	Action by ANC/ Council	Action by ANC/Council	Action by States/ICAO	Status
D16/60		**Correlation of Aircraft Identification** That, ATM/AIS/SAR and CNS/MET Sub-groups study the use of "aircraft identification" as an unique 'key' for correlation between flight plan data and surveillance information considering operational and technical aspects for implementation. The result of study be presented for consideration by APANPIRG/17.		On-going

– END –

AGENDA ITEM 3

Agenda Item 3: Review and progress the tasks assigned to the ATM/AIS/SAR/SG by APANPIRG

Review of the reports of the RVSM Task Force meetings

3.1 The Secretariat updated the meeting on progress by the RVSM Task Force to implement the regional RVSM plan and to take follow-up action. The RVSM/TF continued its work programme established by APANPIRG to implement RVSM in the Incheon, Naha and Tokyo FIRs, and to follow-up on implementation of RVSM in the Western Pacific/South China Sea (WPAC/SCS) areas. Since ATM/AIS/SAR/SG/15 (July 2005), the Task Force had met three times as follows:

a) Special Coordination Meeting: 20 September 2005, Bangkok, Thailand (arrangements for the RVSM/TF review of the SCS Flight Level Orientation Scheme (FLOS))

b) RVSM/TF/27: 27 February - 1 March 2006, Bangkok, Thailand (90-day Review of RVSM Implementation in the Incheon, Naha and Tokyo FIRs)

c) RVSM/TF/28: 24 – 28 April 2006, Bangkok. Thailand
(Review of the Flight Level Orientation Scheme in the SCS Area)

Special Coordination Meeting for RVSM/TF Review of WPAC/SCS FLOS (SCM RVSM FLOS)

3.2 SCM RVSM FLOS was convened to discuss the way forward to implement the new FLOS scheme that had been proposed by RVSM/TF/22 (September 2004), and to prepare for RVSM/TF/28 scheduled in April 2006 to finalize the new FLOS arrangements.

3.3 It was recalled that RVSM/TF/22 had agreed to a follow-up meeting to be held in April/May 2005 when the results of the safety assessment to be conducted by the Monitoring Agency for Asia Region (MAAR), and the detailed examination of operational factors to be carried out by all parties concerned would be evaluated. Subsequently, the follow-up meeting had to be postponed due to insufficient safety data being provided by some States to enable MAAR to complete the safety assessment in time. The meeting was tentatively rescheduled in January/February 2006 after implementation of RVSM by Japan and the Republic of Korea in September 2005.

3.4 At the SCM, MAAR presented three scenarios of flight level allocation that were used as the basis for conducting the safety assessments for the FLOS review. The base case was the current FLOS used in the WPAC/SCS area. Scenario 1 was the FLOS change proposed at RVSM/TF/22 and Scenario 2 was essentially the same as Scenario 1, but with minor changes for ATS routes A1 and P901.

RVSM/TF/27 – 90-day Review of RVSM Implementation in the Incheon, Naha and Tokyo FIRs

3.5 RVSM/TF/27 carried out the 90-day review of RVSM implementation on 29 September 2005 in the Incheon FIR and Japanese domestic airspace in the Naha and Tokyo FIRs as planned.

Issues Relating to Airworthiness and Approval of Aircraft

3.6 RVSM/TF/27 recalled the outcome of RVSM/TF/26, which reported that statistically 76.5% of aircraft being operated in the Japanese domestic airspace between FL 290 and FL 410 inclusive were confirmed to be RVSM approved while Korean national carriers, i.e. Korean Air and Asiana Airlines, had already obtained RVSM approvals for all their fleets. All Japanese operators who wished to operate in the RVSM airspace received operational approvals for their fleets by 29 September, 2005. As a result, 100% of IFR flights in the domestic RVSM airspace were conducted by RVSM certified aircraft after the implementation.

Safety and Airspace Monitoring Considerations

3.7 RVSM/TF/27 was updated with the results of the 90-day airspace safety oversight provided by MAAR. As shown in Table-1 below, the overall risk was calculated to be well below the established RVSM TLS of 5×10^{-9} fatal accidents per flight hour.

Source of Risk	Lower Bound Risk Estimation	TLS	Remarks
Technical Risk	8.08×10^{-10}	2.5×10^{-9}	Satisfies Technical TLS
Operational Risk	2.80×10^{-9}	-	-
Total Risk	3.60×10^{-9}	5.0×10^{-9}	Satisfies Overall TLS

Table-1: Risk Estimates for the RVSM Implementation in the Japan and the Republic of Korea Airspace

3.8 It was recalled that APANPIRG had assigned the Pacific Aircraft Registry and Monitoring Organization (PARMO) operated by the Federal Aviation Administration (FAA) of the United States the responsibility for providing the Regional Monitoring Agency (RMA) services for airspaces within the Asia/Pacific Region including the Naha, Tokyo and Incheon FIRs. However, as noted by RASMAG/3 (June 2005), because PARMO had been heavily committed to the implementation of RVSM in Canada, Mexico and the USA scheduled for 20 January 2005, MAAR had agreed to assist PARMO in the interim by providing the RMA services for RVSM implementation in the Incheon, Naha and Tokyo FIRs.

3.9 In view of MAAR having completed the 90 day review, RVSM/TF/27 examined the readiness of PARMO to assume the duties and responsibilities for the RMA to support the continued safe use of RVSM in the Japan and the Republic of Korea airspace, and concluded that the responsibilities of the RMA should be reverted to PARMO as previously agreed.

Implementation Management Considerations

3.10 RVSM/TF/27 was informed of the outcome of the Special Coordination Meeting on ATS Routes A593 and B576 (SCM A593/B576, December 2005). The SCM acknowledged the cooperative and collaborative approach which had been exhibited by China, Japan and the Republic of Korea, in ensuring the safety and efficiency of operations on ATS routes A593 and B576 in the Incheon FIR based on the 1983 Memorandum of Understanding (MOU) arrangements.

3.11 The SCM was of the view that Letters of Agreement established as a result of the 1983 MOU were in accordance with the provisions of Annex 11, Paragraphs 3.5.1 and 3.5.2, and reconfirmed that the 1983 MOU was valid in overseeing the current operational arrangements. Although the MOU arrangements had proved robust and, in the hands of the respective ATS providers, had resulted in safe and efficient operations for many years, the SCM recognized that it

was important to consider current circumstances and future changes and commenced a work programme accordingly.

RVSM/TF/28 – Review of the FLOS for the South China Sea Area

Review Proposed Change to Level Allocation

3.12 RVSM/TF/28 reviewed progress to date in addressing the issues arising form the operation of RVSM in the SCS airspace and impact on adjacent airspaces. The meeting recognized the effort of RVSM/TF/22 in developing the flight level allocation system (FLAS) scenarios in an attempt to reduce transition tasks and harmonize the flow of RVSM traffic between the SCS area and the Bay of Bengal and Beyond area, as well as the Pacific area.

3.13 The meeting noted that the Philippines had expressed the desire to continue to operate with the current FLAS. Furthermore, the Philippines advised RVSM/TF/28 of its desire to adopt the single alternate FLOS without any modification in the Manila FIR. After deliberation on the current and proposed FLAS in terms of safety, capacity, regularity, transition workload, operations and harmonization, RVSM/TF/28 noted that the Philippines, despite undertaking an initiative to propose the changes in the FLAS during RVSM/TF/22, had disagreed with the adoption of the proposed FLAS.

3.14 RVSM/TF/28 agreed that work should continue to address the concerns expressed by other States. Accordingly, it was agreed that the FLAS proposal could be raised at the South-East Asia ATS Coordination Group (SEACG) or, if necessary, at the ATM/AIS/SAR Sub-group. RVSM/TF/28 expressed appreciation to MAAR for their tireless work to conduct the safety assessment for the new FLAS in the SCS area.

Review by the Sub-group

3.15 During the review of the RVSM/TF activities, the meeting was informed that the last remaining meeting of the Task Force was the one year review of the Japan and the Republic of Korea RVSM implementation, scheduled for November 2006. In this context, the meeting discussed whether the Task Force could be discontinued.

3.16 Japan considered that the RVSM/TF should not be disbanded, noting that the Terms of Reference of the Task Force included a responsibility for developing strategic, benefit-driven implementation plans, in concert with airspace users, for RVSM operations within selected areas and airspace of the Asia/Pacific Region in order to ensure inter-regional harmonization.

3.17 China informed the meeting that they acknowledged the benefits available from RVSM and had commenced active research in relation to implementing RVSM in China’s sovereign airspace.

3.18 As China shared its borders with about 10 neighbouring FIRs which would be affected by RVSM implementation in China, including transition arrangements between flight levels defined in feet and meters, the meeting considered that the knowledge and experience that had been gained by the RVSM/TF could be useful to China and surrounding States and would assist in inter-regional harmonization when China proceeded with RVSM implementation.

3.19 Accordingly, the meeting agreed that it was not necessary for a decision to dissolve the RVSM/TF to be made immediately, and that such a decision could be considered equally well after the one year review meeting for the Japan/Republic of Korea RVSM implementation that was scheduled in November 2006. The matter would again be raised during the next meeting of the

ATM/AIS/SAR/ Sub-Group in June/July 2007 and if China wished to avail of the assistance of the RVSM/TF this would comprise part of the discussions at that time.

Initial study on RVSM benefits in Japan

3.20 Japan Civil Aviation Bureau (JCAB) continued consultation with ACCs, aircraft operators including general aviation and defense authorities through the established RVSM Working Group (WG) in order to collect feed-back and traffic data with a view to further improving RVSM operations in Japan. This RVSM WG had also been tasked to examine the effectiveness of RVSM operations, in particular how the expected benefits were being achieved.

Analysis Methodology

3.21 In order to examine benefits, (JCAB) used its flight data processing (FDP) system and gathered information of planned flight levels (FLs) and actual assigned FLs of all flights conducted between FL 250 and FL 450 inclusive from September to December 2005. The collected information was used to compare operational difference between the pre-implementation period in September and the post-implementation period through October to December, and determine to what degree actual flights were conducted at the planned FLs, and the average FL actually flown.

Analysis Results

3.22 Sampling data indicate that the matching rate between the planned FLs and actually assigned FLs was 64.0% before RVSM, but decreased to 59.3% after RVSM. However, when aircraft were not assigned to the planned FL, the difference between the planned FLs and the actually assigned FLs became smaller after RVSM implementation.

3.23 It was concluded that the average FL had increased by approximately 400 ft as a result of RVSM implementation on 29 September 2005. This 400 ft increase of the average FLs was considered to have lead to 0.6% fuel saving on assumption that an increase of cruise altitude by 2,000 ft in RVSM environment would generally save fuel burn by approximately 3%. It was considered that flight distance and duration at an RVSM cruise FL were relatively short for domestic flights in Japan and the expected fuel saving benefits may not be apparently achieved as estimated.

Review of the Global and Regional Plans

3.24 The meeting recalled that APANPIRG/16 had been informed that the CNS/MET SG/9 (July 2005), in conducting the review of the bar chart timelines table for surveillance system in the *Asia/Pacific Regional Plan for the New CNS/ATM Systems*, (the "Regional Plan"), had noted that the Regional Plan was in need of significant revision. Considering the need to achieve alignment with the *Global Air Navigation Plan for CNS/ATM Systems*, which was being renamed as the *Global Air Navigation Plan*, (hereinafter "Global Plan"), and that the information provided in the Regional Plan was being transferred into the FASID, APANPIRG/16 considered an extensive revision of the Regional Plan was necessary.

3.25 APANPIRG/16 further considered that the most appropriate action was to eliminate the Regional Plan and to capture any specific regional information in a Supplement to the Global Plan. Implementation status and plans would be reflected in the relevant FASID Tables using the nomenclature available in the tables. Recognizing that the new edition of Global Plan was still to be finalized and would be available only after June 2006, APANPIRG/16 formulated the following Decision.

Decision 16/59 - Review of the Regional Plan for the New CNS/ATM System

That, the CNS/MET, ATM/AIS /SAR Sub-groups and RASMAG be tasked to review the Global Air Navigation Plan for the CNS/ATM System and the ASIA/PAC Regional Plan for the New CNS/ATM system with a view to avoiding any duplication with the updated Global Plan. The work should commence immediately after issuance of new edition of the Global Plan.

3.26 The meeting was informed that the Second Amendment to the Global Plan was now expected to be finalised late in 2006. The revised Global Plan had been developed with the intention of addressing the near and medium term needs of aircraft operators, with the aim of taking advantage of currently available aircraft capabilities and ATS infrastructure and technology. The twenty three Global Planning Initiatives (GPIs) contained in the Global Plan (**Appendix A** to the Report on Agenda Item 3 refers) were developed as a means to ensure global harmonization, interoperability and seamlessness of the global air navigation system and should be seen as supporting "tools" for the PIRGs and Regional Office as they worked towards their regional performance objectives.

3.27 Additionally, ICAO was adopting new business planning processes and the work of the PIRGs would have to be organized on the basis of project management techniques and based on clearly established performance objectives in support of ICAO Strategic Objectives. It was anticipated that each region would be considered as a separate programme and each regional programme should contain several regional projects to cover the PIRG work.

3.28 The GPIs contained in the revised Global Plan were designed to support performance objectives. Therefore the GPIs were not meant to serve as the basis for separate implementation projects in and of themselves, but should support the implementation projects of the region which would be developed on the basis of the identified performance objectives. Accordingly, each region should begin to identify a set of regional "performance objectives", established on identified shortfalls, problem areas, "gaps" or projected needs, taking into account traffic forecasts, aircraft population, current infrastructure etc.

3.29 Subsequently, a process should be undertaken to align the PIRG work efforts into specific projects. This would have the advantage of focusing all work activities, ensuring that resources were efficiently utilised and that all work, including that of the Secretariat, was in support of the ICAO strategic objectives and aligned with the business plan.

3.30 As such, the meeting recognized that the work of APANPIRG would need to be transitioned to the new processes described above. Consequently there would have to be a transition process and ultimately the APANPIRG Sub-Groups would need to develop project proposals for submission to APANPIRG for endorsement.

3.31 It was anticipated that the present APANPIRG list of *Key Priorities for CNS/ATM Implementation in the Asia/Pacific Region* (the "List of Key Priorities") would be useful in establishing regional performance objectives and subsequent project proposals and that, in turn, it was likely that the List of Key Priorities would be subsumed by the performance objectives and project proposals. As the List of Key Priorities had been extensively reviewed and updated by APANPIRG/16, and recognising that it was likely that the list would be absorbed into the new planning arrangements, the meeting did not undertake further review or update of the List of Key Priorities (**Appendix B** to the Report on Agenda Item 3 refers).

3.32 Recognizing that the task was essentially a matter of implementing the emerging ICAO policy on its two principal planning documents (global and regional), and in order to meet ICAO's objectives described above, the first step should be to study the issues concerned and make

recommendations to APANPIRG in respect to incorporating the Global Plan Initiatives in the regional planning process and to revise regional planning documents as appropriate.

3.33 The meeting considered that forming a Task Force under APANPIRG would be the most effective way to undertake this work. The membership of the Task Force should initially comprise the Chairpersons (or suitable delegates) of the APANPIRG Sub-Groups in line with Decision 16/59 and representatives of the Regional Office. The task should be completed by the end of May 2007 in order to facilitate the Sub-Group's developing their work programmes in accordance with the recommendations of the Task Force, for consideration by APANPIRG/18.

3.34 The meeting agreed to the following draft Terms of Reference of the Task Force;

a) to address the intention of APANPIRG Decision 16/59, taking into account the ICAO Global Plan Initiatives described in Amendment 2 to the Global Plan and the ICAO new business planning processes;

b) to review all existing regional planning material, including the *Asia Pacific BANP and FASID, Asia/Pacific Regional Plan for the New CNS/ATM Systems* and the APANPIRG list of *Key Priorities for CNS/ATM Implementation in the Asia/Pacific Region*;

c) in conducting the review in b) above, to ensure that appropriate material was retained, duplication removed and redundant material discarded;

d) endeavour, insofar as possible, to package the regional work programme into discrete projects in accordance with ICAO business planning methodologies;

e) complete the review of all matters by end of May 2007 and report to APANPIRG/18 through the APANPIRG Sub-Groups; and

f) make submissions and recommendations to APANPIRG on the results of the review.

3.35 In light of the foregoing, the meeting agreed to the following draft Decision:

Draft Decision 16/3 – Establish APANPIRG Regional Planning Review Task Force

That, recognizing the new regional planning methodologies precipitated by the second amendment to the Global Plan and ICAO business planning requirements, a Task Force be established, initially comprising the Chairpersons (or suitable delegates) of the CNS/MET and ATM/AIS/SAR Sub-groups and representatives of the Regional Office to review global and regional planning arrangements and related documentation in accordance with the task force Terms of Reference provided by APANPIRG.

Review of State Contingency Planning

3.36 During the years from 2001 to 2004, APANPIRG/12, 13, 14 and 15 continued attempts to address ATS contingency planning matters and considered instances in which restricted airspace had been declared, or was about to be declared, over the high seas that had an impact on the provision of services to international civil operations. APANPIRG acknowledged that the closure of air space over the high seas was in breach of *The Convention on International Civil* Aviation and required (Conclusion 13/8) that States review, amend or develop contingency plans to address these matters.

3.37 During August 2004, the APANPIRG/15 was advised that as a result of resource limitations at the Regional Office, the survey of contingency plans required since August 2001 under Conclusion 12/6 had still not been undertaken, but again requested the Regional Office to complete the survey. The survey was initiated in March 2005, using Attachment D to Annex 11 as the primary reference.

3.38 APANPIRG/16 expressed the view that developing a State contingency plan to meet ICAO requirements could be very complex and involve a wide range of issues, such as delegating responsibility to another State for provision of ATS and associated legal, financial and technical issues, the involvement of many government agencies, and development of operational procedures and training for pilots and controllers. APANPIRG/16 acknowledged that for some States these matters could be difficult to overcome.

3.39 In light of the longstanding difficulties, APANPIRG/16 considered (Conclusion 16/15) that an ICAO Special Implementation Project (SIP) would be a suitable means for facilitating the development of contingency plans. Contingency plans would be developed for a selected State, which could then be used as a model for other States. In addition to addressing the contingency provisions of Annex 11, the SIP would be used to identify and prioritize other contingency factors that could impact the continuity of civil aviation operations, with a view to using the output of the SIP in a workshop or seminar format to assist other States of the Region. Details of the SIPs approved by the Council of ICAO in this respect have been included in paragraphs 4.41 to 4.45 of this report.

3.40 A summary of the survey outcomes has been included as **Appendix C** to the Report on Agenda Item 3 and would be presented to APANPIRG/17.

3.41 A lengthy discussion in relation to contingency planning ensued. A number of States sought guidance on what was required by ICAO and to what level of complexity. Arrangements to any depth quickly became complicated and the variety of contingency circumstances that could eventuate was endless. It was not possible to address each and every circumstance with any confidence and the cost of attempting to do so was significant.

3.42 The Secretariat considered that in the ICAO context, the continuity of international civil aviation operations was most significant. Although circumstances where a State was unable to provide all the services listed in their AIP were sometimes unavoidable, this should not generally result in the closure of international airspace. Situations where difficult circumstances were being experienced by a ground unit were always regrettable, however contingency planning should make adequate provision for ongoing operations (including humanitarian operations) by putting in place alternative arrangements that may include assistance from neighbouring States to temporarily provide services in affected airspace.

3.43 The Secretariat observed that in the age of ultra long haul operations whereby a flight was airborne for 15 hours and crossed a large number of FIRs, contingency planning was required to ensure that sudden circumstances where an airspace or FIR en-route was not able to be crossed did not arise.

3.44 In urging States to complete the Contingency Survey and provide the information to the Regional Office as soon as possible, the Secretariat reminded the meeting that in this context the provisions of Attachment D to Annex 11 comprised the primary reference and all States were encouraged to again review the provisions of Attachment D.

Reductions of Separation in the Oakland and Anchorage FIRs

3.45 The meeting was provided information on the adoption by the United States FAA of a mixed environment strategy for the implementation of reduced separation standards based on automatic dependent surveillance (ADS), including 50 NM lateral/50 NM longitudinal and 30 NM lateral/30 NM longitudinal (30/30). The mixed environment allowed properly equipped aircraft to take advantage of reduced separation standards while not penalizing those that were not yet equipped.

Oakland FIR

3.46 Oakland ARTCC began utilizing 50 NM longitudinal separation based on ADS throughout the Oakland FIR upon transition to Ocean21 in October 2005. In December 2005, Oakland began using 30/30 in operational trials between California and Australia/New Zealand for RNP 4 approved aircraft. The FAA intended to complete an initial draft plan by September 2006 that outlines 30/30 expansion options.

Anchorage FIRs

3.47 The FAA was initiating an airspace study for the Anchorage FIRs to determine the feasibility and benefits of implementing the following:

a) 10 minute longitudinal separation without assignment of Mach number;

b) 50 NM longitudinal separation based on RNP 10 approved aircraft; and

c) 30/30 separation based on RNP 4 approved aircraft.

Aeronautical Information Service Matters

Afghanistan NOTAM Services

3.48 The meeting was informed that because of the difficulties in AIS service provision in Afghanistan resulting from State infrastructure problems, the AIS Office of the Civil Aviation Authority of Singapore (CAAS) had generously provided NOTAM services on behalf of Afghanistan for an eleven year period. The CAAS AIS Office commenced NOTAM services for Afghanistan in June 1995 until, as a result of technology improvements at the FAA facilities at Ramstein Germany, the FAA was able to take over NOTAM provision for Afghanistan from June 2006.

3.49 The meeting recognized the commitment of CAAS in this respect and thanked Singapore for providing assistance to Afghanistan over this long period of time.

Outcome of the Survey of the Quality System in AIS

3.50 The meeting noted that Paragraph 3.2.1 of Annex 15 – *Aeronautical Information Services* required each Contracting State to introduce quality systems as follows:

> *3.2.1 Each Contracting State shall take necessary measures to introduce a properly organized quality system containing procedures, process and resources necessary to implement quality management at each function stage as outlined in 3.1.7 above* (receiving, and/or originating, collating or assembling, editing, formatting, publishing, storing and distributing).

3.51 The meeting recognized that Paragraph 3.2.2 of Annex 15 further recommended the International Organization for Standardization (ISO) 9000 series.

3.52 The meeting was informed that the Regional Office conducted a survey to establish how many States had introduced the quality system in accordance with Annex 15 and whether the established quality system was in accordance with the ISO 9000 series. As of 8 March 2006, the Regional Office had received responses from 18 States, five of which had reported that the quality system was implemented in accordance with Annex 15 and the system fully met the ISO 9000 series. The updated survey result as of 24 March 2006 is at **Appendix D** to the Report on Agenda Item 3 and would be presented to APANPIRG/17 for consideration.

3.53 The meeting noted that some States were experiencing difficulties in introducing quality systems and the ISO 9000 series required in Annex 15. In this regard, Viet Nam suggested that the information on introducing quality systems and, in particular, the ISO 9000 series be available from States which have completed implementation of quality system and the ISO 9000. The Regional Office agreed to advise the next meeting of the AITF that this information should be exchanged.

Aeronautical Information Conceptual Model (AICM) & Aeronautical Information Exchange Model (AIXM) Management Seminar, and ICAO AIS Implementation Task Force (AITF/1)

3.54 The Aeronautical Information Conceptual Model (AICM) and Aeronautical Information Exchange Model (AIXM) Management Seminar and the ICAO AIS Implementation Task Force (AITF/1) were held at ICAO Asia and Pacific Office, Bangkok, Thailand on 20 and 21, and 22 – 24 March 2006, respectively.

3.55 The seminar noted that the AIXM enabled aeronautical information management (AIM) by providing an international standards-based foundation. The seminar also noted that a suitable AIS database was a way to improve the quality and management of AIS data within an AIS office. The AIS database was also a way to support all user requirements and become more interoperable. AICM/AIXM could be adopted as the AIS database or used as the basis for internal AIS database. The seminar participants were provided with examples of AIS databases and electronic AIP (eAIP) publications developed by EUROCONTROL to support the European region.

3.56 AITF/1 reviewed the historical background of regional AIS-related Task Forces, recalling that in respect to the delays in convening the AITF as had been required by APANPIRG under Decision 14/8, ATM/AIS/SAR/SG/15 (Bangkok, July 2005) had formulated the following decision:

Decision 15/8 - Convening the ICAO AIS Implementation Task Force

That, in light of the importance of CNS/ATM operational concept as endorsed by the 11th Air Navigation Conference and the critical importance of the accuracy and timeliness of aeronautical information, the ICAO AIS Implementation Task Force be convened as planned in late 2005.

3.57 AITF/1 noted that a previous survey in relation to AIS-related matters such as automation, Quality Systems and AIS database was conducted to investigate how the requirements in the regional *Guidance Material for AIS Common Operation* could be met. It was suggested that an updated survey be carried out, particularly in relation to new Aeronautical Data requirements and electronic Terrain/Obstacle Data.

3.58 The meeting supported the initiative of AITF/1 in this respect, drafting the following Conclusion:

Draft Conclusion 16/4 – Conduct of Comprehensive AIS Survey

That, recognizing that GPI-18 - *Aeronautical Information* requires the real time availability of quality assured electronic information (aeronautical, terrain and obstacle), the Regional Office conduct a comprehensive survey of all Asia/Pacific States in relation to AIS matters, including details of status in relation to the automation of dynamic data, automation of static data and availability of electronic terrain and obstacle data.

3.59 Australia provided AITF/1 with the details on deficiencies applicable to AIS that were reported at ATM/AIS/SAR/SG15. The meeting agreed that the Task Force would maintain continuous watch on the following list of AIS-related potential deficiencies:

a) Implementation of Digital Terrain data;

b) Implementation of Digital aeronautical charts;

c) Implementation of AIS Quality Systems (including training of AIS staff);

d) AIRAC adherence; and

e) AIS Automation.

3.60 Australia offered to lead a working group of the Task Force to draft an improvement plan to address the deficiencies for consideration at the next Task Force meeting.

3.61 AITF/1 recalled that the 12th Edition of Annex 15 contained new provisions on definitions, the vertical and temporal reference system, electronic terrain and obstacle data, aeronautical data quality requirements, inclusion of GNSS-related elements in aeronautical information and the AIP, etc. The introduction and standardization of properly organized Quality System containing procedures, processes and resources necessary to implement Quality Management at each functional stage were standards for the Contracting States.

3.62 AITF/1 noted that Australia had offered to lead a working group of the Task Force to draft an improvement plan to address the deficiencies in the AIS field for consideration at the next AITF meeting. Also, the differences between EUROCONTROL OPADD and the current Asia/Pacific Region OPADD were tabled for consideration and AITF/1 was asked to review these differences. To

progress the work further, AITF/1 agreed to form a work group assessing regional differences in OPADD.

3.63 In light of the foregoing, the meeting noted and supported the intention of AITF to establish the following two work groups under the Task Force.

a) A work group of the Task Force to draft an improvement plan to address the deficiencies in the AIS field; and

b) A work group of the Task Force to investigate the differences between EUROCONTROL OPADD and the current Asia/Pacific Region OPADD.

Non-compliance with AIS AIRAC

3.64 IATA briefed the meeting in relation to the continuing examples of implementations occurring without sufficient notice and not in alignment with the AIRAC cycles. Malaysia and some other States highlighted that in many instances, matters were outside the control of AIS officials as they were driven by political and institutional agendas that lacked knowledge of AIS matters.

3.65 The meeting reviewed APANPIRG Conclusion 14/9 in this respect, agreeing that the Conclusion adequately described the long standing concerns in this respect. The Regional Office would ensure the matter was highlighted to the next meeting of the AITF, scheduled in March 2007, with a view to identifying a solution to this persistent problem. In addition, the meeting requested that Conclusion 14/9 be highlighted to States and drafted the following decision:

Draft Decision 16/5 – Non Compliance with Annex 15 Provisions

That, noting the regular non-compliance with Annex 15 – *Aeronautical Information Services* provisions in respect to AIRAC notification periods, the Regional Office draw the attention of States to the continued relevance of APANPIRG Conclusion 14/9 – *AIRAC Provisions.*

AIS Enhancement Project in Japan

3.66 Japan provided information to the meeting on the introduction of the Aeronautical Information eXchange Model (AIXM) to its new generation AIS database as the advantages of AIXM could be confirmed through examination.

3.67 Japan commenced provision of NOTAM via the Internet in April 2004. The website address is https://www.aisjapan.go.jp. Japan also informed the meeting of its future plan as follows:

1st Stage

JCAB is now developing the new generation AIS database based on AIXM, and the operation is scheduled for March 2008.

2nd Stage

As the second stage, JCAB plans to start the system design to cope with electronic terrain data and obstacle data in 2007 and 2nd Stage operation is planed in 2011.

3.68 As JCAB considered that it was not possible to cope with the revolution in AIS using their present AIS organization, they had decided to establish a new 'AIS center' in April 2007 by consolidating all function of AIS into one place, which would enable effective and efficient use of human resources to meet new challenging business demands.

3.69 In the Japan-Singapore Partnership Program21 (JSPP21) that continued until 2004, "AIS Training Courses" to trainees from developing countries were organized at the Singapore Aviation Academy with the expenses being shared between Singapore and Japan. Japan provided necessary updated information to enhance the AIS.

National Airspace System Aeronautical Information Management Enterprise System (NAIMES)

3.70 Information was provided by the United States on the mission of the National Airspace System Aeronautical Information Management Enterprise System (NAIMES), which would provide quality aeronautical information services.

3.71 NAIMES provides scalable, standards-based, high-reliability systems and network-centric services. It provides users with secure real-time access to critical aeronautical information, essential for domestic, military, and international aviation operations. This system was an "enabler", providing customers and stakeholders with "one-stop" access to critical products and services. NAIMES facilitates the transition of NAS operations from the legacy system (point-to-point) to a network-based system (point-to-cloud) by utilizing both new and existing infrastructure, and developing associated policies and standards.

3.72 Web sites supported by NAIMES include the FAA's Air Traffic Control System Command Center (ATCSCC) portal (formerly the ATCSCC Domestic Web System), providing access to critical NAS data not readily available to ATCSCC, Air Route Traffic Control Center (ARTCC), and other NAS users. The portal includes links to multiple systems, including the Enhanced Traffic Management System (ETMS), United States NOTAM System (USNS), National Oceanic and Atmospheric Administration (NOAA), Defense Internet NOTAM System (DINS), and National Airspace Resources (NASR). A similar website was developed for the airlines in support of FAA collaborative decision making (CDM) partners. Another web site was PilotWeb, which provides General Aviation (GA) Pilots with real-time access to NOTAMs, Graphical Temporary Flight Restrictions (TFRs), weather and other information of interest.

MET/ATM Seminar

3.73 The meeting reviewed the outcomes and recommendations of the MET/ATM Seminar, which had been arranged by the Regional Office in follow up to APANPIRG Conclusion 14/45 - *Fostering of exchanges between MET and ATM*. The Seminar was held at the ICAO Asia and Pacific Office, Bangkok, Thailand on 8-10 February 2006 Office, and was attended by 50 participants from 19 States and one international organization.

3.74 The only previous regional event on a similar subject was held in 1986. The participants at that seminar felt that in order to enhance the coordination between the MET and ATM communities, more frequent seminars/workshops should be organized in the future.

3.75 The purpose of the seminar was to provide a forum for exchange of information on the current and future requirements for MET in support of ATM. The seminar was also aimed at furthering the development of the MET component of the Regional Plan for the New CNS/ATM. In this regard, developments of new MET products in the Asia/Pacific States to meet the emerging ATM requirements were to be reviewed and discussed.

3.76 The seminar covered the following topics:

a) Organization of Air Traffic Management (ATM) and Meteorological Services (MET);

b) Meteorological impacts on ATM and MET information required for ATF;

c) Use of meteorological information by ATM;

d) Future requirements – MET component of CNS/ATM System

3.77 As a result of discussions during the seminar, the following recommendations were formulated:

a) Study further the ATM requirements and establish a set of general requirements for MET services/products (a regional survey to be carried out by the MET/ATM task Force);

b) Update Chapter 11, Meteorology, of the regional plan for CNS/ATM systems and include information about ATM-tailored MET products developed by the States in the region (as presented at the seminar);

Note: The update of Chapter 11 to be done after the adoption of the second amendment to the Global Plan

c) Encourage the CNS/MET SG to discuss the need for developing provisions related to MET services in support to ATM;

d) Stress the importance of weather information as a key factor in the future air navigation systems;

e) Encourage more frequent exchanges between MET and ATM in a similar format (seminar or workshop) with a periodicity of 3 to 4 years;

f) Express strong support to the development of graphical MET products tailored to ATM requirements;

g) Improve the coordination between CNS/MET SG and ATM/AIS/SAR SG on issues related to the provision of meteorological services for air traffic management (present a working paper on the seminar outcomes to both meetings in 2006)

3.78 The meeting expressed its appreciation for the seminar and its outcomes, which would contribute to greater understanding between the ATM and MET services and foster closer working relations, and requested that the Secretariat bring the recommendations from the seminar to the attention of APANPIRG for consideration. It was regrettable that there was such a lengthy period (20 years) between the conduct of activities of this nature and the meeting strongly supported the recommendation at e) above and encouraged States and ICAO to arrange more frequent events, particularly in light of the fast pace at which technology was changing.

3.79 The meeting was appreciative of the coordination that had been successfully undertaken between the ATM/AIS/SAR and CNS/MET Sub Groups in arranging this seminar and

requested that a "thank-you" be passed to the CNS/MET/SG/10 meeting in this respect. A significant discussion ensued in relation to the need for closer links between ATM and MET practitioners and a variety of suggestions were tabled in regard to ensuring that these groups met more frequently. The meeting remarked that in the sense of daily aviation operations the linkages between MET and ATM were closer than the linkages between MET and CNS and that the current Sub-Group disposition was perhaps not helpful in this regard. In this context, the meeting encouraged the Regional Office and the CNS/MET Sub-Group to explore further ways in which the activities of the MET and ATM groups could be brought into closer association.

State focal point for reporting of operational safety matters

3.80 The meeting recalled that ICAO had placed considerable priority on identifying and rectifying deficiencies and strongly supported the sharing of safety data. This was also a high priority item of APANPIRG, and the APANPIRG/16 was concerned about the persistence of operational deficiencies and urged States to a renewed effort, and to take proactive action in tackling such deficiencies. To facilitate timely and effective action in addressing operational deficiencies notified by operators, APANPIRG/16 Conclusion 16/62 requested States to provide a safety contact point. Accordingly, the Regional Office established a database of State notified "Safety Contact Officers"

3.81 The meeting expressed concern at the broadness of the term "Safety Contact Officer" as it suggested that any and all matters relating to safety should come to the attention of such an Official. Many States had a number of safety officials with responsibilities for differing aspects of safety including ATS flight operations aerodromes and so forth. Additionally, some States had published contact details in their AIP to facilitate notification of pilot related safety matters and did not wish the APANPIRG list to detract from these existing arrangements.

3.82 In reviewing Conclusion 16/62, it was clear that the intent was to provide a focal point for ATS safety matters, in particular the submission and coordination of ATS incident reports. In this respect the Regional Office would adjust the title of the list to ensure that the ATS emphasis was more apparent and include a reference to the ATS Planning Manual (Doc 9426), Part II, Section 1, Chapter 3 – *ATS Incident Reporting* as further clarification.

3.83 The meeting updated the contact information and urged States who had not already done so to identify a responsible State ATS Safety Contact Officer and submit contact details to the Regional Office for inclusion in the list, a copy of which has been included as **Appendix E** to the Report on Agenda Item 3.

Search and Rescue (SAR) Matters

3.84 The meeting noted that APANPIRG/16 had addressed the following SAR matters:

a) reviewed the SAR Seminar and SAREX held at Chennai, India in March 2005,

b) endorsed (Conclusion 16/22) the recommendations thereto for consideration by States,

c) updated the APANPIRG SAR Capability Matrix Table and Register of SAR Agreements, and

d) gave support for the holding of regular ICAO SAR Seminars and SAREXs in the Asia and Pacific Region.

Special Implementation Project (SIP) for SAR

3.85 APANPIRG/16, in recognizing the success of the Chennai SAR Seminar and SAREX, raised Conclusion 16/25 calling for a similar event for Pacific Island States. Subsequently, the Council of ICAO approved a SAR SIP to be conducted by the Regional Office during 2006.

Update of SAR Agreements and SAR Capability Matrix in the Asia/Pacific Region

3.86 The meeting reviewed and updated the APANPIRG list of SAR Agreements and the SAR Capability Matrix Table as presented in **Appendices F and G** to the Report on Agenda Item 3 respectively. In this regard, it was noted that Australia had informed the Regional Office of a SAR Arrangement signed with the Republic of the Maldives in April 2006 for the coordination of Search and Rescue services between the States.

3.87 A model SAR agreement is provided in **Appendix H** to the Report on Agenda Item 3 to assist States in preparing Memorandums of Understanding (MOUs) regarding the provision of SAR services.

Vietnam SAR Activities

3.88 Recognizing the importance of the mutual assistance in SAR service provision, the Civil Aviation Administration of Viet Nam (CAAV) has been actively coordinating with other Civil Aviation Administrations in developing and signing Letter of Agreements (LOAs) for provision of assistance in SAR activities. These LOAs, including the SAR coordination procedures and mission control, are based on the Standards and Recommended Practices of Annex 12 to the Convention on International Civil Aviation. The list of SAR agreements was updated in this respect.

SAR activities of COSCAP

3.89 The meeting noted that an ICAO SAR workshop had been held in Bangkok, Thailand in December 2005 for the combined regional Cooperative Development of Safety and Continuing Airworthiness Programmes of North Asia, South Asia and South East Asia (COSCAP NA, SA & SEA).

3.90 In addition, the Seventh Meeting of the Steering Committee (SC) of COSCAP Southeast Asia (COSCAP-SEA SCM/7) held in Hong Kong China in February 2006 had invited ICAO Headquarters to address the meeting on SAR matters of interest to COSCAP-SEA States. In this regard, SCM/7 recognized that other forums in the region addressed SAR issues but COSCAP-SEA could be a forum for further discussion.

Search and Rescue Coordination between Maritime and Aviation Authorities

3.91 Annex 12 – *Search and Rescue* (SAR) and the *International Convention on Maritime SAR* under the International Maritime Organization (IMO) call for harmonization of maritime and aeronautical SAR. The maritime counterpart is called the Asia-Pacific Heads of Maritime Safety Agencies (APHMSA) Forum and meets each April in the Asia/Pacific region. The United States noted that both the APANPIRG and the APHMSA Forum discuss common SAR matters but there appears to be limited sharing of information between the two regional groups.

3.92 The Ninth Asia-Pacific Heads of Maritime Safety Agencies Forum (APHMSA Forum 9, April 2006) discussed a paper which provided an overview of the search and rescue extracts from a previous APANPIRG report. The senior maritime safety officials agreed that there were several SAR topics of common interest and effort, including:

a) analysis of SAR capability,

b) SAR agreements,

c) exercises and seminars, and

d) the concept of some Pacific island States needing additional support to improve SAR capability, in particular, the idea of the Special Implementation Project.

3.93 The participants of the APHMSA Forum 9 (Australia, Canada, Chile, People's Republic of China, Hong Kong, Japan, Malaysia, New Zealand, Solomon Islands, Republic of Philippines, Republic of Korea, Singapore, U.S.A, Vanuatu and Vietnam) issued its communiqué which included the statement: "From the SAR perspective and with the common interest between APHMSA Forum and APANPIRG, the Forum also noted the potential benefits in exchanging appropriate information regarding their meetings."

3.94 Possible actions from the APHMSA Forum attendees could include:

a) APHMSA Forum action on APANPIRG SAR findings;

b) Maritime SAR experts contacting their aeronautical counterparts; and

c) Maritime SAR experts requesting to participate in the APANPIRG SG.

FAA Human Factors Design Standard

3.95 The meeting noted that as a result of the human factors research, the FAA published the FAA Human Factors Design Standard (HFDS) to be used as guidance when developing new ATC applications or systems. The HFDS is available for download at http://hf.tc.faa.gov/hfds/download.htm.

Global Plan Initiatives

GPI-1	Flexible use of airspace	**Scope:** The optimization and equitable balance in the use of airspace between civil and military users, facilitated through both strategic coordination and dynamic interaction. **Related ATM objectives:** Airspace desegregation/flexible use of airspace
GPI-2	Reduced vertical separation minima	**Scope:** The optimization of the utilization of airspace and enhanced aircraft altimetry systems. **Related ATM objectives:** Reduced vertical separation
GPI-3	Harmonize level systems	**Scope:** The adoption by all States of the ICAO Flight Level Scheme based on feet as contained in Appendix 3 to Annex 2 – *Rules of the Air*. **Related ATM objectives:** nil
GPI-4	Alignment of upper airspace classifications	**Scope:** The harmonization of upper airspace and associated traffic handling through application of a common ICAO ATS Airspace Class above an agreed division level. **Related ATM objectives:** nil
GPI-5	Performance based navigation	**Scope:** The incorporation of advanced aircraft navigation capabilities into the air navigation system infrastructure. **Related ATM objectives:** Application of required navigation performance; Application of required surveillance performance; Reduced longitudinal separation; Reduced lateral separation
GPI-6	Air traffic flow management	**Scope:** The implementation of strategic, tactical and pre-tactical measures aimed at organizing and handling traffic flows in such a way that the traffic handled at any given time or in any given airspace or aerodrome is compatible with the capacity of the ATM system. **Related ATM objectives:** Centralized ATFM; Inter-regional cooperative ATFM; Establishment of ATFM databases; Application of ATFM strategic planning; Application of pre-tactical ATFM planning; Application of tactical ATFM planning

GPI-7	Dynamic and flexible ATS route management	**Scope:** The establishment of more flexible and dynamic route systems, on the basis of navigation performance capability, aimed at accommodation preferred flight trajectories. **Related ATM objectives:** Fixed RNAV ATS routes; Contingency RNAV routes; Random RNAV routes; Application of Required Navigation Performance; Dynamic Accommodation of user-preferred flight; profiles; Trajectories conformance monitoring
GPI-8	Collaborative airspace design and management	**Scope:** The application of uniform airspace organization and management principles on a global basis; leading to a more flexible airspace design to accommodate traffic flow dynamically. **Related ATM objectives:** Airspace desegregation/flexible use of airspace; Dynamic accommodation of user-preferred flight profiles
GPI-9	Situational awareness	**Scope:** Operational implementation of data link-based surveillance. The implementation of equipment to allow traffic information to be displayed in aircraft supporting implementation of conflict prediction and collaboration between flight crew and the ATM system. Improve situational awareness in the cockpit by making available electronic terrain and obstacle data of required quality. **Related ATM objectives:** application of data link; Functional integration of ground systems with airborne; ADS; ADS-B; SSR Mode S
GPI-10	Terminal area design and management	**Scope:** The optimization of the Terminal Control Area (TMA) through improved design and management techniques. **Related ATM objectives:** Application of RNP; Functional integration of ground systems with airborne systems; Independent IFR approaches to closely spaced runways; Curved and segmented approaches; Application of data link; WGS-84
GPI-11	RNP and RNAV Standard Instrument Departures (SIDs) and Standard Terminal Arrivals (STARs)	**Scope:** The optimization of the Terminal Control Area (TMA) through implementation of RNP and RNAV SIDs and STARs. **Related ATM objectives:** Application of RNP; Functional integration of ground systems with airborne systems; RNAV SIDs and STARs; Curved and segmented approaches

GPI-12	Flight Management System (FMS) - based arrival procedures	**Scope:** The optimization of the Terminal Control Area (TMA) to provide for more fuel efficient aircraft operations through FMS based arrival procedures. **Related ATM objectives:** Functional integration of ground systems with airborne systems; RNAV SIDs and STARs; Curved and segmented approaches; Arrival metering, sequencing and spacing; Application of data link
GPI-13	Aerodrome design and management	**Scope:** The implementation of management and design strategies to improve area utilization. **Related ATM objectives:** nil
GPI-14	Runway operations	**Scope:** Reduce runway occupancy time **Related ATM objectives:** A-SMGCS
GPI-15	Match IMC and VMC operating capacity	**Scope:** Improve the ability of aircraft to manoeuvre on the aerodrome surface in adverse weather conditions. **Related ATM objectives:** A-SMGCS
GPI-16	Decision support and alerting systems	**Scope:** Implement decision support tools to assist air traffic controllers and pilots in detecting and resolving air traffic conflicts and in improving traffic flow **Related ATM objectives:** Minimum safe altitude warning; Conflict prediction; Conflict alert; Conflict resolution advice; Trajectory conformance monitoring; Functional integration of ground systems with airborne systems
GPI-17	Implementation of data link applications	**Scope:** Increase the use of data link applications. **Related ATM objectives:** Application of data link; Functional integration of ground systems with airborne systems; ATS Inter-facility Data Communication (AIDC)
GPI-18	Aeronautical information	**Scope:** To make available in real-time, quality assured electronic information (aeronautical, terrain and obstacle) **Related ATM objectives:** Functional integration of ground systems with airborne systems; ATS Inter-facility Data Communication (AIDC)
GPI-19	Meteorological systems	**Objective:** To improve the availability of meteorological information in support of a seamless global ATM system. **Related ATM objectives:** nil

GPI-20	WGS-84	**Objective:** The implementation of WGS-84 by all States. **Related ATM objectives:** Implementation of WGS-84
GPI-21	Navigation systems	**Scope:** Enable the introduction and evolution of performance-based navigation supported by a robust navigation infrastructure providing an accurate, reliable and seamless global positioning capability. **Related ATM objectives:** WGS-84; NPA; Precision approach; Required Navigation Performance
GPI-22	Communication network infrastructure	**Scope:** To evolve the aeronautical mobile and fixed communication infrastructure, supporting both voice and data communications, accommodating new functions as well as providing the adequate capacity and quality of service to support ATM requirements. **Related ATM objectives:** AMSS; HF data; VHF data; SSR Mode S; ATN
GPI-23	Aeronautical radio spectrum	**Scope:** Timely and continuing availability of adequate radio spectrum, on a global basis, to provide viable air navigation services (Communication, Navigation and Surveillance) **Related ATM objectives:** nil

KEY PRIORITIES FOR CNS/ATM IMPLEMENTATION IN THE ASIA/PACIFIC REGION

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
1.	RNP/RNAV Implementation	Implement performance based navigation, operation and procedures to improve the efficiency and flexible use of airspace.	Report to APANPIRG	ATM/AIS/SAR	On-going Phased implementation.	reflect performance based navigation, not just RNP.
2.	ADS-C	The implementation of ADS in oceanic or remote areas in accordance with the Regional CNS/ATM Plan is required for the enhancement of safety and ATM.	Report to APANPIRG FIT-BOB reconvened September 2003. Bay of Bengal operational trial of ADS/CPDLC commenced February 2004, trial on going. FIT-SEA inaugural meeting May 2004. South China Sea operational trial of ADS/CPDLC expected 2006/2007.	ATM/AIS/SAR	Phased implementation. Implementation focus and timetable need to be developed. States are gaining experience in the use of ADS.	

KEY PRIORITIES FOR CNS/ATM IMPLEMENTATION IN THE ASIA/PACIFIC REGION

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
3.	Co-operation in Regional CNS/ATM Planning , Implementation & Training.	The continuation and enhancement of ICAO's co-ordinating role of technical co-operation in CNS/ATM planning and implementation, in close co-operation with all partners and taking into account the regional approach, is required.	Report to APANPIRG	All	Sub-Groups to identify requirements.	Emphasis needs to be on sharing information and training. Title 'Technical Co-operation" is confusing with assistance programs. Need to inform States of opportunities for training well in advance of scheduled date. Training opportunities should include ICAO programs as well as associated organizations programs.
~~4.~~	Preparation for WRC-2007	The co-operative participation of States is required with their respective telecommunications regulatory authorities, regional groups, at the APT forums and at the WRC regional preparatory meetings for WRC-2007 to ensure that aviation spectrum requirements are fulfilled and protected.	WRC-2007 APT Feb 06	All	States are designating contact points responsible for preparation for WRC 2007 and are providing contact details for posting on the website to facilitate coordination.	High importance task. Spectrum must be available to enable CNS/ATM implementation.

KEY PRIORITIES FOR CNS/ATM IMPLEMENTATION IN THE ASIA/PACIFIC REGION

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
5.	GNSS Implementation • GBAS • SBAS	To implement GNSS in accordance with the Asia Pacific Regional Strategy. Facilitate market available GBAS ground system certified to Annex 10 SARPs.	On-going 2008	CNS/MET	SBAS receivers - (TSO C145/6) now available Lead aircraft with certified GBAS avionics now in service.	Strategy for Approach, Landing and Departure identified GBAS as a preferred CAT I option. No ground equipment is available that is certified to Annex 10 SARPs.
6.	MET support for the new CNS/ATM System.	To identify the ATM requirements for new MET products supporting CNS/ATM systems and update the plan accordingly. Implementation of the transition to GRIB and BUFR coded WAFS products	2006 2006	CNS/MET	METATM TF has surveyed the new requirements and is preparing an update for the MET chapter of the ASIA/PAC Regional Plan for the New CNS/ATM Systems. MET/ATM coordination seminar ~~planned for~~ conducted in early 2006. GRIB coded products have been implemented. BUFR coded SIGWX charts are being implemented with the deadline for implementation 30 Nov 2006	MET/ATM coordination seminar is expected to provide information for updating the Regional Plan

KEY PRIORITIES FOR CNS/ATM IMPLEMENTATION IN THE ASIA/PACIFIC REGION

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
7.	ADS-B	Operational Standards to support proposed separation standards. Airline aircraft certificated to participate in ADS-B operations. Avionic packages available to meet GA and low capacity operations.	2006 2006 2006	ADS-B Task Force ADS-B Task Force ADS-B Task Force		Focus on activities to enable successful ADS-B implementation. Roll-out of ADS-B considered an on-going activity.
8.	Implementation of APV and RNAV (GNSS) Approaches.	Review applicability of APV and RNAV (GNSS) Approach Design Standards, aircraft certification and augmentation system availability for Asia Pacific. Develop implementation strategy.	2006 2007	ATM/AIS/SAR CNS/MET	APV and RNAV (GNSS) Design standards now in PANS OPS. Aircraft certified for RNAV (GNSS) and APV approaches.	Navigation function. ATM/AIS/SAR/SG to consider operational issues including charting.

KEY PRIORITIES FOR CNS/ATM IMPLEMENTATION IN THE ASIA/PACIFIC REGION

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
9.	Data Link Flight Information Services (DFIS) applications	To implement the following applications via request/response mode of data link in the Asia and Pacific Regions: a) Data link –automatic terminal information services (D-ATIS); b) VOLMET data link service (D-VOLMET); c) Pre-Departure Clearance (PDC) delivery via data-link; d) DCL	2008	ATM/AIS/SAR CNS/MET	Trials and demonstrations are conducted and some operational services are provided by States.	
10.	Safety Management Systems.	States to establish national safety management systems and effective application of safety programmes which are required for the provision of air traffic services. Required monitoring services available to support operational enhancements.		ATM/AIS/SAR RASMAG RASMAG	Annex 11 provisions effective 27 November 2003. On-going RASMAG activities. Operational enhancements suspended where effective monitoring is not available.	

