INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF THE FIFTEENTH MEETING OF THE APANPIRG ATM/AIS/SAR SUB-GROUP (ATM/AIS/SAR/SG/15)

Bangkok, Thailand, 25 – 29 July 2005

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 Fifteenth meeting of the APANPIRG Air Traffic Management/Aeronautical Information Services/Search and Rescue Sub-Group (ATM/AIS/SAR/SG/15) was held at the Kotaite Wing of the ICAO Asia and Pacific Regional Office, Bangkok, Thailand on 25 to 29 July 2005.

2. Attendance

2.1 The meeting was attended by 76 participants from 22 States, 1 International Organization and 1 Data Services provider. A list of participants is provided at **Attachment 1** to this Report.

3 Officers and Secretariat

3.1 Mr. Colman Ng was elected to the position of Chairman of the ATM/AIS/SAR 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 Mr. Kyotaro Harano, Regional Officer ATM, 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 41 Working Papers, 2 Flimsies and 19 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

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 remaining Sub-Groups of APANPIRG following the dissolution of the CNS/ATM Implementation and Coordination Sub-Group last year, 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 The Regional Office was pleased to hold the meeting at its conference building generously provided to ICAO by the Royal Thai Government, and named the Kotaite Wing in honour of Dr. Assad Kotaite, President of the Council of ICAO. Mr. Shah informed the meeting of the pending retirement from service of Dr. Kotaite after 30 years as the President of the ICAO Council, to take effect from August next year.

5.3 Mr. Shah highlighted the resource issues being faced by the Regional Office as a result of the outcomes of the ICAO triennium budget processes completed last year. In particular, in addition to the loss of the AIS/MAP Regional Officer post, one of the established ATM Regional Officer posts had been dissolved and this would have an impact on the ATM work programme that

would be able to be achieved by the Regional Office in future. Mr. Shah requested that, in setting the future directions of the Sub-Group, delegates remain cognizant of the Regional Office resources and set the work programme accordingly.

5.4 Mr. Shah recalled that the Chairman of the ATM/AIS/SAR Sub-Group, Mr. George P.S. Chao of the Civil Aviation Department, Hong Kong, China had advised the Fourteenth Sub-Group meeting in July last year that he would be retiring from service with the Civil Aviation Department (CAD) in late 2004 and therefore would no longer be available to chair the Sub-Group. Mr. Chao had very capably undertaken the task of the Chairman for the Sub-Group over a period of 5 years, assuming the Chairman's role at the Ninth ATS/AIS/SAR Sub-Group Meeting in July 1999 and leading the Sub-Group with wisdom and leadership since that time. Mr. Shah took this opportunity to express deep appreciation to the CAD for making Mr. Chao available for so many years to fill the Chairman's role.

5.5 Mr. Shah noted that it was an important task of this meeting to appoint a new Chairman. In response to a request for nominations, Japan nominated Mr. Colman Ng, the Acting Assistant Director General (Air Traffic Management) Civil Aviation Department, Hong Kong, China. Mr. Ng had joined the Civil Aviation Department in 1975 as a student air traffic control officer and, over the years, had qualified in all disciplines of operational air traffic control. Mr. Ng had taken charge of the Training Section for some years and was also involved in the planning and implementation of Chek Lap Kok Airport in the years prior to its opening in 1998. Mr. Ng had also qualified as a Search & Rescue Mission Coordinator and Aircraft Accident Investigator.

5.6 Mr. Ng's nomination by Japan was seconded by the United States of America. Mr. Ng gratefully accepted the Chairmanship, thanking the Sub-Group for their confidence in him and noting that he had 'big shoes to fill' in taking the Chair after the good work that had been completed under the previous Chairman. Mr. Ng took up the Chairman's role immediately, presiding over the meeting for its duration.

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 15/1 – Deletion of ATS Routes from the APANPIRG List of Deficiencies
Draft Conclusion 15/3 – Adoption of the Asia/Pacific ATS Route Catalogue
Draft Conclusion 15/4 – Review of ATS Route Catalogue by States
Draft Conclusion 15/6 – Implementation of 30/30 NM Separation Minima
Draft Conclusion 15/7 – Special Implementation Project for Development of a State Contingency Plan
Draft Conclusion 15/9 – Recommendations of the ICAO SAR Seminar and SAREX held at Chennai, India
Draft Conclusion 15/10 – Special Implementation Project International Seminar and SAREX
Draft Conclusion 15/11 – Equitable Sharing by Civil and Military Users
Draft Conclusion 15/12 – ATM Contingency Planning for Volcanic Ash Cloud Avoidance
Draft Conclusion 15/13 – Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region
Draft Conclusion 15/14 – State contact point for submission of ATS incident report
Draft Conclusion 15/15 – Language Proficiency

6.3 **List of Draft Decisions**

Draft Decision 15/2 – To Discontinue the Development of ATS Route Master Database
Draft Decision 15/5 – To Disband the ARNR Task Force

6.4 **List of Decisions**

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

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 5 "Review of ATS Coordination Group Meetings", and new Agenda Item 7 "Review developments relating to CNS/ATM implementation" in accordance with guidance from APANPIRG/15 in respect of the dissolution of the CNS/ATM/IC Sub-Group. The meeting broadened the scope of Agenda Item 2 to ensure that the outstanding Conclusion and Decisions of previous APANPIRG meetings were also included, in addition to the outcomes of the most recent APANPIRG meeting. Accordingly, the meeting adopted the following agenda:

Agenda Item 1:	Adoption of Provisional Agenda
Agenda Item 2:	Review the APANPIRG/15 Report and subsequent ANC/Council Actions with respect to ATM/AIS/SAR issues, and the status of outstanding Conclusions and Decisions of APANPIRG
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:	Update the list of ATM/AIS/SAR Tasks together with priorities
Agenda Item 10:	Any other business
Agenda Item 11:	Date and venue for next meeting

Agenda Item 2: Review the APANPIRG/15 Report and subsequent ANC/Council Actions with respect to ATM/AIS/SAR issues, and the status of outstanding conclusions and decisions of APANPIRG

APANPIRG/15 Report and ANC/Council action

2.1 The meeting reviewed the Conclusions and Decisions with respect to ATM/AIS/SAR matters agreed to at the APANPIRG/15 meeting (23-27 August 2004) and noted the actions taken by the Air Navigation Commission (ANC) and the Council of ICAO in regard to the APANPIRG/15 report. Summarized highlights from the ANC and Council review have been provided below and the updated Conclusions and Decisions arising from the APANPIRG/15 report, including actions by the ANC and the Council, have been provided in **Appendix A** to the Report on Agenda Item 2.

Matters related to air traffic services/aeronautical information service/search and rescue (ATM/AIS/SAR) (Agenda Item 2.1)

a) The Commission noted, from paragraph 2.1.22 of the meeting report, that a target date of 9 June 2005 had been set for the reduced vertical separation minima (RVSM) implementation in Naha and Tokyo flight information regions (FIRs), Japan and Incheon FIR, Republic of Korea.

b) Appreciating the initiative of APANPIRG in taking up the initiative of APANPIRG in taking up the task of reviewing the Asia/Pacific air traffic services (ATS) route network (Conclusion 15/3 refers), the Commission called upon the Secretary General, as reflected in Appendix B, to monitor its progress.

c) The Commission noted that the Secretariat had recently distributed State letter AN 13/11.6-04/85, containing the revised guidelines on the use of strategic lateral offsets as approved by the Commission, and that a proposal for amendment to the *Procedures for Air Navigation Services — Air Traffic* Management (PANS-ATM, Doc 4444) to include these procedures was under development for applicability in November 2005. Furthermore, the Commission endorsed Conclusion 15/8 calling upon States to adopt a unified approach to implement the 2 NM lateral offset procedures simultaneously and that the Regional Office would coordinate an implementation date as soon as practicable. The Commission specifically included this conclusion in Appendix B hereto for action by the Secretary General.

d) When reviewing Conclusion 15/9 calling for ICAO to review the airspace classification provisions in Annex 11 — *Air Traffic Services* so as to specify the class of airspace appropriate for RVSM and required navigation performance (RNP) operations, the Commission noted that the conclusion was made, particularly, on the basis that visual flight rules (VFR) flights should be excluded from RVSM and RNP airspace. In this respect, it was recalled that in accordance with Annex 2 — *Rules of the Air*, VFR flight was already prohibited from operating in RVSM airspace, and that as the use of RNP expanded to lower airspaces, it was likely that States would want to establish RNP airspace wherein VFR flight would be allowed. Therefore, it would not be appropriate to amend the classification of airspaces in Annex 11 to exclude VFR flight from RNP airspace. However, it was agreed that further guidance on how to classify and designate airspace wherein RVSM and RNP was implemented, would be useful to States. Therefore, the

Commission noted Conclusion 15/9 and requested the Secretary General, as reflected in Appendix B, to examine the *Manual on Required Navigation Performance (RNP)* (Doc 9613) with a view to providing guidance on the application of airspace classifications in airspace where RVSM and RNP was implemented.

Matters related to communications/navigation/surveillance (Agenda Item 2.2)

a) The Commission noted that APANPIRG had established a task to conduct appropriate consultations, to identify factual information and to develop a regional strategy for implementation of air-ground data link in the Asia/Pacific Regions with a target date of July 2005 (paragraph 2.2.47 of the meeting report refers). The Commission specifically noted this paragraph [in their report] for action by the Secretariat.