KEY PRIORITIES FOR CNS/ATM IMPLEMENTATION IN THE ASIA/PACIFIC REGION

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
11.	Air Traffic Flow Management.	States to consider and implement aspects of air traffic flow management (ATFM) including: a) centralized ATFM b) inter-regional cooperative ATFM; c) establishment of ATFM databases; d) application of strategic ATFM planning; and e) application of tactical ATFM planning	2006 Ghosting period for Bay of Bengal operational ATFM Trial commenced on 29 June 2006	ATM/ ATIS/ SAR	On going	

Survey on National Contingency Plans

State/Territory	Do they have any plan?	If no, when will it be completed?	If yes;			Are the procedures of notification by NOTAM provided?	Are there Contingency Planning for Volcanic Ash?	Are resources and services to other States in the event of the natural disaster available?
			does it comply with Annex 11 and ATS Planning Manual?	is there any exchange of contingency plans between States?	is there a history of activation (including exercise) of contingency plans?			
Australia	Yes				Yes			
Bangladesh								
Bhutan								
Cambodia								
China	Yes		No. China is updating its contingency plan and submit it to the Regional Office by the end of 2005.					
Hong Kong,China	Yes		Approporate actions to ensure that adquate air traffic services will continue to be provided to international civial aviation opeartions in accordance with Annex 11should be planned.	No	The procedures are all tested on a regular basis, but there has not been any operational activation.	A NOTAM message is supposed to be issued in the event of activation of the Backup ATC Center and Tower. The message format has been prepared.	No	No
Cook Islands								
DPR Korea								
Fiji	Yes (updated with new plans on 11 May 2006.)		Yes	Yes	Last activation was on 31 December 1999 due to Y2K. No exercise of contingency plan has been made since then.	Specific procedures relating to the opearion of the Contingency Plan are included within the NOTAM templates.	No	No
France (French Polynesia)	Yes		Yes	Yes	No	Specific procedures to issue NOTAM including	No	No
France (New Caledonia)	Yes							
India								
Indonesia								
Japan	Yes		Yes	Yes	Simulated training is conducted at Tokyo ACC every year.			
Kiribati								
Lao PDR								

Survey on National Contingency Plans

State/Territory	Do they have any plan?	If no, when will it be completed?	If yes;			Are the procedures of notification by NOTAM provided?	Are there Contingency Planning for Volcanic Ash?	Are resources and services to other States in the event of the natural disaster available?
			does it comply with Annex 11 and ATS Planning Manual?	is there any exchange of contingency plans between States?	is there a history of activation (including exercise) of contingency plans?			
Malaysia	Yes		Yes			Yes		
Maldives	Yes		SLOA should be reviewed to see how longitudinal separation can be established at FL 270 on R457 and G465 at MLE.	No	No	No.		
Marshal Islands								
Micronesia, Federated States of								
Mongolia								
Myanmar								
Nauru								
Nepal	Yes		Establishment of a simplified route network needs to be considered.			No		
New Zealand								
Pakistan	Yes		Yes			No		
Palau								
Papua New Guinea								
Philippines								
Republic of Korea	Yes		Article 14 of the Plan should actually plan each aspect.	Will be offered to adjacent States	No	No		
Samoa								
Singapore	No							
Solomon Islands								
Sri Lanka	Yes		Yes			No		
Thailand	Yes		Yes			No		
Tonga	Yes		Specific plans should be developed.			No		
U.S.A.	Yes		Yes	The FAA would not delegate airspace to other countries.	Last exercise was conducted on 21 October 2004.	No		
Vanuatu	No						Yes	
Viet Nam	No	2006-2007						

Note: Blank indicates that no information has been provided.

SURVEY RESULT OF THE QUALITY SYSTEM

(as of 24 March 2006)

State/Territory	Compliance with the requirement of the quality system (Paragraph 3.2.1 of Annex 15)	Conformity with ISO 9000 series (Paragraph 3.2.2 of Annex 15)	If no, future plan to introduce the quality system or the ISO 9000 series.
Australia	Yes	No	No immediate plan for ISO9000
Bangladesh			
Bhutan	In progress	No	TBD for ISO9000
Brunei Darussalam			
Cambodia			
China	No.	No	AIS QA implementaion plan is expected to be introduced in 2007.
Hong Kong,China	Yes	No	TBD for ISO9000
Macau, China			
Cook Islands			
DPR Korea	Partly	Partly	by October 2008
Fiji	No. Shortcoming is observed in collating, editing and distributing. AIS Procedural Manual is being developed.	No	Subject to satisfying AIS expertise requirements, the future plan for the AIS Provider to embed the quality system culture and achieve ISO recognition is planned.
France (French Polynesia)	Yes	Yes	
(New Caledonia)	Yes	Yes	
India	Yes	Yes for Mumbai AIS. Others No.	Delhi is expected to be certifed by 31 Mar 2006. Chennai is expected to be by August 2006. Actions are being taken for Kolkata AIS.
Indonesia	No	No	Will start in 2008 and expectedly implement in 2010.
Japan	Yes	No	Trial of ISO9001 will start from April 2007 and operation will start from October 2007.
Kiribati			
Lao PDR			
Malaysia	Yes	No	by December 2008
Maldives	No	No	by the end of 2008 or early 2009.
Marshall Islands			
Micronesia, Federated States of			
Mongolia	No	No	quality sysytem in progress. Expected by 2008.

SURVEY RESULT OF THE QUALITY SYSTEM

State/Territory	Compliance with the requirement of the quality system (Paragraph 3.2.1 of Annex 15)	Conformity with ISO 9000 series (Paragraph 3.2.2 of Annex 15)	If no, future plan to introduce the quality system or the ISO 9000 series.
Myanmar	No	No	Depending upon human resource, financial planning and safety management.
Nauru			
Nepal			
New Zealand	Yes	Yes	
Pakistan			
Palau			
Papua New Guinea			
Philippines	No	No	Will include in the future plan.
Republic of Korea	In progress (by 2007)	No	TBD for ISO9000
Samoa	Reply received, but just says "published".	No	
Singapore	Yes	Yes	
Solomon Islands			
Sri Lanka			
Thailand	Partially	Yes (for dynamic data)	
Tonga			
U.S.A.	Yes		
Vanuatu			
Viet Nam	No	No	quality sysytem in progress. Expected by 2007.

Note: Blank indicates no information available.

STATE ATS SAFETY CONTACT OFFICERS

APANPIRG Conclusion 16/62 required the nomination by States of a Contact Officer or position to act as the focal point for ATS safety related activities and in particular for the submission and coordination of ATS incident reports. The ICAO Asia and Pacific Regional Office (Bangkok, Thailand) maintains the following list in this regard.

Attention is drawn to the provisions in the ICAO Air Traffic Services Planning Manual (Doc 9426), Part II, Section 1, Chapter 3 – *ATS Incident Reporting* in relation to the reporting and investigation of ATS incidents.

(Last Updated 30 June 2006)

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	Accident/Serious Report	Flight Standard Division Japan Civil Aviation Bureau 2-1-3, Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918 Japan	Tel +81-3-5253-8731 Fax +81-3-5253-1661	
	ACAS RA Report	Air Traffic Control Division Japan Civil Aviation Bureau 2-1-3, Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918 Japan	Tel +81-3-5253-8749 Fax +81-3-5253-1664	
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26.	**NEW CALEDONIA**			
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41.	**VIET NAM**			

STATE SAR AGREEMENTS

(last updated 30 June 2006)

ID NO.	DATE	STATES	REMARKS
1	**14 April 1972**	**ASEAN States - Indonesia, Malaysia, Philippines, Singapore and Thailand**	**Multilateral agreement for the facilitation of search for aircraft in distress and rescue of survivors of aircraft accidents**
2	**March 1997**	**Viet Nam - ASEAN**	**Viet Nam signed instrument of accession to 1972 ASEAN Agreement (as above)**
3	June 1982	Indonesia / Singapore	
4	September 1985	Singapore / Thailand	Updated July 1996
5	July 1996	Philippines / Singapore	
6	November 1990	Australia / Indonesia	Updated 5 April 2004
7	February 1999	Cambodia / Viet Nam	
8	**9 December 1985**	**Malaysia / Philippines**	
9	**9 September 1985**	**Malaysia / Thailand**	
10	**11 August 1984**	**Malaysia / Singapore**	
11	**29 August 1985**	**Malaysia / Indonesia**	
12	**16 December 1998**	**Malaysia / Brunei Darussalam**	
13	February 2001	Australia / Papua New Guinea	
14	September 2002	New Caledonia / New Zealand	
15	November 2002	United States / Republic of Palau	
16	2003	United States / New Zealand	
17	1988	United States / Indonesia	
18	1986	United States / Japan	
19	Notified 2003	United States / Marshall Islands	
20	Notified 2003	United States / Micronesia	

ID NO.	DATE	STATES	REMARKS
21	Notified 2003	United States / China	
22	1998	Lao PDR / Vietnam	LOA for provision of assistance
23	June 2005	Tonga / New Zealand	
24	August 1986	Indonesia / Philippines	
25		Indonesia / United States	Agreement on the Coordination of SAR Services
26	1990	Indonesia / Papua New Guinea	JBC MOU signed
27	July 1996	Viet Nam / Singapore	
28	September 1996	Viet Nam / Philippines	
29	Notified 2005	New Zealand / Australia	
30	Notified 2005	New Zealand / Samoa	
31	**April 2006**	**Australia / Maldives**	**Letter of Arrangement**
32		New Zealand / Cook Islands, Fiji, Tokelau and French Polynesia	Under development

*updated entries by ATM/AIS/SAR/SG/16 in bold type

Analysis of SAR Capability of ICAO States in the ASIA/PAC Region

	Training	Alerting	Legislative	SAR committee	Agreements	Relationships	Communications	Quality Control	Civil/Military	Resources	SAREX	Library	Computerisation	SAR programme	Supply dropping	Special equipment	SAR aircraft	Navigation	ELTs	LUT
Australia	E	E	E	E	E	C	E	E	E	E	E	E	E	E	E	E	E	E	C	E
Bangladesh	B	C	D	A	A	C	C	A	D	A	A	C	A	A	C	C	D	A	D	C
Bhutan																				
Brunei	E	E	E	E	E	E	E	E	E	E	E	E	E	E	D	D	E	E	E	A
Cambodia	B	B	B	B	B	B	C	A	B	B	A	C	A	A	A	A	B	A	A	A
China	E	E	E	E	E	E	D	D	E	D	D	C	B	A	E	E	E	E	E	A
Cook Islands	A	B	B	A	A	C	C	C	B	A	B	A	A	A	A	B	B	A	E	A
DPR Korea	B	D	B	D	A	B	D	D	D	C	B	A	A	A	B	A	C	C	A	A
Fiji	B	C	C	C	C	C	C	B	D	C	D	C	A	C	B	A	C	C	C	A
French Polynesia	C	D	D	D	C	D	E	A	E	C	C	B	A	A	E	D	E	E	E	**A**
Hong Kong, China	E	E	E	E	D	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
India	D	C	C	B	B	C	C	A	C	C	C	C	C	D	D	D	C	A	B	E
Indonesia	E	D	E	E	E	D	D	D	E	D	E	D	D	D	C	D	D	D	D	E
Japan	E	E	E	E	D	E	E	E	E	E	E	E	D	E	E	E	E	E	E	E
Kiribati																				
Lao PDR	B	A	B	B	B	A	B	A	B	B	A	C	A	A	A	A	A	A	A	A
Macau, China	E					E	E				E						E			
Malaysia	E	E	C	E	D	E	E	E	E	E	E	D	E	E	E	D	E	E	E	B
Maldives	B	A	A	A	A	A	A	A	D	A	C	A	A	A	A	A	A	A	A	A
Marshall Islands																				
Micronesia	C	B		A	A	B	C					A		B	B					
Mongolia	A	C	C	A	B	B	B	A	B	B	B	C	B	B	A	A	A	A	B	A
Myanmar	B	A	B	C	A	D	C	C	D	A	A	A	A	A	C	A	D	C	A	A
Nauru																				
Nepal	D	D	C	B	A	C	C	B	D	B	A	B	A	D	D	C	D	D	D	B
New Caledonia	C	D	D	D	C	D	E	A	E	C	C	B	A	A	E	D	E	E	E	E
New Zealand	E	E	E	E	A	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Pakistan	C	C	D	D	A	D	D	C	D	C	A	A	A	A	D	A	D	D	C	E
Palau																				
Papua New Guinea	D	E	D	C	D	D	C	C	D	C	C	D	C	C	C	A	A	A	E	A
Philippines	D	C	E	D	D	C	D	D	E	C	C	C	C	C	C	B	C	E	C	A
Rep. of Korea	C	C	C	C	C	D	E	E	E	E	C	A	D	E	D	E	E	E	E	E
Samoa																				
Solomon Islands																				
Singapore	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sri Lanka	D	A	C	D	B	C	C	D	E	D	B	C	A	A	D	D	C	A	C	A
Thailand	E	E	E	E	D	E	E	E	E	E	E	D	B	B	E	E	E	E	E	B
Tonga	C	B	A	A	B	C	C	A	D	A	A	A	A	A	A	A	C	A	E	A
United States	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Vanuatu																				
Viet Nam	D	D	D	E	D	D	D	C	E	D	C	C	B	C	C	D	D	C	D	B

Updated 30 June 2006

Categorisations:

A = Not implemented
B = Initial implementation
C = Meets Annex 12 requirements in some areas
D = Meets Annex 12 requirements in most areas
E = Fully meets Annex 12 requirements
Blank = No response

Model SAR Agreement

MEMORANDUM OF UNDERSTANDING FOR

CO-OPERATION AMONG

THE DEPARTMENT OF NATIONAL DEFENCE OF CANADA

THE DEPARTMENT OF FISHERIES AND OCEANS OF CANADA

THE UNITED STATES COAST GUARD

THE UNITED STATES AIR FORCE

THE UNITED KINGDOM MARITIME AND COASTGUARD AGENCY

THE UNITED KINGDOM CIVIL AVIATION DIVISION OF THE DEPARTMENT OF ENVIRONMENT, TRANSPORT AND THE REGIONS

AND

THE UNITED KINGDOM MINISTRY OF DEFENCE

CONCERNING
SEARCH AND RESCUE

1. Introduction

1.1 The Department of National Defence of Canada as represented by the Canadian Forces (CF), the Department of Fisheries and Oceans of Canada as represented by the Canadian Coast Guard (CCG), the United States Coast Guard (USCG), the United States Air Force (USAF), the United Kingdom Department of Environment, Transport and the Regions (DETR), as represented by the United Kingdom Maritime and Coastguard Agency (MCA) and the United Kingdom Civil Aviation Division (CAD), and the United Kingdom Ministry of Defence (MOD), hereinafter referred to as the "Participants" of this Memorandum of Understanding (MOU), recognise the benefits that have been enjoyed from previous co-operative arrangements, including the Exchange of Notes dated 24th and 31st January, 1949 between Canada and the United States relating to aeronautical Search and Rescue (SAR) operations along the common boundary of the two countries, and further recognise that additional benefits may be enjoyed from the co-operative arrangements detailed herein.

1.2 The Participants recognise the great importance of co-operation in maritime and aeronautical SAR, and in the provision of expeditious and effective SAR services to save lives and reduce suffering. The Participants also recognise the assumed responsibilities for SAR within the framework of the International Convention on Maritime Search and Rescue, 1979 and of the Convention on International Civil Aviation 1944, with particular attention paid to Annex 12 (Search and Rescue) of the latter Convention, both Conventions as amended.

1.3 The Participants have reached the following understanding.

2. Objectives and Scope

2.1 This MOU establishes a framework for co-operation among the Participants of each country in carrying out activities and sets out their various responsibilities.

3. Responsibilities

3.1 Any Participant, on receiving information of a maritime or aeronautical incident where any person is in distress within its search and rescue region(s) (SRRs), will take urgent measures to provide the most appropriate assistance, regardless of the nationality or status of such a person or the circumstances in which the person is found.

3.2 SAR operations should normally be carried out in accordance with the relevant SAR manuals and recommendations of the International Civil Aviation Organisation (ICAO) and the International Maritime Organisation (IMO), taking account of any nationally accepted SAR procedures.

3.3 To ensure that SAR operations are conducted in an efficient and co-ordinated manner, the Participants of each country concerned should consult and co-operate with each other as necessary and appropriate, lending assistance as capabilities allow. If primary responsibility for co-ordination of a SAR response or operation cannot be immediately ascertained, the Participants of each country concerned should consult to resolve the responsibility.

3.4 For any SAR operation involving co-ordination among Participants from more than one country, the Participants will, through appropriate consultation, decide in each case which Participant will have primary responsibility for co-ordinating the SAR operation.

3.5 Entry of SAR units onto or over the territory of the countries of those Participants conducting SAR operations will, to the best of their ability, be expeditiously arranged via the appropriate rescue co-ordination centres (RCCs).

3.6 Solely for the purpose of rendering emergency rescue assistance to persons, vessels, or aircraft in danger or distress, when the location is reasonably well known, SAR facilities of a Participant may immediately enter onto or over the territory of another Participant country, with notification of such entry made as soon as practicable.

3.7 To facilitate the co-ordination referred to in this Section, the Participants of each country concerned will, to the best of their ability, keep each other fully and promptly informed of all relevant SAR operations. They should develop appropriate procedures to provide for the most effective and efficient means of communication.

4. SAR Regions

4.1 The SRRs of the United States of America and Canada are separated geographically by a continuous line connecting the following co-ordinates:

45° 00´ N 040° 00´W, 45° 00′ N 053° 00′ W, 43° 36′ N 060° 00′ W, 41° 52′ N 067°00′W, 44° 30′N 067° 00′ W, north to the intersection with the national boundary, westerly along the transcontinental national boundary to 48° 30′ N 124° 45′W, 48° 30′ N 125° 00 ′W, 48° 20′ N 128° 00′ W, 48° 20′ N 145° 00′ W, 54° 40′ N 140°00 ′W, 54° 40 ′N 136° 00′ W, 54° 00′ N 136° 00′ W, 54° 13′ N 134° 57′ W, 54° 39′ 27” N 132° 41′ W, 54° 42′ 30″ N 130° 36′ 30″ W, northerly along the national boundary to the Beaufort Sea, and thence north to the North Pole.

4.2 The SRRs of the United Kingdom and Canada are separated geographically in the North Atlantic Ocean by a continuous line joining the following co-ordinates:

58° 30′ N 030° 00′ W, and 45° 00′ N 030° 00′ W.

4.3 The establishment of SRRs is intended only to effect an understanding concerning the regions within which a Participant accepts primary responsibility for co-ordinating SAR operations.

4.4 The delimitation of SRRs is not related to, and will not, prejudice the boundaries between countries.

5. Rescue Co-ordination Centres

5.1 The primary operational points of contact under this MOU are the nationally and internationally recognised RCCs of the Participants of each country involved. Participants of each country involved will, to the best of their ability, keep each other informed about their RCCs and associated SRRs, and provide any information which might be useful, in order to expedite and improve co-ordination.

5.2 The primary method for co-ordination of SAR activity will be via RCCs, as referred to in paragraph 5.1. However, this MOU is not intended to preclude any appropriate direct communication which may be considered necessary between any SAR facility or other organisational element of the Participants, when speed of reaction requires it and time is of the essence, or other similar circumstances dictate.

5.3 In addition to that related to specific SAR cases, Participants of each country should exchange information that may serve to improve the effectiveness of SAR operations. This information may include, but not be limited to, communication details, information about SAR facilities; descriptions of available airfields; knowledge of fuelling and medical facilities; and information useful for training SAR personnel.

6. Co-operation

6.1 The subordinate elements of all Participants of each country may provide for further co-ordination and co-operation by the establishment of appropriate operational MOUs and procedures among the Participants. Such will contain provisions consistent with this MOU.

6.2 The Participants of each country will endeavour to promote mutual SAR co-operation, by giving due consideration to collaborative efforts, including, but not limited to:

6.2.1 arranging exchange visits between SAR personnel;

6.2.2 carrying out joint SAR exercises and training;

6.2.3 using ship reporting systems for SAR purposes;

6.2.4 developing SAR procedures, techniques, equipment, facilities, and information systems;

6.2.5 providing services in support of SAR operations, such as the use of aircraft landing fields, fuelling and medical facilities;

6.2.6 co-ordinating, as appropriate, national positions on international SAR issues of mutual interest;

6.2.7 supporting and conducting joint research and development initiatives aimed at reducing search time, improving rescue effectiveness, and minimising risk to SAR personnel; and

6.2.8 conducting regular communications checks and exercises including the use of alternative methods to cater for communications overloads during major disasters.

7. Finances

7.1 Unless otherwise determined by the Participants, each Participant will fund its own expenses for activities pertinent to this MOU.

7.2 The provisions of this MOU are contingent upon the availability of SAR personnel, facilities and funding.

8. Application of this MOU

8.1 This MOU is not intended to create binding obligations under international law.

8.2 Nothing in this MOU in intended to affect in any way rights and duties based on international agreements or other MOU's pertaining to any of the Participants.

8.3 Any dispute regarding the interpretation or implementation of this MOU, or any of its operational MOUs, will be resolved by consultation among the Participants and will not be referred to an international body or third party for settlement.

9. Amendment

9.1 This MOU may be amended only with the written consent of all the Participants.

10. Duration, Withdrawal and Termination

10.1 The Memorandum of Understanding between the United States Coast Guard, the United States Air Force, the Canadian Forces, and the Canadian Coast Guard signed March 16 and March 24, 1995, and the Search and Rescue Agreement between Chief of Defence Staff, Canadian Forces and Commandant, U.S. Coast Guard signed 25 October, 1974, are hereby superseded.

10.2 This MOU will enter into immediate effect, for an indefinite period, upon signature by all Participants.

10.3 Any Participant may withdraw from the MOU, by giving not less than six (6) months notice in writing to the other Participants. Such termination will not affect the applicability of this MOU to the remaining Participants.

10.4 This MOU may be terminated with the mutual written consent of all the Participants or by any superseding arrangement.

10.5 Termination of this MOU will not affect SAR operations in progress at the time of termination unless otherwise determined to by the Participants involved.

…….

AGENDA ITEM 4

Agenda Item 4: Consider problems and make specific recommendations concerning the provision of ATM/AIS/SAR in the Asia/Pacific Region

ATS Route Catalogue

4.1 The meeting was informed that APANPIRG/16 had accepted the *Asia/Pacific ATS Route Catalogue* as a regional planning tool, to be maintained and updated on a regular basis.

4.2 The Catalogue was first published in August 2005 and a current copy (Version 3, June 2006) was now available from the ICAO Asia/Pacific web site (http://www.icao.int/apac/) under the menu "eDocuments". The Catalogue was an informal document that consolidated material from the Basic Air Navigation Plan and related documents to serve as an aid to States and users for route planning purposes. It was noted that the Catalogue was primarily a one-stop information document, showing which routes were contained in the BANP, the status of implementation and amendment of routes, and future route requirements of States and users. As the Regional office was responsible for managing the amendment process for the BANP, APANPIRG/16 agreed that the Catalogue should also be maintained on the same basis, noting that the Catalogue would be left to the Regional office to update.

4.3 APANPIRG/16 considered that the ongoing work to implement routes was a high priority of States and users and therefore developed the following Conclusion:

Conclusion 16/10 – Review of ATS Route Catalogue by States

That, the States concerned study the routes in the Asia/Pacific ATS Route Catalogue in respect to the feasibility of the route requirements, in order to consider their implementation with appropriate priorities, and to raise route implementation proposals as relevant ATS Coordination Meeting in the Asia/Pacific Region.

Oakland FIR ATS Route Realignment Proposal

4.4 With the advent of performance based navigation and the Ocean21 ATC automation system, the evaluation indicated that the realignment of the airways north of Guam and south of Hawaii would increase the efficiency of certain ATS routes. In this regard, the FAA was investigating modifications to the following ATS routes north of Guam:

a) **ATS Route R596** would be modified from the Manila FIR Boundary, TIDEL direct FLASH;

b) **ATS Route R584** would be modified from the Fukuoka FIR Boundary, KEITH direct 1612N14136E (Guam Boundary) direct UNZ;

c) **ATS Route G339** would be modified from the Fukuoka FIR Boundary, PAKDO direct 1612N14136E (Guam Boundary) direct UNZ;

d) **ATS Route A216** would be modified and extended from the Fukuoka FIR Boundary, MONPI direct HOOVR (Guam Boundary); and

e) **ATS Route A337** would be modified from the Fukuoka FIR Boundary, TEGOD direct JUNIE.

4.5 The FAA was also investigating modifications to the ATS routes south of Hawaii.

4.6 The United States informed the meeting that this information was the first release of these proposals and, as such, the matters had not yet been coordinated with ICAO or the neighboring States affected. The United States was aware of ICAO requirements in this respect and, subsequent to completing coordination with affected parties, would submit amendment proposals to ICAO in the normal manner.

4.7 IATA noted the developments being planned by the United States and offered their support and appreciation for this work, reiterating that the track distance savings proposed were very valuable to operators.

IATA ATS Route Matters

4.8 The meeting noted information provided by IATA on ALLPIRG/5 Conclusion 5/8: − *Globally coordinated air traffic services (ATS) routes*, and Conclusion 5/9: − *Terminal area (TMA) structure and area navigation.*

4.9 IATA considered that the *Asia/Pacific ATS Route Catalogue* was the result of the excellent work of the ICAO ATS Route Network Review Task Force and the Regional Office. IATA recalled the intent was that the routes in Chapter 2, 4 and 5 of the Catalogue would be processed in due course and implemented where feasible.

4.10 IATA reported that, to date, nine routes in Chapter 5 of the Route Catalogue had been successfully implemented. Several routes contained in Chapter 4 (States Requirements) have also been implemented. IATA placed on record its appreciation to all States and the ICAO Asia Pacific Regional Office for their respective roles in the route planning and implementation. Special thanks from IATA went to India, China, Vietnam, Cambodia, Thailand, and Singapore for accelerating the implementation of routes in Chapter 5.

4.11 IATA also placed on record it's appreciation to Singapore for introducing the new set of GNSS Procedures in the Terminal area in line with Conclusion 5/9 of the ALLPIRG/5 report, an implementation which could potentially result in millions of dollars fuel savings and reductions in gas emissions for all flights operating from Singapore Changi Airport.

4.12 It was recognized that there might be a wide range of difficulty in implementing some of the routes in Chapter 5 and IATA requested States to continue to process the implementation of the route proposals on an ongoing basis in accordance with the guidelines in the ICAO *ATS Planning Manual (Doc 9426)*.

Unmanned Aerial Vehicles (UAV)

4.13 The meeting recalled APANPIRG Conclusion 16/61 relating to 'Unmanned Aerial Vehicles' (UAV), as follows:

UAV Operation

That, ICAO develops, as a priority, appropriate provisions and guidance material for the operation of UAV.

4.14 In respect to progress on this matter, the meeting was informed that the ANC had agreed that the ICAO Secretariat should convene a meeting of interested States and international organizations to assist ICAO in determining how it should proceed with its work on UAVs.

Accordingly, the ICAO Exploratory Meeting on Unmanned Aerial Vehicles (UAVs) was held in Montreal, Canada from 23-24 May 2006. The meeting was attended by thirty-seven delegates from fifteen States and seven international organizations. A copy of the full report of the meeting is available from the ICAO web site at http://www.icao.int/index.html under the 'Meetings' menu.

4.15 The UAV Exploratory meeting had reviewed the results of a questionnaire sent out by ICAO to selected States and international organizations, and the current status of ICAO work concerning UAVs. Considerations put forward by the Secretariat to assist in the discussions were as follows:

a) Resolution A35-14, Appendix A, Resolving Clause 4, states that ICAO should utilize, to the maximum extent appropriate and subject to the adequacy of a verification and validation process. Therefore, the outcome of the work of RTCA, EUROCAE and other organizations, could serve as the basis for eventual development of ICAO Standards and Recommended Practices (SARPs);

b) ICAO's concern is with international civil UAV operations and those standards that affect such operations. ICAO should therefore, not be expected to take on a leading role in the development of aircraft performance specifications; and

c) ICAO is placing increasing emphasis on development of performance-based standards, and less on technical standards and detailed specifications.

4.16 The UAV Exploratory Meeting identified the following critical issues related to UAV activity that had to be addressed and resolved:

- Certification
- Licensing
- Regulations
- Technical issues
- Human factors issues
- Public acceptance
- Environment
- Security

4.17 The UAV Exploratory Meeting noted that EUROCONTROL was actively involved in the work of EUROCAE WG-73 and the work of RTCA and considered the work of EUROCAE/RTCA as the foundation for developing civil UAVs into legitimate airspace users (i.e.: legitimate aircraft) in the context of a fully transparent ATM system. A presentation from EUROCAE identified the major objectives of its Working Group 73, including an objective to collaborate and coordinate with the US though RTCA SC203 and FAA involvement.

4.18 The UAV Exploratory Meeting agreed that although there would eventually be a wide range of technical and performance specifications and standards, only a portion of those would be necessary for inclusion as ICAO SARPs and that ICAO was not the most suitable body to lead the regulatory effort. However, there was a need for harmonization of terms, strategies and principles with respect to the regulatory framework which should evolve in a coordinated manner and that ICAO should act as a focal point in this respect.

4.19 The UAV Exploratory Meeting further agreed that ICAO should coordinate the development of a strategic document that would guide the regulatory evolution that, even though non-binding, would be used as the basis for development of regulations by the various organizations and States.

4.20 Significant discussion ensued during ATM/AIS/SAR/SG/16 in relation to these matters. Although recognizing the reasons, described above, that ICAO was not leading the regulatory effort, the meeting expressed strong and serious concerns at the lack of suitable SARPs and guidance materials to regulate the wide proliferation of UAV activities across the region, particularly in sovereign airspaces. Many States present and IFALPA expressed misgivings at the pending implementation of mixed operations in which UAV operations occurred in the same airspace as 'normal' passenger transport operations, considering that until appropriate regulatory mechanisms were in place mixed operations should not occur.

4.21 The meeting was informed that Annex 6 – *Operation of Aircraft* provisions did not generally make a distinction between manned and unmanned operations. As such, in a strict sense the Annex provisions were arguably equally applicable in both situations, meaning that UAV operations should be bound by the same provisions as other flights, including requirements for UAV operators to be licensed and appropriately rated pilots.

4.22 The meeting considered that the intent of APANPIRG Conclusion 16/61 had not yet been met and requested that mechanisms be put in place to ensure that States of the region were kept fully informed of progress in these matters and were given opportunity to provide input to discussions. In particular, the meeting requested that States be kept informed of ICAO's progress in coordinating the development of the UAV strategic document referred to by the UAV Exploratory Meeting that was intended to be used as the basis for development of regulations by the various organizations and States. In this context, the meeting drafted the following conclusion:

Draft Conclusion 16/6 – Coordination of UAV Procedures Development

That, noting the strong and serious concerns held by States of the Asia/Pacific Region in respect of UAV operations in mixed environments and that ICAO was not in a position to lead the regulatory effort in relation to the development of UAV standards and recommended practices, ICAO Headquarters take steps to ensure that States of the Asia/Pacific region be routinely consulted in coordination relating to UAV regulatory matters, including the development of the UAV strategic document referred to by the UAV Exploratory Meeting (Montreal, Canada, May 2006) that was intended to be used as the basis for development of UAV regulations.

Bay of Bengal ATFM Operational Trial

4.23 The meeting noted the progress being made by the Air Traffic Flow Management Task Force (ATFM/TF) of the Bay of Bengal ATS Coordination Group (BBACG), towards the operational trial of an automated flow management tool for regulating the flow of traffic across the Bay of Bengal transiting the Kabul FIR during the night time peak traffic period (2000-2359UTC).

4.24 In addition to the large numbers of affected flights originating from India, Malaysia, Pakistan, Singapore and Thailand, ATFM/TF had identified specific cases of long haul flights originating from China, Hong Kong China, Viet Nam, Philippines and Indonesia that would transit the Kabul FIR during this period.

4.25 During the Special ATS Coordination Meeting for the Bay of Bengal ATFM Operational Trial (SCM BOB ATFM TRIAL) held on 16-17 February, 2006, the ATFM/TF considered that the development of Thailand's Bay of Bengal Cooperative ATFM Advisory System (BOBCAT) was at the stage where an operational trial should be conducted in order to enable an operational assessment of BOBCAT. Accordingly, the ATFM/TF finalized a suitable Safety Assessment with associated Hazard Log and model text for an AIP Supplement describing the arrangements for the ATFM operational trial.

4.26 The two primary procedures documents supporting the operational trial are the *Bay of Bengal and South Asia Air Traffic Flow Management Handbook* (the "ATFM Users Handbook") and *Training Guidelines for Air Navigation Service Providers* (the "ANSP Training Guidelines") have recently been finalised.

4.27 During ATM/AIS/SAR/SG/15 (July 2005), the meeting agreed that although the flow operations guidance documents that were being prepared by the ATFM/TF would be very specific to the Bay of Bengal circumstances, it was likely that other States of the Region would benefit from reviewing the documents when they had reached a mature stage. Accordingly, the ATFM Users Handbook and ANSP Training Guidelines have been included as **Appendices A and B** to the Report on Agenda Item 4 respectively.

4.28 During the Special ATS Coordination Meeting – Go/No Go Decision in respect of the Bay of Bengal ATFM Operational Trial (SCM GO BOB ATFM) held from 14 − 16 June 2006, the ATFM/TF took a "Go" decision to commence a ghosting phase of the ATFM Operational Trial on 29 June 2006. Progression from the ghosting phase to the operational use of BOBCAT would take place once satisfactory ghosting performance was evident to the Core Team of the ATFM/TF; this was anticipated to occur on or after 6 July 2006. Trigger NOTAMs were issued during the week commencing 19 June 2006 to initiate the ghosting phase of the trial on this basis and a further NOTAM would be issued to make the change from ghosting to operational implementation.

4.29 As well as the BOBCAT user interface itself, the BOBCAT website at https://www.bobcat.aero would contain additional documentation necessary for the education and training of airline dispatcher and ANSP staff, including the *Bay of Bengal and South Asia ATFM Handbook* and BOBCAT Safety Assessment, as well as a summary of frequently asked questions (FAQ). It was the intention of the ATFM/TF that the BOBCAT website comprise a single point of focus for the ATFM operational trial and affected airline operators and ANSPs are encouraged to make an application via email to atfmu@bobcat.aero for user name and password as soon as possible, to enable access to the website.

Difficulties of Air Traffic Management in the Bangkok FIR

4.30 The meeting noted information provided by Thailand concerning on-going difficulties of air traffic operations within the Bangkok FIR regarding the RVSM implementation in the WPAC/SCS airspace. In this regard, the meeting was requested to consider the issues raised below by Thailand and the proposed approach to mitigate and resolve the identified problems.

4.31 Given the use of the Modified Single Alternate FLOS in the WPAC/SCS airspace and single alternate FLOS in the Bay of Bengal and Beyond RVSM airspace, the operational safety problem directly involves the need to provide a flight level transition to aircraft operating in the eastern half of the Bangkok FIR.

4.32 Given the use of the Modified Single Alternate FLOS in the WPAC/SCS RVSM airspace, seven RVSM flight levels are available for air traffic operations across the eastern half of the Bangkok FIR, whereas in the full band RVSM, the total of 13 flight levels are available: Therefore, the current FLOS in WPAC/SCS limits the maximization of airspace capacity and optimal uses of flight level for the air traffic management in the Bangkok FIR.

Thailand's Proposal

4.33 During RVSM/TF/28 (April 2006), the proposed change of FLOS was reviewed in comparison with the current Modified Single Alternate FLOS. Even though a number of States (i.e. China, Hong Kong, Japan, Lao PDR, Vietnam, and Thailand) supported the new proposed FLOS, its application could not be harmonized with all concerned States in the WPAC/SCS region.

4.34 In light of the complexity of the problems, Thailand proposed the establishment of a special coordination group to specifically review identified problems and harmonize the flight level assignments in the WPAC/SCS RVSM airspace. The goal was to achieve the safe, efficient, and harmonized implementation of RVSM in the Asia and Pacific Region.

4.35 In this context, the meeting reviewed safety matters in the WPAC/SCS RVSM operation, noting noted that RASMAG/5 had found that the overall risk of the WPAC/SCS RVSM did not satisfy the TLS. In this regard, IATA was of view that the LHD occurrences should be reviewed in greater detail in order to understand the cause and locations of the identified problems. As such, full LHD related information needed to be made available so that the proper remedial actions could be identified and put in place to resolve significant LHD occurrences in WPAC/SCS RVSM airspace.

4.36 Hong Kong China and Thailand were of a view that the RVSM transition activities were a safety concern to ATS operations and significantly affected the workload of ATC. Accordingly, the meeting agreed that safety issues should be addressed by the special coordination group proposed by Thailand. Vietnam expressed concern in relation to the non-harmonization of the FLAS.

4.37 Efficiency matters in relation to the WPAC/SCS RVSM operations were also considered by the meeting. Discussions attempted to identify how a single alternate FLOS without any modification could perhaps be implemented, in accordance with the table of cruising levels in Appendix 3 of Annex 2. The meeting recognized that the SCS airspace contained several crossing points, and with the current situation, the Modified Single Alternate FLOS is unlikely to be changed. Hong Kong and Thailand felt that the RVSM efficiency benefits were not fully utilized on the traffic flow from Northeast Asia to Hong Kong to Thailand and vice versa.

4.38 The meeting was of view that capacity enhancement matters should also be addressed and that a special coordination group would also have a role in retaining an ongoing oversight of RVSM related matters throughout the region. However, in attempting to address the urgent issues already identified in respect of the WPAC/SCS area, the meeting agreed that the initial focus of the work group should be confined to this area. The Terms of Reference for the group could be expanded at a later stage.

4.39 Accordingly, in order to specifically address matters relating to WPAC/SCS RVSM operations, the meeting agreed to establish a working group to address identified difficulties in terms of safety, efficiency, and harmonization. The meeting drafted the following Conclusion:

Draft Conclusion 16/7 – Establishment of the WPAC/SCS RVSM Scrutiny Group

Recognizing that:

a) incompatibilities exist between the modified single alternate flight level orientation scheme (FLOS) in use in the Western Pacific/South China Sea (WPAC/SCS) area and the single alternate FLOS in use in areas adjacent to the WPAC/SCS area, and

b) the RVSM Target Level of Safety in the WPAC/SCS area was not being satisfied,

a Scrutiny Group be established to identify and address problems in the safety, efficiency and harmonization of WPAC/SCS RVSM operations in accordance with the Terms of Reference endorsed by APANPIRG.

4.40 The meeting drafted the following terms of reference for the Scrutiny Group:

DRAFT TERMS OF REFERENCE

Western Pacific/South China Sea RVSM Scrutiny Group (WPAC/SCS RSG)

a) To assemble subject matter experts from affected States and international organizations, including those experienced in air traffic control, data analysis and risk modeling;

b) To analyze and evaluate problems in air traffic operations in the RVSM airspace of the Western Pacific South China Sea (WPAC/SCS) area regarding RVSM transition activities;

c) To promote the minimization of transition activities and enhance the harmonization of flight level assignment with the adjacent regions where RVSM was implemented;

d) To analyze and evaluate problems in air traffic operations in the RVSM airspace of the Western Pacific South China Sea (WPAC/SCS) area regarding large height deviation (LHD) occurrences;

e) To identify any other problems associated with RVSM operations in WPAC/SCS airspace;

f) To recommend remedial actions to improve safety and reduce risk in RVSM operations; to identify beneficial trends in system performance and promote practices that ensure continued safe operations;

g) To report to the ATM/AIS/SAR Subgroup in order to assist in determining the safety, efficiency, and harmonization of RVSM implementation in the Western Pacific South China Sea area; and

h) To keep the Regional Airspace Safety Monitoring Advisory Group of APANPIRG (RASMAG) up to date with developments.

ICAO Special Implementation Projects (SIPs)

4.41 The meeting was informed of the three SIPs that had been approved by Council of ICAO for the Asia/Pacific Region in 2006:

a) ATS Safety Management System Training;

b) Development of State ATS Contingency Plans; and

c) International SAR Seminar and SAREX – Pacific Islands.

4.42 The meeting was advised the SIPs were primarily aimed at assisting in the implementation of the regional air navigation plans and were therefore a direct extension of the task of the Regional Offices. The projects were also expected to provide a sound basis on which States may formulate requests for technical cooperation in meeting their commitments. Full details in respect of the SIP proposals are included as **Appendices C, D and E** to the Report on Agenda Item 4 respectively.

4.43 Planning in respect of the Contingency planning SIP was advanced and it was anticipated that the SIP would be completed in Indonesia during July 2006, enabling reporting to APANPIRG/17 in August 2006.

4.44 In terms of the ATS Safety Management SIP, the SIP would need to be supported by at least one State ATS safety management system expert who would be fully funded by the State, including travel, subsistence and miscellaneous expenses. States were encouraged to discuss this with their administrations and forward information to the Regional Office in regard to the availability of suitable officers to assist with the SIP.

4.45 Final planning had not yet commenced for the SIP addressing the Pacific Islands International SAR Seminar and SAREX. Again, affected States were encouraged to discuss this with their administrations and forward information to the Regional Office in regard to the potential availability of a State to host the SIP.

Information on A380 wake vortex

4.46 The meeting noted information in ICAO State letter Ref: T3/4.4-AP111/05, issued 10 November 2005, regarding operational issues related to A380 aircraft wake vortex issues, including expanded horizontal and vertical wake turbulence spacing criteria relative to other aircraft for A380 operations.

4.47 Information was provided in relation to the activities of an ad hoc group of experts under the auspices of the United States FAA, EUROCONTROL, the Joint Aviation Authorities (JAA) and the manufacturer who were currently developing guidance on wake vortex separation criteria for the A380. It was anticipated that this guidance would be made available during 2006.

Aircraft incident involving wake vortex

4.48 The meeting was provided with information on an incident that occurred on 13 August 2005 involving wake vortex as reported to Shannon Operations Management. A summary of this incident was reported to the 47th Meeting of the European Air Navigation Planning Group (EANPG/47, November/December 2005).

4.49 In its review, EANPG/47 noted that, at the time of the incident, the separation between the aircraft was in excess of the separation standard required to be used by ATC. EANPG/47 also noted the violent nature of the wake turbulence encounter at cruise altitude and recalled the anecdotal information related to wake turbulence that had been presented in the context of the implementation of RVSM.

4.50 In recognition of the concerns in this regard, EANPG/47 formulated Conclusion 47/5 inviting EANPG States to note the information concerning the above mentioned wake turbulence incident and requesting the wide dissemination of information on the potential severity of such incidents. In order to determine the appropriate course of action to be taken in relation to wake vortex encounters, the EUR/NAT Regional Office of ICAO (Paris) requested that all wake turbulence related incidents in EANPG States be reported to the EUR/NAT Regional Office.

BAY OF BENGAL
AND
SOUTH ASIA
AIR TRAFFIC FLOW MANAGEMENT
HANDBOOK

VERSION 1.0
16 June 2006

Table of Contents

Glossary of Terms

Term	Description
ACC	Area Control Centre
ADC	Aerodrome Control
AEROTHAI	Aeronautical Radio of Thailand, Limited
AFTN	Aeronautical Fixed Telecommunications Network
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Services
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATFM Users Handbook	Bay of Bengal and South Asia ATFM Handbook
ATFMU	Air Traffic Flow Management Unit
ATM	Air Traffic Management
ATS	Air Traffic Services
ATT	Additional Taxi Time
AWUT	Allocated Wheels-Up Time
BOBCAT	Bay of Bengal Cooperative Air Traffic Flow Management Advisory System
CHG	Change Message
CNL	Cancel Message
CSRT	Contingency Slot Request Template
DEP	Departure Message
DLA	Delay Message
EET	Estimated Elapsed Time
ETD	Estimated Time of Departure
FIR	Flight Information Region
FL	Flight Level
FPL	Flight Plan Message
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICAO PANS ATM	ICAO Procedures for Air Navigation Services: Air Traffic Management
MAD	Maximum Acceptable Delay

NOTAM	Notice to Airmen
PIC	Pilot in Command
PSR	Past Slot Request
SMC	Surface Movement Control
SRT	Slot Request Template
STT	Standard Taxi Time
TWR	Control Tower
WUT	Wheels Up Time

1. Introduction

Purpose and Scope

1.1. As per ICAO Annex 11 Chapter 3.7.5, an ATFM service shall be implemented for airspace where air traffic demand at times exceeds or is expected to exceed the declared capacity of the air traffic services concerned.

1.2. Further, Annex 11 recommends that an ATFM service should be implemented on the basis of a regional air navigation agreement or through a multilateral agreement, which should make provision for common procedures.

1.3. Doc 4444 (PANS-ATM) Chapter 3.2.1.5 states that *"Detailed procedures governing the provision of the ATFM measures, and service within a region or area should be prescribed in a regional ATFM manual or handbook".*

1.4. Accordingly, the purpose of this Handbook is to provide in one document, the procedures for the operation of the Bay of Bengal and South Asia ATFM service, which have been developed through the effective use of Collaborative Decision Making between the States, ICAO Asia and Pacific Regional Office and airspace users concerned.

Objectives of Air Traffic Flow Management (ATFM)

1.5. Air Navigation Service Providers (ANSPs) concerned, ICAO Asia Pacific Regional Office, and the International Air Transport Association (IATA) considered that there was a need to introduce an automated air traffic flow management system, due to present flight level constraints at the Kabul FIR gateway points together with the limited number of route segments through the Kabul FIR. This would ensure a smooth flow of traffic through Kabul waypoints and associated route segments.

1.6. The objectives of ATFM across the Bay of Bengal and South Asia are:

a) To enhance and facilitate the orderly and efficient flow of air traffic across the Bay of Bengal and South Asia;

b) To minimize ground and enroute delays;

c) To maximize capacity and optimize the flow of air traffic within the area;

d) To plan for and manage future ATS workload in the light of forecast increased traffic flow within the area; and

e) To assess the economic and environmental impact of the implementation of the ATFM system.

1.7. The Bay of Bengal Cooperative ATFM Advisory System (BOBCAT) has been developed by Aeronautical Radio of Thailand Ltd. (AEROTHAI), in coordination with ICAO Asia Pacific Regional Office, affected Air Navigation Service Providers (ANSPs) concerned, the International Air Transport Association (IATA) and their member international airlines to assist in managing the present restrictions for westbound aircraft operating through the Kabul FIR during the busy night time period.

ATFM Users Handbook

1.8. This *Bay of Bengal and South Asia ATFM Handbook* (ATFM Users Handbook) provides information necessary for airline operators and ANSPs to carry out their responsibilities within the BOBCAT system. The AFTM Users Handbook will be updated as BOBCAT functionalities are enhanced.

Principles of BOBCAT

1.9. The following principles have been agreed to:

a) To introduce an automated air traffic flow management system in accordance with ICAO standards and recommended practices to enhance the smooth flow of westbound aircraft transiting the Kabul FIR during the period of 2000 to 2359UTC;

b) BOBCAT provides advisory information only. ANSPs retain responsibility for tactical ATS and traffic management;

c) BOBCAT will manage mandatory slot selection through interaction with airline dispatchers via the Internet using a dedicated website;

d) To maintain or improve aircraft operations through the Kabul FIR during the above period;

e) To maintain a high level of responsiveness to requests from ANSPs, IATA and their airline operators for procedure and system improvements; and,

f) To provide reports and statistics on ATFM operations for analysis.

References

1.10. The following documents are referred to within this handbook:

a) Annex 11 Air Traffic Services;
b) Doc 4444 Procedures for Air Navigation Services – Air Traffic Management;
c) Doc 9673 Basic Air Navigation Plan – Asia and Pacific Regions;

d) Doc 9750 Global Air Navigation Plan for CNS/ATM Systems; and,
e) Doc 9426 ATS Planning Manual

Control of the Manual

1.11. This Handbook is controlled, edited and produced by the ICAO BBACG Air Traffic Flow Management Task Force, which operates under the auspices of the ICAO Bay of Bengal ATS Coordination Group (BBACG).

1.12. The Editor for the Bay of Bengal and South Asia ATFM Handbook is:

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Validity

1.13. The date of application of this Edition number 1.0 is 16 June 2006 and this manual shall not be used operationally before that date.

Changes to the ATFM Handbook

1.14. The ATFM Handbook will usually be updated once per year. However intervening amendments may be issued in conjunction with relevant State AIC and AIP documents.

1.15. Whenever a user identifies a need for a change to this Handbook, a Request for Change Form (RFC) should be completed and submitted to the Editor. A copy of the RFC Form is shown at Appendix A.

Version / Amendment Number	Date	Amended by	Comments
1.0	16 June 2006	ATFM/TF	The original version

2. BOBCAT Operations and Functionality

BOBCAT System

2.1 The BOBCAT will be responsible for the ATFM activities within the Bay of Bengal and South Asia areas for the routes and at the times described in States' AIP Supplements. This responsibility will be managed by the Bangkok Air Traffic Flow Management Unit (ATFMU) in coordination with aircraft operators and ANSPs in the FIRs concerned.

BOBCAT Concept of Operations

2.2 The BOBCAT concept of operations has been formulated based on the following parameters:

a) BOBCAT shall ensure slot allocations at the same flight level are not less than the agreed required spacing at each Kabul FIR entry waypoints: SITAX (A466), PAVLO (N644), ROSIE (L750) and ASLUM (G792);

b) In order to efficiently utilize airspace with regard to aircraft diverting over Dhera Ismail Khan (DI) on A466 and N644, airline operators should indicate their CVSM flight level for entry into Kabul FIR at the DI waypoint;

c) Spacing requirements between two aircraft at the same waypoint into Kabul FIR and the same flight level shall be 10 minutes;

d) An additional buffer time will be applied within the system to ensure flexibility as well as efficient and safe flow of traffic operating through the Kabul FIR;

e) In order to ensure availability of an initial slot for westbound departures from Northern India and Pakistan, departures from these airports will be given priority at flight level 280 for entry into Kabul FIR. Conversely, aircraft departing from other airports with longer flight times will given priority at flight levels 310-390 for entry into Kabul FIR;

f) Allocated Wheel-Up Time (AWUT) assigned by BOBCAT is based on information derived from the airline operators and ANSPs' input. This time should be based on Estimated Time of Departure (ETD), individual aerodromes' Standard Taxi Time (STT) provided by ANSPs, and any additional time that aircraft operator considers necessary (Additional Taxi Time - ATT);

g) Aircraft sequencing at the departure airport according to AWUT order will be managed by the ANSP concerned;

h) ANSP should endeavor to assist aircraft operators in order for them to meet the required AWUT;

i) Airline operators should submit ATS flight plan based on BOBCAT slot allocation for entry into Kabul FIR;

j) It is the airline operators' responsibility to arrange en route flight profile to arrive over the Kabul FIR entry waypoint as allocated by BOBCAT;

k) It is an ANSP responsibility to tactically manage aircraft entry into the Kabul FIR in accordance with the assigned route and flight level;

Bangkok Air Traffic Flow Management Unit

2.3 Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU), located in Bangkok ACC, has responsibility to manage the BOBCAT system on behalf of ANSPs and aircraft operators concerned. The ATFMU will operate for westbound flights operating through the Kabul FIR during night time period.

Area of Operation

2.4 All Westbound flights intending to transit the Kabul FIR on ATS routes A466, L750, N644 between FL280 to FL390 inclusive and G792/V390 between FL310 to FL390 inclusive between 2000UTC and 2359UTC daily shall participate in the BOBCAT system. These flights are required to submit slot allocation requests to the ATFMU for processing.

ANSP and aircraft operators system requirement

2.5 Aircraft Operators and ANSPs are required to have computer equipment capable of connecting to the BOBCAT website https://www.bobcat.aero via the Internet satisfying the following minimum requirements:

a) A Personal Computer of any operating system with the following characteristics;
   ii) Processor: minimum CPU clock speed of 150 MHz
   iii) Operating System: Any that operates one of the following web browsers (i.e. Windows 2000/XP, Linux, Unix, or Mac OS)
   iv) RAM: 64 MB or larger (depending on operating system),
   v) Hard disk Space: minimum of 500 MB or larger (depending on operating system)
   vi) Monitor Display Resolution: Minimum of 800 x 600 pixels
   vii) Web Browser: Internet Explorer 5.5 or newer, Mozilla 1.0 or newer, Mozilla Firefox 1.0 or newer, Netscape 7 or newer,

b) Internet Connection: 56 Kbps Modem or faster Internet connection.

c) Printer if required (e.g. printing out information for distribution to concerned persons).

BOBCAT Operating Procedures

2.6 Westbound flights intending to transit the Kabul FIR on ATS routes A466, L750, N644 between FL280 to FL390 inclusive and G792/V390 between FL310 to FL390 inclusive between 2000UTC and 2359UTC daily shall participate in ATFM.

Application of System Spacing

2.7 BOBCAT is designed to arrange 10-minute spacing plus a buffer time for entry into the Kabul FIR.

Wheels-Up Time

2.8 Wheels Up Time will be calculated based on information submitted by airline operators using an aircraft's ETD + ANSP-provided STT for specific departure aerodrome + Additional Time if required by the operator. It is defined as:

WUT = ETD + STT + Additional Time required by the operator

Allocated Wheels-Up Time

2.9 Allocated Wheels-Up Time (AWUT) is the adjusted WUT calculated by BOBCAT and issued to an aircraft based on submitted entry time into Kabul FIR.

Slot Allocation Process

2.10 The slot allocation process is divided into 3 phases, namely the Slot request, initial Slot allocation and finally Slot distribution to airline operators and ANSPs. All operators concerned are required to submit slot requests to the BOBCAT system by logging onto https://www.bobcat.aero and completing the electronic templates provided.

Slot Request Procedures

2.11 Slot requests including preferred ATS route, flight level and Maximum Acceptable Delay (MAD) should be lodged by the cut-off time of 1200 UTC. Submitted slot requests may be amended at any time up until 1200UTC. To enhance opportunities for preferred slot allocation, airline dispatchers are encouraged to submit additional options in case their first choice is not available. This may include alternative route, flight level and changes to MAD.

2.12 As BOBCAT will allocate FL280 on a priority basis to facilitate departures from northern India and Pakistan underneath over-flying traffic, dispatchers are encouraged to include FL280 in at least one slot request for departures from these airports. This should not discourage airline dispatchers who are requesting a slot from other airports to also submit FL280 as one of their requests, especially during the busiest period of 2100 – 2300UTC.

2.13 Flights that were not allocated a slot although a slot request was submitted prior to the cut-off time (1200UTC) and flights who did not submit slot request by the cut-off time, will have the opportunity to select a slot from the unallocated slots after the slot distribution has been completed.

Slot Allocation Procedures

2.14 Slot allocation shall take place after the cut-off time at 1200UTC. BOBCAT will process and generate the slot allocation based on the information submitted in the slot request, and notify the results not later than 1300UTC via e-mail and the BOBCAT website to concerned parties.

2.15 Flights departing without an allocated slot will be tactically accommodated after participating flights have been processed and should expect delays for requested routes and altitudes.

2.16 The ATFMU will continue to be staffed until 2359UTC, during which time aircraft operators can:

a) View the slot allocation result for flight planning purposes;

b) Cancel the assigned slot; and/or,

c) Request a change of slot allocation to another available slot in the published list.

2.17 ANSPs can view the slot allocation results at https://www.bobcat.aero/.

2.18 Once aircraft operators are satisfied with the slot allocation, they should submit their ATS flight plan using the route and level parameters of the allocated slot.

2.19 In addition to normal addressees, operators should also address flight plan and related ATS messages (e.g. FPL, DLA, CNL, CHG) to the ATFMU via AFTN address VTBBZDZX.

Vacant Slot Selection After Cut-off Time

2.20 Airline operators will be able to log into BOBCAT website at https://www.bobcat.aero/ to select slot allocation from vacant slot. The procedure of selecting slot after cut-off time is posted in the “Help” section of the website.

Cancellation or Change of Slot Allocation

2.21 Airline operators will be able to log into BOBCAT website at https://www.bobcat.aero/ to change or cancel slot allocation. The procedure of cancelling and modifying slot allocation is posted in the “Help” section of the website.

Viewing Available Slots

2.22 Airline operators will be able to log into BOBCAT website at https://www.bobcat.aero/ to view available slot. The procedure for viewing available slots is posted in the “Help” section of the website.

Pilot in Command Role and Responsibility

2.23 In accordance with ICAO PANS ATM provisions (Section 7.8), it is the responsibility of the Pilot in Command (PIC) and the operator to ensure that the aircraft is ready to taxi in time to meet any required departure time.

2.24 PIC shall be kept informed via their operators of the Allocated Wheels Up Time (AWUT), gateway fix times and flight parameters (route/level) nominated by BOBCAT.

2.25 In collaboration with airline operators, ANSPs shall ensure that every opportunity and assistance is granted to an aircraft to meet AWUT and allocated waypoint times.

2.26 The PIC shall include the AWUT in the ATC clearance request.

2.27 The PIC shall arrange take-off as close as possible to the AWUT.

2.28 PIC shall adjust cruise flight to comply with slot time at Kabul FIR gateway fix, providing advice to ATC of speed and estimate variations in accordance with normal AIP requirements.

Missing the Allocated Wheels-Up Time

2.29 In circumstances where it becomes obvious that the AWUT will not be met, a new slot allocation should be obtained by the most expeditious means (e.g. via coordination between flight dispatcher/ANSPs and ATFMU).

2.30 In order to assist coordination in this respect the following steps should be followed, insofar as they are applicable to the particular situation:

a) PIC to inform ANSP of their revised estimate at the allocated gate waypoint

b) ANSP will contact and inform ATFMU of the revised estimate.

c) ATFMU will give two options to the ANSP for consideration by the PIC:

i) First option will be same route and the same requested flight level with the revised estimate for the waypoint or with delay to the revised estimate.

ii) Second option will be same route and a different flight level with the revised estimate for the waypoint or with delay to the revised estimate.

d) PIC shall contact their dispatcher to obtain a new slot allocation from ATFMU if the two options are not acceptable to them.

e) In order to alleviate tactical workload on ANSPs, PIC should coordinate using airline company arrangements (e.g. dispatchers) to the maximum extent possible, particularly in relation to delays of significant duration.

Operations of Special Flights Exempted from ATFM

2.31 The following flights are exempted from ATFM slot allocation:

a) Humanitarian or medical flights; or,

b) State aircraft with Head of State onboard.

2.32 Flights exempted from ATFM shall indicate the exemption in their flight plan (Field 18 – STS-ATFM EXMP).

2.33 ANSPs shall forward the flight plan information to the ATFMU.

2.34 Flights affected by special flight exempted from ATFM shall follow the same procedure as if the aircraft has missed the AWUT.

<u>BOBCAT Username/Password Allocation and Security Policy</u>

BOBCAT Username/Password Allocation

2.35 All concerned parties requiring access to BOBCAT are required to submit a written username/password request to Bangkok ATFMU, on the BOBCAT Username / Contact Information Modification Form included in **Appendix B**, signed by authorized personnel of the organization as well as the organization seal.

2.36 The username/password request should include the following information:

a) User's Full Name;

b) User's E-Mail address; and,

c) User's proposed username.

2.37 Each organization with users participating in BOBCAT system should maintain uniqueness of BOBCAT usernames within their organization. BOBCAT will then put suffix of organization name after each username to ensure that a BOBCAT user's username is unique.

2.38 If a particular airline operator is using the services of another airline's dispatch office, they shall submit an official letter to the Bangkok ATFMU informing them that this airline or dispatch organization has authority to submit slot request on their behalf. This formal letter shall be signed by an authorized person on the company's letterhead.

2.39 If there are any changes to users participating in BOBCAT, each participating organization is responsible to notify Bangkok ATFMU of the change so as to ensure access security for the system.

BOBCAT Security Policy

2.40 For the purpose of maintaining access security of BOBCAT, each user of the system is required to have a username/password, which should not be shared with others. Action taken under a username/password will be interpreted as action taken by the registered user.

2.41 To provide security for BOBCAT users, BOBCAT only stores the digest of the password to be verified against password provided by BOBCAT users. Each generated password will only be known to the BOBCAT user alone via e-mail.

2.42 Each BOBCAT user is responsible for maintaining personal password only known by the user alone. It is recommended that the password be regularly changed to protect against identity theft.

2.43 In the event of a lost BOBCAT username/password, contact should be made with Bangkok ATFMU to request a password reset. The reset password would then be sent to the registered user via e-mail. The user is responsible for changing the generated password into the personal password.

2.44 To protect against identity theft issues, users should logout of BOBCAT website once the task related to BOBCAT system is completed.

3. Bangkok ATFMU

ATFMU Staffing and Hours of Operation

3.1 The Bangkok ATFMU will operate from 0600UTC to 2400UTC daily for westbound flights only, with contact details as follows:

a) Telephone : +662 287 8024, +662 287 8025

b) Tel/Fax: +662 287 8026

c) Fax : +662 287 8027

d) ATFN: VTBBZDZX

e) E-mail: atfmu@bobcat.aero

ATFMU Functions and Responsibilities

3.2 Bangkok ATFMU has the following functions and responsibilities:

a) Manage operation of BOBCAT system so as to ensure that proper slot requests were submitted to the system, slot allocations are completed properly and processes after initial slot allocation are completed in a timely manner;

b) Coordinate with airline operators and ANSPs involved in BOBCAT operations with respect to:

   i. Requesting username/password into BOBCAT system;
   ii. Submitting slot request;
   iii. Obtaining slot allocation for aircraft missing wheels-up time.

4. Airline Dispatchers and Private Operators

Submitting a Slot Request to BOBCAT

4.1 Slot requests including preferred ATS route, flight level and Maximum Acceptable Delay (MAD) should be lodged by the cut-off time of 1200 UTC. Submitted slot requests may be amended at any time up until 1200UTC. To enhance opportunity for preferred slot allocation, airline dispatchers are encouraged to submit additional options in case their first choice is not available. This may include alternative route, flight level and changes to MAD.

Use of Multiple Slot Request Options

4.2 Airline dispatchers are alerted that more slot request options (routes and flight level) submitted generally increase the potential that a flight would be allocated a slot based on the requests submitted.

Use of Estimated Elapsed Time

4.3 BOBCAT calculates Estimated Time over Kabul FIR entry waypoint based on Estimated Elapsed Time (EET) provided by airline operators in the ATS Flight Plan and the Wheels-Up Time. Airline operators are reminded that BOBCAT slot allocation is only accurate up to the precision of EET provided by airline operators.

Use of Standard Buffer Time

4.4 A standard buffer time of will be applied for entry into Kabul FIR. For example, aircraft allocated slot into Kabul FIR at 2100UTC can arrive at the waypoint up to the buffer time being nominated.

Use of Standard Taxi Time and Additional Time Required

4.5 Standard Taxi Time suggested by ANSPs at the departing airport will be used to compute Wheels-Up Time of an aircraft. Additional Time required by aircraft operator can also be added for Taxi purposes.

Calculation of Wheels-up Time (WUT)

4.6 Wheels-Up Time will be automatically calculated by BOBCAT user interface based on the following equation:

WUT = ETD + STT + Additional Time Required by Operator

Procedures if No Slot Allocated or Missing Cut-off Time

4.7 Flights that were not allocated a slot although a slot request was submitted prior to the cut-off time (1200UTC) and flights which did not submit slot request by the cut-off time, will have the opportunity to select a slot from

the unallocated slots after the slot distribution has been completed. The procedures for such operations are posted in BOBCAT Website under the "Help" section.

Use of Slot Request Templates (SRT) and Past Slot Request (PSR)

4.8 Airline operators will have the opportunity to save a slot request into a slot request template (SRT) with a name of their choice. This slot request template can be used to submit a slot request for a flight of a later date, or a slot request of a similar flight on the same date.

4.9 Furthermore, airline operators will have the facility to view slot requests submitted on previous days and use a Past Slot Request as template for the current day's operation.

Use of Contingency Slot Request Templates (CSRTs)

4.10 In addition to reducing workload with respect to slot request submission, the Slot Request Template feature can also be useful where airline operators are unable to reach the BOBCAT website, e.g. the airline operators' Internet connection is down. In this case, they should advise the Bangkok ATFMU of the problem, select the appropriate Contingency Slot Request Template (CSRT) forms which are shown in **Appendix C and D**, and transmit the information to the Bangkok ATFMU via fax.

4.11 Accordingly, airline operators are requested to store up-to-date Slot Request Templates corresponding to all scheduled flights in another location outside of the BOBCAT website.

5. Air Navigation Service Providers (ANSPs)

General ANSP Roles and Responsibilities

5.1 AWUT shall be included as part of the ATC clearance.

5.2 When requested by the PIC prior to push back, or if the aircraft has pushed back, ANSPs shall assist the PIC to coordinate for a new slot allocation with the ATFMU in the event that the aircraft is unable to meet the AWUT.

5.3 ANSPs shall notify specific Standard Taxi Time (STT) for the individual departure airports and any subsequent changes, e.g. taxi way works, to the ATFMU as guidance for airline operators in estimating WUT.

5.4 ANSPs shall notify Bangkok ATFMU of any change required in the spacing at specific waypoint within their area of responsibility.

5.5 The ATFMU (AFTN Address: VTBBZDZX) shall be included in the list of AFTN addressees for NOTAMs regarding any planned activities relevant to BOBCAT operations (e.g. reservation of airspace/closure of airspace, non-availability of routes, etc).

5.6 The ATFMU (AFTN Address: VTBBZDZX) shall be included in the list of AFTN addressees for ATS messages (e.g. FPL, DLA, DEP, CHG, CNL) related to flights participating in the ATFM operational trial.

Control Tower/ACC Responsibilities – Departure Airport

Standard Push-back and Taxi Time

5.7 ADC/SMC at departure airports are responsible for providing Bangkok ATFMU with representative time between the time an aircraft pushes back and the wheels-up time of the aircraft during the period of BOBCAT operation.

Priority Take-off for Aircraft Subjected to ATFM

5.8 In accordance with ICAO PANS ATM procedures (Section 7.8), flights with slot allocation should be given priority for takeoff over other departures to facilitate compliance with AWUT.

Procedures if aircraft unable to make AWUT

5.9 In circumstances where it becomes obvious that the AWUT will not be met, a new slot allocation should be obtained by the most expeditious means (e.g. via coordination between PIC/flight dispatcher/ANSPs and ATFMU).

5.10 In the case where the delay is expected to be no more than 5 minutes past the slot window, there maybe an opportunity to tactically manage the aircraft to avoid a new slot allocation as long as it will not interfere with another aircraft's slot at the Kabul FIR entry point. This will ultimately depend on close coordination between Tower, ACC and PIC.

5.11 Where the expected delay will be more than 5 minutes, the PIC will contact ATC with the expected delay, any other pertinent information and request a new slot. The TWR controller shall immediately contact his respective ACC and request a revised slot allocation based on the PIC information. ACC shall then coordinate with ATFMU, obtain a new slot allocation and pass the information to the PIC via the TWR.

5.12 The PIC has the choice of the following:

a) Choosing from alternates provided by ANSPs in co-ordination with Bangkok ATFMU, or;

b) Contacting airline operator's office to lodge a new slot allocation.

ACC Responsibilities – En Route

Coordination with Pilot In Command (PIC)

5.13 En Route ACCs should manage the transit of aircraft with BOBCAT slot allocation so that these aircraft would be in a position to make their slot allocation into the Kabul FIR.

Coordination between En Route ACCs

5.14 In circumstances where it becomes obvious that the allocated slot into Kabul FIR cannot be met, the en route ACC first becoming aware would:

a) Advise the PIC of the situation; and

b) Manage the traffic tactically

5.15 In these circumstances, the appropriate en route ACC should file ATFM System Fault and Event Report Form in **Appendix E** and submit to Bangkok ATFMU by fax or e-mail.

AIS Responsibilities – Departure Airports

Coordination with Airline Operators and the Bangkok ATFMU

5.16 The AIS office is responsible for coordinating with Bangkok ATFMU to assist in obtaining a slot allocation for airline operators who do not have access to the BOBCAT website.

5.17 The AIS office shall ensure that an airline operator proposing to submit a flight plan for a flight entering the Kabul FIR during the BOBCAT time period has a slot allocation.

5.18 The AIS office shall provide a BOBCAT Slot Request form to the airline operator who proposes to enter the Kabul FIR during the hours of BOBCAT operations. Once completed, this form shall be submitted by the AIS office on behalf of the airline operator to the Bangkok ATFMU for processing. The slot request form is shown at **Appendix F**.

5.19 In the case of an AIS office that has access to the BOBCAT website, the aircraft's slot allocation result may be viewed and used by the airline operator to complete his ATS flight plan.

5.20 With regard to an AIS office which is unable to access the BOBCAT website, the Bangkok ATFMU shall transmit the aircraft's slot allocation result to the AIS office by fax or other means. This information shall be relayed to the airline operator by the AIS office to allow an ATS flight plan to be filed.

5.21 The AIS office shall also ensure that, when the flight plan is finally completed by the airline operator, it is based on the BOBCAT slot allocation with reference to the Estimated Elapsed Time (EET) from departure airport to the Kabul FIR entry point as well as the ATS Route and Flight Level entering the Kabul FIR before transmission by AFTN.

5.22 In the circumstances that the airline operator submits slot request prior to the cutoff time, the following steps should be undertaken by the airline operators:

a) The airline operator shall contact the AIS office to obtain the result of his slot allocation request. If satisfied, submit a flight plan using the slot allocation result; or,

b) Otherwise, request a new slot allocation through the AIS office.

5.23 The Bangkok ATFMU (AFTN Address: VTBBZDZX) shall be included in the list of AFTN addressees for ATS messages (e.g. FPL, DLA, DEP, CHG and CNL) related to affected flights.

6. Contingency Arrangements

Airspace Contingencies

6.1 In the event of closure of ATS routes, flight levels or other airspace that occurs prior to the cut off time for BOBCAT slot allocation and which may affect BOBCAT operations, Bangkok ATFMU should be notified as soon as possible. In turn, Bangkok ATFMU will pass on this information to airline dispatchers to re-file slot request on routes or flight levels which are not affected. Other ANSPs will also be advised by Bangkok ATFMU of this situation.

6.2 In circumstance where closure of ATS routes or airspace as referred to in paragraph 6.1 above occurs after the slot allocation cutoff time, the following procedures are applicable:

a) If aircraft are already airborne, ANSPs will tactically manage these flights based on spare slot allocations en route as well as obtaining slots for them through the Kabul FIR in coordination with PIC to avoid diversions; or,

b) If aircraft have not yet departed, new slot allocations will be coordinated between Bangkok ATFMU and dispatchers for flights that would be affected by the closure.

6.3 Extreme weather conditions, e.g. cyclonic conditions, affecting international airspace may cause en-route diversion or cause airlines not to plan on routes affected by the extreme weather conditions. In this situation, ANSPs may also elect to increase longitudinal spacing between affected aircraft.

6.4 In the event of extreme weather conditions affecting ATFM operations, ANSPs would need to tactically manage these flights, including diversions. In doing so, coordination with Bangkok ATFMU should be considered if it will affect aircraft which are not yet airborne.

6.5 In the case of flights which have not yet departed, dispatchers should re-file on alternative routings wherever possible.

Reduction in Airspace Capacity due to Other Reasons

6.6 In circumstances where an ANSP is required to increase the longitudinal spacing between aircraft, e.g. sudden loss of staff, degradation in facilities, etc., the ANSP affected would normally take NOTAM action regarding the event as well as contacting Bangkok ATFMU with details and the resultant effect on BOBCAT operations. Bangkok ATFMU would coordinate with all concerned advising them of any changes which would affect BOBCAT operation.

6.7 ANSP responsible for areas affected by any contingency for an

area or areas which may affect normal BOBCAT operations shall notify Bangkok ATFMU of the contingency and possible consequences to aircraft as soon as possible, so appropriate action and coordination can be taken.

Communication Issues

6.8 In the event that an airline operator or an ANSP is unable to access the BOBCAT website, the following means of communication with Bangkok ATFMU shall be used:

a) Telephone : +662 287 8024, +662 287 8025

b) Tel/Fax: +662 287 8026

c) Fax : +662 287 8027

d) ATFN: VTBBZDZX

6.9 In the event that an ACC is unable to log onto the BOBCAT website, the Bangkok ATFMU, on being advised, will send a copy of the slot allocation results to the affected ACC ensuring that:

a) For departure airports, AWUTs are sorted the correct order;

b) For en-route ACCs, appropriate Kabul entry waypoint(s) are selected and aircraft allocations are sorted in the correct order of ETO with Flight Level;

Complete Failure of BOBCAT System

6.10 In the event of a complete failure of the BOBCAT system, Bangkok ATFMU shall notify all parties concerned and advise that ATFM procedures are suspended. In this event, procedures will be applied by States concerned in accordance with bi-lateral agreements.

Suspension of ATFM Operational Trial

6.11 In the case of an evident safety issue, reasonable actions to manage the situation, including the suspension of the ATFM operational trial, should be taken by the party first becoming aware of the circumstances.

6.12 Beyond direct safety considerations, it is possible that a request to stop the ATFM operational trial could be subjective and require some sort of value judgment. Accordingly, such a request should be relayed to the appropriate member of the Core Team of the Air Traffic Flow Management Task Force for initial consideration and, if the request was supported, further relayed to the remaining members of the Core Team in order to enable appropriate consideration of the matter. After consideration, the decision of the Core Team would be promulgated.

Non-Completion of Flight

6.13 In circumstances where an aircraft aborts his flight en route and either diverts or returns for various reasons, this information should be transmitted to Bangkok ATFMU so that his original slot allocation for entry into the Kabul FIR can be cancelled and made available for use by other aircraft.

7. System Fault and Event Report

7.1 An ATFM system fault is defined as a significant occurrence affecting an ATS unit, an aircraft operator or ATFMU resulting from the application of ATFM procedures.

7.2 Aircraft operators and ATC units experiencing an ATFM system fault should complete an ATFM System Fault and Event Report Form from the ATFM Users Handbook (see **Appendix E**) and forward it to the ATFMU at the address indicated on the form. The ATFMU will analyze all reports, make recommendations/suggestions as appropriate and provide feedback to the parties concerned to enable remedial action.

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU)
Tel: +66-2-287-8024
+66-2-287-8025
Tel/Fax: +66-2-287-8026
Fax: +66-2-287-8027
E-Mail: atfmu@bobcat.aero
AFTN: VTBBZDZX

ATFM USERS HANDBOOK REQUEST FOR CHANGE FORM

To be submitted to Bangkok ATFMU

SECTION I: NATURE OF CHANGE

1. Subject: _____
2. Reason of Change: _____

   _____
3. Description: _____

   _____

   _____

   _____

   _____

   _____
4. References: _____

   Reference sections/paragraphs related to the change as well related documents.

SECTION II: INFORMATION OF PARTY INITIATING CHANGE

Organization: _____

Full Name: _____

Tel: _____ Date of Request: _____

E-Mail: _____ Signature: _____

SECTION III: CONSULTATION

Response due date: _____

Organization / Administration	Contact Person Name	Agreement (Agree/Disagree)	Date

SECTION IV: FEEDBACK

Action(s) Required: _____

Feedback Passed: _____ Editor: _____

RFC Number: _____ Date Received: _____

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU)
Tel: +66-2-287-8024
+66-2-287-8025
Tel/Fax: +66-2-287-8026
Fax: +66-2-287-8027
E-Mail: atfmu@bobcat.aero
AFTN: VTBBZDZX

USERNAME / CONTACT INFORMATION MODIFICATION FORM

To be submitted to Bangkok ATFMU

SECTION I: ADD NEW USERS

Prefix	First Name	Last Name	Proposed Username Up to 20 characters	E-Mail Address

SECTION II: REMOVE USERS

Prefix	First Name	Last Name	Username	E-Mail Address

SECTION III: RESET PASSWORD

Prefix	First Name	Last Name	Username

SECTION IV: NOTIFICATION E-MAIL ADDRESS

❒ Change our organization's notification e-mail address to _____

SECTION V: CONTACT INFORMATION

Organization: _____

Full Name: _____

Tel: _____ Signature: _____

E-Mail: _____ Date/Time of Request: _____

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU)
Tel: +66-2-287-8024
+66-2-287-8025
Tel/Fax: +66-2-287-8026
Fax: +66-2-287-8027
E-Mail: atfmu@bobcat.aero
AFTN: VTBBZDZX

CONTINGENCY SLOT REQUEST TEMPLATE FORM A

To be submitted to Bangkok ATFMU

SECTION I: AIRCRAFT DETAIL

Call Sign: _____ Registration: _____

Departure Aerodrome: _____ Departure Date: _____

Destination Aerodrome: _____ ETD (hhmm): _____

Aircraft Type: _____ Estimated Taxiing Time (minutes): _____
Estimated time between taxi and wheels up

SECTION II: ROUTE/FLIGHT LEVEL OPTIONS

Option No.	ETD (UTC)	MAD (Maximum Acceptable Delay)	WP1	EET1	FL1	WP2	EET2	FL2
1, 2, 3, …	*hhmm*	*Minute(s)*	*DI*	*hhmm*	*390*	*SITAX*	*hhmm*	*390*
			DI		**390**	**SITAX**		**390**
			DI		**350**	**SITAX**		**350**
			DI		**310**	**SITAX**		**310**
			DI		**280**	**SITAX**		**280**
Option No.	**ETD (UTC)**	**MAD** (Maximum Acceptable Delay)	**WP1**	**EET1**	**FL1**	**WP2**	**EET2**	**FL2**
			DI		**390**	**PAVLO**		**390**
			DI		**350**	**PAVLO**		**350**
			DI		**310**	**PAVLO**		**310**
			DI		**280**	**PAVLO**		**280**
Option No.	**ETD (UTC)**	**MAD** (Maximum Acceptable Delay)	**WP1**	**EET1**	**FL1**			
			ROSIE		**390**			
			ROSIE		**350**			
			ROSIE		**310**			
			ROSIE		**280**			
Option No.	**ETD (UTC)**	**MAD** (Maximum Acceptable Delay)	**WP1**	**EET1**	**FL1**			
			ASLUM		**390**			
			ASLUM		**350**			
			ASLUM		**310**			

SECTION III: CONTACT INFORMATION

Organization: _____

Full Name: _____

Tel: _____ Signature: _____

E-Mail: _____ Date/Time of Request: _____

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU)
Tel: +66-2-287-8024
+66-2-287-8025
Tel/Fax: +66-2-287-8026
Fax: +66-2-287-8027
E-Mail: atfmu@bobcat.aero
AFTN: VTBBZDZX

CONTINGENCY SLOT REQUEST TEMPLATE FORM B

To be submitted to Bangkok ATFMU based on previously saved Slot Request Template

SECTION I: AIRCRAFT DETAIL

Call Sign: _____ Registration: _____

Departure Aerodrome: _____ Departure Date: _____

Destination Aerodrome: _____ ETD (hhmm): _____

Aircraft Type: _____ Estimated Taxiing Time (minutes): _____
Estimated time between taxi and wheels up

SECTION II: ROUTE/FLIGHT LEVEL OPTIONS

1. Slot Request Template Name: _____
   Name of Slot Request Template which will be used to submit slot request

2. Changes from Slot Request Template Detail:

   _____

   _____

   _____

   _____

SECTION III: CONTACT INFORMATION

Organization: _____

Full Name: _____

Tel: _____ Signature: _____

E-Mail: _____ Date/Time of Request: _____

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU)
Tel: +66-2-287-8024
+66-2-287-8025
Tel/Fax: +66-2-287-8026
Fax: +66-2-287-8027
E-Mail: atfmu@bobcat.aero
AFTN: VTBBZDZX

ATFM SYSTEM FAULT AND EVENT REPORT FORM

To be submitted to Bangkok ATFMU

SECTION I – GENERAL INFORMATION

1. Date and Time (UTC) of Occurrence _____ / _____ / _____ / _____ / _____
   yy / mm / dd / hh / mm
2. Type of Event
   - 2.1 Failure of BOBCAT system ❒
   - 2.2 Communication Link failure ❒
   - 2.3 Non compliance with ATFM procedures by Pilot / Airline Operator / ANSP ❒
   - 2.4 Error in FPL and associated messages ❒
   - 2.5 Failure in ATFM Slot Monitoring (i.e. TWR at Aerodrome of Departure) ❒
   - 2.6 Non compliance with slot allocation window ❒
3. Restrictions applicable to the flight: _____

SECTION II – DETAILED INFORMATION

1. Organization / Administration submitting the report: _____
2. Flight Data (if applicable) – Call Sign: _____

   Attach copies of Flight Progress Strips indicating DEP, EOBT, WUT, DES or Entry Point & ETO over entry point, FL to ATC Unit/Sector area of activity as applicable.
3. Other details necessary for analysis of the incident

   Attach copies of FPL or RPL, subsequent ATS modifying messages etc. if appropriate

   _____

SECTION III – SUPPLEMENTARY INFORMATION

1. Actions already initiated: _____

   _____
2. Contact information follow-up action:
   - 2.1 Name: _____
   - 2.2 Designation: _____
   - 2.3 Tel: _____
   - 2.4 E-Mail: _____
3. Signature: _____
4. Date/Time of Report: _____

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU)
Tel: +66-2-287-8024
+66-2-287-8025
Tel/Fax: +66-2-287-8026
Fax: +66-2-287-8027
E-Mail: atfmu@bobcat.aero
AFTN: VTBBZDZX

SLOT REQUEST FORM

To be submitted to Bangkok ATFMU

SECTION I: AIRCRAFT DETAIL

Call Sign: _____ Registration: _____

Departure Aerodrome: _____ Departure Date: _____

Destination Aerodrome: _____ ETD (hhmm): _____

Aircraft Type: _____ Estimated Taxiing Time (minutes): _____
Estimated time between taxi and wheels up

SECTION II: ROUTE/FLIGHT LEVEL OPTIONS

Option No.	ETD (UTC)	MAD (Maximum Acceptable Delay)	WP1	EET1	FL1	WP2	EET2	FL2
1, 2, 3, …	*hhmm*	*Minute(s)*	*DI*	*hhmm*	*390*	*SITAX*	*hhmm*	*390*
			DI		**390**	**SITAX**		**390**
			DI		**350**	**SITAX**		**350**
			DI		**310**	**SITAX**		**310**
			DI		**280**	**SITAX**		**280**
Option No.	**ETD (UTC)**	**MAD** (Maximum Acceptable Delay)	**WP1**	**EET1**	**FL1**	**WP2**	**EET2**	**FL2**
			DI		**390**	**PAVLO**		**390**
			DI		**350**	**PAVLO**		**350**
			DI		**310**	**PAVLO**		**310**
			DI		**280**	**PAVLO**		**280**
Option No.	**ETD (UTC)**	**MAD** (Maximum Acceptable Delay)	**WP1**	**EET1**	**FL1**			
			ROSIE		**390**			
			ROSIE		**350**			
			ROSIE		**310**			
			ROSIE		**280**			
Option No.	**ETD (UTC)**	**MAD** (Maximum Acceptable Delay)	**WP1**	**EET1**	**FL1**			
			ASLUM		**390**			
			ASLUM		**350**			
			ASLUM		**310**			

SECTION III: CONTACT INFORMATION

Organization: _____

Full Name: _____

Tel: _____ Signature: _____

E-Mail: _____ Date/Time of Request: _____

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU)
Tel: +66-2-287-8024
+66-2-287-8025
Tel/Fax: +66-2-287-8026
Fax: +66-2-287-8027
E-Mail: atfmu@bobcat.aero
AFTN: VTBBZDZX

ORGANIZATIONAL CONTACT INFORMATION FORM

To be submitted to Bangkok ATFMU

ORGANIZATION CONTACT INFORMATION

Organization Name: _____

Organizational Unit Name: _____

Address: _____

_____

_____

_____

_____

_____

Tel: _____ AFTN: _____

Fax: _____ E-Mail: _____

Name: _____

Title: _____

Signature: _____ Date of Submission: _____

BAY OF BENGAL COOPERATIVE ATFM ADVISORY SYSTEM

TRAINING GUIDELINES FOR AIR NAVIGATION SERVICE PROVIDERS

VERSION 1.0
16 June 2006

Table of Contents

1. Introduction

Purpose of the Training Guidelines

1.1 The purpose of this guideline is to assist ANSPs to achieve their responsibilities in managing aircraft involved in the BOBCAT program from pre-departure to into the Kabul FIR.

General

1.2 It is proposed that States of the ICAO Asia/Pacific Region within the Bay of Bengal, South Asia and Pakistan airspace will implement an operational trial of an integrated Bay of Bengal Cooperative Air Traffic Flow Management System (BOBCAT) commencing on 6 July 2006. The trial will be conducted under the auspices of the ICAO Bay of Bengal ATS Coordination Group – ATFM Task Force. The ATFM operational trial will be preceded by a 7 day ghosting period commencing on 29 June 2006.

1.3 The ATFM service is advisory in nature and will be provided by Aeronautical Radio of Thailand LTD (AEROTHAI) from the Bangkok Air Traffic Flow Management Unit (ATFMU).

1.4 The ATFMU will utilize the BOBCAT system in exercising its responsibility for the ATFM activities within the Bay of Bengal and South Asia areas for the ATS routes, flight levels for westbound aircraft entering the Kabul FIR between 2000 to 2359UTC daily. This responsibility will be managed in coordination with aircraft operators and ANSPs in the FIRs concerned.

1.5 The ATFM service will be limited to slot allocation/management for westbound flights transiting the Kabul FIR. The objectives of the ATFM services are to:

a) Reduce ground and en-route delays;

b) Maximize capacity and optimize the flow of air traffic entering the Kabul FIR;

c) Provide an informed choice of routing and flight level selection;

d) Alleviate unplanned in-flight rerouting and technical stops; and,

e) Assist regional Air Navigation Service Providers (ANSPs) in planning and managing future workload in the light of forecast increases of traffic flows within the area.

1.6 The operational trial will manage westbound flights transiting the Kabul FIR at specified times by satisfying minimum spacing requirements at established gateway fix points in the vicinity of the eastern boundary of the Kabul FIR.

1.7 Mandatory slot allocation will be managed via internet access to the automated BOBCAT system of the Bangkok ATFMU.

1.8 BOBCAT will provide advisory ATFM information only. ANSPs continue to retain responsibility for tactical ATS and traffic management.

1.9 The ATFMU will operate from 0600UTC to 2359UTC daily and will be responsible for westbound flights only. The Bangkok ATFMU may be contacted as follows:

Website:	https://www.bobcat.aero/
Telephone:	+66-2-287-8024, +66-2-287-8025
Fax:	+66-2-287-8027
Tel/Fax:	+66-2-287-8026
E-mail:	atfmu@bobcat.aero
AFTN:	VTBBZDZX

2. Identification of ATS routes, flight levels and applicable hours

2.1 All westbound flights intending to transit the Kabul FIR between 2000UTC and 2359UTC daily on ATS routes A466, L750, N644 from FL280 to FL390 inclusive and V390/G792 from FL310 to FL390 inclusive shall participate in the operational trials of BOBCAT.

2.2 In order to ensure availability of an initial slot for westbound departures from designated airports in northern India and Pakistan, (currently identified as VIDP, OPKC and OPLA), FL280 has been reserved in BOBCAT for priority allocation to departures from these airports.

2.3 Aircraft departing from airports east of India will have priority for FL310 to FL390.

2.4 Notwithstanding priorities mentioned in paragraph 2.2 and 2.3 above, aircraft may submit slot requests for any of the available levels to enter the Kabul FIR mentioned in paragraph 2.1 above.

3. BOBCAT Operating Procedures

Slot Allocation Process

3.1 The slot allocation process is divided into 3 phases, namely the Slot request, initial Slot allocation and finally Slot distribution to airline operators and ANSPs. All operators concerned are required to submit slot requests to the BOBCAT system by logging onto https://www.bobcat.aero/ and completing the electronic templates provided.

Slot Requests

3.2 Slot requests including preferred ATS route, flight level and Maximum Acceptable Delay (MAD) should be lodged between 0001 UTC and 1200 UTC on the day of operation. Slot requests may subsequently be amended up until 1200 UTC, which shall be the cut-off time. To enhance opportunities of preferred slot allocation, airline dispatchers are encouraged to submit additional options in case their first choice is not available. This may include alternative route, flight level and changes to MAD.

3.3 As BOBCAT will allocate FL280 on a priority basis to facilitate departures from northern India and Pakistan, dispatchers responsible for submitting slot request for these aircraft are encouraged to include FL280 as one of the option in their slot request.

3.4 Flights that were not allocated a slot although a slot request was submitted prior to the cut-off time (1200UTC), and flights that did not submit a slot request by the cut off-time, should select a slot from the listing of unallocated slots available immediately after slot distribution has been completed.

Slot Allocation

3.5 Slot allocation will take place shortly after the cut-off time at 1200UTC. BOBCAT will process and generate the slot allocation based on the information submitted in the slot request.

Slot Distribution

3.6 Notification of results will be distributed via the BOBCAT website “Slot Allocation” page not later than 1300UTC. In cases where the recipient has difficulties in receiving this information on the website, alternative arrangements for notification of slot allocation (e.g. E-mail, Fax, and Telephone) should be coordinated with the ATFMU.

3.7 Flights departing without an allocated slot will tactically be accommodated after participating flights have been processed and may expect delays for requested routes and flight levels.

3.8 After the slot allocation has been published at https://www.bobcat.aero/, aircraft operators may:

a) View the slot allocation result for flight planning purposes;

b) Cancel the assigned slot; and/or,

c) Request a change of slot allocation to another available slot by viewing available slot and selecting their preferred option.

3.9 ANSPs may view the slot allocation results at https://www.bobcat.aero by selecting Slot Allocation page.

3.10 Once aircraft operators are satisfied with the slot allocation, they should submit their ATS flight plan using the time, route and level parameters of the allocated slot.

3.11 In addition the ATFMU (VTBBZDZX) shall be included in the list of AFTN addressees for ATS messages (e.g. DEP, DLA, CHG and CNL) related to flights participating in the BOBCAT program.

Pilot in Command – Role and Responsibilities

3.12 In accordance with ICAO PANS ATM provisions, it is the responsibility of the Pilot in Command (PIC) and the operator to ensure that the aircraft is ready to taxi in time to meet AWUT window. The PIC shall be kept informed via their dispatcher of any changes to the Allocated Wheels Up Time (AWUT), Kabul FIR gateway fix(es) times and flight parameters (route/level) allocated by BOBCAT.

3.13 The PIC shall include the AWUT in the initial ATC clearance request.

3.14 The PIC, in collaboration with ATC, shall arrange take-off as close as possible to the AWUT.

3.15 PIC shall adjust cruise flight to comply with slot time at Kabul FIR gateway fix, providing advice to ATC of speed and estimate variations in accordance with normal AIP requirements.

3.16 In circumstances where it becomes obvious that the AWUT and the allocated slot time in Kabul FIR gateway fix will not be met, a new slot allocation should be obtained by the most expeditious means (e.g. via coordination between flight dispatcher, PIC, ATC and ATFMU).

ANSP – Role and Responsibilities

3.17 In accordance with ICAO PANS ATM provisions, flights with an ATFM slot allocation should be given priority for take off over other departures to facilitate compliance with AWUT.

3.18 AWUT shall be included as part of the initial ATC clearance.

3.19 In collaboration with airline operators, ATC shall ensure that every opportunity and assistance is granted to a flight to meet AWUT and allocated Kabul FIR gateway(s) times.

3.20 When requested by the PIC prior to push back or if for some other reason after push-back, there is some delay which would cause the aircraft to miss the AWUT and eventually the Kabul Entry waypoint slot time, ATC shall assist the PIC by coordinating with the ATFMU for a new slot allocation.

3.21 As guidance for airline operators in estimating WUT, ANSPs shall notify ATFMU of Standard Taxi Time (STT) for their departure aerodromes. Any additional temporary changes, e.g. taxi way works etc, which will affect STT, would be also notified to the ATFMU.

3.22 The ATFMU (VTBBZDZX) shall be included in the list of AFTN addressees for NOTAMs regarding any planned activities that could affect slot allocation (e.g. reservation of airspace/closure of airspace, non-availability of routes, etc).

Management of AWUT and Flow Buffer

3.23 The management of flights subject to ATFM in the departure phase is critical to the overall success of the ATFM operation. Therefore, flight subjected to ATFM during departure should be given priority in obtaining their AWUT ahead of other departing aircraft in accordance with ICAO ATM-PANS (ATFM section) provisions.

3.24 Control Tower staff should be aware of fundamental issues to ensure the success of a smooth transition from pushback to takeoff for these aircraft. These items include:

a) Time aircraft calls for pushback;

b) Time aircraft commences taxiing; and,

c) The use of Standard Taxi Time (SST) from commencement of pushback to the runway threshold.

3.25 It should be noted that in interpreting AWUT and Allocated ETO at Kabul entry waypoints, an aircraft may depart within reasonable buffer time of the AWUT without any required coordination. Such buffer time to the AWUT must not compromise adherence to the allocated slot time at the Kabul entry waypoint.

3.26 The Control Tower should monitor the progress of aircraft prior to pushback request in order to assist as necessary if a short delay occurs.

3.27 In the event that an aircraft is likely to depart outside its AWUT, the control tower may consider the following options:

a) When an aircraft is ready to depart before the AWUT, the aircraft could be allowed to depart provided the PIC advises that the aircraft can arrive at the Kabul FIR entry waypoint within the allocated slot time;

b) When an aircraft departure is minimally delayed and missed the AWUT, the aircraft could be allowed to depart provided that the PIC reported the aircraft will be able to arrive at the Kabul FIR entry waypoint within the allocated slot time;

c) In any event, this procedure should not jeopardize the following aircraft's slot allocation for entry into the Kabul FIR; and,

d) When an aircraft could not meet its AWUT and reports that it would not be able to arrive at Kabul FIR entry waypoint within the allocated slot time, a new slot allocation shall be obtained from Bangkok ATMFU.

3.28 The departing ACC concerned should be advised of any delay or time gained resulting from deviation from AWUT, so that they may be able to assist with different control techniques (track shortening/lengthening, increase/decrease of Mach No.) for the aircraft to make up or lose time to meet the allocated slot time at the Kabul FIR entry waypoint.

3.29 With regard to paragraph 3.26 and 3.27, these procedures should not jeopardize the given slot allocation of other aircraft’s for entry into the Kabul FIR.

Missing the Allocated Wheels-Up Time

3.30 In circumstances where it becomes obvious that the AWUT will not be met, a new slot allocation should be obtained by the most expeditious means (e.g. via coordination between flight dispatcher/ANSPs and ATFMU).

3.31 In order to assist coordination in this respect the following steps should be followed, insofar as they are applicable to the particular situation:

a) PIC to inform ANSP of their revised estimate at the allocated gate waypoint

b) ANSP will contact and inform ATFMU of the revised estimate.

c) ATFMU will give two options to the ANSP for consideration by the PIC:

i) First option will be same route and the same requested flight level with the revised estimate for the waypoint or with delay to the revised estimate.

ii) Second option will be same route and a different flight level with the revised estimate for the waypoint or with delay to the revised estimate.

d) PIC shall contact their dispatcher to obtain a new slot allocation from ATFMU if the two options are not acceptable to them.

e) In order to alleviate tactical workload on ANSPs, PIC should coordinate using airline company arrangements (e.g. dispatchers) to the maximum extent possible, particularly in relation to delays of significant duration.

4. Procedures for Special Flights Exempted from ATFM

4.1 The following flights are exempted from ATFM slot allocation:

a) Humanitarian or medical flights; or,

b) State aircraft with Head of State on board.

4.2 Flights exempted from ATFM shall indicate the exemption in their flight plan (Field 18 – STS-ATFM EXMP).

4.3 AIS offices concerned shall forward the flight plan information to the ATFMU (at AFTN: VTBBZDZX).

Flight affected by Special flight e.g. VIP movement

4.4 BOBCAT will provide advisory ATFM information only.

4.5 ANSPs retain responsibility for tactical ATS and traffic management during this period.

4.6 At the departure aerodrome, where necessary to do so, ATC shall assist the affected flight(s) by coordinating with ATFMU for a new AWUT.

4.7 Flights with slot allocations which may be affected by the exempted aircraft during the en-route phase should be tactically managed by ANSP(s) concerned.

5. Interaction between ANSPs and the BOBCAT system

5.1 Only authorized personnel are permitted to logon to the BOBCAT website. A designated person within the administration is responsible for submitting notification of the new nominee on the application form provided and submitting this form to the Bangkok ATFMU by fax or email.

5.2 ANSPs may view the slot allocation results page and customize the screen to suit functional requirements of each position with respect to airspace characteristics or working environment, etc. For example:

a) Departure aerodrome may choose to view only departure traffic from specific airport or airports, showing AWUT information;

b) Area control (e.g. Lahore ACC) may wish to view ETO at Kabul FIR entry waypoints as well as DI or;

c) ACC involved with departure airport(s) may also choose to view departure information (AWUT) from the aerodrome(s) involved as well as Kabul FIR entry waypoints.

5.3 Customizations mentioned in Para. 5.2 can be saved in "Preference" section of the BOBCAT website. Detailed instruction of how to save these preferences may be found in "Help Pages" part of "Documents" section of the BOBCAT website.

5.4 ANSPs are recommended to log into the BOBCAT website as soon as possible after the cut off time and monitor any subsequent changes made by airline operators.

Coordination Requirements Between Units Within an ANSP

5.5 This sub-section looks at proposed coordination arrangements between the ACC(s), Control Tower(s) and the AIS Office operated within a single ANSP. These procedures may vary at different locations depending on what BOBCAT facilities are available in each unit.

5.6 Where the Control Tower does not have the benefit of viewing BOBCAT slot allocation results, the ACC is responsible to ensure that information of AWUT is distributed to the control tower in the correct order to assist them in managing aircraft subjected to ATFM.

Coordination Between ACC and Control Tower

5.7 The ACC and Control Tower should arrange internal coordination procedures for distribution of Slot Allocation Result information to the Control Tower.

5.8 The ACC shall forward any updated ATFM information relevant to the concerned aerodrome to the Control Tower as soon as possible.

5.9 ANSPs responsible for departure aerodrome(s) may designate an ATS unit as a point of contact for any relevant ATFMU activities affecting the Control Tower e.g. missed wheel-up time coordination and new AWUT assignment provided by the Bangkok ATFMU. These coordination procedures should be introduced to ensure information is passed effectively to the aircraft involved. (See AIP)

5.10 In the event that, an aircraft departs slightly outside the given slot time, the Control Tower shall notify the ACC, so that assistance may be provided to the aircraft to enable him to make up or lose time to make its designated Kabul Entry time.

En-Route ACCs

5.11 En-Route ACCs should give all possible assistance to flights subjected to ATFM in order to meet their Kabul entry waypoint time and flight level.

5.12 Lahore ACC should arrange flights to be at the Flight Level allocated by BOBCAT at the Kabul entry waypoint. An alternative Flight Level may also be used depending on the traffic situation.

6. AIS Office Involvement in BOBCAT

6.1 The AIS office is responsible for coordinating with Bangkok ATFMU to assist in obtaining a slot allocation for airline operators who do not have access to the BOBCAT website.

6.2 The AIS office shall ensure that an airline operator proposing to submit a flight plan for a flight entering the Kabul FIR between 2000 and 2359UTC has a slot allocation.

6.3 The AIS office shall provide a BOBCAT Slot Request form to airline operators who propose to enter the Kabul FIR during the hours of BOBCAT operations. Once completed, this form shall be submitted by the AIS office on behalf of the airline operator to the Bangkok ATFMU for processing. The slot request form is shown at **Appendix F** of the ATFM Users Handbook.

6.4 In the case of an AIS office that has access to the BOBCAT website, the aircraft's slot allocation result may be viewed and used by the airline operator to complete his ATS flight plan.

6.5 With regard to an AIS office which is unable to access the BOBCAT website, the Bangkok ATFMU shall transmit the aircraft's slot allocation result to the AIS office by fax or other means. This information shall be relayed to the airline operator by the AIS office to allow an ATS flight plan to be filed.

6.6 The AIS Office shall also ensure that when the flight plan is completed by the airline operator, it is based on the BOBCAT slot allocation with reference to the estimated elapsed time (EET) from departure airport to the Kabul FIR entry point as well as the ATS route and flight level entering the Kabul FIR.

6.7 In the circumstances that the airline operator submits slot request prior to the cutoff time, the following steps should be undertaken by the airline operators:

a) The airline operator shall contact the AIS office to obtain the result of his slot allocation request. If satisfied, submit a flight plan using the slot allocation result; or,

b) Otherwise, request a new slot allocation through the AIS office.

6.8 The Bangkok ATFMU (AFTN Address: VTBBZDZX) shall be included in the list of AFTN addressees for ATS messages (e.g. FPL, DLA, DEP, CHG, CNL) related to affected flights.

7. Contingency Procedures

Airspace Contingencies

7.1 In the event of closure of ATS routes, flight levels or other airspace that occurs prior to the cut off time for BOBCAT slot allocation and which may affect BOBCAT operations, Bangkok ATFMU should be notified as soon as possible. In turn, Bangkok ATFMU will pass on this information to airline dispatchers to re-file slot request on routes or flight levels which are not affected. Other ANSPs will also be advised by Bangkok ATFMU of this situation.

7.2 In circumstance where closure of ATS routes or airspace as referred to in paragraph 7.1 above occurs after the slot allocation cutoff time, the following procedures are applicable:

a) If aircraft are already airborne, ANSPs will tactically manage these flights based on spare slot allocations en route as well as obtaining slots for them through the Kabul FIR in coordination with PIC to avoid diversions; or,

b) If aircraft have not yet departed, new slot allocations will be coordinated between Bangkok ATFMU and dispatchers for flights that would be affected by the closure.

7.3 Extreme weather conditions, e.g. cyclonic conditions, affecting international airspace may cause en-route diversion or cause airlines not to plan on routes affected by the extreme weather conditions. In this situation, ANSPs may also elect to increase longitudinal spacing between affected aircraft.

7.4 In the event of extreme weather conditions affecting ATFM operations, ANSPs would need to tactically manage these flights, including diversions. In doing so, coordination with Bangkok ATFMU should be considered if it will affect aircraft which are not yet airborne.

7.5 In the case of flights which have not yet departed, dispatchers should re-file on alternative routings wherever possible.

7.6 Under conditions mentioned in Para 7.5, this will increase the amount of aircraft on routes not affected by the weather condition, which may cause more departure delays. Airline dispatchers should consider using alternative routing through Kabul FIR so that it will lessen the delay in slot allocation through Kabul FIR. In this case, it is suggested that judicious use of all available routes and flight levels through the Kabul FIR be applied to reduce excessive delays.

Reduction in Airspace Capacity due to Other Reasons

7.7 In circumstances where an ANSP is required to increase the longitudinal spacing between aircraft, e.g. sudden loss of staff, degradation in facilities, etc., the ANSP affected would normally take NOTAM action regarding the event as well as contacting Bangkok ATFMU with details and the resultant effect on BOBCAT operations. Bangkok ATFMU would coordinate with all concerned advising them of any changes which would affect BOBCAT operation.

7.8 ANSP responsible for areas affected by any contingency for an area or areas which may affect normal BOBCAT operations shall notify Bangkok ATFMU of the contingency and possible consequences to aircraft as soon as possible, so appropriate action and coordination can be taken.

Communication Issues

7.9 In the event that an ANSP is unable to access the BOBCAT website, the following means of communication with Bangkok ATFMU shall be used;

a) Telephone: +66-2-287-8024, +66-2-287-8025

b) Fax : +66-2-287-8027

c) Tel/Fax: +66-2-287-8026

d) AFTN : VTBBZDZX

7.10 In the event that an ACC is unable to log onto the BOBCAT website, the Bangkok ATFMU, on being advised, will send a copy of the slot allocation results to the affected ACC ensuring that:

a) For departure airports, AWUTs are sorted the correct order;

b) For en-route ACCs, appropriate Kabul entry waypoint(s) are selected and aircraft allocations are sorted in the correct order of ETO with Flight Level;

Complete Failure of BOBCAT System

7.11 In the event of a complete failure of the BOBCAT system, the Bangkok ATFMU shall notify all parties concerned and advise that ATFM slot allocation procedures are suspended until further notice. Procedures will be applied by States concerned in accordance with existing bi-lateral agreements.

Non-Completion of Flight

7.12 In circumstances where an aircraft aborts his flight en route and either diverts or returns for various reasons, this information should be transmitted to Bangkok ATFMU so that his original slot allocation for entry into the Kabul FIR can be cancelled and made available for use by other aircraft.

Suspension of ATFM Operational Trial

7.13 In the case of an evident safety issue, reasonable actions to manage the situation, including the suspension of the ATFM operational trial, should be taken by the party first becoming aware of the circumstances.

7.14 Beyond direct safety considerations, it is possible that a request to stop the ATFM operational trial could be subjective and require some sort of value judgment. Accordingly, such a request should be relayed to the appropriate member of the Core Team of the Air Traffic Flow Management Task Force for initial consideration and, if the request was supported, further relayed to the remaining members of the Core Team in order to enable appropriate consideration of the matter. After consideration, the decision of the Core Team would be promulgated.

8. System Fault and Event Report

8.1 An ATFM system fault is defined as a significant occurrence affecting an ATS unit, an aircraft operator or ATFMU resulting from the application of ATFM procedures.