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

a) The Commission noted that APANPIRG reviewed the outcome of Eleventh Air Navigation Conference (AN-Conf/11) and took follow-up actions on the basis of the analysis of various recommendations (Decision15/46 and Conclusions 15/47 and 15/48 refer).

b) The Commission noted that environmental issues had been discussed by APANPIRG with emphasis on the benefits accrued as a result of CNS/ATM systems implementation. Furthermore, the main focus of the Committee on Aviation Environmental Protection (CAEP) was at the global and regional levels and as such necessary tools were being developed to undertake this task. It was recognized that the level of maturity and complexity of these global/regional tools and their proprietary nature would not allow States to use them in their business case analysis. To respond to specific needs at the national level, APANPIRG noted the advice of CAEP that a more practical tool would be necessary. Acknowledging that operational measures contribute to reducing emissions and, recognizing the consequent need to quantify the benefits at national level, the Commission endorsed Decision 15/53 wherein APANPIRG had agreed to support CAEP's efforts in the development of simplified tools and associated guidance for estimating environmental benefits of CNS/ATM systems at the national level. The Commission specifically included this decision in Appendix B hereto for action by the Council.

c) Furthermore, the Commission noted that the environmental issues discussed by APANPIRG were also reflected during the consideration of 35th Session of the ICAO Assembly (Montreal, 28 September to 8 October 2004). The Assembly called for ICAO, through CAEP in cooperation with other relevant bodies such as the planning and implementation regional groups (PIRGs), to develop appropriate tools to assess emissions reductions associated with implementation of ATM measures and consequently adopted the resolution A35-5, that includes a specific clause related with the possible environmental benefits accrued from the implementation of ATM systems.

Deficiencies in the air navigation field (Agenda Item 4)

a) Regarding deficiencies, the Commission noted that APANPIRG had reviewed, analyzed and prioritized the list of air navigation deficiencies. Furthermore, the Commission noted that, as a follow-up to State letter M 6/1, dated 15 July 2004, APANPIRG called upon States to develop and implement an action plan for each deficiency (paragraph 4.25 of the meeting report refers) as well as to provide information to the Regional Office.

b) Continuing the discussions on deficiencies, the Commission complimented APANPIRG for developing the Asia/Pacific Supplement to the Uniform Methodology and for providing clear and concise procedures for the identification, assessment, prioritization and verification, validation and action plan, monitoring, rectification and removal from list of deficiencies (Conclusion 15/54 refers). Consequently, the Commission requested the Council to note Conclusion 15/54 and call upon the Secretary General to consider the applicability of this Asia/Pacific Supplement to the remaining regional offices for the resolution of regional air navigation deficiencies.

Other business (Agenda Item 7)

a) With regard to increasing the efficiency of PIRGs, the Commission noted that APANPIRG had reviewed its working methods. The Commission commended APANPIRG for taking the initial step towards a paperless meeting (paragraph 7.1 of the meeting report refers).

Review of Outstanding Conclusions and Decisions of APANPIRG

2.2 The meeting recalled that APANPIRG/15 (August 2004) had considered that many of the outstanding conclusions in the ATM/AIS/SAR fields were long standing, not specific enough in their intent or time-bounded and in many cases had been overtaken by events. In light of these considerations, the APANPIRG/15 agreed to close many of the outstanding conclusions. The meeting noted that if replacement was required, APANPIRG would formulate new and relevant conclusions as necessary.

2.3 With this in mind, the meeting reviewed progress on the outstanding Conclusions and Decisions of APANPIRG and updated the consolidated list. The updated list has been included as **Appendix B** to the Report on Agenda Item 2.

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

Review of the Terms of Reference of the ATM/AIS/SAR/SG

3.1 The meeting reviewed its Terms of Reference (TOR) as amended by APANPIRG/15 (Decision 15/19 and Appendix G to the Report on Agenda Item 2.1 refers) based on the recommendation of ATM/AIS/SAR/SG/14, and agreed that these satisfactorily covered the work programme of the Sub-Group. It was recalled that APANPIRG/15 considered it appropriate to revise the TORs to properly reflect the Sub-Group's expanded role. The TOR are included as **Appendix A** to the Report on Agenda Item 3.

Regional Office Seminar Activities

3.2 Since the ATM/AIS/SAR/SG/14 meeting held on 28 June-2 July 2005, the ICAO Asia/Pacific Regional Office had conducted the seminars described below. Details of the respective seminars have been included in the appropriate parts of this report:

a) 15-19 November 2004 – Air Traffic Management Safety Management Seminar, Beijing, Peoples Republic of China;

b) 14-17 December 2004 – Civil/Military Seminar, Asia/Pacific Office, Bangkok, Thailand;

c) 7-11 March 2005 – Search and Rescue Seminar, Chennai, India;

d) 21-22 March 2005 – Sixth Asia/Pacific RVSM Seminar, Incheon, Republic of Korea; and

e) 18-20 April 2005 – ADS/CPDLC Seminar, Asia/Pacific Office, Bangkok, Thailand.

f) 8-10 June 2005 – RASMAG ATS Safety Management Seminar

3.3 The Regional Office thanked the presenters that had attended the seminars and passed on their expertise and wisdom. Without the input from appropriate experts, the Regional Office could not put together good quality seminars on such a wide spread of subjects. The Regional Office also recognized the burden, in terms of costs and absences from the office, carried by the administrations that supported the attendance of their experts at ICAO seminars and passed on the thanks of the Regional Office for facilitating this participation

3.4 The meeting recognized the role of the Regional Office in arranging and conducting the 6 seminars of relevance to the region during the previous 12 months. This represented a significant workload and commitment by the Regional Office and was highly commended by the meeting. China and Thailand commented that the availability and conduct of seminars of this nature was very beneficial to States and, although recognizing the resource limitations at the Regional Office, expressed a very strong position that the seminars should be available on an ongoing basis to assist States in understanding and implementing ICAO provisions.

Review of RVSM/TF meeting reports

3.5 The Secretariat updated the meeting on progress by the RVSM Task Force to implement the regional RVSM plan and take follow-up action. The RVSM/TF continued its work programme in support of Japan and the Republic of Korea 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) and the Bay of Bengal and Beyond areas. The meeting noted that the implementation of RVSM in the Japan and Republic of Korea FIRs on 29 September 2005 would complete the implementation of RVSM in the international oceanic airspaces of the Asia and Pacific Region.

3.6 After the ATM/AIS/SAR/SG/14 meeting on 28 June – 2 July 2004, the Task Force met eight times (including two special coordination meetings), and conducted an RVSM Seminar as shown below:

Special ATS Coordination Meeting: 5 - 7 July 2004, Bangkok, Thailand
(RVSM Implementation in the Incheon, Naha and Tokyo FIRs)

RVSM/TF/22: 20 - 24 September 2004, Bangkok, Thailand
(Review of flight level orientation schemes)

RVSM/TF/23: 18 - 22 October 2004, Bangkok. Thailand
(RVSM Implementation in the Incheon, Naha and Tokyo FIRs)

RVSM/TF/24: 8 - 12 November 2004, Bangkok. Thailand
(One-year Review of Bay of Bengal and Beyond Implementation)

Sixth RVSM Seminar: 21 - 22 March 2005, Incheon, Republic of Korea

RVSM/TF/25: 23 - 25 March 2005, Incheon, Republic of Korea
(RVSM Implementation in the Incheon, Naha and Tokyo FIRs)

Special ATS Coordination Meeting: 29 – 30 May 2005, Kunming, China
(RVSM procedures between China and Myanmar)

RVSM/TF/26: 4 - 8 July 2005, Tokyo, Japan
(Go/No-go Decision Making for the Incheon, Naha and Tokyo FIRs)

Special ATS Coordination Meeting (SCM) – Japan/Republic of Korea

3.7 The meeting was informed that the SCM was convened to assist Japan and Republic of Korea in their RVSM implementation planning for the Incheon FIR and the domestic airspace of the Naha and Tokyo FIRs. The SCM reviewed the provisional Operational Plan for the FIRs concerned. RVSM would be applied from FL 290 to FL 410 inclusive in the Incheon, Naha and Tokyo FIRs, using the single alternate Flight Level Orientation Scheme (FLOS). The airspaces where RVSM would be introduced would be exclusive for RVSM approved aircraft, except for specific areas which would be defined by the States concerned. In addition, the transition areas and corresponding transition procedures would be developed by the States involved.

3.8 The SCM noted that the monitoring functions of the airspace planned for RVSM implementation in the Japan and Republic of Korea FIRs were under the responsibility of the Pacific Aircraft Registry and Monitoring Organization (PARMO). The PARMO was fully occupied with the implementation of RVSM in the domestic airspaces of the United States, Canada and Mexico that was

scheduled for 20 January 2005 and consequently would not be able to assist with the safety assessment work required for this implementation. As an interim measure, in view of the urgency to progress the readiness and safety assessment for the Incheon FIR, the SCM requested the Monitoring Agency for the Asia Region (MAAR) to undertake the readiness and safety assessment work involved. In this regard, MAAR agreed that they were willing to provide the necessary monitoring services.

RVSM/TF/22 – Review of the FLOS for the West Pacific/South China Sea area

3.9 The RVSM/TF/20 meeting (October 2003), which made the decision to go ahead with RVSM implementation in the Bay of Bengal and Beyond area scheduled for 27 November 2003, agreed to convene the RVSM/TF/22 meeting to review the RVSM FLOS for the WPAC/SCS area. This was necessary due to concerns of States responsible for the transition areas between the airspaces where two different FLOS were being applied; the airspace of the WPAC/SCS RVSM used a modified single alternate FLOS and elsewhere the single alternate FLOS was used. With the RVSM implementation by Japan and the ROK, this would lead to additional transition difficulties for some States.

3.10 RVSM/TF/22 reviewed the operation of RVSM in the airspace concerned and the effect of applying different FLOS requiring transition areas to be operated. MAAR had advised that the Large Height Deviation (LHD) occurrences in the RVSM airspaces submitted by the concerned States in both the WPAC/SCS and Bay of Bengal and Beyond areas for the period January 2003 to July 2004 showed that the LHD occurrences were more significant in the WPAC/SCS.

3.11 Recognizing the need to maintain safety, efficiency and regularity of operations in the WPAC/SCS area, the RVSM/TF/22 meeting developed a provisional revised plan based on proposals submitted by the Philippines and Thailand to revise the assignment of levels and corresponding No-Pre-Departure Coordination (No-PDC) procedures.