8.2 Aircraft operators and ATC units experiencing an ATFM system fault should complete an ATFM System Fault and Event Report Form from the ATFM Users Handbook as **Appendix E** and forward it to the ATFMU at the address indicated on the form. The ATFMU will analyze all reports, make recommendations/suggestions as appropriate and provide feedback to the parties concerned to enable remedial action.

ATS SAFETY MANAGEMENT SYSTEM TRAINING

SUMMARY

Project: To formulate a two/three day ATS safety management workshop and deliver the workshop in-country to a minimum of three States.

Objective: To assist States to meet obligations for ATS safety management by facilitating a suitable ATS safety management workshop enabling practical hands on experience in the application of safety management techniques.

Strategic Objectives: A 5, A7, A8

1. NEED FOR THE PROJECT

1.1 In reviewing matters related to airspace safety and particularly the monitoring requirements associated with the widespread regional implementations of reduced separation including RVSM and RNP10, APANPIRG/16 (August 2005) expressed concerns in relation to a number of matters related to ATS safety management. These included the non provision of safety related data by some States, the lack of robust organisational and funding arrangements to establish regional safety monitoring agencies, target levels of safety in enroute airspaces were being exceeded, significant numbers of large height deviations were being reported, horizontal plane safety assessments for RNP10 route structures were not updated and difficulties were being experienced at the interfaces between differing flight level orientation schemes (FLOS) in use regionally. APANPIRG/16 raised a number Decisions and Conclusions in this regard, including the following:

> **Conclusion 16/5 – No implementation of reduced separation unless compliant with Annex 11**
>
> That, recognizing that some States had not adequately complied with safety management provisions, the Regional Office advise States of the Asia/Pacific Region that further regional implementation of reduced separation minima should only proceed in circumstances where implementing States can demonstrate an ability to comply with Annex 11, Chapter 2, safety management provisions for the continuous monitoring and regular assessment of the safety level achieved.

1.2 Although a number of regional safety management seminars had been held, a more interactive approach utilizing a small group workshop format was expected to facilitate hands-on opportunities for participants to be involved, for example, in the actual preparation of generic safety assessments based on simulated hazard workshop activities. By conducting the workshop activities in-country in selected States, savings could be made in terms of travel and associated costs for the State concerned. Holding the workshops in-country would also facilitate increased attendance by officials from the State as no travel time or costs would be incurred.

1.3 In order to effectively present a suitable workshop, a minimum of two workshop facilitators would be required. In addition to the SIP consultant, it is proposed that the SIP be supported by the provision of an additional ATS safety management expert/s from a State or States with experience in ATS safety management. In this respect, in principle support for the provision of an appropriate expert had been offered by a number of States.

2. SCOPE OF THE PROJECT

2.1 The objective of the SIP would be to assist States to meet obligations for ATS safety management by facilitating a suitable ATS safety management workshop enabling practical hands on experience in the application of safety management techniques.

2.2 It is proposed that a SIP consultant be tasked to formulate a suitable ATS safety management workshop programme of approximately two/three day's duration for delivery in-country in selected States.

2.1 Following finalisation of the workshop programme, the SIP consultant, in company with at least one additional ATS safety management expert from a State of the region with a track record of safety management experience and expertise, would travel to selected States and conduct the workshop.

3. DURATION OF THE PROJECT

3.1 The project would commence during the third quarter 2006. It is intended that a suitable workshop programme be formulated and then delivered to as many States as possible in terms of the budget available for the SIP. In this respect, up to five days would be allocated for the preparation of appropriate programme materials adapting, wherever possible, existing materials.

3.2 In terms of the delivery of the workshop, each workshop would be conducted either once in each State, or twice in the same State to train a wider group of officials. It is preferable that at least 3 States receive the workshop in the first stage, requiring a time allocation of up to two and a half weeks.

3.3 Subsequently, the workshop programme would be refined and made available for delivery by suitable State experts as required. Up to three days should be allocated for this purpose. As such, the duration of the SIP would be in the order of four weeks.

3.4 The SIP would need to be supported by at least one State ATS safety management system expert who would be fully funded by the State, including travel, subsistence and miscellaneous expenses.

— END —

DEVELOPMENT OF STATE ATS CONTINGENCY PLANS

SUMMARY

Project: Project mission to one State to prepare ATS contingency planning arrangements in accordance with the provisions of Annex 11, Section 2.28.

Objective: To prepare and implement State ATS contingency planning arrangements for a single State to the point where the arrangements were ready to be tested during exercise by the State concerned. Finalization of ATS contingency plans would be accomplished by the State, subject to exercise outcomes. Following finalization, the process followed and documentation raised would be used to develop a model for use in a regional strategy.

Strategic Objectives: A5, A7

1. NEED FOR THE PROJECT

1.1 In accordance with the provisions of Annex 11, Section 2.28, ATS authorities shall develop and promulgate contingency plans for implementation in the event of disruption, or potential disruption, of air traffic services and related supporting services in the airspace for which they are responsible for the provision of such services.

1.2 In an attempt to establish the level of regional compliance with these provisions, the Twelfth meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/12, August 2001) considered that a survey of States should be conducted to determine the status of contingency planning in the Asia and Pacific Region and the extent to which contingency plans were exchanged between States. APANPIRG/12 required (Conclusion 12/6) the Regional Office to conduct a survey in this regard.

1.3 During subsequent years from 2002 to 2004, APANPIRGs 13, 14 and 15 continued attempts to address ATS contingency planning matters and considered instances in which restricted airspace had been declared, or was about to be declared, over the high seas that had an impact on the provision of services to international civil operations. APANPIRG acknowledged that the closure of air space over the high seas was in breach of the Convention on International Civil Aviation and required (Conclusion 13/8) that States review, amend or develop contingency plans to address these matters.

1.4 During August 2004, APANPIRG/15 was advised that as a result of resource limitations at the Regional Office, the survey of contingency plans required since August 2001 under Conclusion 12/6 had still not been undertaken, but again requested the Regional Office to complete the survey. The survey was initiated in March 2005.

1.5 APANPIRG/16 (August 2005) noted the poor response to the survey and that of the 12 responses received at that time a number had indicated that contingency plans were still in preparation. Further, views were expressed that developing a State contingency plan to meet ICAO requirements could be very complex and involve a wide range of issues, such as delegating responsibility to another State for provision of ATS and associated legal, financial and technical

issues, the involvement of many government agencies, and development of operational procedures and training for pilots and controllers. APANPIRG/16 acknowledged that for some States, these matters could be difficult to overcome.

1.6 In light of the longstanding difficulties, APANPIRG/16 considered that SIP would be a suitable means for facilitating the development of contingency plans. Contingency plans would be developed for a selected State, which could then be used as a model for other States. In addition to addressing the contingency provisions of Annex 11, the SIP would be used to identify and prioritize other contingency factors that could impact the continuity of civil aviation operations, with a view to using the output of the SIP in a workshop or seminar format to assist other States of the Region. The meeting adopted Conclusion 16/15 in this respect, requesting ICAO to conduct an appropriate SIP.

2. SCOPE OF THE PROJECT

2.1 The objective of the SIP would be to prepare and implement State ATS contingency planning arrangements for a single State to the point where the arrangements were ready to be tested during exercise by the State concerned. Finalization of ATS contingency plans would be accomplished by the State, incorporating the exercise outcomes.

2.2 The SIP would concentrate on addressing the provisions of Annex 11, Attachment D, primarily in the context of operations in international airspace. The SIP would also address the relevant APANPIRG Conclusions, particularly in respect of continuity of operations following acts of terrorism, industrial action, natural disaster and presence of volcanic ash.

2.3 The SIP consultant would visit the selected State for the purposes of drafting ATS contingency plans in close coordination with State representatives. Coordination with neighbouring States would also be required and this would occasion some travel, although it was anticipated that a great deal would be achieved by telephone and correspondence in this respect.

2.4 Following finalization of the ATS contingency planning arrangements for a single State, the process followed and documentation raised would be used to develop a generic ATS contingency planning model for application in the region as widely as possible.

3. DURATION OF THE PROJECT

3.1 The project would be conducted over a period of four weeks, comprising 3 weeks in the selected State completing coordination with agencies of the State and neighbouring States and 6 days for preparation and reporting. The project would commence not later than the third quarter of 2006.

— END —

INTERNATIONAL SAR SEMINAR AND SAREX – PACIFIC ISLANDS

SUMMARY

Project: Coordinate the conduct of an international SAREX and associated SAR seminar based at a Pacific Island State, review the outcomes of the SAREX and seminar and, in conjunction with visits to neighbouring States to inspect SAR capabilities, raise recommendations to facilitate the collaborative delivery of SAR services by a group of Pacific Island States.

Objective: The objective of the SIP project would be to improve search and rescue services, coordination and cooperation between island States of the Pacific.

Strategic Objectives: A2, A5

1. NEED FOR THE PROJECT

1.1 During its review of search and rescue (SAR) matters, APANPIRG/16 (August 2004) noted the very positive outcomes from the ICAO SAR Seminar and SAREX that had been hosted by the Airports Authority of India at Chennai during March 2005.

1.2 The Chennai SAR seminar had extensively reviewed the circumstances resulting from the devastating tsunami that had impacted many States on the eastern side of the Bay of Bengal on 26 December 2005. There were many lessons to be learnt in this regard and, accordingly, the Chennai seminar had prepared a list of recommendations resulting from their consideration of these matters. APANPIRG/16 considered (Conclusion 16/22) that the recommendations should be widely circulated and taken into account by States when considering their SAR activities.

1.3 In this context, it was noted that although the Asia sub-region had experienced significant recent exposure to SAR matters as result of the tsunami and the Chennai SAR seminar and SAREX, this was not the case for the Pacific sub-region. Noting the lack of recent international SAREX opportunities for the Pacific Island States and that it was highly desirable that SAR Seminars and SAREXs be held on a regular basis as they made an important contribution toward ensuring SAR preparedness, APANPIRG/16 concluded:

Conclusion 16/23 – Special Implementation Project International Seminar and SAREX

That, ICAO consider a proposal for an Asia/Pacific Special Implementation Project to be established with the primary objective to improve search and rescue services, coordination and cooperation between island States of the Pacific.

2. SCOPE OF THE PROJECT

2.1 The primary objective of the SIP project would be to improve search and rescue services, coordination and cooperation between island States of the Pacific.

2.2 This would be addressed by tasking a SIP consultant to coordinate the conduct of an international SAREX and associated SAR seminar based at a Pacific Island State. Subsequently, the SIP consultant would review the outcomes of the SAREX and seminar and, in conjunction with visits to neighbouring States to inspect SAR capabilities, raise recommendations to facilitate the collaborative delivery of SAR services by a group of States. The recommendations arising from the Chennai ICAO SAR seminar of March 2005 would be considered in this review.

3. DURATION OF THE PROJECT

3.1 The project would commence during the third quarter 2006. It is anticipated that suitable SAR seminar and SAREX activities would be completed over approximately 5 days. A period of coordination and preparation would be required prior to commencing the seminar and SAREX activities, up to 5 days should be allocated for these activities.

3.2 Analysis of the outcomes of the seminar and SAREX would be necessary to identify appropriate recommendations. In addition, a review of the recommendations arising from the Chennai ICAO SAR seminar of March 2005 would also be necessary. The preparation of an appropriate report summarising the proceedings and documenting the recommendations would also be required. Up to 5 days should be allocated for these activities.

3.3 A suitable time allocation, of the order of 5 days, should also be made to enable travel to a number of States for the purposes of assessing SAR capabilities and identifying opportunities for coordination and cooperation between States in the delivery of SAR services.

3.4 The SAR seminar and SAREX would be conducted in conjunction with the affected States and an identified host State.

— END —

AGENDA ITEM 5

Agenda Item 5: Review of ATS coordination group meetings

Update on ATS Coordination Groups' activities in the Asia/Pacific Region

5.1 The meeting was updated on the activities since the ATS/AIS/SAR/SG/15 of the ICAO and State ATS Coordination Groups that contribute to the work of APANPIRG. The following Sub-Regional ATS Coordination Group meetings were held:

ICAO ATS Coordination Groups

a) 22 - 25 November 2005, ICAO Asia/Pacific Office, Bangkok, Thailand
Combined Sixth Meeting of the FANS Implementation Team, Bay of Bengal (FIT-BOB/6), and Third Meeting of the FANS Implementation Team, South-East Asia (FIT-SEA/3)

b) 16 − 20 January 2006, ICAO Asia/Pacific Office, Bangkok, Thailand
Fifth Meeting of the Air Traffic Flow Management Task Force (ATFM/TF/5) and Seventeenth Meeting of the Bay of Bengal ATS Coordination Group (BBACG/17)

c) 16 – 19 May 2006, ICAO Asia/Pacific Office, Bangkok, Thailand
Thirteenth Meeting of the South-East Asia ATS Coordination Group (SEACG/13)

State ATS Coordination Groups

a) 15 – 16 November 2005, ICAO Asia/Pacific Office, Bangkok, Thailand
Special ATS Coordination Meeting Cross Polar and Russian Trans−East ATS Routes (SCM POLAR & RTE)

b) 24 – 28 January 2006, Honolulu, Hawaii, United States
Twenty-fourth Meeting of the Informal Pacific Air Traffic Control (ATC) Coordinating Group (IPACG/24)

c) 30 January – 1 February 2006, Honolulu, Hawaii, United States
Twentieth Meeting of the Informal South Pacific ATS Coordination Group (ISPACG/20)

e) 22 – 23 May 2006, Emirates Aviation College, Dubai, United Arab Emirates
First Meeting of the Asia South and Indian Ocean ATS Coordination Group (ASIOACG/1)

ICAO ATS Coordination Groups

FIT-BOB/6 - FIT-SEA/3

5.2 The meeting reviewed the reports of the FIT-BOB/6 and FIT-SEA/7, which addressed the matters summarized below.

Review Bay of Bengal ADS/CPDLC Operational Trial

5.3 India updated the meeting in relation to the status of the ADS/CPDLC Operational Trial that had commenced in the Bay of Bengal on 19 February 2004, in relation to operations in the Chennai and Kolkata FIRs. India had adopted the FANS 1/A Operations Manual (FOM) as the operational procedures applicable to the trial.

5.4 India reported that the trials in Chennai and Kolkata FIRs were proceeding positively, with confidence increasing amongst pilots and controllers. The ground system had already reached a level of stability where failures were now very infrequent. An enhancement planned for the system would enable the automatic relay of MET data contained in ADS reports to be sent directly to the MET department via an automatic message switching system.

5.5 All problem reports had been being forwarded to the Boeing Central Reporting Agency (CRA) for record and analysis. However, as legal arrangements had not been finalized, Boeing had been unable to undertake any significant work in this respect.

5.6 India raised concerns that protocols should be established to ensure that the usage of different data service providers or changing between service providers should in no way affect the delivery of messages.

5.7 India reported that Kolkata was experiencing difficulties in effecting transfer of control of data link to the Yangon system. The meeting recognized that Myanmar was not participating in the trial and their ADS/CPDLC systems were not always available, and this would account for the lack of CPDLC response from their end. The meeting encouraged Myanmar to reactivate its ADS/CPDLC equipment as soon as possible in order to join the Bay of Bengal operational trial. Also, there was a need to revise Letter of Agreement (LOAs) between neighbouring ACC s to provide for ADS/CPDLC transfers.

5.8 With Mumbai and Delhi automation systems being equipped with ADS/CPDLC components, India was planning to introduce ADS/CPDLC trial operations in the Arabian Sea portions of the Mumbai and Delhi FIRs. Trial operations were expected to commence from January 2006. In support of this initiative, India advised that they would prefer to work strictly with one CRA for both the Bay of Bengal and the Arabian Sea.

5.9 Although the trials to date had been progressing well, India was not yet ready to consider introduction of reduced separation provisions. Further, a simultaneous coordinated implementation of reduced separation applications by all participating ATS service providers in the Bay of Bengal was likely to be the best implementation strategy.

Impediments to ADS/CPDLC Implementation

5.10 The meeting noted that although the ADS/CPDLC operational trial in the Bay of Bengal had commenced in February 2004, there were still no CRA services available more than 18 months after commencement of the trial. The lack of CRA services meant that complex problem reports had been unable to be analyzed and the technical parameters of the data link operations had been unable to be verified. Consequently, no progress could be made beyond the current trial operations.

5.11 Concerns of this nature had been recognized by APANPIRG/16 (August 2005) (Conclusion 16/5 – *No implementation of reduced separation unless compliant with Annex 11*) in relation to RVSM and reduced horizontal separation minima implementations, and that the ICAO

safety assessment and ongoing monitoring provisions were equally applicable in the implementation of new communications and surveillance systems like ADS and CPDLC.

5.12 The meeting urged all parties to take all actions to ensure the commencement of CRA services for the Bay of Bengal as soon as possible, in order to enable India and the FIT-BOB to progress the safety assessment for implementation. Once a suitable safety analysis had been completed in accordance with ICAO provisions, implementation of CPDLC and/or ADS could be considered.

Tables of ADS/CPDLC Equipage and ATS Status

5.13 The meeting reviewed and updated the Tables of ADS/CPDLC Equipage and ATS Status for the Indian Ocean/Bay of Bengal and the South China Sea/South-East Asia. The meeting requested that the Regional Office expand the tables to include each FIR affected as an individual entity, rather than including all the FIRs of a State under one heading.

Whole of Indian Ocean ATS Coordination Group

5.14 The Secretariat advised that Australia was presently working with African States through the Informal Indian Ocean ATS Coordination Group (IIOACG) to implement ADS and CPLDC in the Southern Indian Ocean area. The FIT-BOB/4 meeting (September 2004) had considered the establishment of a Whole of the India Ocean meeting to harmonize ADS/CPDLC implementation across the region. This was endorsed by BBACG/16 (February 2005) who recommended that the Regional Office bring this to the attention of APANPIRG/16 to be held on 22-26 August 2005. This would allow for integration of all the various coordinating groups and implementation plans into a consolidated approach.

5.15 Unfortunately the reduced ATM staffing circumstances at the Regional Office had resulted in an inability to further pursue this matter and it was unclear when further progress would be made. However, the Secretariat urged the meeting to consider the efficiencies to be gained by working with other States towards simultaneous implementations in contiguous airspaces.

Updates on CNS/ATM developments

5.16 The meeting was updated by the following States on the status of their ADS/CPDLC implementation and operations: Indonesia Malaysia Myanmar Philippines Singapore Sri Lanka Thailand and Viet Nam.

Phased Implementation – Singapore and Viet Nam

5.17 FIT-SEA/1 (May 2004) had agreed that the South China Sea area ADS/CPDLC operational trial would be carried out by the Philippines, Singapore and Viet Nam. Indonesia would also participate in this trial for the eastern part of the Jakarta FIR.

5.18 In noting the delay to implementation in the Philippines and the uncertainty in regard to the preparedness of Indonesia, the meeting suggested that a phased approach should be adopted in relation to the implementation of ADS and CPDLC in the South China Sea area, with implementations occurring as soon State's operational capability became available.

5.19 Singapore and Viet Nam agreed to work together towards implementing an operational trial as soon as Viet Nam's equipment was commissioned, assisted by the Regional Office, the FIT-SEA and the FIT-SEA CRA. It was anticipated that a trial of this nature could be coordinated to commence in the latter part of 2006.

Central Reporting Agency – South East Asia (Establishment of FIT-SEA CRA)

5.20 In considering the establishment of a CRA for the FIT-SEA, the meeting recalled that the generous offer by CRA Japan to provide CRA services to the FIT-SEA for operations in the South China Sea area was accepted by the participating States present during FIT-SEA/2 (April 2005), including the Philippines and Singapore, and was strongly supported by the Regional Office as well as IATA and IFALPA. Subsequently Indonesia and Viet Nam, who were not present at FIT-SEA/2, were advised by letter from the Regional Office in this regard (ref: ATM 0248 & 0249) and had also accepted the offer from CRA Japan.

5.21 The meeting noted that services to be provided by the CRA Japan would be on a voluntary and temporary basis until a formal CRA was established, and adopted the terminology FIT-SEA CRA for the services provided by CRA Japan for the South China Sea area.

5.22 In order to progress the work of the FIT-SEA CRA, in particular the commencement of an ADS/CPDLC operational trial involving the Philippines, Singapore and Viet Nam, the meeting agreed to the matters that need to be addressed.

FIT-SEA Members and Work Plan

5.23 The meeting reconfirmed the membership, Terms of Reference and Work Plan for the FIT-SEA.

5.24 The meeting also reconfirmed that it would be necessary to obtain the involvement and cooperation of the aircraft manufacturers and data link service providers as had been discussed during FIT-SEA/2. In this regard the meeting again requested that the Secretariat confirm their participation at future FIT-SEA meetings.

Area of FIT-SEA CRA services

5.25 The meeting agreed that the geographical area of FIT-SEA CRA services shall be defined as follows:

> *the airspace within the Ho Chi Minh, Manila and Singapore FIRs, where implementation of ADS/CPDLC technologies is considered to enhance surveillance and communications capability, leading to significant benefits for operational efficiency and regularity of flights in the South China Sea area*.

5.26 Specific route segments where an ADS/CPDLC trial could be planned would be determined by respective States in due course and would be advised to FIT-SEA and the FIT-SEA CRA. It was considered crucial for FIT-SEA to have China involved in the future development of the ADS/CPDLC trial in the South China Sea area. The Regional Office agreed to alert China to this fact and seek their involvement in future FIT-SEA meetings.

Arrangement of data confidentiality agreements

5.27 The meeting considered arrangements for data confidentiality agreement between States, Airlines, Data Link Service Providers (DSPs) and the FIT-SEA CRA.

5.28 A model data confidentiality agreement between States and FIT-SEA CRA was developed and would be circulated by the FIT-SEA CRA to the Philippines, Singapore, and Viet Nam for their consideration and action.

Arrangements for submission of problem reports to the FIT-SEA CRA.

5.29 The meeting understood that problem reports (PRs) should be submitted first to the States from ATS providers, airlines and data service providers in accordance with their data confidentiality agreement. It was stressed that the submission of PRs to the FIT-SEA CRA from States should be completed as soon as possible on each occasion in order that the CRA could initiate required actions in a timely manner.

5.30 The meeting agreed that the list of contact officers contained in the respective Tables of ADS/CPDLC equipage and ATS Status were suitable in the first instance but should be kept up to date.

Guidance Material for the End-to-End Monitoring of Data Link Systems

5.31 The meeting was informed that APANPIRG/16 (August 2005) under Conclusion 16/20 had adopted the Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region that had been prepared by RASMAG. The guidance material was intended to provide a set of working principles for ATS data link system performance monitoring that would be applied by all States implementing these systems, as well as providing detailed guidance on the requirements for establishing and operating a FANS-1/A Interoperability/Implementation Team (FIT) and Central Reporting Agency (CRA).

FANS 1/A Operations Manual (FOM)

5.32 The meeting recalled that APANPIRG/15 (August 2004) had agreed that States should take all relevant ICAO provisions on data link into account when establishing their operating requirements and procedures. Further, APANPIRG/15 had agreed (Conclusion 15/7) that the FOM provided the necessary procedures for ATS providers and should be used as a basis to operate ADS and CPDLC with aircraft equipped with the FANS-1/A systems.

5.33 In regard to further development of the regional Guidance Material and the FOM, and harmonizing with ICAO provisions, as discussed at APANPIRG/15, additional work was required to more closely align the material of the documents concerned. In this regard, ICAO Headquarters was willing to undertake the lead to progress this work in coordination with the Regional Office and the States responsible for the FOM.

5.34 The meeting also considered the following subjects:

ICAO OPLINK Panel Draft CPDLC Guidance Material

In light of many lessons learned in the use of CPDLC over many years OPLINKP developed guidance material related to ATC procedures, pilot procedures, technical specifications, human machine interface (HMI) for constructing and displaying of CPDLC messages, and human factors associated with the *reading* of a text message as opposed to *hearing* it. This material should assist in reducing error rates, as well as standardizing procedures over a number of regions.

Draft ICAO Safety Management Manual (SMM, Doc 9859)

Required Communication Performance (RCP) Concepts

Update of the activities of the Air Traffic Flow Management Task Force (ATFM/TF)

The ATFM/TF had been convened under the auspices of the BBACG in February 2005. ATFM/T/F/4 (November 2005) had requested that Thailand develop their automated flow system (BOBCAT) to the stage of an operational ATFM trial. Further information on this matter is reported in WP/14 to the ATM/AIS/SAR/SG/16 meeting.

Frequency Management at intersection of Yangon, Kolkata and Dhaka FIRs

The meeting was briefed by IATA on frequency management problems being experienced by flights en-route between Dhaka FIR and Yangon FIR which transited a small portion of the south east corner of the Kolkata FIR which lies between the Dhaka and Yangon FIRs. There were complicated communication procedures in place in the relevant State AIP's that exacerbated already high cockpit workload related to ATC procedures for the concerned airspaces.

In discussion, it was apparent that the difficulties in ground/ground communication needed to be overcome before improvements could be made to flight crew procedures. A 14 day test/sample/recording period would be reported to BBACG/17 scheduled 18-20 January 2006.

BBACG/17

5.35 The meeting reviewed the report of BBACG/17, which was focused on progressing implementation of the ICAO regional CNS/ATM Plan, and to deal with operational matters necessary to improve the efficiency of operations and enhance safety.

APANPIRG/16 Conclusions and Decisions

5.36 The meeting reviewed and discussed the 32 Conclusions and Decisions from APANPIRG/16 that were of immediate relevance in the context of ATM, AIS and SAR matters.

APANPIRG Deficiencies List

5.37 The meeting reviewed the List of Deficiencies in the ATM/AIS/SAR fields as updated by APANPIRG/16 (August 2005) based on information provided to the Regional Office by States. (*This matter is dealt with under WP/25*)

Review current operations across the Bay of Bengal and identify problem areas

Air Traffic Flow Management Task Force (ATFM)

5.38 The meeting recalled that, although recent airspace capacity improvements had been made in terms of the EMARSSH realignment of ATS routes (November 2002) and the implementation of RVSM in the Bay of Bengal (November 2003), recent meetings of APANPIRG, the BBACG and the RVSM Task Force had all recognized a continuing need to improve the overall management of traffic flows across the Bay of Bengal and South Asia area.

5.39 To address the above issues, the Special Coordination Meeting – Bay of Bengal ATFM was held from 31 January – 4 February 2005. Arising from the recommendations of that meeting, the BBACG set up a dedicated ATFM/TF to progress the implementation of ATFM automated systems for the Bay of Bengal and South Asia traffic flows.

Level transitions and communications problems over Yangon FIR

5.40 The meeting considered information provided by IATA that flights operating within the Yangon FIR continue to experience communications problems with Yangon ACC, both in the northern and southern segments. Despite the fact that a new ACC communications system had been installed in Yangon, pilot reports indicate only a slight improvement and problems of pilots unable to contact the ACC on either HF or VHF for long periods remain. The implementation of a procedure for Mandalay Approach to relay for Yangon ACC had provided some relief, but intermittent operation meant that a large percentage of aircraft were still not able to communicate with ATC for long stretches while transiting the Yangon FIR.

5.41 The meeting was informed that the IATA In-Flight Broadcast Procedure (IFBP) had been in force in the area since 29 August 2003.

New Procedure for flights between Lahore and Urumqi FIRs

5.42 IATA reported that Urumqi FIR (China) was non RVSM airspace while Lahore FIR (Pakistan) was. Since the implementation of RVSM in 2003, flights operating between the two FIRs had encountered difficulties at position PURPA on the FIR boundary, because of transition and communication issues. The problem had recently been addressed by Pakistan in coordination with China and a new procedure had been promulgated which would address the issue. This new procedure took effect on 10 January 2006 and IATA expressed its appreciation as the arrangements were working smoothly.

RVSM Matters

5.43 IATA reported that although the Bay of Bengal and Indian FIRs implemented RVSM on 27 November 2003, which doubled the number of available levels, in respect of A466 and N644 which diverge into Kabul FIR, Lahore ACC was unable to treat them as separate routes because of anticipated difficulties in transitioning flights from the RVSM to the CVSM levels. IATA requested that if these routes could be considered as separate routes for separation purposes, the capacity constraints currently in force would be eased.

5.44 In addition, as the majority of airspace surrounding the Kabul FIR was now RVSM, IATA urged States and the Regional Office to assist where possible in hastening the implementation of RVSM in the Kabul FIR. This would provide extra flight levels to transit Kabul and provide seamless RVSM operations for the long haul traffic from Asia to Europe.

Report of MAAR's RMA activities

5.45 BBACG/17 considered the report of the MAAR on its review of airspace safety for the RVSM implementation in the Asian region. In respect to the Bay of Bengal area, MAAR noted that a large majority of States had provided the required Traffic Sample Data (TSD) for analysis, however there were still some States that had not provided LHD data and these were being followed up by MAAR.

5.46 In regard to the safety assessment MAAR reported that the total risk was assessed as 3.29×10^{-9}, therefore current estimates of both technical and total risks satisfy the agreed TLS value of no more than 2.5×10^{-9} and 5.0×10^{-9} fatal accidents per flight hour respectively.

Establishment of Safety Monitoring Agency (SMA) for the Asia Region

5.47 BBACG/17 considered the establishment of a SMA for the Asia Region, which was being progressed by RASMAG in line with APANPIRG's requirement.

ICAO SAR Seminar and SAREX

5.48 BBACG/17 reviewed outcome of the ICAO SAR Seminar held in Chennai, India from 7 to 11 March 2005. The information on this Seminar was reported to ATM/AIS/SAR/SG/15 and APANPIRG/16 meetings.

Implementation of the new CNS/ATM systems in the Region

5.49 The meeting reviewed the progress made by States to implement CNS/ATM systems and the programmes underway under the FIT and ATFM projects as described above. One of the main issues to be resolved is the establishment of a CRA and its funding to support the introduction of the ADS and CPDLC systems. These activities are described in detail in the RASMAG, FIT and ATFM groups' reports.

International ATS Data Link Operations Manual (IDLM)

5.50 The meeting was informed that, in considering the need for harmonized global FANS 1/A operating procedures, ICAO Headquarters had supported proposals raised during the North Atlantic FANS Interoperability Group Eleventh meeting (NAT-FIG/11, October 2004). NAT-FIG/11 agreed that amalgamation of the Pacific FANS Operations Manual and the NAT Guidance Material was a desirable goal. It was recognised that there were practical and operational reasons why some elements of FANS implementation must differ from region to region. Many differences however, could be successfully reconciled across regions and result in overall international harmonization of data link services.

5.51 Work had commenced under the auspices of the ICAO EUR/NAT Office in order to produce a joint document which consolidated elements of FANS operations that are common across all participating regions, whilst identifying operationally necessary differences among regional service providers for specification in region-specific sections.

5.52 The meeting noted the overriding philosophy of this work was to ensure that what pilots and controllers do in the context of data link operations should be consistent across FIR boundaries to the maximum extent possible.

APANPIRG Funding Study Group

5.53 In considering the funding of regional safety monitoring activities, the meeting recognized that the primary reason for establishing such multinational facilities or services is to enable two or more States to carry out the services each has responsibility for under the regional plan more efficiently and in a more cost effective manner than each of them could achieve on its own.

5.54 The meeting was informed that APANPIRG/16 had recognized an urgent need to develop feasible and sustainable funding solutions for regional safety monitoring so that on-going initiatives to carry out trials and to implement CNS/ATM systems in Asia/Pacific would not be delayed and that safety and efficiency were not compromised. APANPIRG under Conclusion 16/2 called for a study group to be formed to report to RASMAG by end of June 2006.

ATS route developments

5.55 The meeting was informed that the *Asia/Pacific ATS Route Catalogue* developed by ATS Route Network Review Task Force (ARNR/TF, disbanded by APANPIRG/16) as presented to ATM/AIS/SAR/SG/15 (July 2005) was adopted by APANPIRG/16 under Decision 16/9. The catalogue was accepted as a regional planning tool and to be maintained and updated on a regular basis. The Catalogue Version 1 was published in August 2005 and was now available from the ICAO Asia/Pacific web site (http://www.icao.int/apac/) under the menu “eDocuments”.

Development of State Contingency Plans

5.56 The meeting discussed in detail issues related to States providing a contingency plan in accordance with Annex 11 that would provide for a variety of circumstances affecting the safety and regularity of international civil aircraft operations. In follow-up to APANPIRG Conclusion 16/15 in this respect, the Regional Office proposed to ICAO Headquarters a special implementation project to assist System prepare such a plan.

Review and update BBACG Work Plan

5.57 The meeting reviewed and adopted the BBACG work plan. Attention was drawn to the efficient implementation of the 2 NM Strategic Lateral Offset Provisions (SLOP), noting that the great majority of States regionally had now included these procedures in their AIP.

5.58 The meeting discussed progress in relation to the long standing matter of the flexible use of FL300 on Bay of Bengal routes, and considered that a Special ATS Coordination Meeting (SCM) should be held later this year to enable the issue to be properly evaluated and a way forward to be reached.

Additional information

5.59 BBACG/17 also noted information on the following subjects:

a) ICAO language proficiency requirements

b) Speech Sample Training Aid

c) Document 9835 - Manual on Implementation of ICAO Language Proficiency Requirements

d) Draft ICAO Safety Management Manual (SMM, Doc 9859)

e) Required Communication Performance (RCP) Concepts

f) Wake Vortex Report - EANPG

g) Airbus A380 Wake Turbulence

h) ICAO Runway Safety Toolkit

i) Proposed Regional Special Implementation Projects (SIPs)

5.60 As the ATFM/TF and the FIT-BOB were undertaking major components of the work of the BBACG, the meeting considered that there was not an urgent need for the BBACG to meet during the next 12 months. Accordingly, the Regional Office would scheduleBBACG/18 during January/February 2007 and advise the meeting arrangements in due course.

SEACG/13

5.61 The meeting noted the report of the SEACG/13 meeting, summarized below.

Standardize Lower Limits of RNP Routes in the SCS Routes Structure and Establish RNAV Routes Beneath

5.62 SEACG/11 agreed that only RNP 10 approved aircraft could operate in the RNP 10 route structure. In this regard, SEACG/13 was informed that ATM/AIS/SAR/SG/14 (July 2004, Bangkok) agreed that RNAV routes (non-RNP 10) should be established under the existing RNP 10 routes. Clarifications on the operation of the segregated airspace of RNP 10 were sought from the meeting, such as respective RNAV route designators for the lower non-RNP RNAV routes and the upper RNP RNAV routes.

Realignment of A1 and P901

5.63 In response to update by China, IATA suggested a pair of unidirectional routes, where aircraft would be provided with radar control service, between Bangkok Airport and the Pearl River Delta airports and beyond as a means of increasing the capacity of the routes.

Establishment of CRA for FANS Implementation Team – South-East Asia (FIT-SEA)

5.64 With regard to Action Item 15 – Establishment of Central Reporting Agency (CRA) for FIT-SEA, Japan informed the meeting of the current status of FIT-SEA CRA and relevant issues discussed at the Third Meeting of FIT-SEA (FIT-SEA/3, November 2005). The meeting noted the establishment of FIT-SEA CRA by FIT-SEA at FIT-SEA/3.

Update on ADS/CPDLC Implementation Planning

5.65 The meeting noted that Singapore and Viet Nam would commence the Phase 1 trial in late 2006 or early 2007, and the Philippines would join the Phase 2 trial by the end of 2007.

Review of the First Meeting of the ICAO RNP Task Force (RNP/TF/1)

5.66 SEACG/13 reviewed the draft Terms of Reference (TOR) prepared by the first meeting of Task Force and adopted TOR for the RNP-SEA/TF.

5.67 The meeting further reviewed the Action Items developed by the SEACG/13. Regarding the Action Item 17 – Implementation of Radar Handover Procedures, IATA recalled that SEACG/13 reviewed the radar coverage/services chart and noted that the routes between Bangkok and Hong Kong were continuously covered by radar. It was suggested that the radar services be utilized to increase capacity on the routes rather than reviewing the flight level allocation.

5.68 Hong Kong, China advised the meeting that the further reduction of longitudinal separation minima (currently 40 NM) by using the radar was difficult at this stage, and the flight level assignment and communication capability, etc. should be holistically reviewed to increase the capacity, taking into consideration the capacity of the TMA and airports in the region.

State ATS Coordination Groups

SCM POLAR & RFE

5.69 The meeting noted information on the report of the SCM POLAR & RFE, which was held to review present operational and technical aspects related to the increase in traffic on the cross polar and Russian Far East routes.

IATA - Russian Routes Access & the Anchorage Track Advisory Programme

5.70 The SCM meeting noted information provided by IATA of a review of the state of operations and air traffic services in relation to the cross-Polar and Russian Trans-East tracks. The United States FAA Anchorage Center provided a Track Advisory Program for access into the Russian airspace from the Anchorage airspace. Track Advisory includes routes into the Russian Trans-East, and the cross-Polar routes, Polar 2, Polar 3 and Polar 4 into Russia.

5.71 The SCM meeting considered that the following steps should be considered in attempting to alleviate the congestion in the cross-Polar Routes and Russian Trans-East airspace:

a) Open Polar 4 access at ORVIT for Saturday departures from North America.

b) Open Polar 3 access for Saturday departures from North America that transition through currently closed ACC's.

c) Increase access to 24 hours for all routes (LISKI, ORVIT, RAMEL currently limited);

d) Consider new entry points, such as one at 72 north latitude, referred to as Chukotka 2 on the RACGAT/13 route catalogue.

e) Consider the implementation of RVSM in the Arctic region. Additional flight levels would significantly increase capacity and efficiency;

f) Consider some ATS routes as westbound only, during certain hours when traffic demand is greatest.

g) Consider reducing the "window" for slots from ten minutes to five minutes;

h) Consider reduced separation minima on some routes to 50 NM longitudinal separation, or 30 NM separation for RNP 4 aircraft;

i) Segregation of routes or flight levels by aircraft capability (CNS/ATM);

j) Request the FAA to upgrade the Track Advisory Program to a web-based, dynamic product; and/or

k) Develop a cooperative Air Traffic Flow Management relationship with Nav Canada, the FAA, and Reykjavik ACC to provide real time coordination of traffic matters in the cross-Polar and Russian Trans-East route structures.

Capacity Optimization on Cross-Polar/Trans-East Routes

5.72 The Russian Federation informed the meeting that there was presently a vast difference in the application of longitudinal separation minima for Nav Canada, Anchorage ARTCC and Russia on cross-Polar and Trans-East routes, ranging from 30 kilometers to 20 minutes. Capacity is severely limited due to the variation of longitudinal separation minima from one ACC to the next (30 kilometers to 15 minutes) and the additional 10-minute window imposed by Anchorage ARTCC.

Harmonized vertical separation in North Asia

5.73 The meeting was informed that the current vertical separation standards in use for the Mongolian and Russian airspace were 300 meters below 8100 Metric Standard (MSTD), 500 meters above 8100 MSTD and 1000 meters above 12100 MSTD. On the other hand, China had adopted a different non-ICAO metric flight level standard, which necessitates a flight level transition area at both ends of the airspace, requiring air traffic controller intervention to adjust the levels of every flight prior to entering any FIR outside of China. The meeting noted that even in the best possible circumstances, implementation of RVSM in Mongolia and Russia was at least two years away.

Parallel Air Route to A575

5.74 Mongolia informed the meeting that A575 had been the only major route connecting Europe and East Asia, with 48 % of international flights passing through the entry/exit point INTIK which has no surveillance capability. Consequently, and also the expected peak traffic during the Beijing Olympics in 2008, Mongolia had proposed to China and Russia that a new air route parallel to the west of A575 be opened.

Russian Federation Update

5.75 The Russian Federation updated the meeting in respect of the current issues relating to improvements to the cross-Polar/Trans-East ATS route network and optimization of Trans-Siberian routes. The Russian system consists of some 113 centers; however it was intended by Russia that a consolidation of ACCs would commence in the medium term, with a view to reducing the number of ACCs to less than 15 ACCs over the next 10-15 years.

5.76 The meeting also noted that the cross-Polar route system consisted of four main ATS routes, as described below, which have recently experienced tremendous growth in traffic volumes.

a) **Polar 1** - flights between central part of North America and India/Pakistan;

b) **Polar 2** - flights between central and eastern parts of North America and Malaysia/Singapore/Thailand/Indonesia;

c) **Polar 3** - flights between central and eastern parts of North America and China/Hong Kong/Taiwan/Philippines; and

d) **Polar 4** - flights between central/eastern parts of North America and China/Hong Kong/Taiwan/South Korea and a large number of link-routes

IPACG/24

5.77 The meeting noted the report of IPACG/24 held in conjunction with the IPACG and ISPACG FITs meeting provided by the United States, which addressed the following items:

a) *Implementation of the application of a 10- minute longitudinal separation minimum without the mandatory application of Mach number within the Oakland Flight Information Region (FIR):* The meeting noted that ICAO expected approval for this implementation to become effective on 5 December 2005.

b) *Application of 50NM longitudinal separation between appropriately equipped aircraft:* Oakland Air Route Traffic Control Center (ARTCC) reported that they were applying 50NM longitudinal separation in a mixed environment. JCAB planned to apply 50NM longitudinal separation minimum between aircraft at cruise in the oceanic airspace of Fukuoka FIR beginning in mid 2006. Anchorage ARTCC was expected to implement in a mixed environment once the Ocean21 system is operational.

c) *Expansion of airspace where RVSM was applied to the Japanese domestic airspace*: JCAB reported that the RVSM was implemented successfully in the Japanese domestic airspace at 1900UTC on 29 September 2005.

e) *Consider operational testing of in-trail procedure using new technologies:* FAA provided information on the Global Air Traffic Interoperability (GATI) program, which includes an in-trail procedure based on automatic dependent surveillance – broadcast (ADS-B).

Procedural Matters

a) *Revision to current lost communications procedures*: Comments were received from the ICAO Asia Pacific Office and ICAO Headquarters. An ad hoc working group developed revisions to the proposed amendment. FAA agreed to present the revisions to ISPACG/20 for their consideration.

b) *Development of common traffic management terminology*: The FAA Air Traffic Control System Command Center (ATCSCC) and JCAB Air Traffic Management Center (ATMC) agreed to use phraseology developed by the Multi-Agency Air Traffic Services Procedures Coordination Group (MAPCOG). The Task Force planned to evaluate the differences and similarity of that terminology/phraseology with that used by their organizations and exchange their findings.

ATS Route/Airspace Matters

a) *Implementation of flight re-routing between Japan and Hawaii tracks*: JCAB had presented a plan to IPACG/23 to consider the time of daily generation, coordination, and publication of PACOTS Tracks 11 and 12. The study was intended to evaluate advantages and disadvantages from the viewpoint of

airspace users as well as ATS providers. ATMC planned to start the assessment in March 2006.

b) *Need for boundary fixes on the Fukuoka/Oakland 25N and 160E control area (CTA) boundary:* JCAB agreed to conduct further studies.

c) *Review of the structure of fixed routes from Western PACOTS gateways to Japanese domestic airspace*: ATMC spent two months in late 2005 working on resolutions. Trials were conducted but there was insufficient data. ATMC planned to conduct further studies in mid-2006 in hopes that these studies would lead to development of a comprehensive solution.

d) *Conduct a study to evaluate the effectiveness of the current airspace/route structures*: Following FAA's implementation of Ocean21, Anchorage and Oakland reported that they plan to conduct an internal airspace review. The airlines were asked to identify specific high priority traffic flows in order that a smaller scale study could be conducted.

Communications Matters

a) *Evaluation of the feasibility and capability of utilizing the Internet as a medium for ATFM communication*: The test of the web conference capability was delayed due to security issues. The ATCSCC and ATMC had expected the issues to be resolved by the end of March 2006, however, the test has been delayed pending the ATCSCC purchase of additional equipment. No date has been scheduled for the test.

b) *Adoption of Version 2 of the Asia/Pacific ATS Interfacility Data Communications (AIDC) Interface Control Document (ICD) as the basis of inter-facility data communications between ATMC, Anchorage ARTCC, and Oakland ARTCC*: JCAB agreed to progress toward full implementation of AIDC Version 1 and report further progress.

5.78 The full summary of the meeting is available on the FAA web site athttp://www.faa.gov/ats/ato/ipacg.htm.

ISPACG/20 – ISPACG/IPACG/FITs

5.79 The noted the report of the ISPACG/20 and IPACG/ISPACG/FITs meeting provided by the United States, which addressed the following items:

Air Traffic Management (ATM) Issues

a) *ATM contingency plans*: Brisbane and Auckland Centres had reviewed contingency arrangements and were unable to progress them further due to issues regarding shared information on traffic. Airways planned to enhance internal contingency arrangements.

b) *Implementation of user preferred routes (UPR):* Airservices reported that their conflict probe software was expected to be implemented in Jul/Aug 2006. Airways reported that they were using UPRs for most long hauls in the Pacific, and that Dynamic Airborne Route Planning (DARP) trials were planned between Auckland and Brisbane.

Separation Minima

a) *Implementation of 2NM strategic lateral offset procedures:* Strategic lateral offset procedures had been implemented in all but Tahiti FIR. Tahiti was to implement a 2NM lateral offset effective 16 Feb 2006.

b) *Application of "Rule of 11" in oceanic airspace*: Airways New Zealand reported on their plans to implement this procedure in the first quarter of 2006, as detailed in ICAO PANS-ATM, Doc 4444.

c) *Implementation of 50NM lateral/50NM longitudinal separation (50/50)*: Tahiti reported plans to implement 50NM lateral separation in Sept 2006. 50NM longitudinal separation was subject to a precision survey after the successful introduction of VIVO 4 in Mar 2006.

d) *Implementation of 30NM lateral/30NM longitudinal separation (30/30):* FAA and Airservices reported on the implementation and operational trials for 30/30 in portions of the Oakland FIR and in the Australian Oceanic airspace (east of Australia only), Auckland FIR, Honiara FIR, Nauru FIR and the Nadi FIR in Class A airspace.

e) *Requirement for a 14-minute automatic dependent surveillance (ADS) reporting rate when 30/30 separation is not being applied*: Concerns were raised by the airlines on the appropriate ADS reporting rate that was being applied in airspace where 30/30 could be applied. FAA provided information to demonstrate that the fuel cost resulting from the delay incurred for an aircraft to wait for a clearance to a higher altitude while the controller manually changed the reporting rate, re-applied the conflict probe, and issued the clearance was likely to be significantly more than the cost incurred from the higher reporting rate.

Communications, Navigation and Surveillance (CNS) Issues

a) *ATS Interfacility Data Communication (AIDC):* Fiji has implemented AIDC with Auckland and Brisbane ACCs) and was ready to test with Oakland. A regional program is needed for the introduction of AIDC Version 2. An ad hoc group met to develop a plan for AIDC messages. It was agreed that work would continue following the meeting. Based on this work, a separate working paper is presented to recommend that the ICAO Regional AIDC Task Force be reconvened.

b) *HF pre-flight and SELCAL checks*: ATS providers agreed to reduce the number of SELCAL checks to the minimum necessary to meet State and ICAO requirements.

c) *Identify methods to reduce HF congestion*: A working group was established to address these issues.

d) *Address problems with SATCOM*: It was agreed to establish a working group to address problems.

e) *Aircraft loss of communications procedures*: An amended proposal to the

regional Supplementary Procedures, Doc 7030 that had been developed by IPACG/24 was reviewed. The FAA would consolidate the comments and circulate a final proposal to IPACG ATS providers prior to responding to ICAO.

f) *Implementation of automatic dependent surveillance – broadcast (ADS-B):* FAA and Airservices reported working with the US NASA) on ADS-B trials for in-trail procedures (ITP). Airservices may begin trials in remote and oceanic airspace beyond the coverage of radar or ADS-B ground stations in Dec 2006.

5.80 The full summary of the meeting is available on the FAA web site at http://www.faa.gov/ats/ato/ispacg.htm.

ASIOACG/1

5.81 The meeting noted information on the report of the First Meeting of the Arabian Sea/Indian Ocean ATS Coordination Group (ASIOACG/1) meeting convened by Airservices Australia, with the support of Emirates Airline, from 22 to 23 May 2006 at the Emirates Aviation College, Dubai UAE and attended by 20 participants.

5.82 The establishment of ASIOACG was the result of a proposal by the ICAO Asia and Pacific Regional Office to establish an annual meeting of the "Whole of Indian Ocean ATS Coordination Group" and by Airservices Australia through its active participation in the existing "Informal Indian Ocean ATS Coordination Group" (IIOACG). APANPIRG/16 supported the formation of this group using the IIOACG as a basis and to include relevant organizations in the northern parts of the Indian Ocean and Arabian Sea.

5.83 Accordingly, Airservices Australia in consultation with ICAO Asia and Pacific Office and Emirates Airline undertook to convene ASIOACG/1 for the establishment of ASIOACG, to promote the expansion of ADS/CPLDC services across the region as well as the planning and implementation of airline defined optimum routes and related ATM procedures.

5.84 In considering the establishment of ASIOACG, it was expected that ASIOACG would operate as an "informal" ATS Coordination Group, which would include Air Navigation Service Providers (ANSPs), State Regulatory Authorities, airspace users and industry stakeholders. ASIOACG recognized that it would need to be cognizant of ICAO provisions and regional planning guidelines for the harmonization of international civil operations. Although the meeting was adopting an "Informal" approach, appropriate arrangements would be made to ensure that the ICAO Regional Offices were provided with reports of the ASIOACG meetings and with invitations to attend subsequent meetings.

5.85 The meeting agreed to adopt a Letter of Agreement which would define the arrangements for the establishment and continuation of ASIOACG. In this regard, it was recognized the LOA was not legally binding, but would provide a degree of authority to support the ongoing activities of ASIOACG. A draft LOA was prepared and it was be expected that the LOA would be ready for signing prior to, or during the next meeting.

5.86 The following is a summary of the subjects discussed at the meeting and the main points arising:

HF and data link communications

The meeting agreed that HF air-ground communications were generally unreliable and suffered from a number of inherent limitations. It was further recognised that reliable Voice/Data link communication services were a pre-requisite for the introduction of reduced separation standards in oceanic airspace.

It was important to ensure that the technical capability of the CPDLC system to be used was at an operational level. Ensuring such technical capability would require oversight by an appropriate technical body such as a central reporting agency (CRA), and the results of such technical examination would comprise an important part of an implementation safety assessment.

Mumbai ADS/CPLDC facilities

The Mumbai ADS/CPDLC facilities were co-located with ATC and data link communications could be operated on a "third-party" basis (similar to the existing arrangements for HF communications) subject to the technical capability requirements described above. It was accepted that under this suggested arrangement, there could be no reduction in existing separation standards as the conditions for CPDLC would not be met.

FIT/CRA arrangements for ASIOACG

Where it was intended to introduce ADS/CPLDC systems to support reduced separation standards (e.g. 50/50 and 30/30 based on RNP10 and RNP4 respectively), then it would be necessary to establish a FIT/CRA to enable States to meet the Annex 11 safety monitoring provisions.

It was agreed to coordinate with FIT-BOB to make use of their CRA, as this would be a more cost effective and efficient use of resources. Some users offered financial support to FIT-BOB to undertake the CRA responsibilities for ASIAOCG in accordance with the formula agreed for funding the CRA in the Bay of Bengal area. This mattered would be progressed by the ICAO APAC Office.

Update from ANSPs on CNS/ATM initiatives

Updates were provided by Australia, India, Oman and Yemen on the status of their CNS/ATM capability.

Industry affairs and user requirements

The meeting was informed of users' requirements for CNS/ATM operations for the Arabian Sea and North Indian Ocean. Information was provided on ATS flight planning issues and automated ATM systems, AIP issues, GNSS applications, airborne use of the "Required Time of Arrival" (RTA) function, and introduction of User Preferred Routes (UPRs). The meeting recognised the importance of ICAO Doc 9750 "Global Air Navigation Plan for CNS/ATM Systems" and agreed to adopt a "Capacity Enhancements Table" for ASIOACG.

ATS route structures, flex tracks and other airspace capacity enhancements

Information was provided on Flex Track operations currently in use across that portion of the Indian Ocean contained within the Melbourne FIR, together with the use of fixed "Connector Routes" within the Male FIR (Maldives). India, Oman and Yemen agreed to conduct a review of the present FLAS arrangements in the Arabian Sea, with a view to the eventual removal of the FLAS to provide for more flexible and efficient operations.

The meeting agreed to support the implementation of the Connector Routes and other initiatives to support Flex Track operations.

Data link services (ADS-C/CPDLC), FANS1/A Operations Manual (FOM) and HF communications

It was agreed that ASIOACG would adopt the FOM, in conjunction with appropriate ICAO documentation, as the working document for FANS1/A operations within the ASIOACG area of responsibility.

ATS Coordination – facilities and procedures (including AIDC)

OLDI tests were being conducted between Muscat Oman and Bahrain ACCs during June 2006. Australia was developing proposed AIDC messaging arrangements between Melbourne and adjoining ACCs.

Air Traffic Flow Management (ATFM)

Traffic forecasts and flow arrangements were considered for the region and several initiatives were under way in India and by States in the Middle East under MIDAPANPIRG. Recognizing the importance of effective ATFM, the meeting agreed that ASIOACG should develop ATFM options for the future, which would be conveyed through the ICAO Regional Offices to both APANPIRG and MIDANPIRG.

Civil/Military coordination and "Due Regard"

Several States reported their concerns for air safety in respect to operations relating to the operation of un-notified military flights, some of which were believed to be operating under "Due Regard" over the high seas. It was recognized that further improvements were needed in civil military coordination in the region. IN this regard, the meeting agreed that these issues should be referred to the ICAO Civil/Military Coordination Meeting, to be hosted by CAMA in Sana'a (Republic of Yemen) on the 18th and 19th of June 2006.

It was also suggested that the Civil/Military Coordination Meeting be requested to review the reporting lines for the notification of future occurrences involving Military aircraft and that consideration be given to the establishment of an appropriate Address Group for notification by Email

ADS-B

The meeting was advised by India of their ADS-B trials, which was on test at the Chennai ACC.

Australia provided an update of its ADS-B programme, the details of which could be found at the Airservices website at: www.airservicesaustralia.com.

The meeting was informed of recent activities that had been undertaken by ICAO in regard to ADS-B, including reference to VDL-2 in the Asia and Pacific regions and the work of the OPLINK Panel in regard to the development of separation standards for ADS-B.

5.87 The next meeting, ASIOACG/2, would be held in Muscat, Oman during November 2006.

AGENDA ITEM 6

Agenda Item 6: Review progress of the Regional Airspace Safety Monitoring Advisory Group (RASMAG)

6.1 Since ATM/AIS/SAR/SG/15 on 25-29 July 2005, RASMAG had met twice: RASMAG/4 in October 2005 and RASMAG/5 in June 2006.

6.2 The meeting noted that, whilst a primary task of RASMAG was to review the monitoring and safety assessment activities carried out by the regional monitoring agencies established by APANPIRG for implementation and operation of reduced separation minima, other airspace safety matters were also taken into consideration by the group.

Review of outcomes of the DGCA/06 ALLPIRG/5 meetings

6.3 RASMAG/5 reviewed the outcomes of DGCA/06 and ALLPIRG/5, both held in March 2006, insofar as these related to the work of RASMAG.

6.4 RASMAG/5 noted the formal 'Declaration' and list of 'Conclusions and Recommendations of DGCA/06 and took the following action:

a) recognized that the outputs from DGCA/06 were pointed at the highest level of civil aviation administrations, and it would take some time for specific actions to be identified by States and regional bodies to implement the intent of the Conference.

b) to ensure that a strong focus was retained in respect to the implementation of safety management systems, a new item was included on the RASMAG task list.

c) encouraged its participating States and international organizations to fully and comprehensively review the outcomes of the DGCA/06 Conference with a view to identifying items suitable for action by RASMAG.

6.5 The following subjects discussed at ALLPIRG/5 were considered relevant to the RASMAG work programme:

a) framework for Global Planning
b) environmental benefits of CNS/ATM systems
c) outcome of and follow-up to the DGCA Conference
d) progress made in the Universal Security Audit Programme (USAP)
e) cost-recovery arrangements for RMAs
f) coordination amongst RMAs Monitoring data link applications
g) global harmonization of RNP/RNAV implementation
h) ICAO Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies

6.6 In regard to the ALLPIRG/5 Conclusion 5/12 concerning the convening of a meeting of global RMAs, RASMAG/5 supported meeting and considered it important to go beyond the discussions items included in Conclusion 5/12 and include technical and standardization matters for resolution.

6.7 The meeting noted information on the following subjects covered by ALLPIRG/5;

- Amendment 44 to Annex 11 applicable on 23 November 2006

  RASMAG/5 considered that the guidance material in respect of the TLS was a useful step forward in assisting States to understand what was required in the identification and implementation of a TLS.

- First Meeting of Operational Data Link Panel (OPLINK/1)- recommendations for amendments to SARPs and PANs

- publication of the ICAO *Safety Management Manual* (SMM, Doc 9859)

- regional *Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region* had been circulated by State Letter (Ref.: T 3/10.1.17 – AP048/06 (ATM)) on 5 June 2006 in accordance with APANPIRG Conclusion 16/20

Annual December Traffic Sample Data

6.8 In considering the requirements for routine safety assessment, RASMAG/5 noted that APANPIRG/16 (Conclusion 16/4) had adopted December every year as the standard sample period for vertical and horizontal traffic sample data collection, commencing from December 2005.

6.9 In regard to the continuous monitoring and regular assessment of target levels of safety in reduced separation applications, in November 2005 the Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05ATM) advising States that APANPIRG/16 had adopted a standardized approach for the collection of vertical and horizontal traffic sample data.

6.10 RASMAG/5 in reviewing the input of traffic sample data by States, identified that a few States had not provided December 2005 TSD or LHD data, and therefore should be considered for inclusion on the APANPIRG List of Deficiencies in the ATM/AIS SAR fields, in accordance with APANPIRG Conclusion 16/6. Accordingly, RASMAG/5 drafted the following Decision:

Draft Decision RASMAG 5/1 ─ Non-provision of safety related data by States

That, as a result of the non-provision of safety related data to approved regional safety monitoring agencies as required by APANPIRG Conclusion 16/4, Bangladesh, Fiji, Lao PDR, Myanmar and Papua New Guinea be included in the APANPIRG List of Deficiencies in the ATM/AIS/SAR Fields in accordance with APANPIRG Conclusion 16/6.

6.11 In regard to the draft Conclusion above, the Regional Office would write to the States concerned highlighting and seeking the provision of a suitable TSD for December 2005, and outstanding LHD reports to the relevant RMA. The receipt of appropriate data prior to APANPIRG/17 in August 2006 would result in the removal of that State from the Deficiency List.

6.12 In the case of Pakistan, the meeting recognized that some confusion existed. Pakistan was accredited to the Middle East Office of ICAO in Cairo, however, it was also listed in the RMA Handbook as a State of the Bay of Bengal and therefore under the jurisdiction of MAAR. The meeting requested the Regional Office to coordinate with the Cairo Office to establish whether Pakistan should be included in the Bay of Bengal under MAAR, or under the MID RMA.

Report of MAAR's RMA activities

6.13 MAAR provided reports on its airspace safety oversight for RVSM implementation in respect to the Bay of Bengal (BOB) and Western Pacific/South China Sea airspaces (WPAC/SCS).

6.14 For the BOB airspace, both technical and total risks from the available TSD and LHD reports **satisfy the agreed TLS value** of no more than 2.5×10^{-9} and 5.0×10^{-9} fatal accidents per flight hour due to the loss of a correctly established vertical separation standard of 1,000 ft and to all causes, respectively. MAAR drew attention to limitations in the assessment based on the lack of some TSD and LHD data, however informed the meeting that the situation in this respect had improved markedly, thereby increasing the reliability of the analysis.

6.15 In regard to the WPAC/SCS route structures, the risk estimation was conducted based on the modified single alternate FLOS. The estimate of technical risks satisfies the agreed TLS values of no more than 2.5×10^{-9}. However, the estimate of 7.08×10^{-9} for the **overall vertical risk exceeds the agreed TLS** value of 5.0×10^{-9} fatal accidents per flight hour due to all causes.

6.16 MAAR noted limitations in the assessment based on the lack of some TSD and LHD data, however informed the meeting that the situation in this respect had improved markedly, thereby increasing the reliability of the analysis.

6.17 The meeting strongly endorsed the recommendation made to States by MAAR regarding the need to mitigate identified LHD occurrences, and fully endorsed MAAR's statement that:

> *Based on the LHD summary, it is important to note that the numbers of LHD occurrences and erroneous duration for aircraft operations in the WPAC/SCS RVSM airspace are extremely high. Therefore, MAAR strongly recommends all States concerned to put in place remedial actions to mitigate such significant errors on an urgent basis.*

Report of Australia's RMA activities

6.18 Australia presented the results of its safety assessment of the Australian Oceanic Airspaces for RVSM. For the Australian Domestic RVSM airspace the TLS this was determined to be 0.0142×10^{-9} fatal accidents per flight hour, and for the Indian Oceanic RVSM airspace 0.0135×10^{-9}. This was more than two orders of magnitude less than the required technical TLS in each case, and highlights the situation already demonstrated by reports from PARMO and MAAR, that the technical risk was being easily met within the Asia/Pacific Region.

6.19 In relation to the assessment of operational errors, the analysis showed that at the time of the assessment, the overall vertical risk of 8.67×10^{-9} fatal accidents per flight hour **did not satisfy the target TLS of 5×10^{-9}.**

6.20 Australia stressed the importance of any assessment clearly identifying factors that contribute to errors and for States ensuring that controls were put in place to minimize the likelihood of these errors occurring in the future. In this regard, Airservices Australia had identified a number of contributory factors related to the errors, and that their RMA had reviewed the status of actions to implement controls.

Review of Technical and Operational Errors

6.21 In reviewing the reports of the three regional RMAs, RASMAG/5 recognized that performance in terms of technical error was meeting a good standard throughout all areas. In no case had the technical TLS been exceeded and in general the technical TLS was achieved easily. This result suggested good airframe performance and was a credit to regional operators.

6.22 However, in terms of operational error, the TLS was not being achieved in a number of areas. A consistent theme in the analysis of these errors was that of difficulties in ATC-to-ATC coordination, which accounted for a large proportion of LHD. The meeting encouraged all States to be aware that this ground-ground communication interface exhibited weaknesses in all the regional examples examined. Accordingly, undertaking investigations in this respect would be a logical point to start in attempting to reduce the instances of LHD.

6.23 In this regard, the meeting recognized the value of ATS Interfacility Data Communications (AIDC) between ATS facilities in reducing the potential for ground-ground coordination errors by enabling routine coordination to be undertaken directly between the ATS equipment in respective ATC facilities. This removed the possibility of human readback and hearback errors, resulting in a decrease in coordination errors and associated decrease in LHD occurrences.

6.24 In light of the foregoing, the meeting drafted the following draft Conclusion for consideration by APANPIRG/17:

Draft Conclusion RASMAG 5/2 – Investigation of large height deviations, implement AIDC

That, in noting the prevalence of RVSM Large Height Deviation (LHD) occurrences resulting from ATC Unit-to-ATC Unit coordination errors, as reported by RMAs assessing RVSM operations within Asia Pacific Region, the Regional Office draws to the attention of States that investigations into LHD should concentrate in this area and that benefits would be achieved from the early implementation of AIDC between ATC Units in this regard.

Exceeding Target Levels of Safety

6.25 In noting that the RVSM TLS was being exceeded in both the WPAC/SCS and Indian Ocean airspaces, RASMAG/5 recalled discussions that had been held during RASMAG/3 (June 2005) and its review of related ICAO documentation in respect to the derivation and application of TLS.

6.26 In light of the above, it was therefore agreed by the meeting that a single event in which airspace safety monitoring identified that the TLS had been exceeded was not sufficient cause to cease the application of the separation minimum. RASMAG/5 highlighted that fluctuations about the TLS should serve as a warning bell to prompt intensive investigation of the circumstances, not as an on-off switch to suddenly continue or discontinue RVSM operations. However, it would be important to continue intensive monitoring and re-assess the safety on a regular basis to ensure that there was not an unsafe trend.

6.27 In this context, the meeting noted that the TLS in the WPAC/SCS was showing an adverse trend, despite the concerns of RASMAG having been brought to the attention of affected States by State Letter T3/10.0, T3/10.1.17 − AP117/05 (ATM) on 21 November 2005 under the terms of APANPIRG Conclusion 16/3.

6.28 Although it was understood that the States involved had acted upon the above conclusion, the meeting considered that further action was necessary to establish and correct the reasons behind the high number of LHDs in this area. Accordingly, in order to again alert the States involved to the circumstances and request their assistance in investigating the matter, the meeting drafted the following Conclusion for consideration by APANPIRG/17:

Draft Conclusion RASMAG 5/3 — Identification and mitigation of large height deviations

That, in noting the continuing prevalence of RVSM large height deviation occurrences in the Western Pacific/South China Sea area despite the actions taken as a result of APANPIRG Conclusion 16/3, the Regional Office again draws the attention of all States concerned to urgently identify and put in place remedial actions to mitigate such significant errors.

Report of PARMO's RMA activities

6.29 The PARMO provided an update to the meeting based on their 1st quarter 2006 report, including a summary of large height deviation reports, results of traffic data analysis, and an estimate of vertical risk for the airspace. The report covers the current reporting period, April 2005 through March 2006, in the PARMO's ongoing process of providing quarterly updates of information relevant to the continued safe use of the RVSM in Pacific and North East Asia airspace.

Pacific Airspace

6.30 The technical risk remained unchanged with a value of 0.0932×10^{-9} fatal accidents per flight hour. The operational risk estimate is 2.64×10^{-9} fatal accidents per flight hour. The estimate of the overall vertical collision risk was 2.73×10^{-9} fatal accidents per flight hour. This estimate was roughly 47 percent **below the regionally agreed TLS value** of 5.0×10^{-9} fatal accidents per flight hour. This new estimate was based on the most–recent 12 months of large height deviation reporting.

North East Asia Airspace

6.31 The collision risk estimate for North East Asia airspace was presented at RVSM/TF/27. The technical risk was reported to be $8.08.x\ 10^{-10}$ fatal accidents per flight hour. The operational risk estimate was reported to be 2.80×10^{-9} fatal accidents per flight hour. The estimate of the overall vertical collision risk was 3.60×10^{-9} fatal accidents per flight hour. The estimate of the overall vertical collision risk was roughly 28 percent **below the regionally agreed TLS value** of 5.0×10^{-9} fatal accidents per flight hour.

Establishment of Safety Monitoring Agency (SMA) for the Asia Region

6.32 The meeting recalled that at RASMAG/4 (October 2005), Thailand expressed its intention to expand MAAR's services to assist ICAO and States regionally for safety monitoring of RNP-based horizontal-plan separation minimum application in the Asia Region.

6.33 RASMAG/4 had commended MAAR on its performance as an RMA and considered that it was likely that any additional services provided by MAAR could reasonably be expected to be of a similar quality. In noting expressions of support from a number of States represented at the RASMAG/4, including Australia, Hong Kong China, India, Japan, Singapore and the United States, as well as the Regional Office, RASMAG/5 again supported the initiatives of Thailand and encouraged MAAR to proceed in accordance with the proposal as presented to the meeting.

6.34 RASMAG/4 noted that the Thailand proposal should be brought to the attention of the respective ATS Coordination Groups and the ATM/AIS/SAR Sub Group. Accordingly, BBACG/17 and SEACG/13 (May 2006) had been briefed as to the proposals and the ATM/AIS/SAR/SG/16 would also be informed.

6.35 MAAR updated the meeting on progress to establish an SMA, and provided an estimate of the costs of establishing an SMA. Also, the United States FAA and AEROTHAI had recently completed formal modification to the existing United States-Thai agreement covering FAA-AEROTHAI cooperation in the RVSM airspace safety monitoring, and the first SMA training was scheduled on 19 – 23 June 2006.

Expanded Airspace Monitoring and Assessment Capability – Japan

6.36 Japan informed the meeting that JCAB had developed its functions and capabilities required for the safety assessment and monitoring in the areas of RVSM, reduced horizontal (lateral and longitudinal) separation minima using RNP, and aircraft separation applications using data link, *e.g.* ADS and CPDLC. Accordingly, JCAB considered it essential to strengthen its functions and capabilities in the area of airspace safety assessment and monitoring with a view of providing such services within the entire airspace of Fukuoka FIR as a minimum.

6.37 Japan further informed the meeting of its intention to fulfil the responsibility of providing airspace safety assessment and monitoring services for RVSM and RNAV/RNP within Fukuoka FIR by strengthening the current capabilities in terms of staffing, system equipment, expertise, etc. Thus, JCAB wished to be recognized as a RMA for RVSM and a SMA for RNP in the region when JCAB became fully capable of providing the services. Japan was considering whether safety assessment and monitoring services for RVSM and RNAV/RNP would be able to be provided to other FIRs beyond Fukuoka FIR in the future.

Regional Safety Monitoring Groups Required

6.38 The meeting recalled that RASMAG/1 (April 2004) had agreed that, in addition to RMA services, it was necessary to establish safety monitoring groups to undertake the safety management programmes for the application of RNP, data link services and related separation minima. This matter was addressed, in part, by APANPIRG/15, Decision 15/5 ─ Adoption of the Term Safety Monitoring Agency (SMA).

6.39 In addition to arrangements involving the existing MAAR, PARMO and Airservices Australia RVSM RMA's and the data link CRA's being established for the Bay of Bengal and South-East Asia areas, the following areas had been identified as still requiring a safety monitoring group to be established for airspace safety monitoring services and safety assessments in the Asia/Pacific Region:

a) South China Sea area – for the safety assessment of the RNP 10 route structure and reduced horizontal separation, and application of data link services;

b) RNP 10 routes across the Bay of Bengal area – for the safety assessment and monitoring of the routes, reduced horizontal separation, and application of data link services;

c) RNP 10 routes from Southeast Asia to the Middle East – for the safety assessment and monitoring of the routes, reduced horizontal separation, and application of data link services; and

d) Some FIRs in the Pacific Region required further investigation to determine the safety services to be established.

6.40 The meeting supported the initiatives of Japan and Thailand, agreeing that under its TORs, RASMAG could inform APANPIRG that RASMAG considered both States as competent and capable in the provision of these airspace safety monitoring functions. RASMAG included this information in the RASMAG List of Competent Airspace Safety Monitoring Organizations, a copy of which has been shown as **Appendix A** to the Report on Agenda Item 6.

Safety assessment for RNP 10 Operations in the SCS area

6.41 The meeting reviewed the status of the safety assessment for RNP 10 operations in the SCS area, noting that APANPIRG/16 had been advised that a safety assessment had not been undertaken since implementation of the revised route structure in November 2001, more than 4 years ago.

6.42 Although attempts had been made during RASMAG/4 to arrange that a horizontal assessment be conducted on a one-off assistance basis by Airservices Australia, arrangements were still not in place and the safety assessment work had not commenced. Australia indicated to the meeting that as a result of a change in organizational priorities, the resources required for this assistance work would need to be re-assessed and it was likely that assistance may not be available in the short term.

6.43 In view of the progress being made by MAAR to gain SMA capability, RASMAG/5 considered that the MAAR SMA would be in a position by the third quarter of 2006 to undertake such a horizontal safety assessment. Accordingly, the meeting requested that this information be made available to the States involved to assist them in addressing their safety responsibilities in this regard.

6.44 In light of the foregoing the meeting drafted the following Conclusion for consideration by APANPIRG/17:

Draft Conclusion RASMAG 5/4 — Completion of the horizontal safety assessment for the South China Sea route structure

That, recognizing that no horizontal safety assessment for the South China Sea route structure had been conducted since implementation in 2001, the Regional Office draws this to the attention of concerned States, provides information in respect of the near term availability of SMA services in the Asia region and urges the completion of a horizontal safety assessment in accordance with ICAO ATS safety management provisions at the earliest opportunity.

Completion of Data link Trials in Japan

6.45 Japan updated the meeting in relation to the ATS data link trials that had commenced in 1997 using the ODP (Oceanic Data Processing) Version 2.5 System. Since then, the trials had continued and were planned to be completed in July 2006 upon implementation of regular operations.

6.46 The JCAB CRA had monitored the ATS data link system performance and the result of analyses of the CPDLC and ADS data indicated that the system performance had generally met the requirements prescribed in the FANS-1/A Operations Manual (FOM).

6.47 The final report on the trials concluded that the trials demonstrated satisfactory performance, and recommended to JCAB that the ATS data link trials be terminated and regular operations should commence in the oceanic airspace of Fukuoka FIR.

6.48 As a consequence of the implementation of full ATS data link operations in the oceanic area, JCAB intended to reduce the longitudinal separation minimum from time-based 15 minute separation to distance-based 50 NM separation using ATS data link, as of 6 July 2006.

Implementation of 50 NM Longitudinal Separation – Japan

6.49 The meeting noted information provided by Japan concerning a fast-time simulation conducted by ENRI to predict traffic in a 50 NM longitudinal separation minimum environment. JCAB on reviewing the results, concluded that 50 NM longitudinal separation should be implemented in a phased manner in the oceanic airspace in Fukuoka FIR. As the first step, 50 NM longitudinal separation minimum would be applied between ADS/CPDLC equipped aircraft on ATS routes R580 and R220 on 6 July 2006. This application would be expanded to other ATS routes and airspace after gaining operational experience.

Review of regional safety assessment activities/requirements

6.50 The meeting reviewed the following regional safety assessment/requirement activities:

a) RVSM/TF/28 – FLOS Review meeting (April 2005)

The RVSM/TF/28 FLOS review meeting for the airspace in South East Asia area had been delayed for twelve months due to a lack of safety data from some States, which prevented MAAR from completing the safety assessments.

Arising from a change to the Philippine's position regarding the original flight level allocation system proposal consensus could not be reached. It was agreed that the States concerned should consult each other and when agreed on a finalized flight level allocation system, an ICAO meeting could be convened. As the RVSM/TF was no longer involved with RVSM operations in this area, oversight of RVSM matters would come under the SEACG;

In considering the circumstances, RASMAG/5 expressed concern at the number of LHDs reported in this area and the possibility that they may be related in some way to the difficulties with the FLOS interfaces. Although no direct evidence could be provided in this respect, the meeting urged States to convene a dedicated body at the earliest opportunity and to conduct an

airspace safety assessment in accordance with the provisions of Annex 11 and the Safety Management Manual.

b) Post-implementation RVSM safety assessment – Japan/Republic of Korea

The meeting reviewed the post-implementation safety assessment of the RVSM implementation in the Japan domestic and Republic of Korea airspace on 29 September 2005, as presented RVSM/TF/27 90-day review meeting (February-March 2006).

Based on the provided collision risk modeling input and estimated collision risks, both technical and total risks **satisfy the agreed TLS value** of no more than 2.5×10^{-9} and 5.0×10^{-9} fatal accidents per flight hour, respectively.

Establishment of Central Reporting Agency (CRA) for FIT-SEA

6.51 The meeting was updated on the establishment of a CRA for the FIT-SEA, which would be provided by CRA Japan. These services would be on a voluntary and temporary basis until a formal CRA was established, and the terminology FIT-SEA CRA was adopted for the services provided by CRA Japan for the SCS area.

Scrutiny Group 30/30 Oakland FIR – USA

6.52 The meeting was informed of the implementation on 22 December 2005 by the United States FAA of an operational trial of 30 NM lateral and 30 NM longitudinal separation standards in a portion of the Oakland Oceanic FIR.

6.53 As part of the operational trial, the FAA had formed a group of experts to evaluate performance of the various components of the system supporting the reduced separation minima. This group had been termed the “30-30 Scrutiny Group”.

6.54 The meeting noted the thoroughness of the work being undertaken by the Scrutiny Group in monitoring and assessing many parameters of the 30/30 operational trial. Although the performance of the trial to date was generally in accordance with what had been anticipated, the analysis provided by the Scrutiny Group was valuable in demonstrating the safety of the operation. The meeting expressed appreciation to the USA for sharing the material and would appreciate being kept up to date in terms if the conduct of the trial.

Long Term Monitoring of Height Performance

6.55 The United States informed the meeting that the NAT Central Monitoring Agency (NAT CMA), the RMA for the NAT Region, in the late 1990’s began to report analysis of NAT results showing that the altimetry system error (ASE) of some airframes monitored over several years exhibited changes over time that could be characterized as an undesirable linear trend. In 2003, the European RMA, EUROCONTROL, began to report similar results to the NAT OPS/AIR Sub-Group.

6.56 Further studies had been undertaken and it became evident from these studies that faults in altimetry system components were a major cause of observed ASE trends The NAT OPS/AIR Sub-Group had affirmed at several of its recent meetings that monitoring was highly valuable and should continue. The Sub-Group was in the process of developing changes to the State RVSM approval process, which would strengthen maintenance requirements, expecting that monitoring would play a role in confirming that such changes had a beneficial effect on ASE stability.

6.57 The results of the monitoring of ASE were being study by the ICAO Separation and Airspace Safety Panel (SASP). Representatives from the RMA's would be invited to its WG/WHL/10 meeting in Australia in November 2006.

6.58 In recognizing the importance of this matter, RASMAG/5 also gave in-principle support for such a meeting in order to progress the ASE issue. MAAR, being the only one of the 3 current regional RMAs not represented on the SASP, expressed a strong interest in attending the meeting.

Review of RASMAG/3 ATS Safety Management Seminar

6.59 The meeting noted the outcome of the 3-day RASMAG ATS Safety Management Seminar held in June 2005, and proposal to hold a similar workshop in States around the region. Subsequently, due to resource constraints, the workshops could not be carried out. As events had overtaken the RASMAG proposal, this activity would not be progressed further at the present time. Additionally, it was noted that the Civil Aviation Department of Hong Kong China and the Regional Office would host a combined SMS workshop during the first quarter 2007.

ICAO Safety Management Manual (Doc 9859)

6.60 The meeting noted that the *ICAO Safety Management Manual* (Doc 9859) has been developed as essential guidance material to support the implementation of the harmonized provisions relating to safety management in Annexes 6, Parts I and III, 11 and 14, Volume I.

6.61 In continuation of the work that builds upon the harmonized provisions and Doc 9859, it was intended that the following critical tasks would be completed by ICAO over the next two years:

a) analysis of all Annexes to assess the feasibility of developing SARPs to support performance-oriented regulatory approach to the management of safety in States;

b) development of model regulations to support a performance-based regulatory approach to the management of safety in States;

c) development of guidance material for the integration of safety management programmes by national oversight authorities, as well as the application of safety management systems and practices in aviation organizations; and

d) development and delivery of a programme of training courses in each ICAO Regional Office to assist States to implement the harmonized provisions discussed above.

The First Meeting of the ICAO RNP Task Force (RNP/TF/1)

6.62 The meeting noted information on the report of First Meeting of the ICAO RNP Task Force (now South East Asia RNP Implementation Task Force (RNP-SEA/TF/1)) held in Singapore from 13-15 March 2006.

Safety Management Systems in India

6.63 India updated the meeting in respect of its development and implementation of safety management systems. SMS containing all the essential elements of safety management as envisaged in the ICAO Safety Management Manual had been developed by Airports Authority of India (AAI) with the assistance of Airservices Australia.

6.64 The meeting, in recognizing the work undertaken so far, congratulated India in taking these initial steps toward the implementation of safety management systems. It was evident that there was still much to be done, however the early steps were in accordance with ICAO provisions and formed a solid foundation upon which to proceed.

Review of information of interest to RASMAG's work

6.65 The meeting was provided with information on the subjects listed below, and relevant comments made by RASMAG/5 are highlighted.

a) Regional Special Implementation Projects

Three SIPs have been approved for the region: ATS Safety Management System Training; Development of State ATS Contingency Plans; and International SAR Seminar and SAREX – Pacific Islands;

b) ICAO Training Courses on Implementation of Safety Management Systems in State

In support of ICAO's 2005 to 2010 Strategic Objective A: Safety – *Enhance global civil aviation safety*, two SMS training courses had been scheduled at the Asia and Pacific Regional Office during September 2006

c) Airbus A380 wake turbulence

Information was provided in ICAO Asia/Pacific Office Regional State letter Ref.: AP-108/05 (ATM) dated 3 November 2005;

d) Wake vortex incident contained in the Report of the 47th Meeting of European Air Navigation Planning Group (EANPG/14);

e) *"Runway Safety Toolkit"*

The *Toolkit*, produced by ICAO and Embry-Riddle Aeronautical University, Florida, United States, has been developed to assist States in the implementation of runway incursion prevention programmes. The CD-ROM of the *Toolkit* may be obtained from the Regional Office on request

f) Global Survey on language proficiency

g) ICAO issued a Speech Sample Training Aid ─ "ICAO Language Proficiency Requirements – Rated Speech Samples CD-ROM;

h) Dimensions – Large Commercial Aircraft

IFALPA provided some generic information concerning the physical size of current large commercial aircraft using information obtained from the public websites of aircraft manufacturers. This information may be useful in collision risk modeling; and

i) Survey of State Contingency Plans

As requested by APANPIRG/16, in March 2005 the Regional Office conducted a survey of Asia/Pacific States on the development of State Contingency Plans. Further updating and replies from States who had not responded were required.

Review and update of the RASMAG Task list

6.66 RASMAG reviewed and updated its task list. New tasks were added including: retaining a focus on implementation of SMS in accordance with the outcomes of the DGCA/06 Conference; and ensuring that the material from the RASMAG/3 tripartite meeting of RMAs was included in any global meeting of RMA's held pursuant to ALLPIRG/5 Conclusion 5/12.

Summary of RASMAG by ATM/AIS/SAR/SG/16

6.67 In reviewing the work of RASMAG, the ATM/AIS/SAR/SG/16 meeting gave full endorsement and support to the four draft Conclusions that had been raised by RASMAG/5 and requested that the Secretariat relay this information to APANPIRG/17.

Funding of Regional Safety Monitoring - A Regional Solution

6.68 RASMAG/5 reviewed APANPIRG Conclusion 16/2 concerning the formation of a study group to develop a feasible and sustainable means to organize and finance the necessary safety monitoring mechanisms. In this regard, the Council of ICAO had taken note of the difficulties encountered in the Asia/Pacific region in securing funding for regional safety monitoring activities, and had also observed similar problems in other ICAO Regions. Accordingly, the Council had referred the matter to ALLPIRG/5 and the Sixth Meeting of the Air Navigation Services Economic Panel (ANSEP/6, March 2006) to consider developing a globally applicable approach.

6.69 RASMAG/5 was informed that ALLPIRG/5 and ANSEP/6 had endorsed a step-by-step approach for the implementation of the "global" approach to funding RMAs which also incorporated the general guidelines for the establishment of a multinational ICAO ASIA/PAC air navigation facility/service already contained in the ASIA/PAC FASID. Accordingly, RASMAG/5 proposed actions for recommending appropriate mechanisms to APANPIRG/17 in response to Conclusion 16/2, agreeing that the global consensus that had emerged on the most appropriate funding model for RMAs obviated the need for the special study group. The meeting then considered how to place the funding of already-established regional safety monitoring services on a sustainable financial basis, recognizing the need to address SMAs and CRAs as well as the RMAs.

6.70 To progress the matter, RASMAG prepared a draft Working Paper (**Appendix B** to the Report on Agenda Item 6 refers) for submission to APANPIRG/17 proposing that APANPIRG initiate steps to establish a *Regional Safety Monitoring Board – Asia* and a *Regional Safety Monitoring Board – Pacific* by inviting the States concerned to meet with the aim of preparing acceptable Memoranda of Agreement and to take the necessary follow-up steps to establish the Boards to support their activities. The meeting requested that the Secretariat take steps to present the

Working Paper, subsequent to final editorial revision, to APANPIRG on the recommendation of RASMAG as an appropriate mechanism to address the issue of funding mechanisms for regional safety monitoring.

6.71 The ATM/AIS/SAR/SG/16 meeting gave full support to the approach adopted by RASMAG/5 and endorsed the draft Working Paper to APANPIRG/17 that had been prepared by RASMAG.

APANPIRG ASIA/PACIFIC AIRSPACE SAFETY MONITORING

RASMAG LIST OF COMPETENT AIRSPACE SAFETY MONITORING ORGANIZATIONS

The Regional Airspace Safety Monitoring Advisory Group of APANPIRG (RASMAG) is required by its terms of reference to recommend and facilitate the implementation of airspace safety monitoring and performance assessment services and to review and recommend on the competency and compatibility of monitoring organizations. In order to assist in addressing these requirements, RASMAG updates and distributes the following list of competent airspace safety monitoring organizations for use by States requiring airspace safety monitoring services. In the context of the list, abbreviations have meanings as follows:

- RMA – Regional Monitoring Agency – safety assessment in the vertical plane (i.e. RVSM);
- SMA – Safety Monitoring Agency – safety assessment in the horizontal plane (i.e. RHSM, RNP10, RNP4); and
- CRA – Central Reporting Agency – technical performance of data link systems (i.e. ADS/CPDLC)
- FIT – FANS 1/A Interoperability/Implementation Team – parent body to a CRA.

(last updated 8 June 2006)

Organisation *(including contact officer)*	State	Competency	Status	Airspace assessed
Airservices Australia (Mr Robert Butcher, Manager Human Factors and Analysis, Safety Management Group, email robert.butcher@airservicesaustralia.com)	Australia	RMA	Current	Brisbane & Melbourne FIRs not including oceanic airspace east of Australian mainland.
		SMA	Current	Brisbane & Melbourne FIRs

Organisation *(including contact officer)*	State	Competency	Status	Airspace assessed
FIT/BOB (ICAO Regional Office email icao_apac@bangkok.icao.int & Mr. Bradley Cornell, Boeing Engineering, email Bradley.D.Cornell@Boeing.Com)	ICAO Regional Office & Boeing USA	FIT & CRA	Current	Bay of Bengal FIRs
CRA Japan (Mr. Yoshiro Nakatsuji, Director, Air Traffic Control Association Japan, email: naka@atcaj.or.jp)	Japan	CRA	Current	Fukuoka FIR for IPACG/FIT Ho Chi Minh, Manila, Singapore FIRs for FIT-SEA
IPACG/FIT (Mr. Hideo Watanabe, JCAB Co-Chair, email: watanabe-h2pt@mlit.go.jp & Mr. Reed Sladen, FAA Co-Chair, email reed.b.sladen@faa.gov)	Japan & USA	FIT & CRA	Current	North & Central Pacific (Oceanic airspace within Fukuoka FIR, and Anchorage & Oakland FIRs)
ISPACG/FIT (Mr. Bradley Cornell, Boeing Engineering, email Bradley.D.Cornell@Boeing.Com)	Boeing USA	FIT & CRA	Current	South Pacific

Organisation *(including contact officer)*	State	Competency	Status	Airspace assessed
FIT/SEA (ICAO Regional Office email icao_apac@bangkok.icao.int & CRA Japan (Mr. Yoshiro Nakatsuji, Director, Air Traffic Control Association Japan, email: naka@atcaj.or.jp)	ICAO Regional Office & Japan	FIT & CRA	Current	South China Sea
Japan Civil Aviation Bureau (JCAB) (Mr. Takashi Imuta, Chief of Airspace Safety Monitoring Section, email: imuta-t2in@mlit.go.jp	Japan	RMA	Available fourth quarter – 2006	Fukuoka FIR
		SMA	Available fourth quarter – 2007	Fukuoka FIR

Organisation *(including contact officer)*	State	Competency	Status	Airspace assessed
Monitoring Agency for the Asia Region(MAAR) (Dr. Paisit Herabat Executive Officer, Systems Engineering,Aeronautical Radio of Thailand Ltd. Email: paisit@aerothai.co.th	Thailand	RMA	Current	Bangkok, Calcutta, Chennai, Colombo, Delhi, Dhaka, Hanoi, Ho Chi Minh, Hong Kong, Jakarta, Karachi, Kathmandu, Kota Kinabalu, Kuala Lumpur, Lahore, Male, Manila, Mumbai, Phnom Penh, Sanya FIR, Singapore, Taibei, Ujung Pandang, Vientiane, Yangon FIRs
		SMA	Available third quarter-2006	Bangkok, Calcutta, Chennai, Colombo, Delhi, Dhaka, Hanoi, Ho Chi Minh, Hong Kong, Jakarta, Karachi, Kathmandu, Kota Kinabalu, Kuala Lumpur, Lahore, Male, Manila, Mumbai, Phnom Penh, Sanya FIR, Singapore, Taibei, Ujung Pandang, Vientiane, Yangon FIRs
Pacific Approvals Registry and Monitoring Organization (PARMO) (Mr Brian Colamosca Manager, Separation Standards Analysis Group, FAA, email: brian.colamosca@faa.gov.)	USA	RMA	Current	Anchorage Oceanic, Auckland Oceanic, Brisbane (east of Australian mainland), Honiara, Incheon, Melbourne (east of Australian mainland), Nadi, Nauru, Oakland Oceanic, Port Moresby, Tahiti FIRs
Civil Aviation Authority of Singapore (CAAS) (Mr. Kuah Kong Beng, Chief Air Traffic Control Officer, email: KUAH_Kong_Beng@caas.gov.sg)	Civil Aviation Authority of Singapore (CAAS)	Monitoring Authority for Gross Navigation Error (GNE)	Current	Hong Kong, Ho Chi Minh, Manila, Sanya, Singapore FIRs,

APANPIRG/17 - **WP/__**
Agenda Item: 2.4

International Civil Aviation Organization

**SEVENTEENTH MEETING OF THE
ASIA AND PACIFIC AIR NAVIGATION PLANNING AND
IMPLEMENTATION REGIONAL GROUP
(APANPIRG/17)**

Bangkok, Thailand, 21–25 August 2006

Agenda Item 2.4:

FUNDING ARRANGEMENTS FOR REGIONAL AIRSPACE SAFETY MONITORING

(Prepared by RASMAG, Presented by the Secretariat on behalf of RASMAG)

SUMMARY

APANPIRG/16 requested that a study group develop a feasible and sustainable means to organize and finance the necessary safety monitoring mechanisms and to report through RASMAG. Subsequently, the Council of ICAO took note of difficulties in sustaining safety monitoring activities in other Regions and referred the matter to ALLPIRG/5 and ANSEP/6. With support from the ICAO Secretariat, a global approach has been accepted based on the designation of RMA activities as multinational facilities/services. RASMAG/5 considered these developments and prepared recommendations contained in this paper concerning implementation of the global approach to funding safety monitoring mechanisms in Asia/Pacific.

1. INTRODUCTION

1.1 APANPIRG/16 recognized the urgent need to develop feasible and sustainable funding solutions for regional safety monitoring so that on-going initiatives to carry out trials and to implement CNS/ATM systems in Asia/Pacific would not be delayed and that safety and efficiency were not compromised. It was recalled that APANPIRG's CNS/ATM technical experts had previously found it difficult to resolve the complex legal, financial and organizational issues involved in establishing a regional safety monitoring agency, and the meeting considered that this matter should be addressed by States' experts in these specialist fields. Accordingly, APANPIRG/16 adopted ***Conclusion 16/2 – Funding arrangements for regional airspace safety monitoring***:

> *That, a study group be convened to develop a feasible and sustainable proposal to equip States to organize and finance necessary safety monitoring mechanisms for the provision of safety services for the international airspaces in the Asia/Pacific region and that States be represented at that meeting by their appropriate legal, financial and organizational experts who would be best equipped and empowered to resolve any difficulties. The study group should report to RASMAG not later than the end of June 2006.*

1.2 Parallel to this, the Council of ICAO had been considering difficulties in establishing sustainable approaches to funding safety monitoring activities in other ICAO Regions and had placed the matter on the agenda for the fifth meeting of the All Chairmen of the Planning and Implementation Regional Groups (ALLPIRG/5). The report of APANPIRG/16 drawing attention to difficulties experienced in Asia/Pacific prompted further action by the Council in pursuit of a global model and the matter was referred as well to the sixth meeting of the Air Navigation Services Economics Panel (ANSEP/6). Both ALLPIRG/5 and ANSEP/6 were held in Montreal in March 2006 and both bodies gave their support to an approach developed by the ICAO Secretariat which is based upon existing ICAO guidance and policies. The President of the Council referred the recommended approach and implementation procedure to Members of the Council, seeking their views, prior to consideration of the matter at the 178th Session of the Council.

1.3 In view of these on-going developments, the ICAO Regional Office did not convene the special study group requested by APANPIRG/16 and instead raised the matter at the earliest suitable opportunity at RASMAG/5 held in Bangkok from 4 to 8 June 2006. RASMAG/5 discussed the global experiences with funding regional safety monitoring activities and evaluated the options. It was decided that the need for the special study group had been obviated as a result of the global consensus on how best to organize and fund regional safety monitoring activities. RASMAG/5 discussed the implementation of the global approach in Asia/Pacific and prepared the advice contained in this paper that addresses APANPIRG's concerns underlying Conclusion 16/2. Recommendations are made for APANPIRG/17's consideration.

2. DEVELOPMENT OF A GLOBAL APPROACH

2.1 Upon considering the Air Navigation Commission's review of a report by the European Air Navigation Planning Group (EANPG/45), the Council of ICAO during its 172nd Session requested that the Air Transport Committee include in the Air Transport Program the development of a global method for cost recovery of the required RMA infrastructure. It was considered that the method should be based on existing ICAO guidance material on cost recovery of air navigation services.

2.2 Subsequently, during the 176th Session, the Council requested that the subject of a global approach for establishing, funding and determining the basis for cost recovery for regional monitoring mechanisms be placed on the agenda for ALLPIRG/5 after reviewing a report of the Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG/9). The report of APANPIRG/16 also prompted further action by the Council at its 177th Session. Specifically, the Council urged the Secretary General to take action on the issue of funding arrangements for cost recovery of regional airspace safety monitoring mechanisms.

2.3 After consulting its Regional Offices, the ICAO Secretariat confirmed that there is a need to fund RVSM safety monitoring activities through a cost recovery mechanism. It was observed that, in some of the regions, the funding of these activities is the main obstacle for the continuation of monitoring operations. Present arrangements under which States on a voluntary basis absorb all costs were not considered to be sustainable in the long term. That some regions had established study groups to consider this issue was noted.

2.4 In a paper prepared for consideration by ALLPIRG/5 and subsequently by ANSEP/6, the ICAO Secretariat observed that international cooperative ventures in the provision of air navigation services have normally proven to be highly cost-effective for the provider States as well as the users, and in some instances have constituted the only means for implementing costly facilities and services which offer capacity that exceeds the requirements of individual States. By cooperating in such facility or service provision, the States concerned have been able to provide more efficient services and at lower cost than if they had to finance the facilities concerned themselves. In fact, *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082/7) encourage international cooperation in the provision and operation of air navigation services where this is beneficial for the providers and users concerned

(paragraph 12), and States or their delegated service providers are particularly recommended to consider participating in joint charges collection agencies (paragraph 18).

2.5 The ICAO Secretariat pointed out that such international cooperation may take different forms. In its simplest form there is a coordination and harmonization process initiated as a sub-regional activity between a limited number of States. As a result it is possible to generate significant synergies and to achieve savings by coordinating the planning, implementation and operation of air navigation facilities and services across borders with neighboring States.

2.6 The ICAO Secretariat considered that the most obvious arrangement for the financing of an RMA is to establish it as a Multinational (ICAO) Air Navigation Facility/Service, for which guidelines are included in the regional air navigation plans (1) and which are provided herein at **Attachment A**.

2.7 The participation of States in the provision of a multinational facility/service 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 also shoulder its share of the costs involved. The participating States would need to formalize in an agreement the terms under which the multinational facility/service is to be provided. If the participating States were to assign the operation of a multinational facility/service to an international organization or an international agency, this would need to be covered in the agreement.

2.8 Considering the moderate costs involved and the interim nature of an RMA, the ICAO Secretariat argued that an "administrative agreement" would be preferable to an international treaty. An administrative agreement is at a lower level of requirement in respect of formalities and procedures than a treaty and can be signed by a minister, the Director General of Civil Aviation (DGCA) or some other authorized person (e.g. the Chief Executive Officer (CEO) of an air navigation services provider), and could be concluded by an exchange of letters or notes. It would also come into force with minimum delay, and would permit greater flexibility in cases where subsequent modifications are required.

2.9 Basic provisions that would normally have to be part of an agreement include, inter alia: definition and description of the facility/service; establishment and operation of the facility/service; managerial aspects (including governing bodies and decision making arrangements, organization, and staffing and consultation); financial aspects (including cost determination, cost sharing, budgeting, authority to approve the budget and financial auditing); procedures for settlement of disputes; and withdrawals, amendments to and termination of the agreement. The agreement should specify who will establish and operate the RMA concerned, namely whether this is to be done by a State or an existing international organization or agency.

2.10 The Secretariat advised that the agreement should outline the procedure to be applied for determining the cost share to be borne by each participating State. Any cost sharing method should, to the extent possible, be equitable, simple and easy to apply. The question of equity should not only be considered in the context of the participating States, but also with respect to the final users (aircraft operators) since it may be assumed that in most instances the participating States would include the costs they incur in the cost base for their air navigation services charges, where levied.

2.11 The ICAO Secretariat added that any method of cost sharing should, in principle, be based on the extent of the use of the multinational facility/service concerned by each participating State. Thus, the parameters or keys used to determine each State's cost share should reflect the extent of such use. However, if the use made of a multinational facility/service can only be measured by applying complex

(1) In the case of Asia/Pacific, the general guidelines for the establishment and provision of such a mechanism are set out in detail in Doc 9673 – Facilities and Services Implementation Document (FASID) Asia and Pacific Regions, First Edition 2001. This concept is also described in Doc 9161/4, *Manual on Air Navigation Services Economics*, Chapter 3 – Part D – Multinational Facilities and Services.

procedures and at a cost which is not commensurate with the costs to be shared, other methods of cost sharing based on readily available and relevant statistical data could be applied. Whatever method is selected it must provide for the just and equitable sharing of the costs involved.

2.12 It would be up to each participating State to decide whether or not it wishes to recover its cost share from the users. A State could either include these costs in its cost base for route charges (if it levies such charges). As an alternative, the State could recover the costs by levying a separate charge (normally a more complex and costly procedure to administer). The Secretariat noted that users would probably find it easier to accept the former solution. It was suggested that the levying of a separate charge be avoided, considering also the limited costs involved and that the latter solution would increase the administrative burden for users as well as providers. However, this does not exclude that the funding required is technically collected as a surcharge (the cost is identified separately) but included in the ordinary route charge levied, since this would satisfy the users' requirements on transparency.

2.13 The ICAO Secretariat also drew attention to other options for the operation and cost recovery of RVSM monitoring. For example, it would be possible to establish a joint financing arrangement administered by ICAO, similar to the existing arrangements for traffic on the North Atlantic. In addition to addressing the recovery of costs of air navigation facilities and services operated by Denmark and Iceland, this arrangement also regulates cost recovery of the RVSM monitoring function in that region. Another option would be to establish a new agency specifically for the purpose to operate and recover the costs of the RVSM monitoring function. Both these options would, however, most likely lead to heavier administrative arrangements and more staff with related higher costs. They would also require more formal and complicated procedures in the establishment phase. Therefore, a simpler and less costly solution was advocated by the ICAO Secretariat.

2.14 Where a region (i.e. a Planning and Implementation Regional Group - PIRG) would not be able to find a State or an existing organization or agency willing to accept the responsibility to operate an RMA, a possibility would be to approach an RMA operator in a neighboring region to operate the RVSM monitoring functions for both regions, on a cost recovery basis.

2.15 ALLPIRG/6 noted the global approach to recovering the costs of RMAs as developed by the ICAO Secretariat and affirmed that the cost-recovery mechanism chosen should be simple but transparent and fair. Furthermore, it was noted that the proposed global approach would be discussed and finalized during the sixth meeting of the Air Navigation Services Economics Panel (ANSEP/6) (Montreal, 27 to 31 March 2006).

2.16 ANSEP/6 discussed the respective advantages of using the multinational (ICAO) air navigation facility/service model compared to the joint financing arrangement model or any other relevant model, but felt that the former was more appropriate in the case of RMAs. A step-by-step approach developed by the Secretariat for implementing cost recovery arrangements also was approved and is provided herein at **Attachment B**. The Panel also agreed that the current ICAO guidance on the subject was sufficient.

2.17 The Air Transport Committee will consider the ANSEP's review of cost recovery mechanisms during the 178th Session of the ICAO Council. The Panel invited the Committee to bring it to the Council's attention that the step-by-step procedure to cost recovery of RMAs proposed by the Secretariat was considered and accepted by both the ALLPIRG/5 and ANSEP/6 meetings. The President of the Council also invited the Members of the Council to provide comments on any views they might have concerning the recommended approach.

3. OPTIONS FOR CONSIDERATION BY APANPIRG

3.1 RASMAG/5 discussed the experiences of other ICAO Regions and noted that there are alternatives to the approach recommended by the ICAO Secretariat. For example, the functions of the EUR

RMA are carried out by EUROCONTROL. The NAT Region has a Central Monitoring Agency that performs the necessary safety monitoring for RVSM and RHSM. However, the mechanisms adopted in these regions take advantage of particular structures that would be difficult and costly to replicate in other regions.

3.2 For the most part, the predominant model adopted for the provision of RMA services relies on the voluntary support of a host State/organization. For example, the monitoring of RVSM operation in the CAR and SAM regions is carried out by the Caribbean and South American Monitoring Agency (CARSAMMA) hosted by Brazil with the assistance of CAR and SAM States**.** The AFI RMA (ARMA) is hosted by the Air Traffic and Navigation Services Company (ATNS) in South Africa.

3.3 ALLPIRG/5 considered that present arrangements under which States, on a voluntary basis, absorb all costs are not sustainable in the long term. The situation that emerged in the MID Region exemplifies the issues. The United Arab Emirates had, until 1 June 2004, provided full support, both financial and technical, to the activities of the Middle East Central Monitoring Agency (MECMA) in monitoring the height-keeping performance of aircraft operating in RVSM airspace in the Middle East Region.

3.4 Considering the notice of withdrawal of support by the United Arab Emirates to MECMA, the Air Navigation Commission, during its 165th Session in February 2004, expressed its concern and requested the Secretary General to take appropriate action on its early resolution. In April 2005, MIDANPIRG/9 developed an action plan, on the understanding that it would be further reviewed and finalized at the MID RMA Meeting to be held in June 2005 (MIDANPIRG, Conclusion 9/13 refers). The Secretary General of ICAO wrote to the States concerned in support of this action. He drew the attention of the States to Amendment 43 to Annex 11, regarding the mandatory requirement for instituting a programme, on a regional basis, for monitoring the height-keeping performance of aircraft operating in RVSM airspace, which became applicable on 24 November 2005. The Secretary General reminded the States of MIDANPIRG/9's concern that, in the interest of safety, unless a concrete action plan were developed and the MID RMA were reestablished, the withdrawal of RVSM operations from the MID Region would be considered by ICAO. Faced with this serious situation, an agreement subsequently was reached among the States concerned to appoint a supervisory Board for the MID RMA.

3.5 The approach adopted in the MID Region has the essential elements of the model recommended by ALLPIRG/5 and ANSEP/6. The PIRG played an active role in bringing the States together to establish a multinational facility/service that would ensure the sustained and equitable provision of regional safety monitoring services and the steps that brought it to fruition were along the lines of those recommended in Attachment B. Some notable features are that:

a) The multinational facility/service is being established according to a Memorandum of Agreement signed by all participating States;

b) The Board is empowered to enter a Custodian Agreement with the provider of the safety monitoring services (Bahrain) and a third party for collection and disbursement of funds (ICAO);

c) The MID RMA shall be managed as a Regional programme, shall have legal personality and shall act through the MID RMA Board;

d) The overall objective of the MID RMA is the promotion of safety of air navigation in the Middle East Region through the operation and management, on a sound and efficient basis, of a permanent MID Regional Monitoring Agency;

e) The MID RMA Board, in which each Participating State is entitled to appoint one member, shall retain overall direction and responsibility for the supervision and operation of the MID RMA in accordance with the relevant obligations of the Participating States under the Convention on International Civil Aviation and its Annexes;

f) The MID RMA's scope, duties and responsibilities will be those agreed by the Board's first meeting and could be revised by the Board. The MID RMA will be assigned clear tasks in a step-by-step approach starting with RVSM height monitoring and RVSM post-implementation safety assessment, having in mind the end objectives, which will include RNP/RNAV and SMS;

g) The funding mechanism and consequent contributions of Participating States may be modified in subsequent years by decision of the Board;

h) Any Participating State may withdraw from this Memorandum of Agreement by giving a prior notice of six (6) months to other Participating States;

i) The hosting of the MID RMA by Bahrain may be terminated at the request of Bahrain, with two years advance written notification to the MID RMA Board to allow sufficient time for selection of an alternative location and necessary arrangements for transfer of the MID RMA;

j) The contributions for the first year shall be set on an equal basis between member States based on the estimation of total costs for the set up, the operation of the agency (US$300,000) and the number of members States; and

k) The funding arrangements will be kept under review and amended if necessary.