3.12 In accordance with ICAO's safety management provisions in Annex 11 – *Air Traffic Services*, detailed safety assessments would need to be carried out by the States concerned before any change to the WPAC/SCS FLOS could be agreed. In this regard, MAAR would undertake the safety assessment of the proposed FLOS for RVSM operations.

3.13 RVSM/TF/22 agreed to a follow-up meeting to be held in April/May 2005 when the results of the safety assessment to be conducted by MAAR and the detailed examination of operational factors to be carried out by all parties concerned would be evaluated.

3.14 Subsequent to the RVSM/TF/22 meeting, as a result of some States not providing the agreed safety related data to MAAR in time to complete the safety assessment, the follow-up meeting had to be postponed and has been tentatively rescheduled in January/February 2006 after implementation of RVSM by Japan and ROK.

RVSM/TF/23 – Japan/Republic of Korea

3.15 RVSM/TF/23 progressed the implementation plan for the Incheon, Naha and Tokyo FIR and reviewed the readiness of Japan and the ROK to implement RVSM. Both States reported that preparations for the introduction of RVSM were progressing well.

3.16 RVSM/TF/23 agreed that the provisional RVSM operational plan should be developed to meet the target date of implementation of 24 November 2005 which was applicable at that time. Accordingly, RVSM would be implemented from FL290 to FL410 inclusive, the airspace would be exclusive for RVSM-approved aircraft, except for special circumstances and the single alternate FLOS would be utilized.

3.17 In regard to the flight level assignment for ATS routes A593 and B576, recognizing that the traffic volume on the A593 and B576 was increasing, the meeting agreed that the assignment of levels needed to be reviewed to accommodate future demand. Several flight level proposals were reviewed and issues related to air traffic management on the routes. These matters would require further consideration by the parties concerned to be considered at the next Task Force meeting.

3.18 Based on Republic of Korea transition plan, RVSM transition areas would be established on airway segments adjoining the Pyongyang and Shanghai FIRs where RVSM would not be implemented. The transition areas would be established within radar and VHF communication coverage. The level conversion within the transition areas would be carried out from metric levels to RVSM levels, and vice versa, without double transitions from metric levels to conventional non-RVSM levels (CVSM) and then to RVSM levels.

3.19 MAAR had agreed to undertake the safety assessment on behalf of PARMO who was responsible for the FIRs but was unable to undertake the work due to their involvement in the RVSM implementation in the United States National Airspace System (NAS) scheduled for January 2005. To facilitate the readiness and safety assessments, Japan and Republic of Korea agreed to submit: the traffic sample data (TSD) for the period of 1 August to 30 September 2004 no later than 31 October 2004, monthly LHD reports, starting from January 2004, and aircraft registration with the RVSM approval records to MAAR and PARMO.

3.20 RVSM/TF/23 agreed that an RVSM seminar should be held to provide operators and ATS providers with information on the requirements for RVSM operations, and Republic of Korea offered to host the seminar at Incheon, Republic of Korea in conjunction with the next RVSM/TF meeting.

RVSM/TF/24 – One Year Review Bay of Bengal

3.21 RVSM/TF/24 carried out the one-year review of RVSM operation in the Bay of Bengal and Beyond implemented on 27 November 2003. India informed that RVSM had been implemented successfully but some operational issues were experienced with respect to levels that had been reserved for aircraft on international traffic flows. As a result, level assignment for domestic traffic was slightly restricted initially, but as confidence grew, ATC applied a more flexible application of level allocation for crossing traffic.

3.22 RVSM/TF/24 reviewed the current operational trial that was implemented by Malaysia, Singapore and Thailand on the assignment of an RVSM level for westbound international flights.

3.23 MAAR presented the annual report of airspace safety review of RVSM implementation and operations in the Bay of Bengal and Beyond area which involved 15 FIRs. RVSM/TF/24 was pleased to note that the results of the risk calculations were well within the agreed Target Level of Safety (TLS). However, there were a number of disturbing issues that had been identified by MAAR that required urgent follow up:

a) missing TSD;
b) missing LHD reports;
c) incomplete and non-reporting of State approvals registry data; and
d) incomplete information on follow-up monitoring of aircraft height-keeping performance in accordance with the RVSM Minimum Monitoring Requirements (MMR).

3.24 In light of the above, RVSM/TF/24 agreed that, in view of the incomplete safety assessment for those FIRs concerned, it was urgent that the States involved be informed that the safety data must be submitted to MAAR as soon as possible. In this regard, it was noted that Second meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/2, October 2004) had requested the Regional Office to inform the States involved to submit the data to MAAR as a matter of urgency.

3.25 The transition procedure arrangement between Kunming and Yangon ACCs was being revised in line with a proposal presented by the RVSM Task Force following the implementation of RVSM in Bay of Bengal and Beyond area. Subsequent to agreement between China and Myanmar representatives, a Letter of Agreement was signed with effect on 1601 UTC, 20 January 2005.

3.26 RVSM/TF/24 meeting reviewed the completion of tasks relating to the implementation of RVSM in the Bay of Bengal and Beyond area, and all the tasks were successfully completed and closed. Accordingly, the RVSM/TF/24 meeting agreed to declare full RVSM operational capability. The RVSM/TF/24 meeting also agreed, as this was the final meeting for this implementation, that outstanding issues relating to RVSM operations in the Bay of Bengal and Beyond area should be completed bi-laterally by the States concerned. The Bay of Bengal ATS Coordination Group, RASMAG and ATM/AIS/SAR/SG would also continue to address relevant RVSM issues and take appropriate follow-up action.

3.27 RVSM/TF/24 also gave consideration to air traffic flow management problems that had been raised by IATA and the need to streamline the flow of traffic, alleviate congestion and consequently reduce ground delays at international airports. In this regard consideration was given to the conduct of an operational trial of the FAA DOTS + or a similar automated flow management system, to enable the States concerned to assess the effectiveness of the system and corresponding ATFM plan. The matter was further pursued under BBACG.

RVSM/TF/25 – Japan/Republic of Korea Implementation

3.28 RVSM/TF/25 progressed RVSM implementation in the Incheon, Naha and Tokyo FIRs. The Republic of Korea had agreed with Japan to implement RVSM simultaneously and the date had been revised from 9 June 2005, previously reported to RVSM/TF/18 (June/July 2003) and the SCM (July 2004) in order to allow time for Japan to complete legal formalities to introduce RSVM in Japan's airspace. The implementation date had been revised to 29 September 2005.

3.29 In accordance with the safety assessment requirements, CASA ROK submitted LHD reports for the 12 months from March 2004 to February 2005 to MAAR. The TSD as requested by the RVSM/TF/23 (October 2004) for 2 months from 1 August to 30 September 2004 had been collected as derived from flight plan electronic data and provided to MAAR on 25 October 2004.

3.30 Republic of Korea advised that all aircraft (100 %) of the national carriers (Korean and Asiana Airlines) that were expected to operate in RVSM airspace within the Incheon FIR had obtained RVSM operational approval from CASA. Also, all approved aircraft were equipped with ACAS II (TCAS version 7).

3.31 For Japan, operator aircraft operational approval readiness was presently below 90 percent but was expected to reach about 94 percent by the implementation date (29 September 2005). JCAB still had some TSD to provide to MAAR and this would be submitted shortly to complete the safety assessment before the Go/No-Go meeting in early July 2005.

3.32 Based on its experience with RVSM operations since February 2000, Japan presented a detailed briefing on how RVSM had been implemented and operated in the Tokyo FIR oceanic airspace and the adjacent Anchorage and Oakland FIRs, and the coordination arrangements in place with the United States to apply a flexible and tactical use of flight level allocation to optimize the traffic flows and provide maximum benefits to operators. The meeting congratulated JCAB and the Tokyo ACC for the excellent manner in which it applied tactical solutions to level assignment, thereby achieving maximum benefit to operators, at the same time contributing to significant fuel savings and environmental benefits.

3.33 The meeting was advised that the results of the RVSM safety assessment carried out in February 2005 by the Electronic Navigation Research Institute (ENRI) for JCAB had shown that the aircraft passing frequency on G581 had exceeded the maximum passing frequency permitted for RVSM operation (Doc 9574 refers). As a result, mitigating action would be taken to implement two uni-directional domestic RNAV routes offset from G581. The routes were under radar coverage and would be subject to radar control service with separation between the tracks based on radar.

3.34 The meeting was provided with a thorough briefing on the Republic of Korea's airspace structure and restrictions necessary to accommodate military operations. Coordination with the military authority was being undertaken to address military requirements, and to seek more optimum use of the airspace.

3.35 In regard to the WPAC/SCS FLOS, the meeting was updated on progress by the RVSM/TF to review the FLOS arrangements in the interest of harmonization and to minimize transition areas. As the safety assessment had not been completed due to missing safety data, the review meeting scheduled in April/May 2005 had been postponed. In light of these developments, the RVSM/TF/25 meeting expressed disappointment and concern that some States responsible for RVSM operations in the SCS airspace had not fulfilled their obligation to cooperate with MAAR and the ICAO RVSM/TF in submitting the data essential for updating the safety assessment that had been agreed to by the RVSM/TF, and by all States involved - including the States who had not provided the complete data.

3.36 RVSM/TF/25 urged all States to continue to support, as a matter of priority, the safety monitoring requirements established by ICAO for RVSM operations, and to fully cooperate with MAAR and PARMO who had been appointed by APANPIRG to undertake the RVSM regional monitoring responsibilities.

3.37 Following further discussions on the flight level allocation for A593 and B576, Japan and the Republic of Korea reached agreement to implement RVSM on 29 September 2005 based on the current flight level allocation system and including RVSM levels on A593 and B576. The meeting recognized that there were issues could not be resolved at the meeting; however, measures agreed to for the flight level assignment provided a basis for implementing RVSM. In order to realize the full benefits of RVSM and provide additional capacity, there was a need to examine in detail the various

options for assigning of flight levels and ATC procedures. The meeting requested all concerned to examine the issues in detail and be prepared to discuss them further at the next meeting.