3.6 The MID RMA Board held its second meeting in Bahrain from 27-28 February 2006, during which the Memorandum of Agreement (MOA) to establish the MID RMA was reviewed and agreed upon. Eight States signed the MOA and the ICAO MID Regional Office is to follow up with the remaining States. The RMA Board accepted Bahrain's offer to host the RMA and authorized the Chairman of the RMA Board to negotiate an agreement with ICAO and Bahrain specifying ICAO's role as the custodian of the funds collected for the purpose of this agreement, in compliance with ICAO's Financial Regulations and Rules. A copy of this MOA is provided for information in **Attachment C** to this paper.

3.7 Considering the various options and the recent experience in the MID Region, ANSEP/6 concluded that the multinational (ICAO) air navigation facility/service model was more appropriate in the case of RMAs when compared to the joint financing arrangement model or any other appropriate model. It was concluded as well that current ICAO guidance for the establishment and financing of such mechanisms is adequate.

4. APPLYING THE RECOMMENDED MODEL IN ASIA/PACIFIC

4.1 The funding arrangements considered by ALLPIRG/5 and ANSEP/6 address a specific requirement for States to undertake safety monitoring on a regional basis with reference to Standard 3.4.1 contained in Annex 11 which concerns the selection of separation minima for application within a given portion of airspace in accordance with the provisions of the PANS-ATM and the Regional Supplementary Procedures as applicable under the prevailing circumstances.

4.2 RASMAG/5 acknowledged with appreciation that the RMA functions are being performed in Asia and Pacific Regions with Australia (Airservices Australia), Thailand (AEROTHAI) and the United States (FAA) voluntarily shouldering the costs. However, it was also noted that the experience worldwide is that such voluntary funding arrangements are not sustainable and they are not equitable. Accordingly, RASMAG/5 highlights the global consensus emerging on the most appropriate model to apply for consideration by APANPIRG.

4.3 That consensus is that voluntary funding models are not sustainable and that the obvious way to organize for the required regional safety monitoring services is through a multinational (ICAO) facility/service for which general guidelines on the establishment and provision of such a mechanism are set out in the FASID (refer Attachment A). APANPIRG is reminded that, pursuant to Article 28 of the Convention and in line with the ICAO policies concerning the formulation of regional plans and their

implementation, any multinational facility/service would be set forth in the Regional Plan as established by the Council. Attention also is drawn to the specification in the FASID that the purpose of a multinational facility/service is to serve international air navigation in airspace extending beyond the airspace serviced by a single State.

4.4 The FASID sets out the steps to be followed by APANPIRG is establishing any multinational facility/service and it recalls that APANPIRG is at all times expected to take an active posture in the process which encompasses thorough evaluations and consideration of the viewpoints of the States, the international organizations concerned, and any particular providers/hosts of the required facilities/services. The outcome of the process is that APANPIRG develops a complete proposal for amendment of the ASIA/PAC Regional Plan for processing in accordance with the procedure approved by the Council. In the case of regional safety monitoring, APANPIRG has already played an active role and any step forward to formalize the funding arrangements can be made in recognition of the arrangements already in place while addressing those matters yet to be resolved in a sustainable way.

4.5 In this context it should be noted that RASMAG/5 was concerned that the voluntary funding approach is not addressing all of the needs for safety monitoring services recognized by APANPIRG as SMAs and CRAs as well as RMAs. The MIDANPIRG Member States in establishing their arrangements allowed scope to address these requirements under the one agreement. RASMAG/5 therefore urges APANPIRG to consider adoption of the global model to ensure that States have the option of an equitable, effective, harmonized and technical regional capability to meet all of the safety requirements for future regional airspace planning, including the implementation and operation of reduced separation minima (including horizontal), communications, navigation, surveillance and air traffic management (CNS/ATM) systems and related airspace changes. As illustrated in the case of the MID Region, an appropriately designed Memorandum of Agreement between the various parties can empower the Board to undertake the necessary actions to provide for the RMA as well as to take any appropriate actions to centralize and harmonize the various monitoring activities.

4.6 The action proposed for APANPIRG therefore is to agree to take steps to formalize the organization and funding of needed regional safety monitoring functions applying the model of the multinational ICAO air navigation facility/service in accordance with the FASID and other ICAO guidelines.

4.7 Considering the scale and diversity of Asia and Pacific and considering the existing arrangements for provision of RMA services, it is further proposed that APANPIRG consider establishment of two Multinational ICAO Air Navigation Services – one for Asia and one for the Pacific. APANPIRG could proceed by calling meetings of the States concerned with each and encouraging them to sign appropriate Memoranda of Understanding. RASMAG/5 considered that these should be called the “Regional Safety Monitoring Board - Asia” and the “Regional Safety Monitoring Board – Pacific”.

4.8 Noting that both Asia and Pacific Regions encompass extensive international airspace that is being served by particular States as allocated by the Council pursuant to the Chicago Convention, ICAO should be considered in the design of the arrangements agreed to under the Memoranda of Understanding and included as a Member of each Board.

4.9 As noted, a considerable amount of work has been undertaken in Asia/Pacific to establish arrangements for safety monitoring to be undertaken on a regional basis. RASMAG/5 recommends that, in developing a sustainable framework, these effective working arrangements be utilized as the essential “building blocks”. For example, the task for APANPIRG of finding and assigning a State or an existing organization or agency to establish and operate the RMA, in accordance with the requirement in Annex 11, has been attended to with the RMA functions being performed by the Airservices Australia RMA, Monitoring Agency for the Asia Region (MAAR) and Pacific Approvals Registry and Monitoring Organization (PARMO). Similarly, actions have been taken to establish SMAs and CRAs with Asia/Pacific regions, albeit with less success in devising sustainable funding mechanisms.

4.10 Accordingly, many of the steps required to put agreements in place to establish a Regional Safety Monitoring Board - Asia and a Regional Safety Monitoring Board – Pacific and to make it possible

for APANPIRG to incorporate these multinational services into the Regional Plan have already been undertaken. RASMAG/5 considered that the critical step now that must be undertaken is for APANPIRG to invite the States concerned with each of the two Regional Safety Monitoring Boards to meet with the purpose of developing appropriate Memoranda of Agreement (MOA) incorporating specific mechanisms to provide necessary safety monitoring services and means of collecting the necessary funds. In that respect, APANPIRG is invited to note the recent success achieved in the MID Region in this regard. Notably, if the MOAs are maintained as administrative agreements, it is possible for the DGCAs (or CEOs of air navigation services providers or other appropriate organizations) in the participating States to sign the document. This does not appear to have been an impediment in the case of the MID Region. Whereas not all of the States concerned signed the agreement at the outset, a sufficient number of participating States committed themselves and additional States have joined since.

4.11 RASMAG/5 considered that many of the points of detail that must inevitably be attended to, including any estimation of costs involved and cost sharing arrangements, can be dealt with in accordance with existing ICAO guidance in the process of formalizing the MOAs in the light of the particular circumstances and the functions to be performed.

4.12 RASMAG/5 also noted that as safety monitoring is an admissible charge there should be no grounds to argue that funds are not available to perform the required safety monitoring services. However, it would be for each Board to decide how best to allocate the costs involved, whether to collect the funds from States or directly from airspace users, and on what basis to allocate the costs. It would then be at the discretion of the States whether to meet any costs incurred or whether to recover them from the users in accordance with ICAO guidance and policies.

4.13 RASMAG/5 recognized that APANPIRG and the States that would become parties to any MOAs would be in the best position to resolve many of these types of matters. However, RASMAG/5 draws APANPIRG's attention particularly to the following considerations:

a) Boards should not be so large that they are unwieldy. It was noted in the case of the MID RMA Board that all ten States that were considered likely to be members were each to be permitted one place on the Board (the United Arab Emirates was invited to become an eleventh member).

b) A related issue is to decide on the States that would be invited to participate. A view was expressed by a representative at RASMAG/5 that only those States that have a responsibility for an FIR associated with the monitoring activities of each of the respective Boards should be invited initially. RASMAG/5 noted that the matter could be kept under review and additional States could be permitted to join at a later stage if appropriate.

c) RASMAG/5 considered that ICAO should be permanently represented on the Board in an appropriate capacity, recognizing as well that Asia and Pacific Regions encompass extensive international airspaces under the responsibility of the Council of ICAO. RASMAG/5 was reminded that ICAO Standards and Recommended Practices should apply strictly in these international airspaces and that the approaches taken to safety monitoring should reflect this.

d) RASMAG considered it appropriate that the Boards should report on their safety monitoring work to APANPIRG through RASMAG;

e) The Memoranda of Agreement should provide a capacity for the safety monitoring activities conducted under the authority of the Regional Safety Monitoring Boards to evolve according to requirements over time. However, a view was expressed that it is likely that, while the nature and scope of the safety monitoring tasks can be expected to change, it is likely that there will be an on-going need for regional safety monitoring mechanism.

f) It should be recognized that capabilities for performing the various safety monitoring tasks are being developed by several States/organizations and that it is important that the process of allocating any particular regional safety monitoring task to a provider should become a transparent one in which all parties are given equal opportunities to participate.

5. ACTION BY APANPIRG

5.1 The meeting is invited to:

a) Note the requirement to ensure that there is a regional mechanism to provide safety monitoring services related to the implementation of RVSM;

b) Consider the global consensus that voluntary funding arrangements are not considered to be sustainable in the long-term and that the most appropriate funding mechanism for RMAs is to establish a multinational (ICAO) facility/service;

c) Recognize that the RMA mechanism can be implemented through the action of APANPIRG defining the RMA Asia and RMA Pacific as multinational (ICAO) facilities/services in accordance with the guidance provided in the FASID;

d) Initiate actions towards formalizing arrangements for the RMAs by inviting the States concerned to meet for the purpose of agreeing on appropriate Memoranda of Understanding to establish the RMAs on a formalized basis as per (b) above;

e) Recommend further that the States concerned address additional, recognized safety monitoring requirements for SMAs and CRAs under these arrangements by urging States to adopt Memoranda of Agreement that provide adequate scope to perform these functions and that they consider naming the bodies so established as the Regional Airspace Monitoring Board – Asia and the Regional Airspace Monitoring Board – Pacific, respectively; and

f) Consider the closure of Conclusion 16/2 on the basis that the intent of the Conclusion has been met and a study group is no longer required.

- END -

GENERAL GUIDELINES ON THE ESTABLISHMENT AND PROVISION OF A MULTINATIONAL ICAO ASIA/PAC AIR NAVIGATION FACILITY/SERVICE

1. INTRODUCTION

1.1 These guidelines were developed by the ASIA/PAC Planning and Implementation Regional Group (APANPIRG) for incorporation in the ASIA/PAC ANP and for use in the ASIA/PAC Regions to facilitate State's collective efforts for cost effective implementation.

1.2 They reflect relevant ICAO provisions and established policies of the Organization's regional planning for and implementation of facilities/services required for air navigation applicable in the ASIA/PAC Regions. They also recognize the principle that costs may be recovered for facilities and services provided for and implemented under the ASIA/PAC Regional Plan as approved by the Council.

2. DEFINITION

Multinational ICAO Air Navigation Facility/Service

2.1 The meeting considered that multinational facilities/services would now be required to facilitate implementation of the ASIA/PAC Air Navigation Plan, especially the new ICAO CNS/ATM systems implementation Plan. Because of their uniqueness, their impact on the system as a whole as well as their implications for users and providers of the multinational facilities/services, they would need early identification. The following definition of a multinational ICAO ASIA/PAC air navigation facility/service would permit this in a rational manner:

> "A facility/service specifically identified as such and included in the ICAO ASIA/PAC Regional Plan for the purpose of serving international air navigation in air-space extending beyond the air space serviced by a single State in accordance with the ASIA/PAC Regional Plan."

Applicability of ICAO provisions

2.2 Pursuant to Article 28 of the Convention and in line with the ICAO policies concerning the formulation of regional plans and their implementation, any multinational facility/service would be set forth in the Regional Plan as established by the Council. In turn, when establishing the cost basis for route facility charges the council approved principles are to be applied, i.e. the costs to be taken into account should be those assessed in relation to facilities and services provided for and implemented under the ASIA/PAC Regional Plan.

Multinational character

2.3 In ICAO rules and procedures the term "facility/service" for air navigation is well understood. Contrary to the term "project" or any other term which may relate only to certain segments or phases of an undertaking it does not exclude research, development, operation and eventually the phasing out of a joint venture. In this context, there is therefore no need to depart from the well known term "facility/service" for air navigation. There is, however, room for amplifying the definition by additional elements in order to dissociate the common undertaking from those facilities/services which are provided by one State only.

2.4 The purpose of a multinational facility/service to serve international air navigation in airspace extending beyond the airspace serviced by a single State is a useful and qualifying element. It is a crucial criterion in that it unambiguously discards other possibilities which the machinery for regional planning and implementation of requirements for facilities/services provides for under Article 28 of the Convention, in accordance with Standards and Recommended Practices and relevant Assembly Resolutions, e.g. delegation of airspace, operating agencies, bi- and multilateral agreements or as a last resort, joint financing under Chapter XV of the Convention. While in any such case States would individually remain responsible under Article 28 for the provision of facilities/services within the area of their jurisdiction a "multinational" facility/service by its very

nature would extend beyond the individual airspace of a State.

3. DEVELOPMENT AND PROCESSING OF A PROPOSAL FOR A MULTINATIONAL ICAO ASIA/PAC AIR NAVIGATION FACILITY/SERVICE

3.1 The following constitutes the step by step development and processing of a proposal for a multinational ICAO ASIA/PAC air navigation facility/service. Comments on individual steps are set forth in subsequent paragraphs.

a) Proposals for a multinational ICAO ASIA/PAC air navigation facility/service might originate from:

- APANPIRG
- a State or a group of States
- an international organization recognized by ICAO

b) Proposals for such a facility/service should be supported by material relating to the following aspects:

- purpose of the proposal and operational and technical justifications;
- financial implications and cost-effectiveness;
- managerial implications; and
- alternative solutions.

c) The proposal will be evaluated by APANPIRG particularly in respect of requirement, acceptability and cost-effectiveness.

d) APANPIRG will then, if in preliminary agreement, through the regional office(s) concerned:

- consult with States which would directly be concerned with the provision of the potential multinational facility/service, as well as those States who would be utilizingit; and as necessary concerned international organizations; and
- re-evaluate the proposal in the light of comments made by these States and international organizations and to decide either to proceed or to discontinue the proposal.

e) APANPIRG develops, in consultation with all concerned, a complete proposal for amendment of the ASIA/PAC Regional Plan for processing in accordance with the procedure approved by the Council.

Comments on the process

3.2 In the light of the basic elements as contained in the definition and their obvious consequence of fully integrating the proposal for a multinational ASIA/PAC facility/service into the ICAO planning and implementation processes for the ASIA/PAC Regions, it follows that:

A) proposals for a multinational ICAO ASIA/PAC air navigation facility/service might originate from:

- APANPIRG or
- a State or a group of States.
- an international organization recognized by ICAO

3.3 In this context it is recalled that APANPIRG at all times takes an active posture. For the permanent and co-ordinating machinery this is a prerequisite to remain responsive to the specific requirements of the ASIA/PAC Regions and is reflected in the objectives of the group, namely to:

a) ensure the continuous and coherent development of the ASIA/PAC Regional Plan as a whole taking into consideration the effect of such development on the regional plans of adjacent regions; and

b) identify specific problems in the air navigation field and propose, in appropriate form, action aimed at resolving these problems.

3.4 The ASIA/PAC planning processes and the working methods of APANPIRG as reflected in its Procedural Handbook ensure continued intensive information of and co-ordination with States members of the ASIA/PAC Regions. Although maximum transparency is inherent in these procedures, specific attention is required from the outset when dealing with multinational projects which may have far reaching

implications for all concerned. This would include the financial problems which are a major cause of deficiencies in the implementation of the ASIA/PAC Regional Plan.

3.5 The procedures for the amendment of approved regional plans and the management of the ASIA/PAC Regional Plan on a continuous basis are described in the Introduction to the ASIA/PAC Regional Plan.

3.6 At the time a proposal is originated within APANPIRG or submitted for its consideration by a State/group of States, basic information must be available to permit preliminary evaluation. Therefore, as a principle:

a) Proposals for such a facility/service should be supported by material relating to the following aspects:

i) purpose of the proposal and operational and technical justifications

This material should include the overall plan and targets for the development and the establishment of the facility/service. The likely implications if any, on regulations, working-routines, equipment, premises and maintenance should be included in the supporting documentation. Information on the expected consequences on the overall ASIA/PAC air navigation system or any part thereof should also be included.

ii) financial implications and cost-effectiveness

Related information should include estimates of the total costs of the multinational facility/service covering, as required, research and development, implementation, operation and maintenance, administration, and capital costs; how all costs incurred prior to the operational phase will be financed; assessing savings which may accrue from the implementation of the facility/service (these can be measured in monetary and/or physical terms for example air traffic controller positions, communications facilities, etc.) and comparing these savings to the total cost estimates; proposals as to how cost shares of States participating in the provision of the project are to be determined. Also, assessment needs to be provided on impact on users from charges for the facility/service concerned.

c) managerial implications

As a minimum, information on the organizational infrastructure (operational and administrative) and on staff should be included.

d) alternative solutions

Although it may not normally be expected that all proposals from the outside submitted to APANPIRG for consideration will contain relevant information to the extent necessary for preliminary assessment, APANPIRG itself should at all times have due regard to any possible alternative which may satisfy the operational requirement in a more cost/effective manner. Such information should be part of the information provided to those who are to be consulted.

3.7 Once necessary information is available, the consequential next phase to be initiated with minimum possible delay is that:

a) The proposal will be evaluated by APANPIRG particularly in respect of requirement, acceptability and cost-effectiveness.

b) The APANPIRG will then, if in preliminary agreement, through the ICAO regional offices in Cairo, Dakar, Nairobi and Paris:

i) consult with States which would directly be concerned with the provision of the potential multinational facility/service, as well as those States who would be utilizing it; and

ii) re-evaluate the proposal in the light of comments made by these States and decide either to proceed or to discontinue the proposal.

3.8 APANPIRG terms of reference, as well as the procedures adopted for the conduct of its activities, enable it to receive advice in the field of economics as necessary and appropriate. APANPIRG would be in the very best position to establish the need for and the form such assistance should take when considering a proposal for a specific multinational facility/service.

3.9 After completion of the above-mentioned preparatory work the process of including a multinational facility/service in the ASIA/PAC Regional Plan requires that:

a) APANPIRG develops in consultation with all concerned, a complete proposal for amendment of the ICAO Regional Plan for processing in accordance with the procedure approved by the Council.

4. FINANCIAL, MANAGERIAL AND OTHER CONTRACTUAL ASPECTS

Introduction

4.1 The participation of States in the provision of a multinational facility/service 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 also shoulder its respective share of the costs involved (paragraph 4.27 refers). The participating States would need to formalize the terms under which the multinational facility/service is to be provided in an agreement. A primary aim of the agreement should be to ensure that the costs involved are shared amongst the participating States in a fair and equitable manner.

4.2 This part of the guidelines is concerned with the main contractual aspects, financial, managerial and other, that should normally be considered when initiating work on a potential multinational facility/service. The basic provisions that would need to be considered for incorporation in such an agreement are outlined, including provisions concerning cost sharing and cost determination. However, the guidance does not extend to the presentation of a draft model agreement or clauses, since circumstances related to the planning, implementation and operation of individual multinational facilities/services may vary considerably.

Note: The guidelines generally refer to "agreement" as a generic term covering one or more agreements as the case may be.

Types of agreement

4.3 An agreement covering the development, implementation, operation and maintenance of a multinational facility/service could either take the form of a formal international treaty or an "administrative agreement". Both forms establish an international obligation but a treaty requires the signature of the head of state or government and will also require the ratification or approval of the national legislative assembly, which, as a rule, is a time-consuming process. An "administrative agreement", on the other hand, is at a lower level of requirement in respect of formalities and procedures than a treaty, can be signed by a minister or director of civil aviation or some other authorized person, and could be concluded by an exchange of letters or notes.

4.4 It is recommended that, whenever possible, the agreement be established in the form of an "administrative agreement" rather than a formal international treaty because this would allow the agreement to come into force with minimum delay and also permit greater flexibility in incorporating any subsequent modifications required. It is recognized, however, that in some States constitutional or legal circumstances may require the approval of the legislative assembly for financial obligations to be accepted by the State, particularly if these are of a substantial magnitude and/or extend over a period of time. Whatever form is used, the agreement(s) should be structured to provide for easy subsequent amendments as developments may require. To this end, material of detail which is more likely to require modifications, and which will not affect the basic provisions of the agreement, should be contained in annexes or appendices.

4.5 It is further recommended that whenever possible only one general agreement (treaty/"administrative agreement") be adopted covering all aspects of the facility/service concerned through all its phases. However, this may not always be possible. In certain circumstances it might be necessary or preferable to have more than one agreement (treaty/"administrative agreement") differing in scope and content. In those circumstances the aim should be to cover as many aspects as possible in the "administrative agreement" and limit the use of the treaty to those aspects for which this form of agreement is essential for the States concerned. Recognizing this, one agreement for example, might cover the activities, including prefinancing, to be undertaken by those States that accept the responsibility for bringing the facility/service up to operational status, with another agreement to be concluded between all the States (including the first group of States aforementioned), which would use or be served by the facility/service

once it became operational. In such circumstances the former agreement would be important because the first group of States would have to ensure the provision of funds from their own resources to ensure the implementation of the facility/service, since no inflow of revenues from charges on users (aircraft operators) would take place until the multinational facility/service becomes operational.

4.6 Another possible approach, if required by circumstances, would be for all the participating States to conclude an agreement covering, in general terms, their commitment to participate in the provision of the multinational facility/service, and then developing a separate agreement covering all aspects relating to the financing and operation of the multinational facility/service.

4.7 The various basic provisions that would normally have to be covered in an agreement of this nature are addressed below in the sequence they would usually appear, as follows:

a) Objective of the agreement

b) Obligations of States party to the agreement

c) Definition and description of the facility/service

d) Establishment and operation of the facility/service

e) Legal responsibility

f) Liability aspects

g) Managerial aspects:
   i Governing bodies and decision-making arrangements
   ii Organization and staffing
   iii Consultation

h) Financial aspects:

   i) Cost determination
   ii) Cost sharing
   iii) Budgeting
   iv) Authority to approve the budget
   v) Financial auditing

i) Taxation and other government levies

j) Procedures for settlement of disputes

k) Accessions, withdrawals, amendments to and termination of agreement.

Basic contractual provisions

a) **Objective of the agreement**

4.8 In its introductory text the agreement should set out the objective underlying the participating States' decision to jointly arrange for the provision of the multinational facility/service concerned.

b) **Obligations of States party to the agreement**

4.9 The agreement should at the outset briefly set forth the basic obligations of the participating States. These include the obligation (by a participating State or group of States individually or collectively or as assigned to an organization or agency) to establish and operate the facility/service concerned; the obligation of each participating State to pay its share of the costs involved; the obligation to observe ICAO policies and practices, including those addressing cost recovery by States from aircraft operators, etc.

c) **Definition and description of the facility/service**

4.10 The agreement should contain a clear and accurate definition and description of the multinational facility/service to be provided and the functions it is to perform, including to the extent possible and desirable, the supporting services required. It may be advisable in certain cases to make specific reference to functions which the multinational facility/service will not be performing.

d) **Establishment and operation of the facility/service**

4.11 The agreement should specify who will establish and operate the facility/service concerned, namely whether this is to be done by one State, two or more States, an existing international organization, an existing national or international agency, or a new agency to be established specifically for this purpose.

Note: The decision as to who should provide the facility/service could be influenced, in particular, by the anticipated capital investment and annual costs involved, as well as the extent to which the alternative providers (i.e. a participating State or States, international

organization or agency) have been engaged in the function(s) concerned.

e) **Legal responsibility**

4.12 If an international organization or agency (as referred to in Assembly Resolution A22-19) is to establish and/or operate the facility/service concerned, it will have to be endowed with proper legal responsibility to have the capacity to contract, to acquire and dispose of property and to institute and answer legal proceedings.

f) **Liability aspects**

4.13 Closely related to legal responsibility are the liability aspects which may have to be addressed in the agreement. This involves such aspects as the determination of the extent to which liability is to be assumed in connexion with the provision of the multinational facility/service. Other aspects also include whether the entity providing the facility/service concerned, whether an international organization agency or State(s), should alone assume such responsibility or whether this should be shared amongst all the participating States.

g) **Managerial aspects**

a) **Governing bodies and decision making arrangements**

4.14 The nature of the governing body or bodies required to administer the agreement needs to be established and a description of their functions provided. Should a new agency be established to operate the multinational facility/service, this would need to be stipulated in the agreement, where reference should also be made to the functions and responsibilities of the executive head of the agency and to whom he or she would be responsible.

4.15 Voting arrangements should be specified. It would need to be decided whether each participating State should have equal voting power (as is for example the practice of ICAO). Alternatively, each State's vote may be weighed in accordance with a predetermined formula, which would need to be specified, for example, by determining the voting power according to that participant's share of total contributions to the facility/service or agency concerned. A maximum and/or a minimum limit may be set for the number of votes that can be assigned to any individual participant regardless of that participant's share of total contributions.

4.16 Another voting aspect which has to be decided on, and specified in the agreement, is whether a simple majority would apply in all cases or whether for particular issues a large majority vote (to be specified) or even unanimity would be required. Where different degrees of majority voting would apply depending on the matter or subject being voted on, these would also need to be clearly identified in the agreement.

b) **Organization and staffing**

4.17 The agreement should refer to the manner in which the entity actually operating the facility/service would structure or organize its functions. This would apply in particular if the operation is to be assigned to a new agency.

4.18 Various aspects of staffing (nationality, numbers and type etc.) will also need to be addressed and, as appropriate, incorporated in the agreement (or an annex to it). If the participating States agree that the multinational facility/service is to be provided by one State or by two or more States (each providing separate components or parts of the project involved), the nationality of staff should not give rise to any problems, and need not be covered in the agreement. However, operation by an international organization or agency may require that certain stipulations be included in the agreement concerning the selection of qualified staff from participating States. Other aspects to be considered, aside from the number and types of staff, are the various elements of conditions of service including status to be accorded to any expatriate staff, tax exemptions, etc., which will reflect on the over-all costs of the venture.

c) **Consultation**

4.19 Provision should be made in the agreement to ensure adequate consultation with States being party to the agreement but not represented on the governing body, and appropriate aircraft operators organizations. Such consultations should at least be undertaken in advance of any developments that could materially affect cost share to be allocated to these States, user charges, and the quality of the services provided.

h) **Financial aspects**

a) **Cost determination**

Pre-implementation considerations

4.20 The determination and presentation of the costs attributable to the provision of the multinational facility/service concerned should proceed in a manner

acceptable to all the participating States. In this context it should be noted that bringing the facility/service up to implementation status can involve the costs of implementation being financed by one or more of the participating States. However, once the facility/service has been implemented, these costs would be capitalized and then included as depreciation (together with accumulated interest) in the over-all cost base to be shared among the States participating in the provision of the facility/service concerned.

Determination of costs

4.21 In order to formalize the manner in which the costs to be shared should be arrived at, the agreement between the States participating in the provision of a multinational facility/service should contain clauses referring to the determination of the related costs. The agreement should also stipulate that the approach towards cost determination be based on that recommended in Chapter 1 of the ICAO Manual on Route Air Navigation Facility Economics (Doc 9161). Should more comprehensive instructions, based on Doc 9161, be required, it is preferable that these be presented in an annex in view of their relative volume and detail, and also because it may be expected that they would need to be updated and modified more frequently than the main text of the agreement. (Amendments to the annexes to the agreement would normally be subject to the approval of the governing body of the multinational facility/service).

4.22 In line with the approach adopted in Doc 9161, the annex would normally contain an inventory of the various components of the multinational facility/service (e.g. buildings, equipment, number of staff by function, etc.). It would also cover the determination of annual costs, i.e. costs of operation and maintenance, administrative and common costs, and capital costs (depreciation and interest) as well as special capital outlays. Finally, where a multinational facility/service or any of its components serve other than the multinational functions specified in the agreement (i.e. functions serving one State only, or non- aeronautical functions), instructions should be provided to ensure the accurate determination of the "multinational" costs to be shared among the participating States.

Presentation of costs

4.23 The agreement would also need to specify, normally in an annex, the basic format to be used for the presentation of the annual costs for approval. The scope and detail of the format will depend on the particular circumstances involved.

b) **Cost sharing**

Responsibility for the sharing of costs

4.24 As stated in 4.1 above, once a State has supported and agreed to the implementation of a multinational facility/service and making use of it, it would be expected to assume responsibility for its share of the costs involved. This basic obligation should be reflected in the agreement between the participating States.

Determination of cost share of each participating State

4.25 The agreement should outline the procedure to be applied for determining the cost share to be borne by each participating State. Any cost sharing method should, to the extent possible, be equitable, simple and easy to apply. The question of equity should not only be considered in the context of the participating States, but also with respect to the final users (aircraft operators) since it may be assumed that in most instances the participating States would include the costs they incur in the cost base for their air navigation facility charges, where levied.

4.26 In general, it does not appear feasible to recommend one specific method or approach to cost sharing because the situation will vary, depending particularly on the technical and operational characteristics of the multinational facility/service involved, the views or policies of the participating States on how costs should be shared, and the volume of these costs.

4.27 In the interest of equity, however, any method of cost sharing should, in principle, be based on the extent of the use of the multinational facility/service concerned by each participating State. Thus, the parameters or keys used to determine each State's cost share should reflect the extent of such use. However, if the use made of a multinational facility/service can only be measured by applying complex procedures and at a cost which is not commensurate with the costs to be shared, other methods of cost sharing based on readily available and relevant statistical data could be applied. Whatever method is selected it must provide for the just and equitable sharing of the costs involved.

Tangible national benefits to the State(s) actually operating the multinational facility/service

4.28 A multinational facility/service might be operated by one or more States with other States contributing their share of the costs involved. In such

circumstances, all the States concerned must decide whether or not the total costs should be subject to sharing or if any allowances should be made to reflect any tangible benefits accruing to the State(s) engaged in the actual operation of the facility/service concerned. Such benefits would usually be in the form of employment of nationals, contracts awarded to national companies, etc. with their associated multiplier effect on the economies of the State(s) concerned. It should be noted that the States actually operating the facility/service would, like other State(s) using it, be obliged to pay its (their) share of the total costs to be shared.

Recovery of costs from users

4.29 As a rule, a multinational facility/service would have to be "multinationally" financed or prefinanced by a State, group of States or, by an agency as established under the authority of an agreement by States. However, any of these could recover the costs so incurred from users once the facility/service has been implemented. Nevertheless, States may also choose to recover less than full costs in recognition of local, regional or national benefits (Doc 9082, paragraph 29 refers). Where an agency has been authorized to recover its costs through charges, the authorizing States would nevertheless need to make up for revenue shortfalls where, for example, the States had decided certain flights should either be exempted from or pay reduced charges.

4.30 It would be up to each participating State to decide whether or not it wishes to recover its cost share from the users (aircraft operators). A State could either include these costs in its cost base for route facility charges (if it levies such charges), or, alternatively, recover the costs by levying a separate charge (normally a more complex and costly procedure to administer). While the recovery of such cost shares from users might normally not be referred to in an agreement on a multinational facility/service, the agreement could include a provision to the effect that such recovery must be based on Article 15 of the Chicago Convention as well as the principles and recommendations in Doc 9082.

4.31 If the participating States were to assign the operation of a multinational facility/service to an international organization or an international agency and decide that it should levy charges on aircraft operators for the purpose of full or partial cost recovery, this would need to be covered in the agreement. In such instances the agreement would usually also stipulate (probably in a separate annex) the charging formula to be used, reductions and exemptions granted, billing and payment arrangements, etc. Such procedures would, of course, need to conform with the provisions of Article 15 of the Chicago Convention and Doc 9082.

c) **Budgeting**

4.32 Proper financial control will require costs and revenues to be estimated in advance. The itemization of the costs should basically correspond with that used for the presentation of costs (see 4.23 above). This will enable actual costs to be compared with estimated costs, and actual revenues with those estimated.

d) **Authority to approve the budget**

4.33 The agreement should also stipulate who has the authority to approve the budget and thus authorize the use of funds to meet operating expenses and capital expenditures. This authority would normally be vested in the governing body of the multinational facility/service concerned.

e) **Financial auditing**

4.34 The financial audit function forms an integral part of the determination of the costs to be shared and the cost share to be borne by each participating State as well as of proper financial control. The agreement between States participating in the provision of a multinational facility/service should therefore specify that an annual financial audit be performed by a certified independent external auditor.

f) **Taxation and other government levies**

4.35 The subject of tax exemptions and other aspects related to taxation will need to be addressed in the context of the over-all operations of the multinational facility/service. Similarly, with regard to other government levies such as custom fees and duties, value added tax, etc., it may also need to be considered whether the import or export, purchase or sale of any equipment, supplies, etc. required for the operation of the multinational facility/service concerned should be exempted from all such levies in the participating States. The inclusion of clauses to that effect would be likely to require an agreement subject to ratification, such as a treaty.

g) **Procedures for settlement of disputes**

4.36 The agreement should contain stipulations setting out the procedures to be followed for settlement or disputes between the participating States arising

from the provision of the facility/service concerned. Regarding the settlement of disputes arising from different interpretations being given to the agreement, the States concerned would have to agree on the procedures for negotiation or arbitration and on the body to which an appeal for a final ruling could be made.

h) **Accessions, withdrawals, amendments to and termination of agreement**

4.37 The agreement should contain provisions, including those describing the financial implications involved, to:

a) cover the subsequent accession by any additional qualifying State(s) after the agreement is in force; and

b) specify the procedure to be applied when a signatory State wishes to withdraw from the agreement as well as procedures to follow in the event of termination of the agreement.

4.38 Similarly, the agreement should specify the procedures to be followed if amendments are to be made to the main text or to any annexes (for which different procedures would normally apply).

Summarized from ALLPIRG/5 Working Paper 10

IMPLEMENTATION OF AN RMA: A STEP-BY-STEP PROCEDURE

On the basis of the approach described in section 2 above [in ALLPIRG/5-WP/10] and existing guidelines on the establishment of a multinational ICAO air navigation facility / service, the implementation of an RMA could include the following steps:

1. define, at a PIRG meeting, the reduced vertical separation minimum (RVSM) monitoring function as a Multinational ICAO Air Navigation Service in accordance with the existing guidelines, on the establishment and provision of a multinational ICAO air navigation facility / service, included in the regional air navigation plan concerned;

2. agree to a cost sharing arrangement based on, for example, distance flown or number of flights within the airspace for which each of the respective States has assumed responsibility, it being understood that distance flown may offer more precision while allocation based on the number of flights is simpler to administer;

3. find and assign a State or an existing organization or agency to establish and operate the RMA, in accordance with the requirement in Annex 11 (the PIRG's responsibility);

4. develop and establish an administrative agreement to regulate the establishment and operation of the RMA, including the cost sharing arrangement and procedures for collection of contributions from the participating States (the PIRG, assisted by the ICAO Regional Office);

5. sign the administrative agreement (DGCAs or some other authorized person in the participating States);

6. establish and operate the RMA as a Multinational ICAO Air Navigation Service in accordance with the administrative agreement (the assigned operator); and

7. recover the contributions to the financing of the RMA through additions to the cost bases for route charges and transfer the amounts to the RMA operator (each State).

MIDDLE EAST REGIONAL MONITORING AGENCY

(MID RMA)

MEMORANDUM OF AGREEMENT

Bahrain- 27 February, 2006

MID RMA Board/2
Appendix 3A to the Report on Agenda Item 3

MEMORANDUM OF AGREEMENT ON THE ESTABLISHMENT, OPERATION AND MANAGEMENT OF THE MIDDLE EAST REGIONAL MONITORING AGENCY (MID RMA) AND ITS FUNDING BY THE PARTICIPATING STATES

1. PARTIES

1.1 The Parties to this memorandum of agreement are: Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia, Syria and Yemen.

2. AGREEMENT

- CONSIDERING the urgent need to institute a programme, on a regional basis, for monitoring the height-keeping performance of aircraft operating in RVSM airspace;

- CONSIDERING the Parties' earlier decision that the Middle East Regional Monitoring Agency (MID RMA) will be funded entirely by the participating States and that the budget estimate for the first year, be paid by the Parties on equal basis;

The Parties have agreed as follows:

1. The Parties to this memorandum of agreement, referred to hereunder as Participating States agree to establish the Middle East Regional Monitoring Agency (MID RMA) and undertake to become its members;

2. The MID RMA shall be managed as a Regional programme; shall have legal personality and shall act through the MID RMA Board;

3. The overall objective of the MID RMA is the promotion of safety of air navigation in the Middle East Region through the operation and management, on a sound and efficient basis, of a permanent MID Regional Monitoring Agency;

4. The MID RMA Board, in which each Participating State is entitled to appoint one member, shall retain overall direction and responsibility for the supervision and operation of the MID RMA in accordance with the relevant obligations of the Participating States under the Convention on International Civil Aviation and its Annexes. The Board shall elect its chairman. It shall inter-alia, supervise and direct the MID RMA, follow-up its activities and reports and assign its priorities. It shall also secure the commitment of Participating States for funding the MID RMA in accordance with agreed funding mechanism and for provision of necessary data for the MID RMA;

5. The MID RMA's scope, duties and responsibilities will be those agreed by the Board's first meeting and could be revised by the Board. The MID RMA will be assigned clear tasks in a step-by-step approach starting with RVSM height monitoring and RVSM post-implementation safety assessment, having in mind the end objectives, which will include RNP/RNAV and SMS. The MID RMA duties and responsibilities will include, but will not be limited to the following:

    - collecting and analysing RVSM data received from MID States as well as from Eurocontrol/FAA, IATA and airlines;

    - collecting data on aircraft approved by various States for operation within RVSM airspace in the MID Region and enter such data in the MID RMA database;

    - verification of the effectiveness of the approval process by States;

- establishing a database for reporting height deviations of aircraft;

- verification that the target level of safety on implementation of RVSM is met and maintained;

- monitoring the effectiveness of the altimetry system modifications to enable aircraft to meet the required height keeping performance criteria;

- evaluation of the stability of altimetry system error;

- undertake monitoring missions to States as required;

- determine in the light of analysis made of data received and of missions conducted, whether compliance with required safety standards is maintained and initiate corrective action as needed in each case; and

- submit a report to each Board meeting on MID RMA activities, its analysis of data and any identified departure from RVSM Safety limits, for its consideration and action as appropriate.

6. The Participating States have accepted Bahrain's offer to host the MID RMA in Bahrain to enable the early establishment and functioning of the MID RMA;

7. Bahrain will provide the offices, equipment and local personnel needed for the MID RMA operations and pay for the initial set up of the MID RMA without waiting for MID States' contributions. The advance payment made by Bahrain shall be recovered through States' contributions in compliance with the agreed funding mechanism;

8. Based on the agreed funding mechanism for the first year of operation of the MID RMA, the cost for the establishment of the MID RMA, its operation and management for the first year shall not exceed the estimated amount of US$ 300,000, which shall be borne by the Participating States on equal basis;

9. The funding mechanism and consequent contributions of Participating States may be modified in subsequent years by decision of the Board;

10. The MID RMA staff shall be composed of:

1.	MID RMA Manager/Team Leader	(Part Time)
2.	One Assistant MID RMA Officer	(Full Time)
3.	Database Specialist	(Part Time)

11. The MID RMA Manager/Team Leader shall manage the project on day-to-day basis and effect coordination with the Chairman of the MID RMA Board. He shall submit the MID RMA reports to the Board with copies to the ICAO Regional Office in Cairo;

12. Bahrain shall monitor the progress of the MID RMA, maintain financial accounting and provide general support and timely reporting;

13. Participating States authorize the MID RMA Board Chairman to negotiate on behalf of the MID RMA an agreement with ICAO and Bahrain specifying ICAO's role as the custodian of the funds collected for the purpose of this agreement, in compliance with ICAO's Financial Regulations and Rules;

14. This Memorandum of Agreement shall come into effect on the date it has been signed by the Participating States;

15. Any amendment to this Memorandum of Agreement, shall be carried out by the parties to this agreement;

16. Any dispute arising out of or relating to this Memorandum of Agreement, shall be settled by direct consultation between the Participating States concerned;

17. Any Participating State may withdraw from this Memorandum of Agreement by giving a prior notice of **six (6) months** to other Participating States. The obligations assumed by the Participating States under this Memorandum of Agreement shall continue to exist after the withdrawal from this Memorandum of Agreement to the extent necessary to permit the orderly finalization of activities, the withdrawal of personnel, the distribution of funds and assets and the settlement of contractual obligations. Additional funds, if necessary, to cover the above mentioned expenditures shall be provided by the Participating States.

18. The hosting of the MID RMA by Bahrain may be terminated at the request of Bahrain, with two years advance written notification to the MID RMA Board to allow sufficient time for selection of an alternative location and necessary arrangements for transfer of the MID RMA.

19. All correspondence relating to the implementation of this Agreement, shall be addressed to:

MID RMA
Chairman of the MID RMA Board
C/o Ministry of Transportation
P.O. Box 586
Bahrain International Airport
Manama - Bahrain

With copy to the:

ICAO Regional Director
ICAO Middle East Regional Office
Egyptian Civil Aviation Complex, Airport Road
P.O Box 85, Airport Post office, Terminal One
11776, Cairo, Egypt

AGENDA ITEM 7

Agenda Item 7: Review developments relating to CNS/ATM implementation

Update on the ADS-B Study and Implementation Task Force

7.1 The meeting reviewed the outcomes of the 4th and 5th meetings of the Automatic Dependent Surveillance – Broadcast (ADS-B) Study and Implementation Task and was informed that an ADS-B Seminar was also organized in conjunction with each of the meetings. Reports of both meetings are posted on the ICAO webpage: http://www.icao.int/apac/meetings.htm

7.2 The objective of the ADS-B Seminars was to provide information to the participants on ADS-B planning and implementation. During the Seminars, a number of speakers from States and Industry provided valuable information on ADS-B. The ADS-B Seminars were well received by participants.

7.3 Amongst other things, the ADS-B Task Force meetings developed a draft strategy for the implementation of surveillance systems in the Asia/Pacific Region and the first amendment to ADS-B Implementation and Operational Guidance Document (AIGD). Information on ADS-B trials, planning and implementation activities by States were discussed at the meetings. Issues and problems observed during the trials and implementation were also discussed and analyzed.

7.4 In response to a decision made by APANPIRG/16, the meeting was informed that the capability of ADS-B in providing aircraft identifications as an additional unique key for correlation with flight plan data was discussed and confirmed. The 5th meeting of ADS-B SITF formulated a draft Conclusion to encourage States capable to do so to conduct In-Trail Procedure (ITP). A draft Decision was also developed proposing amendment to the TOR of the ADS-B Study and Implementation Task Force.

7.5 The meeting reviewed and discussed the draft strategy for the implementation of surveillance systems. Several clarifications and additional background information was provided to questions raised regarding multilateration, ADS-B IN applications and integrity monitoring for ATS surveillance data sharing across FIR boundaries . Significant concerns were expressed by Japan and IATA on several items including the priority of surveillance systems to be used.

7.6 It was proposed to add into consideration regarding the need for cooperation between civil and military authorities. It was also proposed to remove item 8 from the general strategy as mandatory carriage of pressure altitude reporting transponder and ACAS in the region had been already agreed, and to redraft items 3 to 7 of the strategy. In view of comments provided at the meeting, the meeting did not endorse the draft regional strategy as contained in the report of the Task force. It was suggested to refer it back to the Task Force for further improvement. The meeting encouraged member of the ADS-B Task Force to make necessary arrangements for more participants with ATM background to attend the ADS-B Task Force meeting.

7.7 The draft Conclusion on the In-Trail Procedure (ITP) was not endorsed by the meeting as it required equipage of ADS-B IN equipment on-board and it lacked guidance from ICAO. Japan expressed strongly that trials of this kind should not take place in international airspace. IFALPA requested that the meeting formally record that they would not participate in trials of this kind unless both (all) aircraft involved had full situational awareness in respect to the other aircraft involved. This would require suitable cockpit display apparatus and would necessarily involve the use of ADS-IN to provide proper air to air communication.

7.8 No comments were made to the draft Conclusion on the first amendment to ADS-B Implementation and Operational Guidance Document (AIGD) and other two technology related draft

conclusions on the ADS-B data exchange format and the use of ACAS hardware for traffic displays to present ADS-B based flight identity and velocity vector. These draft Conclusions will be presented to CNS/MET SG/10 for appropriate actions together with the comments provided by the ATM/AIS/SAR SG/16.

7.9 IATA also expressed concerns in respect of the proposed broadening of the Terms of Reference of the Task Force, particularly in respect of the proposed addition of "Study and identify applicable air to air applications of ADS-B in the Asia Pacific Region". The Secretariat informed the meeting that the air-to-air application needed to be considered because it contributed to the business case for ADS-B. Without ADS-B IN applications the business case for ADS-B OUT alone would be weaker.

7.10 Japan, IATA and IFALPA reported that they had additional feedback of relevance to the work of the ADS B Implementation Task Force. IATA also advised that they had serious concerns in relation to the outputs of the ADS-B Implementation Task Force and would make APANPIRG/17 aware of these concerns. IATA reiterated that, at this point in time, they were only interested in pursuing the benefits of ADS-B OUT, as there was no clarity as to whether there could be a business case for further developments.

Required navigation performance (RNP) and the RNPSORSG

7.11 Within the international civil aviation community and among individual States, there exist a number of different perspectives in relation to several aspects of RNP and area navigation (RNAV). In order to address the lack of global harmonization resulting from the differing RNP/RNAV naming conventions, ICAO, with the assistance of the RNP Special Operational Requirements Study Group (RNPSORSG), commenced work to ensure a common global understanding of RNP/RNAV and the relationship between RNP and RNAV system functionality.

7.12 In addition, there was a need among the industry community to develop RNP in the terminal airspace, as the original ICAO concept was deemed not sufficient to obtain realistic separation standards. In light of this, RTCA developed the RNP RNAV concept (RTCA DO236). The main differences between ICAO "RNP" and industry "RNP RNAV" is functional integrity vs. containment integrity and continuity.

7.13 Considering that the navigation containment is based on accuracy, functional integrity, continuity and systems availability, RNPSORSG agreed on the need for specifying future applications of a performance based navigation concept without containment integrity and continuity, which will be designated as RNAV, and with containment integrity and continuity, which will be designated as RNP.

7.14 Work of RNPSORSG was progressing well and the future RNAV and RNP applications were agreed to be as follows:

Area of Application	Navigation Accuracy (NM)	Navigation Specification (current)	Navigation Specification (new)	Requirement for performance monitoring and alerting
Oceanic/Remote	10	RNP 10	RNAV 10 (RNP 10 label)	no
	4	RNP 4	RNP 4	yes
Enroute – Continental	5	RNP 5 Basic RNAV	RNAV 5	no
Enroute – Continental and Terminal	2	USRNAV type A	RNAV 2	no
	2	n/a	RNP 2	yes
Terminal	1	USRNAV type B P-RNAV	RNAV 1	no
	1	n/a	RNP 1	yes
Approach	0.3	RNP 0.3	RNP 0.3	yes
	0.3-0.1	RNP/SAAAR	RNP 0.3-0.1 (RNP/AR)	yes

7.15 New ICAO guidelines with amendments to Annexes 6 and 11, a revised Performance Based Navigation Manual and other related provisions would soon be presented, as follows:

a) Revised RNAV and RNP Standards:

- State consultation 4th quarter 2006
- Applicable November 2008

b) Performance Based Navigation Manual:

- Available September or October 2006

c) Obstacle Clearance Criteria (PANS-OPS):

- State consultation 4th quarter 2006
- Applicable November 2008

d) ATC Separation Criteria:

- State consultation 4th quarter 2006
- Applicable November 2008

7.16 Hong Kong, China noted that the PBN was the latest ICAO initiative to address the lack of global harmonization in the understanding and implementation of RNAV and RNP. In this regard, Hong Kong, China expressed concerns as to the lack of holistic approach in the region. Although recognizing the reduced resources available to the Regional Office, ICAO was requested to take a regional approach to the implementation of the PBN.

7.17 The Secretariat was fully aware of the regional approach for the PBN and advised the meeting that the work on the PBN concept had been just commenced at ICAO HQ, with the assistance of the RNPSORSG, to ensure a common global understanding of RNP/RNAV. The Regional Office would disseminate information to States as it was made available.

Implementation of ATS data link operations and 50 NM longitudinal separation minimum in the oceanic area within Fukuoka FIR

7.18 Japan provided information on the operational trials which commenced in October 1997 conducted by JCAB of implementation ADS/CPDLC applications in the oceanic area of the former Tokyo FIR. Operational data was collected for analysis and review by the specialist work group established within JCAB, and upgrade of oceanic control system and associated software as well as modifications to operational procedures were made where required.

7.19 The operational assessment for the Tokyo FIR was conducted by CRA Japan, based on the collected data and information from ATS providers, aircraft operators, data link service providers and aircraft manufacturers in light of the *FANS-1/A Operations Manual* (FOM).

7.20 Results of the overall assessment indicated that system performance criteria described in the FOM were met, and the specialist work group concluded that operational trials should be completed and full ATS data link operations in the oceanic area within the Fukuoka FIR should be implemented in July 2006.

7.21 As a consequence of the implementation of full ATS data link operations in the oceanic area, JCAB concluded to reduce the longitudinal separation minimum from 15 minute separation to 50 NM separation, using ATS data link, as of 6 July 2006. Details of ATS data link operations and reduction of longitudinal separation minimum are described in the AIP-Japan (GEN3.3-29 – 36, and ENR3.6-32), which was published on 11 May 2006 and will become applicable on 6 July 2006.

7.22 The meeting noted the progress being made by Japan and the outcomes of the safety assessment that would support the implementation of this significant reduced separation as planned on 6 July 2006, which should result in major benefits in fuel savings and efficiency of operations as well as contribute to environmental benefits. In this regard, Japan was encouraged to quantify the benefits in due course in line with ICAO's policy on this matter, as described in the reports the DGCA/6 Conference and ALLPIRG/5 meeting.

Operational status of JCAB Air Traffic Management Center (ATMC)

7.23 Japan updated the meeting on the operation of the JCAB ATMC. On 1 October 2005, JCAB ATMC started its operation and moved forward in a phased approach by taking over the ATFM function of the former ATMC that was established in 1994.

7.24 The meeting noted that on 16 February 2006, the Tokyo and Naha FIRs were integrated into a single FIR, namely the Fukuoka FIR. The ATMC added new functions such as airspace management (ASM), ATS for the oceanic airspace in the Fukuoka FIR and ATFM in the style of Collaborative Decision Making (CDM).

7.25 The meeting was informed that ATMC provided ASM service along with two main concepts, i.e. airspace planning to organize effective airspace structures and airspace operation to create flexible airspace use environment for airspace users. As a first step, ATMC has liaison officers of Japan's Self Defense Agency assigned to daily operation. These liaison officers work with ATM

officers in a collaborative manner, which enables effective coordination for the use of military training and testing airspace when they were not in use.

7.26 The meeting was also informed that ATFM was a function to calculate proper traffic volume and make orderly flow in controlled airspace. As the first step, ATS for oceanic control within the Fukuoka FIR commenced in close coordination with ACCs in adjacent FIRs such as Anchorage, Oakland ARTCCs of the United States and Manila ACC of the Philippines.

Reconvening of the AIDC Task Force

7.27 The meeting was advised of the outcome of ISPACG/20, whereby, the States present requested that APANPIRG give due consideration to the reconvening of the Asia/Pacific AIDC Review Task Force for the purpose of completing an outstanding task within the current Asia/Pacific ATS Interfacility Data Communications Interface Control Document (AIDC ICD), as well as addressing limitations identified within the document.

7.28 The meeting was reminded of the background to the development of the Asia/Pacific AIDC ICD, recalling that APANPIRG/5 (Canberra, March 1994) initiated the task of developing the interfacility message exchanges needed to support automation of ATS inter-facility data exchange.

7.29 It was recognized that Asia/Pacific Region had a great need for a data interchange infrastructure that would significantly reduce the need for verbal co-ordination between Oceanic ACCs. The ATS AIDC standards, which would be developed in an ICD were to provide the means by which data interchange between ATS units providing air traffic service in, and adjacent to, the Asia/Pacific Region would be harmonized during the notification, co-ordination and transfer of control phases of operation.

7.30 APANPIRG/5 (Bangkok, 24-28 October 1994) noted a draft Asia/Pacific Regional ICD for Ground/Ground AIDC, which had been developed based on the work undertaken by the North Atlantic Systems Planning Group (NAT SPG) and ADS Panel, and had been reviewed by the Second Aeronautical Fixed Telecommunications Network (AFTN) Management Task Force and other relevant APANPIRG Sub-Group meetings. Taking into account the respective parts of the reports of each Sub-Group meeting including their draft decisions/conclusions, APANPIRG decided to establish an AIDC Task Force in its Decision 5/1.

7.31 As result of the AIDC Task Force, the Asia/Pacific Regional Interface Control Document For ATS Inter-Facility Ground/Ground Data Communications Version 1.0 was issued on 1 June 1995.

7.32 The APANPIRG/13 (September 2002) noted that several States had attempted to use AIDC to implement automatic communication between air traffic control automation systems. Difficulties had been experienced as adjacent FIRs had connected their systems together (e.g. New Zealand-Australia) resulting in ad hoc agreements about how adjacent systems should communicate via AIDC. Several lessons had been learned and several deficiencies in the AIDC standard exposed. It was considered appropriate that the deficiencies and ambiguities in the existing document be corrected so that States could implement new systems with consistency, confidence and certainty. Therefore, the meeting recognized the need to convene a meeting of the AIDC Task Force to re-examine the regional AIDC ICD, with the objective of removing errors and correcting omissions and uncertainties. APANPIRG/13 Decision 5/1 reconvened the Task Force to examine these issues.

7.33 The AIDC Review Task Force meeting (March 2003) proposed a number of amendments to the AIDC ICD, and Version 2.0 (V2.0) was adopted by APANPIRG/14 (August 2003) under Conclusion 14/3.

Implementation of AIDC ICD Version 2.0

7.34 Recently, as States have commenced software enhancements in order to implement AIDC V2.0 functionality, several areas requiring either clarification or further work have been identified within the document. These include:

a) lack of specific error messages in Appendix B, Table B-1 associated with V2.0 functionality (e.g. an invalid off-track deviation direction); and

b) the small possibility of differing interpretations of the required layout of some of the optional formats, despite the guidance provided by the message examples.

7.35 In addition to the above issues:

a) the format of the FANS message needs to be finalized (it was left marked "to be determined");

b) it would be desirable to amend the FCN message currently defined in the ICD to provide even greater flexibility for the use of this message; and

c) the need for the AIDC "ADS" message needs to be discussed.

7.36 A number of these issues were raised at ISPACG/20 (January-1 February 2006). The meeting discussions concluded with tentative agreement to the definition of the format of the FAN message, as well as modifications to the FCN message.

7.37 ISPACG/20 updated Action Item 17-11 to include the statement that:

An ad hoc group met to develop a plan for AIDC messages. Work would continue following the meeting and be reported to ISPACG/21. ISPACG will recommend that the ICAO Regional AIDC Task Force be reconvened.

7.38 The meeting reviewed the issues raised and agreed with the recommendation of ISPACG/20 for APANPIRG to reconvene the AIDC Review Task Force, on the basis that a single meeting of the Task Force would be held to address a very focused agenda comprising the matters raised above and the material included in **Appendix A** to the Report on Agenda Item 7. Accordingly, the meeting formulated the following draft Decision;

Draft Decision 16/8 – Reconvening of the AIDC Task Force

That, APANPIRG reconvenes the AIDC Task Force for a single meeting to complete the outstanding task of defining the format of the FAN message and addressing other outstanding issues identified in the Asia/Pacific Regional Interface Control Document for ATS Inter-Facility Ground/Ground Data Communications Version 2.0.

Amendment 44 to Annex 11

7.39 The meeting was provided with information on Amendment 44 to Annex 11 applicable on 23 November 2006 The ICAO State Letter 2006/32 was issued on 24 March 2006.

7.40 Amendment 44 introduces the following provisions:

a) new and revised standards, as well as guidance material on the concept of acceptable level of safety, to harmonize safety management requirements in Annexes 6 - *Operation of Aircraft,* 11 - *Air Traffic Services* and 14 – *Aerodromes*, in response to the need to complement the prevailing approach to the management of safety based upon regulatory compliance with a performance-based approach; and

b) a recommended practice that air traffic control units be equipped with devices that record background communication and the aural environment at air traffic controller work stations, which may offer additional information to the accident investigation authority.

OPLINKP proposed amendments

7.41 The meeting was provided with information on Headquarters State Letter SP 52/4-06/41 – "Recommendations of the first meeting of the Operational Data Link Panel (OPLINK/1), issued on 24 April 2006 that included recommendations for amendments to Annexes 2, 4, 6, 10, 11, 15, the PANS-ABC (Doc 8400) and the PANS-ATM (Doc 4444)".

7.42 The meeting noted information in the State Letter and requested that participants bring this to attention to those responsible for this matter in their organizations. Responses should reach ICAO Headquarters by 18 August 2006.

Developments in ATM and AIS in India

7.43 India updated the meeting in relation to recent developments in ATM and AIS in India.

Implementation of ADS/CPDLC system

7.44 ADS/CPDLC had been in operation at Chennai and Kolkata and the system is gaining confidence of the pilots and air traffic controllers. Approximately 40% of aircraft logon to the system. The procedures applicable to aircraft utilizing ADS/CPDLC service within Kolkata and Chennai FIR were promulgated thru AIP Supplement 6 & 7 of 2006 effective from 13th April 2006.

7.45 Operational trials for implementation of ADS/CPDLC at Mumbai (Arabian Sea oceanic airspace) and Delhi are progressing positively. The knowledge and experience gained in ADS/CPDLC implementation at Chennai and Kolkata had made implementation in Delhi and Mumbai efficient and smooth.

7.46 Effective progress has now been achieved towards establishing Central Reporting Agency (CRA). The Board of Airports Authority of India had accorded in-principle approval for the CRA Funding agreement and Government of India approval is awaited prior to signing the agreement with IATA.

Additional ATS routes

7.47 Three new international routes connecting South-East Asia and Europe via northern Indian airspace have been established to enhance airspace capacity.

- ATS route M875 is available within Indian airspace, with the approval of Pakistan ATS authorities this route can extend up to Dera-Ismail-Khan (DI) VOR. ICAO and IATA are requested to coordinate with Pakistan and Afghanistan ATS authorities for the necessary approvals.

- M875 and L509 constitute two parallel flows in northern Indian airspace which connect South-East Asia to Pakistan/Kabul FIR.

Opening of domestic route segments for scheduled international flights

7.48 Scheduled international flight are now permitted to flight plan using domestic ATS route segments to and from destination, departure and approved alternate airports in India which are not connected by international ATS routes. This amendment will provide more flexibility to the international flights to flight plan for the most appropriate alternate airport. The change is published thru AIP Supplement 26/2005.

Varanasi TMA extended.

7.49 Lateral limits of Varanasi TMA have been extended from 22nd Dec 2005. Full TMA is under radar coverage and the radar control service from Varanasi is now available on international route M875 in addition to the existing international routes P646, R460, L509, G590, A201 and B209 apart from the domestic routes. The enhanced level of service has benefited the aircrafts operating on these routes with the availability of optimum cruising levels and direct flight paths. The traffic flow between Delhi TMA and Varanasi TMA has improved significantly.

Mangalore TMA will operate on H24 basis

7.50 Mangalore ACC services are now extended to H24, previously daylight hours only. Mangalore radar control service is now available to aircraft on ATS routes M300, P570 and R461. Planning is in progress to extend lateral limits of Mangalore TMA in the north and west directions so that all aircraft transiting thru this airspace are accommodated at preferred flight levels and direct routings.

Capacity enhancement at Delhi and Mumbai International airports

7.51 To facilitate clearance issue up to 30 min prior to startup, a dedicated channel for Clearance Delivery has been established at Mumbai and Delhi airports. Since the commencement of operations significant improvements have occurred in availability of frequency for other ATC communication.

7.52 Trial operations on near parallel runways at Delhi and crossing runways at Mumbai were carried out after development of operational procedures. ATC personnel were trained in-house for the operations. The assessments of the trial operations on near-parallel runways at Delhi were very encouraging.

7.53 Safety assessment of the operation on near-parallel runways at Delhi has been completed and safety assessment of cross-runway operations at Mumbai is in progress.

Electronic version of AIP India is launched on website

7.54 Electronic version of AIP India (Fifth Edition) is launched on Airports Authority of India website (www.aai.aero). The website allows full browsing access to all the sections of AIP. Sixth edition of AIP INDIA will be published in 2007.

ATS route designator amendments

7.55 Pursuant to discussion in ATM/AIS/SAR/SG/15, ATS routes with inconsistent route designators were identified in which the non-conformance was the result of adding suffix N, S, E W to indicate use of route segment based on flight direction. Such identified route designators were subsequently amended to comply with Appendix 1 to Annex 11. Some route segments have been identified with new ATS route designators. All amendments to route designators have been published thru AIP supplement 10/2006, effective from 11 May 2006.

Implementation of semi-circular system of cruising level below FL150

7.56 Previously, a quadrantal system of cruising levels for IFR/VFR flights below FL150 was in force in India. The system of cruising levels for IFR/VFR flights had now been amended to comply with the semi-circular rule in Appendix 3 to Annex 2, published in AIP Supplement No. 3 of 2006, effective from 13th April 2006.

MATERIAL FOR CONSIDERATION BY AIDC TASK FORCE

Interface Control Document Issues

Part I, 4.5.1
Clarify resolution of variables.
Min/max values of variables
How many characters? Is padding required?

Appendix A

Table A-1
Review the AIDC Core message set

Appendix B
2.2.5
CDN – is there a need to be able to coordinate changes to Field 10?
CDN – changes of destination (as per ICAO AIDC?)

2.4
Define the size of free text field in the EMG message

2.5.4
Complete the definition and format of the FAN message

2.5.5
Amend the definition and format of the FCN message

2.6, 2.6.2
Determine the need for the continued inclusion of the ADS and TRU messages in the AIDC ICD. If either of these messages is to be retained, the format of the message needs to be defined.

Other
Specific error messages are required for the following:

- Errors in block level format;
- Errors in "off track" format;
- Errors in Mach Number format;
- Errors in contents of FAN message;
- Errors in content of FCN message.

Appendix D
5.1
Typo? ("Table 3" should be "Table D-3")

Para 7.1
Add additional examples incorporating FAN/FCN
E.g. add a new example "Standard coordination with CPDLC transfer"

Fig D-1
Amend State transition diagrams to include FAN/FCN? Or create new diagrams incorporating FAN/FCN flight thread.

Appendix E
Table E-1
Update ASIA/PAC AIDC/OPLINK AIDC Relationship Table

Additional discussion points:
- Add table listing AIDC addresses of all States?
- Define truncation?
- What AIDC state can FAN/FCN be transmitted in? Does this need to be defined?
- Update AIDC status of States

– END –

AGENDA ITEM 8

Agenda Item 8: Deficiencies in the Air Navigation field

Review of APANPIRG's List of Deficiencies

8.1 The meeting was reminded that the ICAO Council, at the 164th Session on 30 November 2001, approved the definition of a deficiency as follows:

> *"A deficiency is a situation where a facility, service, or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation".*

8.2 In order to enable APANPIRG and its Sub-Groups to make detailed assessments of deficiencies, States and appropriate organizations (including IATA, IFALPA and IFATCA) are expected to provide formal notification of such deficiencies to the ICAO Asia and Pacific Office for action as appropriate, including action at APANPIRG and Sub-Group meetings. The reporting and assessment of deficiencies should be undertaken in accordance with the requirements of the Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies (Uniform Methodology) described in the APANPIRG Procedural Handbook.

8.3 The meeting reviewed and updated the List of Air Navigation Deficiencies in the ATM/AIS/SAR fields as updated by APANPIRG/16. The updated List is appended at **Appendix A** to the Report on Agenda Item 8

Airspace classification - Japan

8.4 Japan informed the meeting of action taken by JCAB to address the item on airspace classification on the APANPIRG List of Deficiencies reporting that JCAB implemented airspace classifications for oceanic airspace within Fukuoka FIR on 29 September 2005. The classifications in oceanic airspace were as follows:

a) at or above FL200 airspace classified as A;

b) at or above FL55 as E; and

c) below FL55 as G.

8.5 Consequently, the Japanese airspace classification within the Fukuoka FIR has been completed and was published in the AIP-Japan, ENR1.4 et al.

8.6 The meeting noted the action taken by Japan to address the outstanding deficiency in regard to airspace classification and deleted the entry from the APANPIRG Deficiency List in this respect.

IATA report of air navigation deficiencies

8.7 IATA presented information on air navigation deficiencies in the region, identified by IATA and in some cases, IATA was of the view these circumstances were deteriorating. Some of the deficiencies related to the provision of ATS in the Asia/Pacific region, which IATA pointed out had been in existence for a long time and IATA had raised many of these issues in the past, in order that remedial action could be taken.

8.8 Developments such as the implementation of new route structures in the South China Sea and the EMARSSH routes, and the introduction of RVSM in the South China Sea, Bay of Bengal and the domestic airspace of Japan/Republic of Korea provided significant benefits to the airline industry at a time when fuel prices were at a record high. However, IATA was of the view that in many areas the full benefits of the increased capacity of the routes brought about by improved route structures and RVSM implementation were not realized on account of the many deficiencies in the provision of ATS.

8.9 IATA provided examples of some long- standing deficiencies. These include: air - ground and ground-ground communications, use of non- standard R/T phraseology, unintelligible communications due to poor command of English, poor ATC practices and procedures, non-compliance with Annex 14 requirements and non-compliance with Annex 15 notification requirements, etc.

8.10 Examples were provided of the categories of deficiencies as highlighted below:

a) air -ground and ground-ground communications

- frequent inability to establish and maintain two-way communications with the respective ATC units over Yangon, Mumbai (oceanic), Dhaka, Makassar and Kabul FIRs;

- the IATA In flight Broadcast Procedure (IFBP) was in effect in the Yangon FIR

- flights operating in Mumbai FIR experience frequent poor HF communications and congestion. IATA notes that India has implemented ADS/CPDLC in Chennai, Mumbai and Delhi which should go some way towards alleviating the HF communications issues

- reports of loss of HF communications with Makassar ACC occur frequently

- reports recently received of poor communications on the Approach and Tower frequencies with Kathmandu, Nepal

- ground-ground communications and the air-ground communications in the area between Kolkatta/Dhaka/and Yangon continue to cause concern

b) unintelligible communications due to poor command of English and use of non- standard R/T phraseology**.**

- many ATS units in the region were not manned by native English speakers, consequently, there was often a strong presence of local accents by both ATS and pilots, making it harder to understand each other

- standard R/T phraseology should be used at all times and training to achieve ICAO language proficiency Level 4 given priority

c) ATC practices and procedures

- late delivery and fragmenting of the Route Clearance continues to cause concern especially for pilots inputting data to the FMS

- late changes in the SID and level restrictions, at or near the take-off point are equally unhelpful and a potential serious safety concern

d) Non-compliance with Annex 14 requirements

- many airports were not fully compliant with Annex 14, and ill-equipped to handle the increased flow, due to inadequate space in the manouvering areas, leading to complex procedures.

- with the increasing size of aircraft, many airports in the region were unable to meet the requirements to accommodate these aircraft

- hazards by kite flying and uncontrolled fireworks displays in the vicinity of busy international airports, cattle and other domestic animals inside airport perimeters continue to adversely affect operations at some of the busy international airports in the region.

e) Non-compliance with Annex 15 notification requirements

- operators continue to receive insufficient notification of airspace and air route closures, changes to navigation procedures, etc.

- publishing changes in approach procedures at an airport without complying with the Annex 15 requirements resulting in operators not able to comply with new procedures due to necessary charts not being available

- insufficient lead time, and /or implementation on non-AIRAC dates means that flights may not have the relevant charts or data in their FMS to support changes

- same waypoint name with different coordinates being published.

8.11 The meeting recognized that the safety issues raised by IATA have been frequently reported over a number of years and in some cases there appears to be little improvement in the situation. However, some States have made significant efforts to improve their communications and infrastructure, but the meeting recognized that the pace of implementation by many States in the region of the ICAO regional CNS/ATM Plan has not kept pace with operational requirements. APANPIRG had noted this situation and States were urged to accelerate implementation.

8.12 The meeting further noted that there were many institutional difficulties within States resulting in insufficient funding of civil aviation facilities and services. Whilst ICAO has addressed this matter at the highest levels, under funding of civil aviation activities remains a matter of major concern.

8.13 The meeting recognized that ICAO initiatives in the safety field have been given the highest priority and considerable resources and effort were being brought to bear, especially through USOAP, the COSCAP programme, ATM safety management activities and other safety groups. ICAO regional missions in the field had also been highlighting difficulties in the areas reported by IATA.

8.14 The meeting also recognized that in recent times there has been a continued reduction in ICAO resources especially at the regional level with a too few AGA, ATM and flight operations personnel. This restricted ICAO's capability to undertake missions and developmental projects to States. There does not appear to be a ready solution to the problem but priority given to implementing the ICAO requirements for ATM safety management systems by States in accordance with the outcomes of the 2006 Global Conference of Directors General would go a long way to identifying and rectifying operational safety problems.

8.15 The meeting agreed that further emphasis should be given to tackling operational safety problem. In view of the resource constraints of ICAO, consideration should be given to make use of the Special Implementation Project facility, and this matter should be subject to a SIP in the early part of 2007. Accordingly, the meeting formulated the following draft Conclusion:

Draft Conclusion 16/9 — Special Implementation Project to conduct a safety survey

That, in order to examine, prioritize, and recommend mitigating action of identified operational safety deficiencies in the Asia/Pacific Region, ICAO undertake a special implementation project during 2007 to assist States concerned to take remedial action.

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

(Changes proposed **after** APANPIRG/16 are shown in strikeout and underlining.) ***(last updated 30 June 2006)***

Identification		**Deficiencies**			**Corrective action**			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
ATS Routes								
Requirements of Part VIII, Table ATS 1 of the Air Navigation Plan	India/Nepal	A473 - Not implemented	16/3/99	A new proposal was submitted in mid 2003 by Nepal. This is being coordinated by AAI with defense authorities.	India/Nepal - implement the route	India/Nepal	Item captured in Chapter 2 of the Route Catalogue. ATM/AIS/SAR/G/16 (June 2006) updated re progress	B
	China	B591 - Partially implemented	22/7/97		China will consider for future imeplementation.	China	Reviewed by ARNR/TF. Item captured in Chapter 2 of the Route Catalogue ATM/AIS/SAR/G/16 (June 2006) updated - route implemented in Shanghai FIR, however implementation is not in accordance with BANP, further implementation TBD	B
	Indonesia	G461 - Implemented with different route specification	24/11/93	ICAO co-ordinated with Indonesia to amend BANP requirement. APAC00/1-ATS was approved on 15 January 2001.	Indonesia-implement the requirement accordingly.	Indonesia	Implemented with different route specification. Amendment Proposal to be submitted. Captured in Chapter 3 of the Route Catalogue.	B
	Cambodia/Philippines/ Thailand/Viet Nam	G473 - Partially implemented	24/11/93	Co-ordination is in progress among States and ICAO.	ICAO - continue implementation co-ordination.	Cambodia /Philippines Thailand/Viet Nam/ICAO	Captured in Chapter 2 of the Route Catalogue.	B

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
	China/Kazakhstan	R216 - Not implemented	24/11/93	CAAC advises current route B215 KUQA A460 REVKI to Alma Ata meets the requirements for traffic from Urumqi to Alma Ata and requests deletion of R216 from BANP (14 Apr 03).	CAAC will coordinate with Kazakhstan to delete R216 from BANP.	China/Kazakhstan ICAO	Captured in Chapter 2 of the Route Catalogue.	B
	Cambodia/Lao PDR/Thailand	R345 - Not implemented. Under the coordination process.	24/11/93	Cambodia has advised that the requirement is no longer valid and will propose the deletion of requirement in consultation with Lao PDR and Thailand.	Cambodia- coordinate the deletion with IATA as well as Lao PDR and Thailand	Cambodia/Lao PDR/ Thailand	Item captured in Chapter 2 of the Route Catalogue.	B
	Indonesia	R459 - Implemented as W51 and W36	24/11/93	ICAO has requested Indonesia to implement as R459.	Indonesia, Singapore - consider implementation of the route with designator L504.	Indonesia/Singapore	To be implemented as L504. Target implementation date TBD	B
WGS-84								
Requirements of Paragraph 3.6.4 of Annex	Bhutan	WGS-84 - Not implemented	2/7/1999	Data conversion completed, but not published		Bhutan	TBD	A

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
	Cambodia	WGS-84 - Partially implemeted	28/6/2001	Cambodia reported ICAO on 22 June 2004 that the WGS-84 coordinates have been implemented in international airports, airspace and international routing.		Cambodia	TBD	A
	China	WGS-84 - Not implemented * implemented in the Sanya ~~AOR~~ FIR as of 1 Nov 2001	2/7/1999	Differences to Annex 15 - *Aeronautical Information Services* are notified		China	Planning in progress China promoting actively, coordination with Regulatory Department in progress	A
	DPR Korea	WGS-84 - Not implemented				DPR Korea	2004	A
	Kiribati	WGS-84 - Not implemented				Kiribati	TBD	A
	Nauru	WGS-84 - Not implemented		Conferring with consultant		Nauru	TBD	A
	Philippines	WGS-84 - Implemented at ~~main~~international airports		on-going		Philippines	2006	A
	Solomon Islands	WGS-84 - Not implemented				Solomon Islands	1999	A
	Vanuatu	WGS-84 - Implemented at main airports	2/7/1999			Vanuatu	1999	A

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
Type of ATS								
Requirements of Part II, Table ATS 3D of the air navigation plan	India	Some ATS route segments in part of Mumbai FIR are subject to Advisory Services	24/11/93	Co-ordination in progress through BBACG. HF radio being modernized and datalink being installed.	India - implement Area Control Services	India	~~Modernization of HF radio by the end of 2004, CPDLC by the end of 2005.~~ ATM/AIS/SAR/G/16 (June 2006) updated re CPDLC trial progressing well, CRA to be established soon, implementation of CPDLC will enable update to control services FL290-FL410.	A

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
Airspace Classification								
Requirements of Paragraph 2.6 of Annex 11	China	Airspace Classification - Not implemented	7/7/99		Difference to Annex 11 is published in AIP, China.	China	ATM/AIS/SAR/G/16 (June 2006) updated, planning in progress to divide into 4 classes of airspace, some differences to ICAO airspace classifications	A
	~~Cook Islands~~	~~Airspace Classification - Not implemented~~	~~7/7/99~~			~~Cook Islands~~	~~Airspace classified, described in New Zealand Airspace Register~~	~~A~~
	DPR Korea	Airspace Classification - Not implemented	7/7/99			DPR Korea	2005	A
	~~Japan~~	~~Airspace Classification - Partially implemented~~	~~2/19/04~~		~~Implementation in oceanic airspace in progress~~	~~Japan~~	~~Domestic airspace complete, final stage of oceanic airspace classification done on AIRAC 29 September 2005, included in AIP Japan ENR 1.4~~	~~A~~
	Kiribati	Airspace Classifcation - Not implemented	7/7/99			Kiribati	TBD	A
	Nauru	Airspace Classification - Not implemented	7/7/99			Nauru	TBD	A
	Papua New Guinea	Airspace Classification - Not implemented	7/7/99			Papua New Guinea	Project in place	A
	~~Samoa~~	~~Airspace Classification - Not implemented~~	~~7/7/99~~		~~CTR C and D Samoa Sector Class G~~	~~Samoa~~	~~Completed Official confirmation required Airspace classified, described in New Zealand Airspace Register~~	~~A~~

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
	Solomon Islands	Airspace Classification - Not implemented	7/7/99			Solomon Islands	TBD	A
	Viet Nam	Airspace Classificatio - Not implemented	7/7/99			Viet Nam	~~Some work is being carried out, expected completion 2006~~ ATM/AIS/SAR/G/16 (June 2006) updated- National Assembly adopted Civil Air Law on 26 June 2006, regulations will be prepared accordingly expected completion 2007.	A

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
AIP Format								
Requirements of Chapter 4 of Annex 15	Cook Islands	AIP Format - Not implemented	7/7/99			Cook Islands	~~TBD~~ ATM/AIS/SAR/G/16 (June 2006) updated - AIP COOK ISLANDS in new format in progress with assistance of New Zealand, effective date TBD	A
	Kiribati	AIP Format - Not implemented	7/7/99			Kiribati		A
	Lao PDR	AIP Format - Not implemented	7/7/99			Lao PDR	Completed	A
	Nauru	AIP Format - Not implemented	7/7/99			Nauru		A
	Papua New Guinea	AIP Format - Not implemented	7/7/99	under development		Papua New Guinea	TBA	A
	~~Samoa~~	~~AIP Format - Not implemented~~	~~7/7/99~~			~~Samoa~~	~~5/15/2003 (to be confirmed) AIP SAMOA in new format was published effective 4 August 2005, NZ AIP SUPP 91/05 refers~~	~~A~~
SAR capability								
~~Requirements of Annex 12~~	~~Cambodia~~	~~Annex 12 requirements implemented.~~	~~20/2/97~~		~~Cambodia - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States~~	~~Cambodia~~	~~SAR agreement established with Viet Nam during 2004/05 - Completed~~	~~U~~

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
	Cook Islands	Annex 12 requirements not implemented. No agreements with adjacent States.	31/1/95	SAR agreement with New Zealand under development	Cook Islands - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Cook Islands	2004	U
	Maldives	Annex 12 requirements not implemented. No agreements with adjacent States.	24/4/97	SAR services and facilites provided (details to be confirmed). SAR agreements with neighbouring States under development	Maldives - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Maldives	2004	U
Carriage of ACAS II								
Requirement of Chapter 6 of Annex 6	Bhutan	Annex 6 requirement not implemented.	26/8/05		Bhutan - implement Annex 6 as required.	Bhutan	TBD	U
	Cook Islands	Annex 6 requirement not implemented.	26/8/05		Cook Island - implement Annex 6 as required.	Cook Islands	TBD	U
	Fiji	Annex 6 requirement not implemented.	26/8/05		Fiji - implement Annex 6 as required.	Fiji	TBD	U
	Kiribati	Annex 6 requirement not implemented.	26/8/05		Kiribati - implement Annex 6 as required.	Kiribati	TBD	U

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
	Marshall Islands	Annex 6 requirement not implemented.	26/8/05		Marshall Islands - implement Annex 6 as required.	Marshall Islands	TBD	U
	Micronesia	Annex 6 requirement not implemented.	26/8/05		Micronesia - implement Annex 6 as required.	Micronesia	TBD	U
	Nauru	Annex 6 requirement not implemented.	26/8/05		Nauru - implement Annex 6 as required.	Nauru	TBD	U
	Palau	Annex 6 requirement not implemented.	26/8/05		Palau - implement Annex 6 as required.	Palau	TBD	U
	Papua New Guinea	Annex 6 requirement not implemented.	26/8/05		Papua New Guinea - implement Annex 6 as required.	Papua New Guinea	TBD	U
	Philippines	Annex 6 requirement not implemented.	26/8/05		Philippines - implement Annex 6 as required.	Philippines	TBD	U
	Solomon Islands	Annex 6 requirement not implemented.	26/8/05		Solomon Islands - implement Annex 6 as required.	Solomon Islands	TBD	U
	Tonga	Annex 6 requirement not implemented.	26/8/05		Tonga - implement Annex 6 as required.	Tonga	TBD	U
	Vnuatu	Annex 6 requirement not implemented.	26/8/05	Pressure altitude reporting transponder required in all airspace since 1/1/00.	Vanuatu - implement Annex 6 as required.	Vanuatu	TBD	U
Carriage of Pressure Altitude Reporting Transponder								
Requirement of Chapter 6 of Annex 6	Bangladesh	Annex 6 requirement not implemented.	26/8/05	ACAS II required since 1/1/03.	Bangladesh - implement Annex 6 as required.	Bangladesh	TBD	U

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
	Bhutan	Annex 6 requirement not implemented.	26/8/05		Bhutan - implement Annex 6 as required.	Bhutan	TBD	U
	Cambodia	Annex 6 requirement not implemented.	26/8/05	ACAS II required in all airspace within FIR since 1/1/03.	Cambodia - implement Annex 6 as required.	Cambodia	TBD	U
	Cook Islands	Annex 6 requirement not implemented.	26/8/05		Cook Island - implement Annex 6 as required.	Cook Islands	TBD	U
	DPR Korea	Annex 6 requirement not implemented.	26/8/05	ACAS II required in all airspace within FIR since 1/1/01.	DPR Korea - implement Annex 6 as required.	DPR Korea	TBD	U
	Fiji	Annex 6 requirement not implemented.	26/8/05		Fiji - implement Annex 6 as required.	Fiji	TBD	U
	New Caledonia	Annex 6 requirement not implemented.	26/8/05	ACAS II required in all airspace within FIR since 23/1/03.	New Caledonia - implement Annex 6 as required.	New Caledonia	TBD	U
	Kiribati	Annex 6 requirement not implemented.	26/8/05		Kiribati - implement Annex 6 as required.	Kiribati	TBD	U
	Lao PDR	Annex 6 requirement not implemented.	26/8/05	ACAS II required in all airspace within FIR since 1/1/03.	Lao PDR - implement Annex 6 as required.	Lao PDR	Competed	U
	Marshall Islands	Annex 6 requirement not implemented.	26/8/05	ACAS II required.	Marshall Islands - implement Annex 6 as required.	Marshall Islands	TBD	U
	Micronesia	Annex 6 requirement not implemented.	26/8/05		Micronesia - implement Annex 6 as required.	Micronesia	TBD	U

AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
	Nauru	Annex 6 requirement not implemented.	26/8/05		Nauru - implement Annex 6 as required.	Nauru	TBD	U
	Palau	Annex 6 requirement not implemented.	26/8/05		Palau - implement Annex 6 as required.	Palau	TBD	U
	Papua New Guinea	Annex 6 requirement not implemented.	26/8/05		Papua New Guinea - implement Annex 6 as required.	Papua New Guinea	TBD	U
	Philippines	Annex 6 requirement not implemented. Implemented within TMA only.	26/8/05		Philippines - implement Annex 6 as required.	Philippines	TBD	U
	Solomon Islands	Annex 6 requirement not implemented.	26/8/05		Solomon Islands - implement Annex 6 as required.	Solomon Islands	TBD	U
	Tonga	Annex 6 requirement not implemented.	26/8/05		Tonga - implement Annex 6 as required.	Tonga	TBD	U

AGENDA ITEM 9

Agenda Item 9: Review of Global DGCA Conference and ALLPIRG/5 Outcomes

Sixth Directors General of Civil Aviation Conference on a Global Strategy for Aviation Safety (DGCA/06

9.1 The meeting considered the outcomes of DGCA/06 Conference held on 20-22 March 2006 at ICAO Headquarters, Montreal related to the work of the Sub-Group. The Conference was attended by 567 participants from 153 Contracting States and 26 international organizations.

9.2 It should be noted that the purpose of the Conference was to reach consensus on a Global Strategy for Aviation Safety in the 21st century. The Conference was advised that 2003 and 2004 were the safest years since the creation of ICAO in 1944, however, six major accidents in August and September of 2005 had claimed more lives than in all of 2004. Those accidents were timely reminders that systemic deficiencies identified under the Universal Safety Oversight Audit Programme (USOAP) since 1999 were still present.

9.3 The meeting noted that in the context of ATM/AIS/SAR/SG, much of the material in both the Declaration and the list of Conclusions and Recommendations was of relevance, with particular emphasis on paragraphs 1 a), c), d), 4 and 5 a) e) of the Declaration. The meeting noted that Conclusion and Recommendation 2/2 a) and b) regarding the implementation of Safety Management Systems and Recommendation 3/1 g) and h) regarding consideration of the development of a new 'safety management' Annex to the Convention were of particular importance to the Sub-Group.

9.4 Significantly, the meeting noted that in recognizing that the transparency and sharing of safety information were fundamental tenets of a safe air transport system, the DGCA/06 Conference had agreed to post results from the ICAO Universal Safety Oversight Audit Programme (USOAP) on the ICAO public website by March 2008. A public announcement to this effect was made by the Conference by way of a News Release to the global media**.**

9.5 The full report of the DGCA/06 Conference is available from the ICAO website at http://www.icao.int/index.html under the 'Meetings' menu.

9.6 In light of the above, the meeting agreed to include on its task list items in respect to Conclusion and Recommendation 2/2 a) and b) in relation to the implementation of safety management systems by States.

Fifth Meeting of the ALLPIRG Advisory Group (ALLPIRG/5

9.7 The meeting reviewed the outcomes of ALLPIRG/5 held at ICAO Headquarters, Montreal from 23 to 24 March 2006 related to the work of the Sub-Group. It was attended by one hundred participants from six planning and implementation regional groups (PIRGs), five global and regional service providers, four international organizations and fifty-one observers. The 18 Conclusions raised by ALLPIRG/5 have been included as **Appendix A** to the Report on Agenda Item 9 and a copy of the full report of ALLPIRG/5 is available from http://www.icao.int/index.html under the 'Meetings' menu.

9.8 ALLPIRG/5 received a comprehensive presentation on the draft second amendment of the Global Air Navigation Plan covering past, present and future work associated with achieving a global ATM system. ALLPIRG/5 agreed that ICAO should conduct a series of workshops at the Regional Offices dealing with the integration of the revised planning processes and GPIs into the current planning framework, and the utilization of the planning tools and methodologies.

Environmental benefits of CNS/ATM systems

9.9 ALLPIRG/5 was appraised of an update on the work of the ICAO Committee on Aviation Environmental Protection (CAEP) and on methodologies for the assessment of the environmental benefits of CNS/ATM systems at the global and regional levels. ALLPIRG/5 invited ICAO to undertake a study on the environmental benefits of the introduction of RVSM.

9.10 The meeting noted that this item has already been addressed in the implementation of airspace changes in the Asia/Pacific Region. The RVSM Task Force had regularly provided estimates of environmental benefits achieved during its implementation process. Also, the APANPIRG ATS Route Catalogue provides such estimates in consideration of new and revised ATS routes. The meeting agreed that this matter would continue to be given due priority in the implementation of airspace changes.

Outcome of and follow-up to the DGCA Conference

9.11 ALLPIRG/5 agreed that each PIRG should develop a practical means of implementing the conclusions and recommendations of the DGCA/06 Conference and submit reports to ICAO on a regular basis.

9.12 As a follow-up to the DGCA/06 Conference, ALLPIRG/5 addressed areas of ATM safety requiring urgent, high-priority attention and consequently requested ICAO to urge States to give priority to the establishment and effective operation of their ATM safety management and safety regulatory functions. ALLPIRG/5 further agreed on encouraging States to share safety data.

9.13 The meeting noted the priority ALLPIRG/5 attached to this important safety matter and this subject was being fully addressed by RASMAG and through other initiatives taken by the ICAO such as the SMS training courses in September 2006, ATM SMS SIP and ATM SMS seminars.

Aviation Security

9.14 ALLPIRG/5 received a report on the progress made in the Universal Security Audit Programme (USAP) and its overall impact in identifying deficiencies in States' aviation security system and providing recommendations for their resolution.

Interregional coordination and harmonization

Cost-recovery arrangements for RMAs

9.15 ALLPIRG/5 noted that in some of the regions the funding of regional monitoring agencies (RMAs) is the main obstacle for the continuation of monitoring operations. ALLPIRG/5 noted that the proposed global approach would be finalized subsequent to its review by the sixth meeting of the Air Navigation Services Economics Panel (ANSEP/6), held at ICAO Headquarters from 27 to 31 March 2006.

9.16 The meeting recognized that this matter which had been raised in APANPIRG /14 was being fully addressed by RASMAG and the implementation groups responsible for establishing RMAs, SMAs and CRAs for the introduction of airspace changes requiring safety monitoring services to be established. This subject has been addressed in detail under Agenda Item 6 to this report.

Coordination amongst RMAs

9.17 ALLPIRG/5 suggested that the ICAO European and North Atlantic (EUR/NAT) Office act as the initial focal point to carry out required coordination and standardization tasks amongst RMAs globally.

Monitoring data link applications

9.18 ALLPIRG/5 acknowledged that regional CRAs cannot independently manage FANS-1/A data link operations on a global scale and that having many different regional CRA functions would probably delay identification and resolution of encountered problems. Consequently, the meeting accepted the benefits of adopting the concept of a global CRA function, but considered that, at this stage, it would be premature to endorse such a proposal and that a business case would be needed before endorsing it.

9.19 The meeting noted that this matter has been addressed under Agenda Item 9 to this report.

Global harmonization of RNP/RNAV implementation

9.20 The meeting noted that ICAO was in the process of reviewing the current RNP concept to meet the increasing demands of airspace planners and aircraft operators for performance-based navigation (PBN). ALLPIRG/5 supporting the PBN programme, called on ICAO to organize workshops and training activities and agreed that all PIRGs should implement the PBN concept.

9.21 The meeting noted that this matter was being addressed by the Asia/Pacific ATS coordination groups and was on the task list of RASMAG to be kept under review.

Uniform Methodology

9.22 On the subject of deficiencies, ALLPIRG/5 agreed to the application in all the regions of regional online databases of air navigation deficiencies.

9.23 In relation to the elimination of long-standing deficiencies, the meeting adopted a proposal that calls for implementation of “last resort action” by all PIRGs when efforts to eliminate deficiencies prove unsuccessful after exhausting all alternatives. The last resort action consists of two parts: first, propose the inclusion of an alternate facility/procedure in the ANP; and, second, if this is not feasible, States, users and ICAO should be provided with an analysis concerning the risk associated with such a deficiency.

9.24 The meeting agreed that further work would be required to progress this matter and a new task was included on the Sub Group Task List.

Meeting of Global RMAs

9.25 In reviewing ALLPIRG/5 Conclusion 5/12, the meeting noted that RASMAG/5 gave in-principle support to a meeting of all RMAs globally under the auspices of the EUR/NAT Office of ICAO but considered that there were a number of issues to be considered in deciding the arrangements for such a meeting of paramount importance was choosing a venue and timing for the meeting that would enable maximum attendance by as many RMAs as possible and a suitable agenda for the meeting would need to be agreed well in advance.

Global Air Navigation Plan

Proposal for a Global Central Reporting Agency (CRA)

9.26 The meeting was informed that ALLPIRG/5 had considered a working paper presented by SITA titled "Establishment of a FANS Global Central Reporting Agency", a copy of which was reviewed by the meeting. The SITA working paper noted that recent satellite data link performance issues caused in part by increases in data link traffic had shown that since all FANS users across different ICAO regions depend on a common global satellite data link network, the traffic generated by users in one region impacted on the network performance delivered to users other regions, thereby making it impossible to manage or plan the performance of the satellite communications network on a regional basis.

9.27 The SITA paper considered that regional CRA functions could not independently manage the use of a global network and that having many different CRA functions would probably delay identification and resolution of performance issues. SITA had concluded that the management of a global satellite data link network which cannot be tailored to meet the needs of specific ICAO regions or sub-regions called for a global CRA function that would serve all regional FANS Interoperability/Implementation Teams (FITs). SITA saw the primary advantages of a global CRA function as the promotion of consistent approaches to FANS implementation across all ICAO regions and an increased awareness and information sharing between the regional FITs.

9.28 In reviewing the SITA proposal, ALLPIRG/5 had recognized the benefits of adopting the concept of establishing a global CRA function to support the regional FITs across all ICAO regions, but considered that, at this stage, it would be premature to endorse such a proposal and that a business case would be needed before endorsing it. A subsequent review of the ALLPIRG/5 report by the Air Navigation Commission (C-WP/12694 refers) clarified that it was necessary for this issue to be examined by APANPIRG before ICAO Headquarters initiated any action.

9.29 ATM/AIS/SAR/SG/16 recalled the history of regional datalink implementation, noting that the ISPACG first established FIT following discussions at ISPACG/11 (December 1996), which identified the need for such a group to provide quality control and monitoring of the FANS-1/A system integrity and performance. In this context, the ISPACG FIT established a central reporting agency (CRA) in 1997 in accordance with the APANPIRG CNS/ATM Guidance Material. Other areas in the Asia/Pacific Region have progressively implemented similar measures based on the ISPACG planning and implementation model.

9.30 In considering the increasing implementation of data link capability and reduced horizontal and vertical separation minima throughout the Asia/Pacific Region, APANPIRG/14 (August 2003) addressed the need for a transparent airspace safety oversight capability, to which all States could contribute and participate, by establishing the Regional Airspace Safety Monitoring and Advisory Group (RASMAG) under Decision 14/48. Under the oversight of RASMAG all safety related activities in the Asia/Pacific Region are reviewed and reports of all monitoring agencies including FITS and associated CRAs are submitted to RASMAG for review.

9.31 Using this information RASMAG gains an overview picture of the safety of international airspaces in the region subject to ICAO safety monitoring requirements. The process also ensures that all regional monitoring agencies share their lessons learnt and facilitates harmonization of their operating procedures and practices. Arising from the results of these activities, ICAO Headquarters and other regional planning groups are kept up to date on developments in the Asia/Pacific Region.

9.32 It should also be noted that the regionally authored FANS Operations Manual (FOM) had been adopted by APANPIRG (APANPIRG/15 Conclusion 15/7 refers), and all States in the Asia/Pacific Region were advised to use this document as a basis for operating ADS-C and CPDLC in conjunction with relevant ICAO documentation, in particular for FANS-1/A operations. ICAO Headquarters has now taken over the development of the FOM to harmonize with other regional and international material in the expectation of eventually producing a global document for data link operations.

9.33 The meeting considered that it was evident from the above history that the advantages identified to ALLPIRG/5 by SITA i.e. the promotion of consistent approaches to FANS implementation across all ICAO regions and an increased awareness and information sharing between the regional FITs were already being realized in the Asia/Pacific Region. The meeting noted that the Asia/Pacific Region presently had the majority of data link related operations and considered that a harmonized approach had already been adopted.

9.34 The meeting was disappointed that this information had not been available to ALLPIRG/5 during the discussions in relation to a Global CRA and felt that it was possible that ALLPIRG/5 had not been fully informed as a result. There were many issues to be resolved if a Global CRA was to be implemented, including State sovereignty, legal and funding issues as well as the commercial competition issues between data services providers (e.g. SITA & ARINC) and CRA services providers (e.g. Boeing, Japan CRA & Airbus). Also, regional experiences had demonstrated instances where local peculiarities in data link operations had required local solutions, rather than global fixes.

9.35 Japan pointed out that in their consideration the life of a FIT and associated CRA was not open ended. Once a implementation of 30NM longitudinal/30 NM lateral had stabilized, there would be no further need for CRA functions and therefore making any significant investment in a specialized Global CRA was not warranted. The meeting also did not see the need for an additional layer of CRA functions over what was already in place. In concluding that there were many issues to be addressed, the meeting agreed with ALLPIRG/5 that it was premature for such a proposal to be considered for endorsement. The meeting was strongly against the proposal.

ALLPIRG/5 List of Conclusions

Conclusion 5/1 Increases Efficiency (Strategic Objective D). Relates to all GPIs	**Workshops on the Global Plan for Regional Offices** That, in support of the Global Plan, ICAO conduct workshops in the Regional Offices to provide training on planning tools and methodologies as well as strengthening the interaction between technical officers at Headquarters and Regional Offices.
Conclusion 5/2 Increases Efficiency (Strategic Objective D). Relates to all GPIs	**Implementation of Global Plan Initiatives (GPIs)** That, recognizing that the evolution continues from a systems-based to a performance-based approach to planning and implementation of the air navigation infrastructure, the regional planning groups: a) note that the Global Plan is a significant component in the development of regional and national plans and that, together with the global ATM operational concept, provide an effective architecture for achieving a harmonized and seamless Global ATM system b) identify GPIs that most closely align with the well established implementation plans of their respective regions; c) select GPIs that would be most effective in achieving the objectives of the region while ensuring continuation of the work already accomplished; d) implement GPIs that take into account the Initiatives across regions, to align work programmes and to develop national and regional plans that facilitate achieving a Global ATM system; e) utilize the planning tools as the common planning and implementation mechanism, thereby ensuring proper coordination and global integration; and f) review, at each PIRG meeting as a part of its regular agenda, the progress achieved and challenges identified in the implementation of GPIs using a common template.
Conclusion 5/3 Increases Efficiency (Strategic Objective D). Relates to all GPIs	**Workshop on the business case model for communications, navigation, and surveillance/air traffic management (CNS/ATM) Systems** That, in support of the development of business cases for the implementation of CNS/ATM Systems, ICAO convene a training workshop for States at the Regional Offices through an appropriate mechanism, such as Special Implementation Projects (SIPs).

Conclusion 5/4 Increases Efficiency (Strategic Objective D). Relates to all GPIs	**Application of the business case model for CNS/ATM** That PIRGs, States and airspace users: a) note that business cases for the implementation of CNS/ATM Systems leading to a global ATM system is a key element in the development of regional, sub-regional and national plans; b) consider the application of the model for the development of business cases in the formulation of national and sub-regional plans with a view to facilitating the achievement of a global ATM system; and c) establish, with ICAO's assistance and within the limits of the programme budget, a network of experts on cost-effectiveness, cost-benefit analyses and business cases for the implementation of CNS/ATM Systems in order to share expertise and to provide assistance to the Regional Offices.
Conclusion 5/5 Increases Efficiency (Strategic Objective D). Relates to all GPIs	**ICAO Global air navigation plan (ANP) database and geographic information system (GIS) portal** Recognizing that access to an ICAO Global ANP database and associated planning services through an web-based ICAO GIS portal would constitute an invaluable tool in supporting, integrating and monitoring the planning and implementation of harmonized regional, interregional and global air navigation infrastructures, the regional planning groups: a) note the progress made by the Secretariat in accordance with Recommendation 1/14 of AN-Conf/11 and the ICAO Global ANP database; b) note the ongoing efforts by the Secretariat in harmonizing formats of all the ANP tables together with the inclusion of temporal information in the tables that would assist the regional planning groups in monitoring and analysing the implementation progress; c) note the intent to expand the ANP tables to include Global Plan Initiatives (GPIs), as appropriate; and d) utilize, through the ICAO GIS portal, the ICAO Global ANP database and associated planning services so as to ensure the currency, coordination and implementation of regional air navigation planning and to contribute to the further development of air navigation plans as the framework for the efficient implementation of new air navigation systems and services at the national, regional, interregional and global levels.
Conclusion 5/6 Increases Efficiency (Strategic Objective D). Relates to all GPIs	**Development of planning tools** That ICAO, in the development of planning tools and services, should accommodate requirements established by the Regional Offices, as well as to take into account similar tools developed by other organizations such as EUROCONTROL.

Conclusion 5/7 Minimizes environmental impact (Strategic Objective C)	**Environmental benefits of CNS/ATM Systems** That PIRGs and States: a) use the Committee on Aviation Environmental Protection (CAEP) provided CO_2 conversion factor in the analysis of environmental benefits of implementing CNS/ATM Systems; b) prioritize the implementation of voluntary, operationally-based improvements in their air traffic management systems, with emphasis on fuel savings, emissions reductions and noise benefits, and also to mitigate costs to the industry; c) provide feedback to ICAO on studies conducted on the environmental benefits of implementing CNS/ATM Systems; and d) share air traffic data to improve future CAEP assessments, in line with State letter AN 1/17-03/86.
Conclusion 5/8 Increases Efficiency (Strategic Objective D). Relates to GPI 7	**Globally coordinated air traffic services (ATS) routes** That PIRGs: a) establish a global consolidated, prioritized list of routes and terminal area (TMA) improvements in close coordination with airspace users; and b) work with neighbouring PIRGs/States/air navigation service providers (ANSPs) to accelerate international route improvements.
Conclusion 5/9 Increases Efficiency (Strategic Objective D). Relates to GPI 5	**Terminal area (TMA) structure and area navigation** That States: a) employ area navigation in all TMAs, including appropriate arrival and departure procedures, to improve efficiency and reduce emissions in the vicinity of airports; and that, in special cases where there are particularly challenging obstacles and where air traffic density is very high and additional approach paths are possible, the more precise and contained required navigation performance (RNP) procedures be employed; and b) review operations, procedures and training of controllers to ensure the optimum management of air traffic services.
Conclusion 5/10 Minimizes environmental impact (Strategic Objective C) Relates to GPI 2	**Environmental benefits of RVSM introduction and regional expertise** That ICAO: a) undertake a study on the environmental benefits of the introduction of RVSM and to ensure that this information is transmitted to policy makers; and b) seek appropriate support from recognized expert organizations in its work on quantifying the environmental benefits of RVSM, noting the support offered by EUROCONTROL in this regard.

Conclusion 5/11 Increases Safety (Strategic Objective A)	**Air traffic management (ATM) safety management** That ICAO: a) urge States to give priority to the establishment and effective operation of their ATM safety management and safety regulatory functions; b) support the development of sufficient expertise levels in the industry through formal training in ATM safety issues and, by cooperation through regional bodies, promote collective means to optimize the effectiveness of training provision; and c) develop further measures to enable the implementation of a "just-culture" reporting environment to facilitate the reporting of ATM occurrences.
Conclusion 5/12 Increases Efficiency (Strategic Objective D). Relates to GPI 2	**Coordination between regional monitoring agencies (RMAs)** That the ICAO EUR/NAT Office act as the initial focal point for the required coordination between RMAs in order to: a) facilitate the exchange of monitoring and operational data between RMAs; b) facilitate the exchange information about best practices between RMAs; c) ensure that incident reports are correctly disseminated to the appropriate RMA; d) provide a forum to manage changes to monitoring requirements; and e) ensure the maintenance of the RMA Handbook.
Conclusion 5/13 Increases Efficiency (Strategic Objective D). Relates to GPI 5	**Implementation of performance-based navigation concept** That, to increase awareness and understanding of the performance-based navigation concept and its elements: a) ICAO organize workshops and training activities; and b) where area navigation (RNAV) or required navigation performance (RNP) implementations are required, these will be implemented by PIRGs and States according to the performance-based navigation concept.
Conclusion 5/14 Increases Safety (Strategic Objective A)	**A regional online database of air navigation deficiencies** That, PIRGs consider establishing and maintaining a regional online database of air navigation deficiencies that ensures transparency and provides a secure access to authorized users.