3.38 The meeting agreed that Japan and the Republic of Korea should now take a close look at the remaining work to be done, complete all outstanding issues as soon as possible, and amend Letters of Agreement including those with neighboring States involved in transition and changes to flight level allocation. In this regard, a deadline to complete coordination on procedures and arrangements should be determined by the States, and follow-up action taken to harmonize their AIP Supplements. The meeting agreed that a deadline of 30 April 2005 should be set for States to submit their data including the RVSM planned area of implementation and the applicable FLOS to be implemented to MAAR, and the safety assessment to be completed by the end of June 2005 to be submitted to the Go/No-Go meeting.

Sixth Asia/Pacific RVSM Seminar

3.39 The Sixth Asia/Pacific RVSM Seminar (RVSM Seminar/6) was held on 21-22 March 2005 at Incheon, Republic of Korea in conjunction with the RVSM/TF/25 meeting held on 23-25 March 2005. The primary purpose of the RVSM/TF/25 meeting was to finalize the operational RVSM plan for the Incheon FIR and the Tokyo and Naha FIRs (domestic) in preparation for the Go/No-Go meeting scheduled on 4-8 July 2005 and implementation on AIRAC date 29 September 2005.

3.40 The seminar was attended by 121 participants from 9 States and 2 international organizations. The seminar programme covered the main topics in the ICAO *Manual on Implementation of 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL410 Inclusive* (Doc 9574), which deals with RVSM implementation and operation.

3.41 The seminar highlighted the need for States to undertake due diligence in regard to the safety management requirements established by ICAO for RVSM, including ensuring that aircraft operations and air traffic management conformed to high safety standards, with ongoing operations subject to a comprehensive safety monitoring programme.

3.42 The meeting noted the benefit of conducting a seminar in conjunction with the implementation process at a States involved in implementation. This allowed for wider participation of parties associated with RVSM matters.

Special ATS Coordination Meeting – China/Myanmar

3.43 The SCM China/Myanmar conducted a post implementation review in relation to the implementation of a revised operational LOA between the Kunming ACC and Yangon ACC for the RVSM transition procedures adopted on 20 January 2005. The transition procedures had been improved by removing the double transition between RVSM to CVSM to China metric levels and vice versa to permit transition directly between RVSM and China metric flight levels.

3.44 China briefed the SCM in respect to problems that had been identified during the routine ATC transfer and coordination activities undertaken between Kunming ACC and Yangon ACC. These included occasions where the transferred movement of aircraft was not in accordance with the actual movement with the time discrepancy exceeding the description in the LOA (3 minutes), where the transferred flight level was not in accordance with the actual flight level and where aircraft entered the Kunming FIR without transfer.

3.45 Whilst acknowledging the improvements in ground-ground and air-ground communications expected imminently as a result of Myanmar's equipment replacement/enhancement programme, the SCM agreed a number of additional procedures and arrangements expected to address the problems that had been identified.

3.46 China and Myanmar signed a Supplement to the Operational LOA and a Memorandum of Understanding between the parties to record and implement the procedures agreed during the SCM. These included additional communications strategies to ensure accurate and timely coordination between the two centers, requirements for eastbound aircraft unable to climb from FL410 to 12 600 m to descend to FL 370 before Lashio (LSO) and agreement that both parties would act to ensure strict adherence to the terms of the Operational LOA. The parties also agreed to continue the relationships established between delegates as a result of the SCM, with a view to holding an annual bilateral meeting to discuss ATM issues.

RVSM/TF/26 Japan/Republic of Korea Go/No Go Meeting

3.47 RVSM/TF/26 reviewed the readiness of Japan and the Republic of Korea (ROK) to implement RVSM in domestic airspace of the Naha and Tokyo FIRs, and in the Incheon FIR, respectively. It was considered that good progress had been made in order to meet the target date of 29 September 2005.

3.48 RVSM/TF/26 examined the traffic situation (density and complexity) based on the two switchover times, i.e. 1600 UTC and 1900 UTC, proposed by the ROK and Japan, respectively. The meeting recognized that it would be desirable to have a common switchover time in order not to create any misunderstanding or confusion. Japan and the ROK agreed to switchover from CVSM to RVSM at 1900 UTC on 29 September 2005. IATA and IFALPA confirmed that the agreed time was acceptable.

3.49 Japan and Republic of Korea advised that a Trigger NOTAM would be issued on 22 September 2005 in accordance with the ICAO procedure in the *Aeronautical Information Manual* (Doc 8126).

3.50 RVSM/TF/26 reviewed the results of readiness assessments and noted that approximately 75 percent of the aircraft operations would be conducted by State approved operators and aircraft. Further, 17 percent of aircraft operations in the collected TSD were in the process of obtaining the State RVSM approval and were expected to be completed in September 2005, before the planned RVSM implementation date. Therefore, the meeting noted that approximately 92 percent of aircraft operations would be RVSM-approved by 29 September 2005.

3.51 The meeting noted that the risk calculation undertaken by MAAR for the Japan and ROK RVSM implementation would exceed the agreed overall TLS. This was due to the LHD event that had occurred in Japan in June 2005. The meeting was advised by Japan that positive counter measures had been put in place to prevent the recurrence of such an incident. In light of the preventive actions taken by Japan and the fact that it was an isolated case, the meeting agreed that this LHD occurrence could be excluded in the risk calculation. As a result, the total risk from all causes was below the TLS of 5×10^{-9} fatal accidents per flight hour.

3.52 Japan reported that the pre-implementation safety assessment for the Japanese domestic airspace had been completed, based on TSD for a period from January 2003 to December 2003. Since the preliminary assessment report in March 2004 showed that the passing frequencies of some segments of ATS route G581 exceeded the criteria of the Global System Performance Specification, JCAB modified the route structure of G581 on 17 February 2005. As a result, the passing frequency on G581 decreased to a level below 40 percent of the figure indicated before the

route restructure. The estimates of technical risk, operational risk and overall risk calculated for Japanese domestic airspace were below the required TLS.

3.53 MAAR advised that it would continue to provide the safety monitoring services until the 90-day review of the Japan and ROK RVSM implementation, after which point the responsibility would return to PARMO. To enable MAAR to complete this task, new TSD would have to be provided for the month of November 2005. The data should be submitted to MAAR no later than 15 December 2005. It was also highlighted that States need to provide MAAR with updates on RVSM approvals on monthly basis, no later than the 15th day of the following month. Complete details of RVSM approval registry records were available on the MAAR website at http://www.aerothai.co.th/maar/dl.php

3.54 Based on the updates provided by Japan and the ROK, as well as the safety assessments completed by MAAR, the RVSM/TF/26 meeting agreed to go ahead with the implementation of RVSM in the Incheon, Naha and Tokyo FIRs on 29 September 2005. The meeting noted that this implementation would complete the implementation of RVSM in the international oceanic airspaces of the Asia and Pacific Region.

Assessment of Non-Approved Operators using Pacific RVSM Airspace

3.55 The Pacific Approvals Registry and Monitoring Organization (PARMO) briefed the meeting in respect to a comprehensive study that they had undertaken into the identification of non-RVSM-approved operators using Pacific airspace where the RVSM is applied.

3.56 Using actual Pacific traffic movement data collected during April 2003 and April 2004, PARMO had compared all observed air carrier aircraft operations flying between FL290 and FL390, inclusive, against the RVSM operational approvals noted in the approvals databases from the PARMO, Monitoring Agency for the Asia Region (MAAR), Caribbean/South American Regional Monitoring Agency (CARSAMMA), North American Approvals Registry and Monitoring Agency (NAARMO), North Atlantic (NAT) Central Monitoring Agency (CMA), and EUROCONTROL.

3.57 The April 2003 traffic movement data used for this analysis were from the Anchorage Oceanic, Auckland, Brisbane, Nadi, Naha, Oakland Oceanic, Tahiti, and Tokyo Flight Information Regions (FIRs). The April 2004 traffic movement data used in this analysis were from the Anchorage Oceanic, Auckland, Naha, Oakland Oceanic, and Tokyo FIRs.

3.58 As a result of the study, PARMO had identified a number of potentially non-RVSM-approved aircraft that had been operating in RVSM exclusive airspace and had comprehensively summarized all cases of the identified operators and aircraft types. The study also revealed possible cases of non-RVSM approved operations, with some possible non-approved operations showing /W in Field 10 of the ICAO flight plans.

3.59 The meeting endorsed PARMO's proposal that a copy of the study be provided to the appropriate Asia/Pacific State civil aviation authorities (CAAs), and that the CAAs investigate the RVSM approval status of the identified operators and aircraft that are under their jurisdiction. The Regional Office undertook to coordinate with PARMO to make arrangements to circulate the analysis material contained in the PARMO study to States of the Asia and Pacific Region.

Pacific Approvals Registry and Monitoring Organization quarterly safety monitoring report

3.60 The United States provided information on the safety monitoring reporting from PARMO and provided a copy of the 1st Quarter 2005 safety monitoring report. The purpose of this quarterly report was to compare actual performance to safety goals related to RVSM implementation in Pacific airspace. This report contained a summary of large height deviation reports received by the PARMO for the most recent 12-month period of April 2004 – March 2005. In addition, an update of the vertical collision risk for Pacific airspace was presented. The vertical collision risk estimate for this period was roughly 67 percent below the target level of safety (TLS) value of 5.0×10^{-9} fatal accidents per flight hour.

3.61 The meeting appreciated the information provided from PARMO, and was pleased to note that RVSM in the Pacific airspace continued to operate well below the TLS. The RVSM RMA reports were routinely reviewed by RASMAG and further information would be contained in the RASMAG reports.

3.62 The meeting expressed its appreciation to PARMO for its substantial contribution to RVSM safety in the Asia/Pacific Region. In particular its efforts to facilitate RVSM implementation throughout the region was highly valued and notably the assistance given to AEROTHAI, Thailand to enable them to establish the Monitoring Agency for the Asia Region (MAAR) that has proved to be a real asset to RVSM operations in the Asia Region.

Formation flights in RVSM airspace

3.63 The United States Department of Defense (DoD) advised of action taken in the United States to accommodate formation flights of military aircraft that were RVSM compliant in RVSM airspace. It should be noted that many military air forces routinely operated aircraft as a formation flight. The air traffic separation required for formation flights operating in RVSM airspace was 2000 feet. However, continuing to provide 2000 ft vertical separation for formation flights made up of RVSM compliant aircraft was considered to be an inefficient use of the airspace.

3.64 The Federal Aviation Administration (FAA) and DoD conducted a follow-up analysis of the implementation of their domestic RVSM in the National Airspace of the United States on 20 January 2005. As a result, there were several recommendations for improvements and changes to current procedures. The recommendation to provide RVSM separation of 1000 feet to formation flights consisting of all RVSM compliant aircraft was one of those improvements. This was a more efficient use of airspace and provided less impact on air traffic controllers responsible for controlling formation flights in RVSM airspace.

3.65 The meeting was informed that the United States applied the RVSM separation standard to a formation flight which consists of all RVSM approved aircraft based on FAA Notice 7110.406 effective 12 May 2005. On the other hand, formation flights which do not consist of all RVSM approved aircraft continued to have 2000 ft separation standard applied above FL 290. RVSM separation for formation flights was acceptable when all aircraft were RVSM approved aircraft, and did not apply to RVSM compliant aircraft conducting aerial refueling. RVSM formation flights must also use an automatic altitude keeping device to hold assigned altitude.

3.66 It was noted that formation flights comprised of all RVSM approved aircraft could file for a single level if all formation aircraft fly the assigned level, either offset from each other or in trail. However, non-standard formation flights comprised of all RVSM approved aircraft must request a block altitude. ATC would then provide other RVSM approved aircraft with appropriate RVSM separation standards (e.g. formation flight assigned FL 320-330 and other RVSM approved aircraft at FL 310 or FL 340).

3.67 The meeting noted the procedures developed and applied by the United States for formation flights in RVSM airspace. To date, these procedures have not been adopted by ICAO for universal application and individual States would need to consider the applicability of applying such procedures in their domestic airspace.

3.68 IATA raised the issue of contingency procedures in the event that an aircraft in the formation had to carry out an emergency descent noting that only one aircraft in the formation conducted radio communications with ATC. The DoD representative advised that, as was the case presently in CVSM applications, the emergency aircraft would leave the formation and come up on the radio and communicate with ATC as an individual aircraft. In this regard, consideration would also need to be given to the type of formation that could be flown and how many aircraft could operate in the formation as this had an impact on the size of the formation and how this would affect the RVSM safety assessment.

3.69 In light of the information provided and the issues arising, the Regional Office would seek advice from ICAO Headquarters on whether these procedures had been considered by ICAO and could be applied in international airspace.

Implementation of ATS routes in the Asia/Pacific Region

Review of the reports of the ATS Route Network Review Task Force (ARNR/TF)

3.70 The meeting reviewed the progress made by the ARNR/TF to undertake the review of the Asia/Pacific ATS route network called for under APNPIRG/14 Conclusion 14/2. The Task Force met three times as shown below:

ARNR/TF/1: 6 – 10 September 2004, Bangkok, Thailand

ARNR/TF/2: 14 – 18 February 2005, Bangkok, Thailand

ARNR/TF/3: 2 – 3 May 2005, Bangkok, Thailand

ARNR/TF/1 Meeting

3.71 The ARNR/TF/1 noted that there was an urgent need to update the Asia/Pacific Basic Air Navigation Plan (BANP) to include a large number of changes to the ATS routes in the region, the assignment of five-letter name-codes with corresponding coordinates for the significant points on these routes, and the route network database maintained by the Regional Office. Further, the ARNR/TF/1 recalled that the APANPIRG/15 (August 2004) acknowledged that updating the BANP ATS routes and determining present and future route requirements was a high priority, as States required this information to plan for and provide the appropriate level of air navigation services to meet user requirements.

3.72 The ARNR/TF recognized the important emphasis placed by APANPIRG/15 on environmental concerns and the need to quantify benefits which would be taken into account. It was recognized that achieving positive environmental outcomes would result from shortening and

realignment of routes whenever it was appropriate to do so. Savings in emissions and reduced fuel requirements could be quantified to show environmental benefits and this would be calculated and documented where possible.

3.73 The ARNR/TF/1 first reviewed the list of ATS routes in Table ATS-1 of the First Edition of the BANP dated 2001, and identified routes no longer required, changes necessary to the routes and new routes that needed to be included in the BANP.

3.74 The meeting reviewed and updated the APANPIRG/15 List of Deficiencies in regard to routes on information provided by States on action taken and proposed remedial action. In its review, the ARNR/TF/1 noted there were constraints in designing airspace that would result in not always being able to provide users with preferred routing. These constraints were well known, and the fact that a direct route could not be implemented, for justifiable reasons, would not in itself constitute a deficiency. In this regard, the ARNR/TF/1 noted that the BANP contained a number of routes that were on the APANPIRG List of Deficiencies that could not be implemented, although the Third Asia/Pacific Regional Air Navigation Meeting in 1993 had included them in the ANP.

3.75 ARNR/TF/1 agreed to establish the *Asia/Pacific ATS Route Catalogue* using a format similar to the one used by the Russian/American Coordinating Group for Air Traffic Control (RACGAT). It was agreed that this would be an ideal way to compile and collate the list of routes proposed by States and users. It would also be useful to include a section containing the routes listed in the BANP. Further, in view of the comments made by IATA in respect to the BANP routes not implemented, another section should be included to show these routes. In the compilation of the document, IATA agreed to assist with work to set the document up with data provided by States.

3.76 The draft Route Catalogue was developed to include five chapters as follows:

Chapter 1: Routes in BANP − Implemented

Chapter 2: Routes in BANP − Not Implemented

Chapter 3: Routes Implemented − Not in the BANP/or not in accordance with the BANP

Chapter 4: Future Requirements − States

Chapter 5: Future Requirements − Users

3.77 In regard to AIS and charting issues, these were in the main related to route implementation. As such, they would be addressed by the implementation groups concerned. In regard to charting and development of route proposals, the ARNR/TF1 meeting emphasized the importance of proposals to be submitted to the Task Force be accompanied with a detailed chart of the route(s). This would also facilitate the review and development of proposals for amendment of the BANP.

3.78 The meeting noting the benefits of including a chart presentation of routes in the Route Catalogue, also felt it would be highly beneficial to recipients to attach charts of routes from the catalogue to the BANP amendment proposals circulated to States and international organizations.

3.79 The meeting took into account the volume of work that would be required by the ARNR/TF, and noted that a strategy would be need to be developed to achieve a review of the ATS route network in the Asia/Pacific Region. The meeting was of opinion that the time line required to amend the BANP varied from amendment to amendment. It was further noted that the actual work of

implementing new routes, revising existing routes and route networks was the responsibility of States and would be facilitated by the regional ATS Coordination Groups.

3.80 In considering the future role of the Task Force, the meeting recognized that the primary work would be to update the ATS routes in the BANP, the route designators and five-letter-name code database, and identify and process State and user requirements for future routes. The meeting considered the Task Force's role in regard to implementation of routes and agreed that, as this was the primary responsibility of States and the appropriate ATS coordination groups, this Task Force would not be required to undertake the implementation work as it would overlap the responsibility of the States and ATS Coordination Groups. Once the Route Catalogue had been completed and follow-up action taken on new route requirements including preparation of BANP amendments, the meeting was of the view that its main function would have been achieved.

ARNR/TF/2 Meeting

3.81 The ARNR/TF/2 reviewed and updated the APANPIRG List of Deficiencies in respect to ATS routes, which would be included in the Route Catalogue As the Route Catalogue fully captured all the circumstances related to route deficiencies, ARNR/TF/2 agreed that there was no longer a need to retain them on the List of Deficiencies. Accordingly, the Task Force recommended that APANPIRG/16 should delete them from the List of Deficiencies. The updated List of Deficiencies would be presented to the ATM/AIS/SAR/SG/15 meeting in July 2005.

3.82 It was noted that the BANP was an official and formal document which took time to amend. Therefore, recent amendments to the BANP would not be published in a timely manner. With the objective of supplementing the BANP and making more timely information available, the Route Catalogue was developed as a living document to be maintained by the Regional Office, updated at least annually and posted on the ICAO APAC website.

3.83 The meeting reviewed the route requirements submitted by States and users, identified and progressed route improvements, and updated the Route Catalogue accordingly. The Catalogue was further improved and expanded in light of discussions. The ARNR/TF/2 recognized that in developing the Catalogue to this present stage, a considerable effort had been made and expressed appreciation to IATA and the Regional Office for the support provided. The ARNR/TF/2 adopted Version 0.1 of the Catalogue as updated.

3.84 The meeting agreed that to progress the work of the Task Force, the next ARNR/TF/3 meeting would be held back to back with the SEACG/12 meeting on 11-13 May 2005 at the Regional Office, Bangkok.

ARNR/TF/3 Meeting

3.85 The ARNR/TF continued its work to update and finalized the layout and content structure to be included in the Route Catalogue, and to review the route requirements of States and users.

3.86 In considering the role of the Route Catalogue, it was intended that this should be an informal supplementary document to the BANP containing consolidated material from the BANP and related documents, to serve as an aid to States and users for route planning purposes. As such, the Route Catalogue did not replace the BANP or provide material to be used in an operational context. It was noted that the Route Catalogue was primarily a one stop information document on what routes were contained in the BANP, status on implementation and amendment, and future route requirements of States and users intended for planning purposes.