Conclusion 5/15 Increases Safety (Strategic Objective A)	**Last resort action to resolve regional air navigation deficiencies** That, when efforts to eliminate deficiencies prove unsuccessful after exhausting all alternatives, PIRGs adopt the following last resort action, which consists of the two parts: a) propose the inclusion of an alternate facility/procedure in the air navigation plan (ANP); or b) when a corrective action as a) above cannot be recommended, provide the State(s)/Territory(ies)/users and ICAO with an analysis concerning risk associated with such a deficiency.
Conclusion 5/16 Increases Efficiency (Strategic Objective D). Relates to GPI 22	**Implementation of very small aperture terminals (VSATs)** That PIRGs: a) discourage the proliferation of VSAT networks where one/some of the existing ones can be expanded to serve the new areas of interest; b) work towards integrated regional/interregional digital communication networks with a single (centralized) operational control and preferably based on the Internet Protocol (IP); and c) give due consideration to managed network services (e.g. a virtual private network (VPN)), subject to availability and cost-effectiveness.
Conclusion 5/17 Increases Efficiency (Strategic Objective D). Relates to GPI 22	**Provisions for digital communication networks** That ICAO: a) expedite the development of provisions relating to the use of the Internet Protocol Suite (IPS) in the aeronautical telecommunication infrastructure; and b) initiate the development of provisions governing the end-to-end performance of digital communication networks, irrespective of the technologies and protocols utilized therein.
Conclusion 5/18 Increases Efficiency (Strategic Objective D). Relates to all GPIs	**Changes to the Regional Supplementary Procedures (SUPPs) (Doc 7030)** That ICAO: a) restructure the SUPPs (Doc 7030) by the complete reordering and reorganization of the material; b) align the area of application of the SUPPs with the area of application of the regional air navigation plans (ANPs); and c) make SUPPs available on a CD as well as on the ICAO website.

AGENDA ITEM 10

Agenda Item 10: Any other business

ICAO Universal Safety Oversight Audit Programme (USOAP)

10.1 The meeting was reminded that during the 35th Session (2004), the ICAO Assembly resolved (Resolution A35-6) that the ICAO Universal Safety Oversight Audit Programme (USOAP) be further expanded to include the safety-related provisions contained in all safety-related Annexes to *The Convention on International Civil Aviation*.

10.2 Full audit reports, including State corrective action plans aimed at addressing audit findings, are made available to all ICAO Contracting States via an ICAO website requiring password access.

10.3 Under the comprehensive systems approach, audits are conducted in consideration of the safety related provisions of 16 of the 18 ICAO Annexes, rather than Annexes 1, 6 and 8 as were considered during previous ICAO audit regimes.

10.4 Audit tools developed by the ICAO Safety Oversight Audit office include:

- SOA Quality Manual;
- State Aviation Activities Questionnaire (SAAQ);
- Compliance Checklist (CC); and
- Audit Protocols (standardised audit questions)

10.5 All Contracting States scheduled for a safety oversight audit in 2006 and 2007 have been provided with the official audit notification from ICAO, informing them of the proposed dates for the conduct of the audit, and forwarding the Memorandum of Understanding (MOU). The Safety Oversight Audit (SOA) Section maintains continuous contact with States regarding upcoming audits through the National Safety Oversight Coordinator appointed by each Contracting State.

10.6 A number of States in the Asia/Pacific region have already been audited. These include Thailand, Malaysia, Fiji, Vanuatu (including PASO), New Zealand, and the Solomon Islands.

10.7 The USOAP tentative work programme for the next 18 months is available from the Safety Oversight Audit (SOA) section at ICAO Headquarters and proposes audits of Asia Pacific States as follows. Actual dates should always be confirmed with SOA.

- Bhutan 3rd quarter 2006,
- India 4th quarter 2006,
- Indonesia 1st quarter 2007,
- Timor-Leste 1st quarter 2007,
- China 1st quarter 2007,
- Cambodia 4th quarter 2007, and
- Viet Nam 4th quarter 2007.

Required Communication Performance (RCP) Concept

10.8 The meeting was provided information on the RCP concept under development by ICAO and an update on the progress to date of the work of the ICAO Operational Data Link Panel (OPLINKP) responsible for this matter.

10.9 The RCP concept provides a means to ensure the acceptable performance of communications within a complete ATM system by characterizing the performance required for communication capabilities that support ATM functions without reference to any specific technology, and was open to new technology. The RCP concept also assesses operational communication transactions taking into account human interactions, procedures and environmental characteristics.

10.10 Development of SARPs, procedures and guidance material relating to the use of RCP was completed by the First Meeting of the OPLINK Panel in September 2005. The proposed amendments include Annex 6 — *Operation of Aircraft*, Annex 11 — *Air Traffic Services*, and the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444). These amendments would have a significant effect on flight planning and there would be a need to amend the ICAO flight plan to allow for an indication that an operator was approved for operations in accordance with the RCP type prescribed for the ATS route and/or area concerned.

10.11 In this regard, it should be noted that the current flight plan structure may not permit the indication of varying performance criteria (such as varying RCP types, RNP types, etc.) along a route of flight or for providing multiple levels of service within a single airspace.

10.12 In reviewing the draft *Manual on Required Communication Performance*, OPLINKP/1 considered that the Manual should be published in all languages of ICAO as a matter or urgency.

10.13 The meeting recognized the importance of the work undertaken by OPLINKP and the role that RCP would play in the future specification of communication requirements. In this regard, when considering implementation of ATM requirements in the future, particular attention would need to be given to specifying and meeting RCP requirements. Also, it would be necessary to include this element in safety assessments and collision risk modeling. Accordingly, implementation projects in the region would need to adjust their task lists to reflect this aspect.

10.14 The meeting was of the view that RCP would lead to closer coordination and cooperation with CNS considerations and it would therefore be necessary to ensure that CNS expertise was an integral part of any implementation project team. In this regard, a through understanding of the RCP concept and how it would be applied in an operational context was considered essential for application of ATM system changes involving communications. The ICAO Manual on RCP would be an important source of guidance and should be considered as planning reference material for ATM implementation groups in the region.

ICAO Language proficiency survey

10.15 The meeting was informed by the Secretariat of the results of the ICAO Headquarters global survey to ascertain the status of implementation of language proficiency provisions. State letter Ref.: T3/9.4 – AP128/05 (ATM) was issued by the Regional Office on 7 December 2005 requesting the participation of States in the conduct of the survey, with responses to be received at the Regional Office by 24 February 2006. Seventeen States responded to the Survey and the results were consolidated for review by the Air Navigation Commission (ANC).

10.16 The ANC, in undertaking its review of the ICAO language provisions had selected a June 2006 date, as it was the last opportunity to make an amendment to the provisions before their applicability in March 2008. As a result of the review, the ANC agreed to the following action:

- The 5 March 2008 applicability date is retained;
- No other changes to the language proficiency provisions of Annex 1 will be made. In particular, a proposal from the International Council of Aircraft Owner and Pilot Associations to relax testing requirement for VFR flights in uncontrolled airspace was not accepted;
- A new progress report on the status of implementation of the provisions will be presented to the Commission in March 2007 (i.e. one year before the applicability date); and
- The Secretariat together with an ad-hoc group of the Commission will develop a strategy to support the timely and effective implementation of the language proficiency requirements. It is expected that this strategy will formalize many of the activities that are taking place (seminars, improvement of the guidance material, etc).

10.17 The meeting noted the outcome of the survey and review by the Air Navigation Commission.

ICAO Language Proficiency Requirements ─ Rated Speech Samples

10.18 The meeting noted that ICAO issued State Letter 2006/39 titled "ICAO Language Proficiency Requirements – Rated Speech Samples CD-ROM" on 24 March 2006, which provided information on a CD-ROM produced by ICAO of speech samples of the ICAO Language Proficiency Rating Scale.

10.19 The speech samples provided on the CD-ROM illustrate ICAO Language Proficiency Levels 3, 4 and 5, as these levels were considered the most critical in determining whether an aviation professional meets the requirements to be involved in international traffic operations and the interval required for retesting. Copies of the CD-ROM are available from the Regional Office for US$ 75.

ICAO *Safety Management Manual* (Doc 9859)

10.20 In light of the expansion of provisions for safety management systems in other areas in addition to ATS, in particular Annexes 14 – *Aerodromes* and 6 – *Operation of Aircraft*, ICAO pursued the philosophy of a combined safety management manual, rather than a series of separate manuals addressing separate ICAO Annexes.

10.21 The meeting noted that the ICAO *Safety Management Manual* (Doc 9859), which supersedes and replaces the draft *Manual of Safety Management for ATS*, had been published. The First Edition of the manual (comprising 290 pages) was available on the ICAONET, or from the Regional Office at US$ 167.

Radiotelephony (RTF) callsign confusion

10.22 Hong Kong, China informed the meeting of measures introduced by the Civil Aviation Department (CAD), Hong Kong China to mitigate the effect of RTF callsign confusion. Leading civil aviation authorities have studied this problem, and it has been noted that there has been an increase in the number of occurrences RTF callsign confusion between two or more aircraft having the same or similar flight numbers. Such events may give rise to potential and actual flight safety incidents which may result in loss of ATC separation.

10.23 Examples of RTF callsign confusion were provided e.g. when:

a) different airlines operate services with the same flight number; e.g. AAA821 and XXX821;

b) within a short period of time an airline operates a number of services with near- sequential or similar flight numbers (more than 50% of same digits); e.g. XXX910, XXX920, XXX922; and

c) within a short period of time a company operates an extra or delayed service with a flight number very similar to the normal service's flight number; e.g. XXX500 and XXX500D.

10.24 There have also been a number of cases where ATC instructions have been misinterpreted because airlines use flight numbers that were the same as commonly used flight levels or radar headings.

10.25 To mitigate against such occurrences in processing slot requests at the Hong Kong International Airport, the Schedule Advisory Committee would seek the cooperation of new slot applicants to accept alternative slots or to amend the flight number if it was found that such flights were scheduled too close to other flight(s) of similar flight number.

10.26 The CAD, Hong Kong, China has promulgated an AIC on callsign confusion to heighten the awareness of airlines, pilots and air traffic controllers of the safety implication of callsign confusion including the following advice:

- Assign different flight numbers to services where currently there are similar flight numbers that could lead to RTF callsign confusion.

- Allocate flight numbers on a more random basis to avoid bunching of similar or sequential callsigns; e.g. allocating the first service of the day from 0 or 1 and subsequent services of the day with 2 or 3 and so on.

- Avoid using flight numbers ending with '0' or '5' in the range '005' to '360' to avoid confusion with ATC radar headings.

- If an ATC instruction is not clearly understood by the flight crew member responsible for RTF, or if there is any doubt concerning the instruction, the flight crew member must request ATC to repeat the message. Seeking confirmation directly rather than consulting other crew member(s) is the rational course of action. Do not execute the clearance prior to confirmation.

- Use headsets during periods of high cockpit workload, e.g. take off, climb, descent and landing etc; and actively monitor ATC transmissions and compliance with them, particularly when some flight crew members are carrying out other tasks and rendering them not able to monitor the RTF.

- Observe correct RTF discipline at all times.

- The similarity of some aircraft callsigns on the same frequency can cause confusion which may lead to an incident. Controllers are to warn pilots concerned and, if necessary, instruct one or both aircraft to use alternative callsigns, e.g. registration mark/number, while they are on the frequency.

10.27 In addressing this topic, IATA gave recent examples where callsign confusion had been problematic. They supported the last point raised above, under which Controllers could instruct an aircraft to use an alternative callsign. IATA pointed out that pilots could also initiate the use of an alternative callsign in situations where callsign confusion was of concern, noting that airline operators were encouraged to do so.

10.28 Japan, in complimenting Hong Kong China for their initiatives, also gave examples of callsign confusion and the steps being taken by Japan to try and address this problem. In this context, Japan was supportive of both pilots and controllers initiating the use of alternative callsigns.

10.29 The meeting appreciated the action taken by Hong Kong China in addressing this safety problem and States were encouraged to consider adopting similar measures. More information could be obtained from the CAD Hong Kong China and the relevant AIC (number 03/06) can be accessed through the following URL: http://www.hkatc.gov.hk/HK_AIP/aip.htm

Civil/Military Air Traffic Management Conference (CMAC)

10.30 Recognizing increased significance and demand for airspace by civil and military users, the Civil/Military Air Traffic Management Conference (CMAC) creates an international forum for policymakers to discuss common issues and solutions. CMAC addresses significant areas of interest including operations, airspace infrastructure, future systems, regional cooperation and global utilization.

10.31 In some cases, this conference offers the first opportunity for civilian and military leaders to begin a dialogue for strategic planning, integrated management and execution of issues related to international airspace.

10.32 CMAC 2007 is co-sponsored by Air Traffic Control Association (ATCA), American Association of Airport Executives (AAAE) and the U.S. Department of Defense; and will be hosted by AEROTHAI from 26 February to 2 March 2007 in Bangkok, Thailand.

ICAO Training Courses on Implementation of Safety Management Systems in States

10.33 The meeting was informed that the Strategic Objectives of ICAO for 2005 to 2010 include Strategic Objective A: Safety – *Enhance global civil aviation safety*, Key Activity A8: *Support the implementation of safety management systems across all safety-related disciplines in all States.*

10.34 Work on Key Activity A8 has already started, with a proposal for harmonizing safety management provisions in Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*, and Part III — *International Operations — Helicopters*, Annex 11 — *Air Traffic Services*, and Annex 14 — *Aerodromes*, Volume I — *Aerodrome Design and Operations*. The ICAO *Safety Management Manual* (Doc 9859) had been developed as essential guidance material to support the implementation of the harmonized provisions relating to safety management in Annexes 6, Parts I and III, 11 and 14, Volume I.

10.35 As a component of this work, ICAO safety management system training courses had been scheduled globally. Two training courses had been scheduled at the Asia and Pacific Regional Office during September 2006, as detailed in State Letter Ref: AP040/06 ATM transmitted on 29 May 2006. The courses would be facilitated by a team from ICAO Headquarters under arrangements with Captain Dan Maurino, Coordinator Flight Safety and Human Factors Programme. The two identical five-day Courses will be held consecutively, with the first Course from 4 to 8 September 2006 open to all States regionally, and the second Course from 11 to 15 September 2006 as a combined activity of the three regional COSCAPs (North, South and South East Asia).

10.36 Since it was expected that participants who successfully complete these courses would lead the implementation of SMS within their States, the course would include a final exam on a pass-fail basis and applicants would be reviewed for suitably based on qualifications and experience before participation in the course was confirmed.

10.37 The courses will build upon the harmonized safety management provisions and Doc 9859, in accordance with the course outline included as **Appendix A** to the Report on Agenda Item 10. The objective of the courses is to develop participants' knowledge and understanding of safety management concepts and requirements for air operators, maintenance organizations, air traffic services providers and aerodrome operators, as well as to provide the means to assist with the implementation of the Standards and Recommended Practices (SARPs) on safety management.

ICAO SAFETY MANAGEMENT SYSTEM (SMS) COURSE

Course information and outline

Background

Managing any aviation organization, large or small, requires the management of many business processes: financing, budgeting, communicating and allocating resources, and so forth. In recent years, managing safety has been added to the list of business processes. Managing safety is now as much a part of running a business as any of the traditional business processes.

ICAO first introduced the requirement for safety management in Annex 11 — *Air Traffic Services*, and Annex 14 — *Aerodromes, Volume I — Aerodrome Design and Operations*. A need was then identified to expand the concept and to harmonize provisions with Annex 6 — *Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes, and Part III — International Operations — Helicopters*, and in a near future the Organization will explore the extension of the concept and requirement to other Annexes of the Chicago Convention.

An SMS is a systemic approach to managing safety, including the necessary organizational structure, accountabilities, policies and processes. In order to reinforce the notion of safety management being a managerial process, the new ICAO safety management requirements include provisions for an organization to establish lines of safety accountability throughout the organization, as well as at the senior management level. The requirements impose upon States the responsibility to establish a safety programme and, as part of such programme, require that air operators, maintenance organizations, air traffic services providers and certified aerodrome operators implement a safety management system (SMS). Lastly, the requirements impose on States the responsibility to establish an acceptable level of safety for the activities/provision of services under consideration.

Course goals

The goals of the ***ICAO Safety Management System (SMS) Course*** are to:

a) develop participants' knowledge of safety management concepts and ICAO Standards and Recommended Practices (SARPs) on safety management in Annexes 6, 11 and 14, and related guidance material; and

b) develop participants' knowledge and skills to certify and oversee the implementation of key components of a basic SMS, in compliance with relevant ICAO SARPs and national regulations.

Target audience

Representatives from civil aviation authorities with responsibilities regarding the implementation of safety programmes, and the implementation and/or oversight of safety management systems, in the areas of aircraft operations, air traffic services, maintenance of aircraft and aerodrome operations.

How participants will benefit

By the end of the course, participants will acquire knowledge, techniques and skills to assist them in evaluating and auditing a safety management system, as well as measuring its performance, including:

- Identification of the means necessary to manage safety observing a performance based approach;
- Application of techniques to identify hazards, and to manage proactively system safety risks;
- Targeting of resources appropriately, and measuring the results of resource allocation;
- Application of predictive assessment methods such as LOSA and NOSS, based on threat and error management;
- Identification of the means necessary to develop and sustain a safety culture;
- Integration of Human and Organizational Factors into the safety management system;
- Evaluation of system operation; and
- Improvement of communications on safety between the civil aviation authority and aviation organizations.

Prerequisites

Participants must have basic technical aeronautical knowledge and a minimum of two years experience in flight, air traffic control or aerodrome operations in a civil aviation administration or the aviation industry.

Class size

The maximum class size for this course is 30 persons.

Course duration

Five days for a total 30 classroom hours, including exercises, case studies and examination.

References

- ICAO Annexes to the Convention on International Civil Aviation
  - Annex 6 – *Aircraft operation, Parts I and III*
  - Annex 11 – *Air Traffic Services*
  - Annex 14 – *Aerodromes – Volume I — Aerodrome Design and Operations*
- ICAO Safety Management Manual (Doc 9858)

Contact

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Training material

The instructional strategy will involve case study materials, presentations and group work.

Course time table

	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Session 1	Accreditation	Module 3	Module 5	Module 8	Module10
Session 2	Accreditation	Module 3	Module 5	Module 8	Module 10
	Coffee/Tea Break				
Session 3	Module 1	Module 3	Module 6	Module 9	Module 11
Session 4	Module 2	Module 4	Module 6	Module 9	Module 12
	Lunch				
Session 5	Module 2	Module 4	Module 7	Module 9	Module 12
Session 6	Module 2	Module 5	Module 8	Module 9	Module 13
	Coffee/Tea Break				
Session 7	Module 2	Module 5	Module 8	Module 9	Closing

OUTLINE OF MODULE PLANS

Module 1 – *SMS course introduction*

Introduction

- Objective of the module:
  - *To introduce the course objectives, strategies and structure, as well as to allow participants to be acquainted with each other and with the course instructors.*

Main presentation

- Description of the module contents:
  - **Part I** – *Presentation of ICAO instructors and participants*
  - **Part II** – *Course objectives, strategies and structure*
  - **Part III** – *Administrative information*
  - **Part IV** – *Evaluation procedures*

Conclusion

- Summary
- Questions by participants.

Module 2 – *Basic safety concepts*

Introduction

- Objective of the module:
  - *At the end of this module, participants will be able to describe why new perspectives for understanding and new methods for managing safety are necessary. Participants will be able to describe the limitations of traditional methods to identify hazards, reduce risks and ensure an acceptable level of safety, and the benefits of a proactive approach to the management of safety.*

Main presentation

- Description of the module contents:
  - Concept of safety
  - Safety investigation
  - The evolution of safety thinking
  - A concept of accident causation
  - The organizational accident
  - People and safety – SHEL model
  - Operational performance and technology
  - Understanding operational errors

- Organizations and safety culture
- Safety investigation
- Questions and answers
- Working group activities

Conclusion

- Progress test: Exercise Nº 02/01 – The Anytown City airport accident *(See Handout N° 1)*
- Test answers and feedback.

Module 3 – *Introduction to safety management*

Introduction

- Objective of the module:
  - *At the end of this module, participants will be able to identify in a case study the strengths and weaknesses of the defences in the civil aviation system, the role of defences in preserving operational safety, and identify latent conditions and risk factors in the system that can produce safety breakdowns.*

Main presentation

- Description of the module contents:
  - The safety stereotype
  - The management dilemma – safety vs. production
  - Need for safety management
  - Strategies for safety management
  - Reactive, proactive and predictable safety management
  - The imperative of change
  - Evolving methods – Building blocks
  - Responsibilities for managing safety
  - Questions and answers

Conclusion

- Progress test: Exercise Nº 03/01 – The Anyfield Airport accident *(See Handout N° 2)*
- Test answers and feedback.

Module 4 – *Hazards*

Introduction

- Objective of the module:
  - *At the end of this module, participants will be able to apply the four fundamentals of hazards identification and management through a case study.*

Main presentation

- Description of the module contents:
  - Terms and associated definitions
  - First fundamental – Understanding hazards
  - A predictive relationship
  - Second fundamental – Hazard identification
  - Scope of hazards
  - Hazard management
  - Sources of hazard identification
  - Third fundamental – Documentation of hazards
  - Fourth fundamental – Costs considerations
  - Safety vs. costs
  - Questions and answers

Conclusion

- Progress test: Exercise Nº 04/01 – International airport construction project *(See Handout N° 3)*
- Test answers and feedback.

Module 5 – *Risks*

Introduction

- Objective of the module:
  - *At the end of this module, participants will be able to apply the four fundamentals of risk management through a case study.*

Main presentation

- Description of the module contents:
  - First fundamental – Risk management
  - Second fundamental – Risk probability
  - Third fundamental – Risk severity
  - Risk assessment matrix
  - Risk assessment criteria

- Fourth fundamental – Risk mitigation
- Evaluating risk mitigation options
- Risk mitigation strategies
- Risk management process at a glance
- Hazard identification and risk management – Class exercises
- Questions and answers

Conclusion

- Progress test: Exercise 05/01 – Accident Boeing 747-412 – 9V-SPK Taipei-Chiang Kai Shek Airport, Taiwan *(See Handout N° 4)*
- Test answers and feedback

Module 6 – *SMS regulation*

Introduction

- Objective of the module:
  - *At the end of this module participants will be able to describe the safety management requirements included in Annexes 6, 11 and 14.*

Main presentation

- Description of the module contents:
  - AGA, ATS and OPS/AMO safety management
  - SMS – ICAO common definitions
  - What is a safety programme?
  - What is an SMS?
  - SMS – Acceptable level of safety
  - OPS/AMO safety programme requirements
  - ATS safety programme requirements
  - AGA safety programme requirements
  - OPS safety programme requirements
  - Acceptable level of safety – Legal considerations
  - Acceptable level of safety – Scope and implementation
  - Question and answers

Conclusion

- Discussion

Module 7 – *Introduction to SMS*

Introduction

- Objective of the module:
  - *At the end of this module, participants will be able to list the differences between a safety programme and an SMS, outline the basic components of an SMS, and the benefits of an SMS for organizations in order to satisfy regulatory, business and operational requirements.*

Main presentation

- Description of the module contents:
  - Introduction and aviation system stakeholders
  - First fundamental – ICAO requirements
  - Safety programme – SMS relationships
  - SMS – Introductory concepts
  - SMS main characteristic features
  - Second fundamental – The four components of SMS
  - Third fundamental – SMS and QMS
  - SMS and QMS – Striking a balance
  - Systems integration benefits
  - Systems integration considerations
  - Fourth fundamental – The importance of gap analysis
  - SMS – Interrelationships
  - Questions and answers

Conclusion

- Discussion.

Module 8 – *SMS planning and development*

Introduction

- Objective of the module:
  - *When completing the module the participants will be able to describe the requirements associated to the planning and development phases of an SMS, and explain the structure of an SMS implementation plan.*

Main presentation

- Description of the module contents:
  - SMS project management flowchart
  - The components of SMS
  - Planning phase
  - System description and gap analysis

- Management commitment and responsibility
- Safety accountabilities of managers
- Development phase
- SMS functional structure definition
- SMS implementation plan
- SMS documentation
- Conclusion
- Questions and answers

Conclusion

- Progress test: Exercise 08/01 – Cuzco International Airport operation *(See Handout N° 5)*
- Test answers and feedback

Module 9 – *SMS implementation and operation*

Introduction

- Objective of the module:
  - *When completing the module the participants will be able to describe the requirements associated to the implementation and operation phases of an SMS, including a phased approach for the SMS implementation.*

Main presentation

- Description of the module contents:
  - SMS project management flowchart
  - Appointment of key safety personnel
  - Safety manager and safety office
  - Safety Review Board (SRB) and Safety Action Group(s) (SAG)
  - Documentation – Safety management manual (SMM)
  - Safety hazard identification and risk management
  - Safety management training
  - Emergency response planning
  - Safety performance monitoring and measurement
  - Audits and surveys
  - Change management
  - Communication
  - Phased approach for the SMS implementation
  - Questions and answers

Conclusion

- Progress test: 09/01 – Collision between two aircraft at Milano-Linate Airport *(See Handout N° 6)*
- Test answers and feedback.

Module 10 – *SMS audit*

Introduction

- Objective of the module:
  - *At the end of this module participants will be able to demonstrate their understanding on how to audit an SMS, through the development of the outline of an SMS standard.*

Main presentation

- Description of the module contents:
  - SMS project management flowchart
  - Auditing the SMS
  - Audit staff
  - Auditor's training
  - Auditor's maintenance of competence
  - Audit objectives and responsibilities
  - Independence of the auditor
  - Auditing the SMS
  - Audit plan and working documents
  - Report content and corrective action follow-up
  - Measuring soundness, appropriateness and efficiency of SMS

Conclusion

- Progress test: Exercise 10/01 – Model of SMS regulation – Outline of a SMS Standard.
- Test answers and feedback

Module 11 – *Examination*

Introduction

- Objective of the module:
  - *The objective of the examination is to verify that participants have understood the basic principles of the development, implementation, operation and performance measurement of safety management programmes and systems in order to increase safety and efficiency in operations, before granting individual SMS certification.*

Module 12 – *Examination review*

Introduction

- Objective of the module:
  - *The objective of this session is to review with participants the results of the course examination and to clarify doubts with respect to the implementation of the SMS and the use of the proposed tools.*

Module 13 – *Course feedback*

Introduction

- Objective of the module:
  - *The objective of this module is to be able to respond to the following questions:*
    - *What we learned and how we can apply the acquired knowledge in our own organizations?*
    - *What obstacles are anticipated for the implementation of SMS in our States organizations?*
    - *Participants feedback concerning the structure of the course and potential improvements*

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AGENDA ITEM 11

Agenda Item 11: Update the list of ATM/AIS/SAR Tasks together with priorities

Asia/Pacific Office ATM Section resources

11.1 The meeting was updated by the Secretariat on the staffing and resource situation of the Regional Office in general and the ATM Section in particular. It should be noted that ATM/AIS/SAR/SG/15 under Agenda Item 9 considered a detailed review of the Asia/Pacific Office ATM Section work programme for the one year period (2004/2005) between ATM/AIS/SAR/SG/14 and 15 meetings. Since 2006, in addition to the normal schedule of meetings, the ATM Section has an additional responsibility to support the regional USOAP audit programme that got underway during 2006, and this generally requires one ATM officer to undertake at least two audits a year.

11.2 The meeting noted with appreciation that Thailand had positively responded to ICAO's request for States to support ICAO's work at a time of reduced resources by providing a suitably qualified ATM officer from AEROTHAI to be assigned to ICAO duties for a three year term, commencing in late 2005.

11.3 Although there had been this improvement in ATM staffing, the secondee officer was still being trained and the increasing ATM work programme and lack of financial resources continued to over-stretch the ATM Section's capability to support all the ATM activities required in the region. Additionally, mid year 2006 retirements of two senior officers from other disciplines at the Regional Office further reduced the overall Regional Office capability. This situation needed to be taken into account when determining additional work required of the Regional Office in this regard. Consequently, during the coming year it was highly likely that the ATM Section would not be able to organize and attend all the ATM forums that were required to be supported by ICAO.

11.4 The meeting noted with regret that ICAO continued to experience diminishing resources at a time of significant change, placing increasing demand on remaining ICAO resources. This was particularly felt in this region where a high priority was placed on accelerating implementation of the CNS/ATM plan and the introduction of improvements to the operational environment in international airspaces as recorded in this report. In the area of ATM safety management alone, there was a substantial amount of work to be done to assist States in the region to meet the Annex 11 requirements which would necessitate ICAO's involvement at the regional level.

11.5 In recognizing the increasing technical and leadership requirements that needed to be met by the Regional Office in addressing the needs of the many States of the Asia Pacific Region, the meeting requested that their deep and serious concern at this situation be formally recorded. The meeting considered it particularly problematic that the resource limitations at the Regional Office effectively acted to remove any capability for a holistic oversight of regional activities to be retained. This was expected to result in wasted time and money as States, acting in good-will, went in different and potentially non ICAO compliant directions as they continued with regional implementations. In light of the deep concerns expressed, the meeting required that the following Draft Conclusion be relayed to APANPIRG for consideration:

Draft Conclusion 16/10 ─ Additional Asia/Pacific Office ATM Staff

That, in consideration of the extensive international airspace of the Asia/Pacific Region and APANPIRG's high priority to implement the regional CNS/ATM Plan at a time of significant traffic growth, increasing operating costs and safety focus, ICAO urgently address the shortage of ATM staff members at the Regional Office.

Task List review and update

11.6 The meeting recalled that APANPIRG/16 had further updated the Task List of ATM/AIS/SAR/SG/15 to reflect the information presented by the meeting. In light of the above, the meeting reviewed the updated Task List approved by APANPIRG/16, further updating of the Task List was agreed to reflect the information presented by the meeting.

11.7 In undertaking the review of the task list, the meeting recognized that the task list was in need of a complete overhaul in order to ensure that it remained fit for the purposes for which it was intended. The meeting considered that the task list carried a large number of out of date references, inappropriate task items and was not presented in a "user-friendly" format. In addition to new task list items relating to actions from the Global Conference of Directors General and ALLPIRG/5 meetings, a task was added requiring the secretary to conduct a complete update of the task list for presentation to the next Sub-Group meeting.

11.8 The meeting reviewed and updated the Task List as per **Appendix A** to the Report on Agenda Item 11 and formulated the following Draft Decision:

Draft Decision 16/11 – ATS/AIS/SAR Subject/Task List

That, the ATM/AIS/SAR Subject/Task List as contained in Appendix A to the Report on Agenda Item 11 be adopted as the current work programme for the ATM/AIS/SAR Sub-Group.

SUBJECT/TASKS IN THE ATM/AIS/SAR FIELDS

The priorities assigned in the list have the following connotation:

A = Tasks of a high priority on which work should be expedited;
B = Tasks of a medium priority on which work should be undertaken as soon as possible but not to the detriment of Priority "A" tasks; and
C = Tasks of a medium priority on which work should be undertaken as time and resources permit but not to the detriment of Priority "A" & "B" tasks. **(Updated 30/06/06)**

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
1	RAN/3 C 6/9 R 14/22 APANPIRG C 2/22 C 3/24 C 4/4 C 4/5 C 5/2 C 5/3	Subject: Implementation of RNP Task: Implement RNP into the Asia Pacific Region	A	a) Identify routes and areas where RNP implementation is required; and b) — monitor progress. Note: a) RNP10 (60 NM) implemented South China Sea route network November 2001; b) RNAV EMARSSH Route network implemented November 2002; c) RNP4 implemented January 2005 in Honiara FIR, Nauru FIR and portions of Brisbane FIR, Nadi FIR and Auckland Oceanic FIR; and d) RNP4 Trial in portions of Oakland FIR commenced December 2005	ATM/AIS/SAR/SG Regional Offcie	On-going
2	APANPIRG C 3/22	Subject: Traffic congestion within the region Task: Suggest ways of reducing this congestion by means of appropriate traffic management	A	a) Identify routes and areas where management of traffic congestion is required; and c) — Monitor r progress. Note: The BBACG established the ATFM/TF to address congestion in the Bay of Bengal and Indian airspace. An operational trial using an automated ATFM system to commence ~~on 22 December 2005 i~~n July 2006	ATM/AIS/SAR/SG Regional Office	On-going

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
3	RAN/3 C 13/14 APANPIRG D 2/35	Subject: AIS Automation Task: Develop a Regional AIS Automation Plan ~~Note: To progress this task, the AIS/TF/1 meeting is tentatively scheduled on 7-11 November 2005. Due to Regional Office ATM staff reduction, was unlikely to be convened. ATM/AIS/SAR/SG/15 agreed (Decision15/8) that the Task Force must commence, States (Japan) would convene and run the Task Force, Regional Office to assist if able.~~		Develop AIS automation plan and introduction of AIS quality systems and AIS databases and consider issues arising from the use of public internet for AIS Note: APANPIRG Decision 14/8 reactivated the AIS Automation Task Force and changed the name and role of the task force to the AIS Implementation Task Force (AITF). First meeting expected November 2004 First meeting of the AIS Task Force and associated AIS Seminar was held 20-24 March 2006	AITF ATM/AIS/SAR/SG	On-going
~~4~~	~~APANPIRG C 2/31~~	~~Subject: Provision of AIS within the Region~~ ~~Task: Examine and comment on the provision of AIS and develop a programme to improve the provision of AIS within the region~~ ~~Note: AIS/MAP and one ATM Regional Officer posts removed from Regional Office establishment, effective 2005. No ability of Regional Office to assist with AIS matters. States will convene AIS Implementation Task Force in November 2005 to consider AIS matters, as described under Task list Item 3 above.~~	~~B~~	~~a) Increase AIS support from the ICAO APAC Office~~ ~~b) Regional AIS seminars to be conducted periodically~~ ~~c) Review the use of Internet for aeronautical information taking into account results of the ICAO AUPI Study Group and update Chapter 4 to the AIS Guidance Manual~~	~~APANPIRG ICAO~~ ~~ICAO~~ ~~AATF ATM/AIS/SAR/SG~~	~~On-going~~ ~~On-going Dec. 2002~~ ~~No update avbl to ATM/AIS/ SAR/SG/14 re internet~~
5	APANPIRG C 3/24 C 9/3 D 9/4	Subject: Implementation of RVSM in the Asia Pacific Region Task: Plan for and facilitate implementation of RVSM, as appropriate, in the Asia Pacific Region	A	a) Plan schedule and facilitate implementation of RVSM in the Asia Pacific Region b) RVSM implementation for the international airspace in the APAC Region ~~is in its final stage~~ has been completed with implementation in the Incheon, Naha and Tokyo FIRs on 29 September 2005. c) ~~Follow-up meetings required for b); 90-day review and one year review~~; 90 Day review of Japan/ Republic of Korea implementation conducted 27 Feb- 1 Mar 2006. One year review scheduled November 2006. d) The South China Sea/West Pacific RVSM FLOS review ~~to be completed and a meeting scheduled in January/February 2006.~~ was held 24-28 April 2006 however no result. ATM/AIS/SAR/SG/16 (June 2006) recommended establishing a RVSM Scrutiny Group with TOR also addressing FLOS	RVSM/TF	On-going ~~North Asia - 2005~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
6	APANPIRG D 3/12 D 3/2 C 4/2	Subject: Inappropriate provision of SAR facilities, services and procedures within the Asia Pacific Region Task: a) Review SAR facilities, services and procedures in the region e) Assist States without SAR services to provide SAR coverage	A	a) Encourage States to delegate or negotiate SAR services b) Identify deficiencies Note: Future ICAO SAR activities in the APAC Region constrained due to Regional Office ATM staffing levels.	ICAO ATM/AIS/SAR/SG	On-going On-going
7	~~APANPIRG~~ ~~D 3/21~~ ~~C 9/2~~	~~Subject: Transition to WGS-84 in the Asia Pacific Region~~ ~~Task: Monitor and facilitate the transition to WGS-84~~	~~A~~	~~a) Maintain status report of WGS-84 implementation within the Asia Pacific Region~~ ~~b) Identify States requiring assistance and where possible assist those States~~ ~~c) Identify deficiencies~~ ~~Note: Substantially complete, remaining issues being managed by the APANPIRG Deficiencies List~~	~~ATM/AIS/SAR/SG~~ ~~States~~ ~~ICAO~~ ~~ATM/AIS/SAR/SG~~ ~~ATM/AIS/SAR/SG~~	~~On-going~~ ~~On-going~~ ~~On-going~~
8	RAN/3 R 14/13 APANPIRG C 5/12 D 6/21 C 9/8	Subject: Implementation of ATS route requirements	B	~~a)~~ Identify ATS route requirements b) Monitor progress of route implementation in APAC Region c) Identify deficiencies ~~Note: APANPIRG Decision 14/4 created the ATS Route Network Review Task Force (ARNR/TF). ATM/AIS/SAR/SG/14 referred matters on the deficiencies list relating to ATS routes to the ARNR/TF for study. First meeting of ARNR/TF expected September 2004.~~ The ~~ARNR/TF held its first meeting on 6-10 September 2004 and completed its work at ARNR/TF/3 on 2-3 May 2005.~~ Note: Asia/Pacific ATS Route Catalogue established, maintained by Regional Office, Version 3 (June 2006) on ICAO website, ATS Routes included as standing agenda item on ATS Coordination Group agendas	ATM/AIS/SAR/SG	On-going On-going On-going

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
9	C 11/8	**SAR Capability Matrix** That, a) the "SAR Capability Matrix" be distributed to States for information and action as appropriate; and b) States provide information to ICAO by 30 April each year to permit the periodic update of the Matrix.	C	a) The SAR Matrix is reviewed by States at all ATM/AIS/SAR/SG Meetings b) States to update the Matrix by providing information to ICAO by 30 April each year Note: Matrix routinely updated during meetings of ATM/AIS/SAR/SG	ATM/ASI/SAR/SG States ICAO	On-going On-going
10	RAN/3 R 7/18 APANPIRG C 8/9	Subject: SAR training and exercises Task: Facilitate SAR training and exercises	B	a) Co-ordinate SAR training available in the region b) Facilitate international participation in SAR exercises ~~c) Bay of Bengal Seminar and SAREX was held at Chennai on 7-11 March 2005~~ Note: APANPIRG/16 raised Conclusion 16/23 in respect of SAR SIP for Pacific Island States, SIP is approved by Council, scheduled last quarter 2006	ICAO States India	On-going ~~2003~~ On-going ~~2005 Completed~~
11	APANPIRG ~~C 6/13~~ C11/9	Subject: Appropriate SAR legislation, National SAR Plans and Amendments Task: Establish appropriate documentation and National SAR Committee	A	a) Implement appropriate legislation, establish National SAR Committees and Plans to support SAR operations b) Monitor developments of SAR Agreements between SAR organizations c) Establish and maintain a Register of SAR Agreements Note: Register of SAR Agreements routinely updated during meetings of ATM/AIS/SAR/SG	States ATM/AIS/SAR/SG ICAO	On-going On-going On-going
~~12~~	~~APANPIRG C 9/9~~	~~Subject: Lack of consideration of Human Factors in the provision of ATS~~ ~~Task: Consider ways by which Human Factors aspects in the provision of ATS within the region could be improved~~	~~B~~	~~a) States to Provide input including lessons learned (ICAO to encourage States to submit reports)~~ ~~b) ICAO to conduct seminars~~ ~~Note: ATM/AIS/SAR/SG/15 noted limited ATM resources remaining at the Regional Office and that presently ICAO Headquarters taking primary carriage of Human Factors activities.~~	~~States ICAO~~ ~~ICAO~~	~~On-going~~ ~~2004 On-going~~ ~~Closed as ICAO HQ has primary carriage of these matters~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
13	APANPIRG D 8/	Subject: Maintenance of the CNS/ATM/GM for the Region	B	Note: ATM/AIS/SAR/SG/15 noted that ICAO Headquarters has taken over development of global guidance material and the status of the APAC Regional Guidance to be reviewed subsequent to provisions of global material under development. ATM/ASI/SAR/SG/16 raised draft Decision 16/3 in company with CNS/MET/SG/10 to establish APANPIRG Regional Planning Review Task Force to conduct this work	ATM/AIS/SAR/SG States	Ongoing
14	APANPIRG C 9/48 C 10/39 C 10/40	Subject: Deficiencies in the field of air navigation Task: Develop and maintain Deficiencies list	A	a) Identify unimplemented items in the BANP b) Review mission reports c) Analyze differences from SARPs d) Review accidents / incidents Note: ALLPIRG/5 (March 2006) raised Conclusion 5/15 in respect of "Last Resort" action to resolve deficiencies.	ATM/AIS/SAR/SG ICAO	On-going On-going On-going On-going
~~15~~	~~APANPIRG/12~~	~~Subject: Lateral Offset Procedures~~	~~A~~	~~a) Identify issues regarding route structures where offsets could be applied~~ ~~b) Implement 2 NM right of route offsets in accordance with ICAO guidelines~~ ~~Note: Significant implementations of 2 NM lateral offset procedures occurred on 20 January 2005 and 17 March 2005 in Asia/Pacific.~~	~~ATM/AIS/SAR/SG~~ ~~States~~	~~On-going~~ ~~2004~~ ~~2005/2006~~ ~~Completed~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
16	APANPIRG/13 C12/6	Subject: Regional Contingency Planning Survey Task: That, ICAO survey States in the Asia/Pacific Region to determine the status of contingency planning and the extent to which contingency plans are exchanged between neighboring States.	C	a) States to complete their State Contingency Plans, using framework supplied in their Y2K CP b) Coordinate with neighboring States c) Send copy of their Contingency Plan to ICAO d) Regional Office initiated survey in March 2005 with results submitted by States by 30 June 2005, and results being studied Updated survey results will be reviewed by APANPIRG/17 Note: APANPIRG/16 raised Conclusion 16/15 in respect of SIP for APAC State. SIP will be conducted in Indonesia during July 2006	ICAO/States	On-going On-going On-going On-going
17	C 15/52	Review key priorities for implementation of CNS/ATM systems for the ASIA/PAC region, identify new items as required and monitor implementation	A	Review key priorities and recommend appropriate actions	ATM/AIS/SAR/SG ICAO/States	On-going
18	Decision 1/3 APANPIRG/15 C 15/49	Make recommendation aimed at improving ATM and CNS support for Terminal Area and Airport Operations, respectively.	B	a) Study operational problems being experienced; b) identify requirements/areas for improvement from States	ATM/AIS/SAR/SG States	On-going Ongoing
19	APANPIRG/15 C 15/46	That recommendations 1/1, 1/10, 1/13, 4/1, 4/2, 6/11 and 7/1 of AN-Conf/11 be studied by the ATM/AIS/SAR/SG, and action be taken to implement them.	B	Review recommendations and take appropriate action to implement	ATM/AIS/SAR/SG ICAO/States	On-going
20	APANPIRG/15 Paragraph 2.1.151	To monitor environmental issues relating to the implementation of CNS/ATM< systems, in particular the work of ICAO's Committee on Aviation Environmental Protection (CAEP), to disseminate relevant information to contracting States, and to carry out appropriate coordination with Contracting States.	B	~~Monitor the work of the ARNR/TF in this respect~~	ATM/AIS/SAR/SG ICAO/States	On-going
21	APANPIRG/15 Paragraph 2.1.151	Develop a framework for regional training plans for the introduction of CNS/ATM systems and to include this material in the "Asia/Pacific Regional Plan for the New CNS/ATM Systems".	B	Review regional training plans and requirements	ATM/AIS/SAR/SG ICAO/States	On-going

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
22	APANPIRG/15 Paragraph 2.1.151	Develop business cases for various options of CNS/ATM implementation taking into account environmental benefits.	B	Coordinate with Regional Officer Air Transport in respect of business case activities	ATM/AIS/SAR/SG ICAO/States	On-going
16/1	ATM/AIS/SAR /SG/16 (June 2006)	Overhaul Task List of ATM/AIS/SAR Sub-Group of APANPIRG and present to ATM/AIS/SAR/SG/17 for adoption	A	ATM/AIS/SAR/SG/16 recognized that the task list was in need of a complete overhaul as it carried large number of out of date references, inappropriate task items and was not presented in a "user-friendly" format. Overhaul of Task List should ensure that all actions arising from ATM/AIS/SAR/SGs 15 & 16 and APANPIRGs 16 & 17 were captured	Regional Offcie	June/July 2007
16/2	ATM/AIS/SAR /SG/16 (June 2006) & DGCA/06	Subject to advice from ICAO Headquarters and APANPIRG, implement actions arising from the Conclusions of DGCA/06 (March 2006), including Conclusion and Recommendation 2/2 a) and b) in relation to the implementation of safety management systems by States.	A	Outcomes of DGCA/06 will be reviewed by APANPIRG/17 and subsidiary tasks for action by ATM/AIS/SAR/SG are expected to be identified	ATM/AIS/SAR/SG ICAO/States	On-going
16/3	ATM/AIS/SAR /SG/16 (June 2006) & DGCA/06	Subject to advice from ICAO Headquarters and APANPIRG, implement actions arising from the Conclusions of ALLPIRG/5 (March 2006)	A	Outcomes of ALLPIRG/5 will be reviewed by APANPIRG/17 and subsidiary tasks for action by ATM/AIS/SAR/SG are expected to be identified	ATM/AIS/SAR/SG ICAO/States	On-going

AGENDA ITEM 12

Agenda Item 12: Date and venue for next meeting

12.1 The meeting agreed that the next ATM/AIS/SAR Sub-Group meeting would held over 5 working days during the first half of July 2007, at the Regional Office premises. The Regional Office expected that the meeting would be held from 2-6 July 2007, but would finalize the dates in due course and advise parties accordingly.

Closing remarks

12.2 In closing, the Chairman, Mr. Colman Ng, thanked members for their active participation throughout and noted that the meeting had reviewed a total of 62 Working and Information papers. As a result of the hard work by all participants, the meeting had formulated and endorsed 7 Draft Conclusions and 4 Draft Decisions for consideration by APANPIRG/17, scheduled to be held in August 2006. This would not have been achieved without the dedication and enthusiasm from all participants involved. It had been most impressive to note that the meeting completed discussions on all the agenda items in a fruitful manner within the scheduled time. The Chairman expressed sincere gratitude to all for their cooperation and their exemplary time-keeping performance during the meeting period.

12.3 The Chairman also thanked the Secretariat for their excellent support. He noted that out of the 62 Working and Information papers that had been covered, 42 were compiled and presented by the Secretariat. The draft report that was prepared during the meeting was a vivid proof of the professionalism exhibited by the Secretariat and colleagues of the ICAO Regional Office. All these fine works were mainly contributed by just a small handful of ATM Officers of the Regional Office. He took the opportunity to express heartfelt appreciation to the Secretariat for the efforts they had collectively put in to ensure the smooth conduct of the meeting.

12.4 The Chairman also noted with appreciation that members of the meeting had adopted a pragmatic, cooperative and collaborative approach to resolving difficult issues. The positive and frank attitude displayed by all was certainly conducive to the success of the meeting. The constructive interactions amongst representatives were also strong indications that the ATM/AIS/SAR Sub-Group was working as a team towards a common goal – that is, to enhance and optimize the overall ATM system in the Asia Pacific Region. Finally, the Chairman thanked members once again for their valuable contribution to the success of the meeting and wished them all a safe journey back home.

— END —

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LIST OF WORKING AND INFORMATION PAPERS

WORKING PAPERS

WP/No.	Agenda Item	Subject	Presented by
1	1	Provisional Agenda	Secretariat
2	2	APANPIRG/16 Report and ANC/Council Actions	Secretariat
3	2	Review and Update Conclusions and Decisions of APANPIRG	Secretariat
4	3	Implementation of RVSM in the Asia Pacific Region	Chairman of the ICAO RVSM/TF
5	3	Review of State Contingency Planning	Secretariat
6	3	Updating of the Asia/Pacific Regional Plan for the new CNS/ATM Systems and the Key Priorities for CNS/ATM Implementation in the Region	Secretariat
7	3	Review the Report of the MET/ATM Seminar	Secretariat
8	3	Search and Rescue Matters	Secretariat
9	3	State Focal Point for Safety Related Activities	Secretariat
10	3	Outcome of the Survey of the Quality System in Aeronautical Information System	Secretariat
11	3	Review of the Aeronautical Information Conceptual Model (AICM) and Aeronautical Information Exchange Model (AIXM) Management Seminar and the ICAO Aeronautical Information Services (AIS) Implementation Task Force First Meeting (AITF/1)	Secretariat
12	4	Adoption of the Asia and Pacific ATS Route Catalogue	Secretariat
13	4	ICAO Exploratory Meeting on UAVs	Secretariat
14	4	Bay of Bengal ATFM Operational Trial	Secretariat
15	4	ATS Route Realignment Proposal	United States
16	6	Funding of Safety Monitoring – A Regional Solution	Secretariat
17	8	Completion of Airspace Classification in the Oceanic Airspace of Fukuoka FIR, Japan	Japan
18	5	Review of the Meetings of the Bay of Bengal ATS Coordination Group, FANS-Implementation Teams for the Bay of Bengal and South-East Asia	Secretariat
19	5	Review of the 13th Meeting of the South-East Asia ATS Coordination Group (SEACG/13)	Secretariat
20	6	Report of the Activities of the Regional Airspace Safety Monitoring Advisory Group (RASMAG)	Secretariat
21	4	Regional Special Implementation Projects	Secretariat

WP/No.	Agenda Item	Subject	Presented by
22	7	Review the work by RNP Special Operational Requirements Study Group on the Implementation of RNP Operations	Secretariat
23	7	Adoption of Amendment 44 to Annex 11 (Guidance Material on acceptable level of safety and recording of ATC background communications)	Secretariat
24	7	Request to Reconvene the AIDC Task Force	Australia Fiji New Zealand United States
25	8	List of Air Navigation Deficiencies in the ATM/AIS/SAR Fields	Secretariat
26	10	ATM/AIS/SAR Task List	Secretariat
27	11	ICAO Language Proficiency Survey	Secretariat
28	7	Global Air Navigation Plan	Secretariat
29	10	Review of Global DGCA Conference 2006	Secretariat
30	10	Review of ALLPIRG/5	Secretariat
31	7,9	Initial Study on RVSM Benefits in Japan	Japan
32	4	Difficulties of Air Traffic Management in Bangkok FIR regarding the RVSM Implementation in Western Pacific/South China Sea (WPAC/SCS) Region	Thailand
33	11	Callsign Confusion	Hong Kong, China
34	10	Global Central Reporting Agency	Secretariat
35	2	Fuel Saving Measures – Implementation of Conditional Routes (CDRs) and RNAV Routes in Japan	Japan
36	4	ATS Route Matters	IATA
37	8	Air Traffic Service Deficiencies in the Asia Pacific Region	IATA
38	7	Fourth and Fifth Meetings of Automatic Dependent Surveillance-Broadcast (ADS-B) Study and Implementation Task Force	Secretariat

INFORMATION PAPERS

IP/No.	Agenda Item	Subject	Presented by
1	–	List of Tentative Working and Information Papers	Secretariat
2	11	Update of Language Proficiency Matters arising from the ICAO Air Navigation Commission	Secretariat
3	2,6	ICAO Training Courses on Implementation of Safety Management Systems in States	Secretariat
4	3	Search and Rescue Coordination between Maritime and Aviation Authorities	United States
5	3	FAA Human Factors Design Standard	United States
6	3	Reductions of Separation in Oakland and Anchorage FIRs	United States
7	7	The AIS Enhancement Project in Japan	Japan
8	4	Guidance Material in regard to Wake Vortex Aspects of A380 Aircraft	Secretariat
9	4	Wake Turbulence	Secretariat
10	4	Overview of the NAS Aeronautical Information Management Enterprise System (NAIMES)	United States
11	5	Update on the work of the Informal Pacific ATC Coordinating Group (IPACG)	United States & Japan
12	5	Update on the work of the Informal South Pacific ATS Coordinating Group (ISPACG)	United States & New Zealand
13	5	Report of the First Meeting of the Arabian Sea/Indian Ocean ATS Coordination Group (ASIOACG/1)	Secretariat
14	7	Operational Data Link Panel Recommendations for Amendments	Secretariat
15	7	Review of the Special Coordination Meeting Cross Polar and Russian Trans−East ATS Routes (SCM POLAR & RTE)	Secretariat
16	11	Language Proficiency – Rated Speech Samples	Secretariat
17	11	ICAO Safety Management Manual (Doc 9859)	Secretariat
18	11	Civil/Military Air Traffic Management Conference (CMAC)	United States
19	7	Required Communication Performance (RCP) Concepts – An Introduction	Secretariat
20	7	Implementation of ATS Data Link Operations and 50NM Longitudinal Separation Minimum in the Oceanic Area within Fukuoka FIR	Japan
21	7	Operational Status of JCAB Air Traffic Management Center (ATMC)	Japan

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22	11	Update of the Universal Safety Oversight Audit Programme (USOAP)	Secretariat
23	4	Documentation for the Bay of Bengal ATFM Operational Trial	Secretariat
24	7	Developments and Implementation in ATM/AIS in Indian Airspace	India

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