3.87 In considering the status of the Route Catalogue, ARNR/TF/3, all material in Chapters 1, 2 and 3 was in respect to the BANP, which was developed and amended in accordance with established ICAO procedures. In this regard, the ARNR/TF/3 agreed that in respect to these chapters, the Route Catalogue simply recorded the current status of the routes in the BANP. Therefore formal approval was not required to include this material and it could be updated by the Regional Office.

3.88 In regard to material in Chapters 4 and 5, this would require some additional prior approval process and should not be simply submitted to the Regional Office on an ad hoc basis by the originator(s). States would submit their route proposals in accordance with established ICAO procedures. In the case of route proposals by IATA member airlines, these would be submitted to IATA for processing in accordance with their established practices. For airlines not IATA members, proposals should be submitted to the States concerned who would then consider the amendment proposal in line with established practices.

3.89 The ARNR/TF/3 reviewed the draft Catalogue *Foreword* including the flow charts on *Amendments to the Catalogue,* finalized the layout and content structure. The ARNR/TF/3 meeting adopted Version 0.2 to be presented to ATM/AIS/SAR/SG/15 for further updating, endorsement and presentation to APANPIRG/16.

3.90 It was recognized that, in the first instance, as the Route Catalogue was a product of the work of the ARNR/TF established by APANPIRG, its status would need to be decided by APANPIRG. The means by which it was amended should be delegated by APANPIRG to the Regional Office or by some other agreed procedure determined by APANPIRG. Accordingly, ARNR/TF/3 agreed to make an appropriate recommendation to APANPIRG through ATM/AIS/SAR/SG/15.

3.91 ARNR/TF/3 recalled that APANPIRG/15 had tasked ARNR/TF to prepare a master database of the routes that had been implemented. It was questioned as to whether the master database should be maintained considering the laborious work required by the Regional Office and the need to compile accurate data in view of there being widely available commercial sources of this data. The ARNR/TF/3 agreed that, as the data required was provided in the Route Catalogue, there was no longer a need for the Regional Office to compile and maintain a separate master database, and therefore it should be discontinued.

3.92 In reviewing its work to date, the ARNR/TF/3 agreed that the ARNR/TF had met the Terms of Reference established by APANPIRG/15 and its work had been substantially completed. The output of the Task Force was consolidated in an Asia/Pacific ATS Route Catalogue which provided a comprehensive and detailed listing of ATS route requirements and implementation status in the Asia/Pacific region. The routes contained on the APANPIRG List of Deficiencies have been incorporated in the Route Catalogue and the status recorded, which would facilitate future follow-up action. Any outstanding matters could be adequately dealt with by the Regional Office and through correspondence, and there was no need for a further meeting before APANPIRG/16.

3.93 Accordingly, the ARNR/TF/3 agreed to recommend to APANPIRG/16 that the ARNR/TF be disbanded. Following the disbanding of the ARNR/TF, it was expected that APANPIRG would refer any outstanding work to the appropriate ICAO/State ATS coordination groups and Regional Office.

Completion of tasks by the ARNR Task Force

3.94 The meeting noted the information provided by ARNR/TF and the discussion on the ATS routes contained on the APANPIRG List of Deficiencies in the ATM/AIS/SAR fields, and considered the recommendation of ARNR/TF to delete the ATS routes from the APANPIRG List of Deficiencies as full details of these routes were contained in the Route Catalogue, which would be kept under review.

3.95 The meeting agreed to recommend to APANPIRG/16 that these be deleted and formulated the following Draft Conclusion:

Draft Conclusion 15/1 – Deletion of ATS Routes from the APANPIRG List of Deficiencies

That, the ATS routes included in the APANPIRG List of Deficiencies which have been incorporated in the Asia/Pacific ATS Route Catalogue be deleted from the APANPIRG List of Deficiencies in the ATM/AIS/SAR fields.

3.96 The meeting considered the ARNR/TF position that the Regional Office did not need to compile and maintain a separate ATS route master database to the Route Catalogue and that this work should be discontinued. Accordingly, the following Draft Decision was developed:

Draft Decision 15/2 – 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

3.97 The meeting reviewed ARNR/TF's progress to complete the Route Catalogue and, in recognizing that further updating was required, included the changes proposed by the meeting. The meeting then considered the recommendation from ARNR/TF/3 that the ATM/AIS/SAR/SG/15 endorse the Catalogue and further recommend that APANPIRG/16 adopt it.

3.98 The meeting recognized that this was a substantial document that would add considerable value to States and users in developing the Asia/Pacific ATS route network. However, it was not clear what status should be given to the document. It was noted that ARNR/TF considered the document should be an informal document maintained as a living document by the Regional Office. In this regard, it was not clear to the meeting if, on this basis, it could be accepted as a supplement to the BANP. The Secretariat advised that this question needed further consideration and the advice of ICAO Headquarters would need to be obtained. At this stage, it would be sufficient for this meeting to endorse the document in principle recognizing its value as an aid to planning and implementation of ATS routes, and advice would be provided to APANPIRG/16 based on input from ICAO Headquarters. In light of the foregoing the following Draft Conclusion was adopted:

Draft Conclusion 15/3 – Adoption of the Asia/Pacific ATS Route Catalogue

That, the *Asia/Pacific ATS Route Catalogue* as shown in **Appendix B** to the Report on Agenda Item 3 be adopted as a living document to be maintained and updated by the Asia and Pacific Regional Office. *(Note: Its status in respect to the Asia/Pacific Basic Air Navigation Plan to be determined by APANPIRG/16.)*

3.99 In response to concerns about the implementation process, the Secretariat advised that the ARNR/TF had agreed that this was the responsibility of States and State ATS coordination groups and would be best left to that process. The ARNR/TF was of the view that States would not be supportive of prolonging the work of the Task Force into a major implementation effort when this could be readily be taken up by other established arrangements. Likewise, the Regional Office was not in any position to commit any further resources to this effort in view of the staffing cutbacks. The meeting emphasized that the ongoing work to implement routes was a high priority of States and users, therefore this should be brought to APANPIRG's attention. The following Draft Conclusion was formulated in this respect:

Draft Conclusion 15/4 – Review of ATS Route Catalogue by States

That, the States concerned study the routes in the ATS Route Catalogue in respect of 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.

3.100 The meeting noted that the ARNR/TF/3 had considered that the Task Force had successfully met its Terms of Reference established by APANPIRG/15, and that ATM/AIS/SAR/SG/15 should be considered a recommendation to APANPIRG/16 to disband the ARNR/TF. In light of the discussion above, the meeting agreed to the termination of the ARNR/TF and formulated the following Draft Decision:

Draft Decision 15/5 – 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.

Designators for ATS Routes

3.101 The Secretariat advised the meeting of the guiding principles in Appendix 1 to Annex 11 regarding ATS route designators. ICAO Headquarters, on reviewing amendment proposals submitted by the Regional Office, had drawn attention to cases of non-compliance with Annex 11 in the assignment of ATS route designators. In some cases, a letter had been added as a suffix to the designator to indicate a flight direction of "N", "E", "S", or "W" e.g. R460E and R460W. It had been noted that this was a long standing practice adopted by some States in some areas. Also, there were cases where another letter was added as a suffix to indicate a branch route, e.g. B465A. These practices were not consistent with the principles in Appendix 1 to Annex 11 governing the identification of ATS routes.

3.102 It should be further noted that the same designator with a directional suffix was being used for two adjacent uni-directional routes, e.g. R460E and R460W. This could lead to confusion and misidentification of a route and did not adequately take into account human factors principles.

3.103 On the advice of ICAO Headquarters States concerned are requested to review ATS routes not in compliance with Annex 11, Appendix 1, and to consider changing them. In any case, where two identical designators were being used with directional suffixes added, one of these routes should be assigned a unique designator. States were requested as a matter of priority to contact the Regional Office to change these designators.

3.104 The meeting considered the use of a letter to indicate direction of flight, and recognized that this would provide added benefit and enable pilots and controllers to readily identify the direction of flight and, when used with discrete route designators, would readily indicate that the route was a uni-directional route. However, the meeting did not have a strong view on making use of this practice by amending Annex 11 and this matter would require further consideration and consultation within their administrations.

3.105 The meeting agreed that States should comply with ICAO provisions and change non-compliant route designators accordingly. The Regional Office maintains a list of unique ATS route designators available for assignment to States in the Asia/Pacific Region. This avoids duplication with other regions and States were requested to coordinate with the Regional Office to change designators as necessary.

Realignment of ATS routes A1 and P901 in the Sanya AOR

3.106 China informed the meeting that they had completed a major study to realign A1 and P901 in the southwest area of the Sanya AOR, which took into account requirements for the route protected area, adjustment of the danger areas and the operating requirements of the new route.

3.107 It was recognized that A1 along with the alternate route P901 were important trunk routes in the South China Sea area. Due to four danger areas in proximity to the routes with different active times, it was not possible to operate either route 24 hours. As an initial step to improve operations to allow 24 hour operations, China adjusted the active time of ZGD155 and ZGD156 with effect from 20 January 2005.

3.108 In follow-up to the outcome of the SEACG/12 meeting and in a spirit of mutual cooperation, China took urgent action to carry out an in-depth study of the route structure and liaise with States and organizations concerned with a view to streamlining the route alignment in the area concerned. Having completed the process, China has developed a restructure plan by establishing a new route segment in the Sanya AOR. The route requirements and construction of the protected areas has taken into account the availability of the Danang VOR and RNP 10 beyond the VOR coverage.

3.109 The meeting expressed its appreciation for the prompt action taken by China to improve the route alignment which would benefit the operators. On reviewing the routes, questions were raised concerning the basis of the route centre line protected area and location of the danger areas which should be given further consideration and evaluation. China explained the issues in detail.

3.110 The meeting supported the need for improvements in relation to flight operations on A1 and P901. The meeting discussed the route realignment proposal, which should be progressed as soon as possible. Further coordination with the States, ICAO and users concerned would be necessary to finalize the route and implementation details, establish the ATC operating procedures and prepare letters of agreement (LOA). Vietnam appreciated the work done by China towards improving the flight operations on A1 and P901 and noted that the proposal was related to the trial package of the revised ATS routes structure and airspace organization over the South China Sea. Vietnam also noted that the proposal required more details such as the designator of the route, names of reporting points, and coordinates of repositioned danger areas etc for consideration. China would progress the matter in coordination with the Regional Office and other parties concerned.

Traffic saturation on L642 and M771

3.111 Singapore alerted the meeting to the dramatic increases in traffic volume that had been experienced on ATS routes L642 and M771 in the South China Sea parallel route structure. Singapore considered that there was already an urgent need for increased capacity on these routes and expected the situation to worsen significantly in light of the increased traffic volumes that were forecast for the region.

3.112 Singapore noted that the South China Sea routes were using 80NM or 10 minute longitudinal spacing for RNP10 operations and that urgent consideration should be giving to reducing the longitudinal spacing to 50 NM as was available for RNP 10 operations. Singapore, noting that this matter had been raised in this vein on a number of previous occasions over the years, urged affected States to consider this matter as a priority and work collaboratively towards a solution of this nature. Singapore considered that a dedicated task force or study group would be an effective way forward and urged States and the Regional Office to consider this approach to rectifying this problem.

3.113 The Regional Office recognized that this was a matter that should be managed under the auspices of the South East Asia ATS Coordination Group (SEACG), and undertook to raise the matter again in this forum. The Regional Office highlighted the remarks already made to the meeting in respect of the lack of Regional Office ATM resources as a result of the loss of two ATM posts, confirming that the Regional Office would be unable to assist with the establishment and operation of such a task force.

3.114 Singapore generously offered to provide a Chairman for this task force and would assist its operation in terms of leadership and meeting arrangements. The meeting agreed that affected States, including Japan, and International Organizations should collaborate to form a task force, which would operate with minimal resources from the Regional Office and provide reporting to ICAO via the SEACG. Japan advised the meeting that they were willing to participate in the task force activities. Singapore undertook to coordinate arrangements to establish the task force and would keep the Regional Office apprised of developments.

Implementation of 30 NM lateral and longitudinal separation minima

3.115 On 20 January 2005, following satisfactory completion of the safety review, 30 NM lateral and 30 NM longitudinal separation minima (30/30) based on RNP 4 and ADS-C were introduced across the Honiara FIR (Solomon Islands); Nauru FIR (Republic of Nauru); and the Tasman Sea area, which includes portions of the Brisbane FIR (Australia); Nadi FIR (Fiji); and Auckland FIR (New Zealand). The meeting was informed by the Secretariat of the planning and implementation of 30/30 that had been carried out by the Informal South Pacific ATS Coordination Group (ISPACG) through its 30/30 Working Group.

3.116 To implement 30/30 separation the meeting noted the following major activities that had been undertaken by the ISPACG 30/30 Working Group:

- Creation of the Implementation Working Group task list
- Conducted Safety Assessment (Hazard Identification workshop)
- Determination of Airborne and Ground system Requirements
- Conducted Rulemaking
- Performed Industry, Defence and Internal coordination
- Conducted International coordination
- Developed Pilot procedures
- Conducted Training Needs Analysis

- Performed Initial System Verification
- Conducted system verification of navigation deviation incidents and events
- Conducted Target Level of Safety calculations for the airspace
- Established a monitoring procedure of post implementation system performance:

    - AGDP (Brisbane TAAATS)
    - OCS (Auckland Oceanic)
    - SITA (Data link Service Provider)

- Conducted investigation of delayed ADS-C reports
- Established an ongoing monitoring program for navigation deviations
- Established an ongoing monthly reporting of all data link communication delays

3.117 A comprehensive safety assessment had been undertaken that demonstrated that the established target level of safety (TLS) of 5 x 10^{-9} fatal accidents per flight hour had been met and a copy of the safety assessment had been submitted to ICAO.

3.118 In considering the benefits of implementing 30/30 separation, the meeting noted that it enabled suitably equipped and approved aircraft to operate in closer proximity to each other to effectively utilise the airspace in a more effective manner. Aircraft would be able to obtain optimal flight paths and cruising levels leading to operational, economic and environmental benefits.

3.119 The meeting recognized the comprehensive manner in which ISPACG had undertaken this important implementation project, which was the first time 30/30 separation had been implemented. In putting into effect the relevant ICAO SARPs and guidance material, there were important lessons to be learnt from the methodology and implementation planning processes developed by ISPACG especially in regard to the safety management practices adopted.

3.120 In light of the forgoing, the meeting formulated the following Draft Conclusion:

Draft Conclusion 15/6 – 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 (30/30) in the specified airspace in the Pacific Region, States are advised to use this as a model in developing an implementation plan to introduce 30/30 NM separation.

Implementation of 30/30 NM separation by the United States

3.121 The United States advised the meeting that the FAA planned to implement 30/30 throughout oceanic airspace where the US provides ATS, beginning with operational trials in portions of Oakland's oceanic airspace, then expanding, as appropriate, throughout the US-controlled Pacific and North Atlantic FIRs. A task force had been formed with a task list similar to that used for implementation of RVSM. The methodology adopted by ISPACG would also be taken into account, and the safety assessment being undertaken by the FAA William J Hughes Technical Center would be submitted to ICAO. Implementation of the operational trial was scheduled to commence in late 2005.

Update on the status of the FAN-1/A Operations Manual

3.122 The meeting reviewed progress by ICAO to develop global guidance material for the application of ADS and CPDLC data link services in conjunction with the FANS-1/A aircraft systems. The development of the FANS-1/A Operations Manual (FOM) has had a long history of development from its inception as the South Pacific Operations Manual (SPOM) prepared by States and users to support the successful introduction of ADS and CPDLC applications in the South Pacific in 1997. Subsequently, ADS and CPDLC had been widely implemented in the Pacific Region, more recently in the North Atlantic Region and operational trials were presently underway in the Asia Region.

3.123 The meeting recalled that APANPIRG/11 (2000, Conclusion 11/4 refers) had revised the *Guidance Material on CNS/ATM Operations in the Asia and Pacific Region* to include operational ATS and pilot procedures as contained in the SPOM. However, this guidance material had not been kept up to date, and to meet wider application of ADS and CPDLC in the Asia/Pacific Region, and to ensure standardization of operating procedures, APANPIRG/15 under Conclusion 15/7 recommended that States in the region use the FOM in conjunction with relevant ICAO provisions as a basis for operating ADS and CPDLC.

3.124 ICAO had recognized that it was essential that harmonized global FANS 1/A operating procedures were used worldwide and had supported proposals raised during the Eleventh Meeting of the North Atlantic FANS Interoperability Group (NAT-FIG/11, October 2004). NAT-FIG/11 considered that amalgamation of the Pacific FOM and the NAT Guidance Material was a desirable goal. The Asia/Pacific Regional Office supported this proposal, which was in line with APANPIRG/15's position regarding the importance of common data link operating procedures for global applicability and the need for States to continue to support ICAO's efforts to achieving this goal. Work had commenced under the auspices of the ICAO EUR/NAT Office to produce a joint document and an initial draft document was expected to be circulated for preliminary comment during the 3rd quarter 2005.

3.125 The United States questioned whether it was realistic to expect ICAO to keep the global document continually up to date in light of operational experiences that would require amendment of the document in a timely manner necessary for operations. Under existing arrangements, the FOM was managed by Pacific States and users responsible for ATS and aircraft operations who worked in concert with the Pacific Central Reporting Agency (CRA), which evaluated the technical performance of the airborne and ground systems concerned. This ensured prompt action would be taken to amend the operational procedures in the FOM when problems arose that required changing the FOM procedure. Concern was expressed that traditional ICAO document amendment processes were lengthy and unsuited to providing timely amendments of an operational nature.

3.126 The Secretariat was not aware of how the ICAO global document amendments would be managed and ICAO Headquarters would be informed of the concerns raised and seek clarification.

State Contingency Plan

3.127 The meeting reviewed progress by States in the Asia/Pacific Region to put in place contingency measures for application in the event of disruptions to ATS and associated services in accordance with ICAO SARPs. In this regard, APANPIRG/15 took action to initiate a survey of States contingency plans first raised by APANPIRG/12 (August 2001) under Conclusion 12/6.

3.128 The Asia/Pacific Regional Office conducted the survey of Asia/Pacific States during March 2005 (ICAO State Letter AP029/05 (ATM) refers). The meeting was advised of the results of the survey and the poor response from States. As of 16 July 2005, the Regional Office had only received responses from 12 States and of these, a number had indicated that plans were still under development with expected completion dates in late 2005. In some instances, State responses did not fully address the parameters described in the survey.

3.129 The meeting recalled the extensive discussions that had taken place at APANPIRG and other ICAO ATS coordination group meetings since the APANPIRG/10 meeting in 1999, which had recommended under Conclusion 10/37 that States use the Y2K Contingency Plans and related documents to form the basis on which to develop general contingency arrangements.

3.130 The meeting recalled that APANPIRG/13 also considered recent instances in which restricted airspace had been declared (September 11, 2001 terrorist attacks) or was about to be declared (State industrial action) over the high seas that had an impact on the provision of air traffic services to international civil operations. The meeting recognized that this was a very important matter in light of recent events and States were reminded of APANPIRG/13 Conclusion 13/8:

Conclusion 13/8 – Contingency Planning

That, States review, amend or develop contingency plans that will:

a) provide a safe and orderly flow of international air traffic in the event of disruptions of air traffic services and related supporting services,

b) preserve the availability of major world air traffic routes within the air transportation system: and,

c) ensure continuous access to airspace for international civil flights over areas of the high seas.

3.131 In considering the matter 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 developing operational procedures and training for pilots and controllers. It would also be necessary to address different issues related to national and international airspace. For some States, these matters could be difficult to overcome and take a considerable time. The meeting was of the view that it would be helpful if this matter could be progressed in a more systematic manner through appropriate ICAO forums.

3.132 The Secretariat appreciated the difficulties faced by States, and drew attention to the Regional Office resource constraints to undertake additional work involving a dedicated task force or special meetings. In this regard, it was suggested that an ICAO special implementation project (SIP) may be a suitable means to develop a contingency plan for one State, which could then be used as a model for other States.

3.133 The meeting agreed that a SIP proposal should be prepared by the Regional Office and the subject should be included on the agenda of State ATS coordination meetings, and formulated the following Draft Conclusion:

Draft Conclusion 15/7 – Special Implementation Project for Development of a State Contingency Plan

That, ICAO undertake a special implementation project to assist States in the Asia/Pacific Region to prepare a contingency plan in accordance with Annex 11, Appendix D, in line with APANPIRG Conclusion 13/8, and that the development of State Contingency Plans be included on the agenda of State ATS coordination meetings.

Aeronautical Information Service (AIS) matters

3.134 The meeting was advised by the Secretariat that regrettably, due to ICAO budget cutbacks, the Asia/Pacific Regional Office AIS/MAP post and one ATM officer post have been removed leaving the ATM Section staffed by two ATM Regional Officers. This has resulted in a need to reduce the ATM Section work programme and AIS matters related to the region would have to be referred primarily to ICAO Headquarters for support. Therefore, without additional AIS expertise made available to the Regional Office, the AIS Task Force reactivated by APANPIRG/14 (Conclusion 14/8 refers) would not be convened in 2005, and may have to be suspended for the foreseeable future.

3.135 However, the meeting noted that AIS was an essential service that had safety implications and was crucial to the provision of ATS. It was noted that the Task Force had not been held even though it had been re-directed and re-established by APANPIRG/14 and that the AIS related issues had not been adequately addressed on a regional basis. In view of the lack of resources of the Regional Office, States offered to provide support to the Regional Office by convening and operating the Task Force whilst the Regional Office retained oversight of the activities. Consequently, the meeting 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.

Use of public internet for aeronautical information services

3.136 The meeting was updated by the Secretariat on guidance material being developed by ICAO to facilitate and harmonize the use of the public Internet for aeronautical applications. The development of the guidance material was undertaken in response to Recommendation 4/6 of the Meteorology (MET) Divisional Meeting (2002) which called upon the Organization to develop guidance and criteria for the accreditation and qualification of providers involved in the exchange and dissemination of aeronautical meteorological information via the Internet. In approving the aforementioned recommendation, the Air Navigation Commission agreed that the subject should be considered in a wider context taking into account all types and categories of aeronautical information.

3.137 Subsequently, the Aviation Use of the Public Internet Study Group (AUPISG) was established to assist the Secretariat in the development of the appropriate guidance material. As a result, the document that had been developed addressed exchange/dissemination of meteorological and aeronautical information service (AIS) products as well as filing/processing of flight plans via the public Internet, with due consideration to associated reliability, integrity, accessibility and security concerns.

3.138 A copy of the ICAO draft *"Guidelines for the Use of the Public Internet for Aeronautical Applications*" (Doc 9855) and the ICAO State Letter pertaining were made available to the meeting and included on the CD of meeting material.

United States web-based exchange of aeronautical information

3.139 The United States provided information on the FAA's modernization efforts for the US National Airspace System (NAS) including support for aeronautical information exchange. The NAS Aeronautical Information Management Enterprise System (NAIMES) consists of a number of systems and services that directly support the collection, validation, management, and dissemination of aeronautical safety information. Within the NAS modernization programme, the NAIMES vision was to continuously improve the safety and efficiency of the NAS as the provider of on-demand operational aeronautical information and services to customers.

3.140 In regard to AIS, the FAA provides aviation users the capability to access aeronautical information through the use of web applications. The AIS web-based system provides: 1) an automated means for flight plan delivery; 2) distribution of weather products and other flight planning data to AIS users and various NAS subsystems; and 3) provide the NAS interfaces, protocols and rational databases required for the flight planning process.

Search and Rescue (SAR) Matters

ICAO SAR Seminar and SAREX

3.141 The Secretariat provided information on the ICAO SAR Seminar, which was held in conjunction with the Bay of Bengal SAREX at Chennai, India from 7 to 11 March 2005. The event was hosted by the Airports Authority of India (AAI). The SAR seminar was attended by 141 participants from 12 States and 1 SAR satellite service provider (COSPAS-SARSAT, United Kingdom).

3.142 The SAR seminar focused on the development of SAR cooperation and coordination and addressed ICAO requirements for States to provide SAR services and agreements in accordance with Annex 12. A comprehensive briefing was provided by India on its extensive involvement in the tsunami emergency that struck the Indian Ocean area on 26 December 2004 and assistance provided to neighboring States. Other States present affected by the tsunami disaster also briefed the meeting on their emergency responses and the valuable lessons learnt were appreciated by the seminar.

3.143 The SAREX was designed to provide participants with the opportunity to experience practical application of SAR services carried out by Indian specialists in search and rescue. The SAREX was composed of a Land Exercise and Sea Exercise. The Land Exercise involved a large contingent of personnel from local emergency and rescue services involved in AAI's emergency procedures. The Sea SAR Exercise involved ships and helicopters of the Indian Coast Guard and Navy as well as merchant ships, and provided participants with the opportunity to experience the wide range of SAR capability of the Airports Authority of India, Indian Coast Guard and Indian Navy.

3.144 The seminar, in its review of the information provided and discussions held, made a list of recommendations as shown in **Appendix C** to the Report on Agenda Item 3.

3.145 The meeting reviewed the recommendations and agreed that they should be taken into account by States in the region when considering their SAR activities, and formulated the following Draft Conclusion:

Draft Conclusion 15/9 – 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 C** to the Report on Agenda Item 3, be taken into account by States in considering their future SAR activities, and this information be disseminated to States by the ICAO Asia/Pacific Regional Office.

3.146 The meeting recognized the highly successful SAR seminar and SAREX and congratulated India on its outstanding contribution to SAR activities in the Indian Ocean area, especially its contribution to neighbouring States affected by the tsunami disaster.

3.147 The meeting noting the successful outcome of the Bay of Bengal seminar and SAREX, agreed that it was highly desirable that these events should be held on a regular basis as they made an important contribution to ensuring continuity of SAR preparedness in the Region. At the Bay of Bengal event, a significant contribution was made by the invited international experts from ICAO and COSPAS-SARSAT.

3.148 New Zealand advised the meeting that they would be willing to provide support to host an ICAO Seminar and SAREX aimed at providing support for Pacific island States and would be seeking international participation.

3.149 The Secretariat recalled that APANPIRG/12 (August 2001) had identified that the Pacific island States should be considered in the Asia/Pacific SIP being contemplated to assist with a Seminar and SAREX in the region, initially for the Bay of Bengal area. Subsequently, the Bay of Bengal SIP had been approved by the Council of ICAO and had been planned for 2002. However, due to unforeseen circumstances, it was not possible to hold the event as planned and the SIP had not been taken up. With India's generous support, the ICAO Seminar and SAREX had been completed and it would now be appropriate to give consideration to the Pacific islands. In this regard the meeting, appreciated the offer made by New Zealand and strongly supported an ICAO Seminar and SAREX for the Pacific islands and that a SIP should be raised to assist in supporting the event.

3.150 In light of the foregoing the meeting formulated the following Draft Conclusion:

Draft Conclusion 15/10 – 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.

Annex 12 – Search and Rescue

3.151 The United States provided information on the background to Amendment 17 to Annex 12 – *Search and Rescue* of the Chicago Convention which went into effect on 12 July 2004 and became applicable on 25 November 2004. The meeting was advised that Annex 12 was amended substantially to better incorporate current SAR concepts and principles and also align it, to the extent practicable, with the International Maritime Organization's (IMO) *International Convention on Maritime Search and Rescue*. Alignment with maritime SAR services was viewed as essential due to the number of aircraft flying over vast expanses of oceanic airspace, large bodies of water inside of land masses, and water areas around many airports. Close cooperation between aeronautical and

maritime SAR services would lead to improved SAR capability, resulting in a more effective and efficient response.

3.152 A summary of the principal underlying concepts that made up the amendment to Annex 12 was provided and the following concepts were highlighted:

- new or revised definitions;
- the establishment of joint aeronautical and maritime rescue coordination centres is now a Recommendation;
- more attention on the need for agreements and coordination of both policies and operations between States and between aeronautical and maritime SAR services;
- emphasis on need for State aeronautical SAR authorities to make arrangements with maritime authorities for ready information regarding ship availability and means for their alert since most of the globe is covered by water and that rescue is frequently accomplished by ships;
- a Recommendation that SAR plans should be integrated with airport emergency plans; and
- the existing Recommendation that States should engage in SAR training is now a Standard.

3.153 The meeting urged States to note and take action on Amendment 17 to Annex 12.

Update of the APANPIRG SAR Capability Matrix and List of State SAR Agreements

3.154 The meeting reviewed and updated the SAR Capability Matrix Table, which provides a comprehensive listing of the SAR Capability of ICAO States in the Asia/Pacific Region, and Asia/Pacific register of SAR Agreements between States. The updated SAR Capability Matrix in **Appendix D** to the Report on Agenda Item 3 and the List of SAR Agreements in **Appendix E** to the Report on Agenda Item 3 will be presented to APANPIRG/16 to be held on 22-26 August 2005. States were encouraged to submit to the Regional Office any additional changes to this information prior to the APANPIRG/16 meeting.

Tonga SAR arrangements

3.155 Tonga provided information on the measures taken by the Ministry of Civil Aviation (MCA), Tonga to assist aircraft in distress in its territories and territorial waters as far as practicable, in accordance with Article 25 of the Convention on International Civil Aviation. As the Tonga Sector was within the Auckland Oceanic FIR, MCA has developed arrangements with New Zealand on SAR matters. New Zealand would also develop SAR agreements with the other neighbouring States. A copy of the SAR arrangements between Tonga and New Zealand was provided to the meeting and has been included as **Appendix F** to the Report on Agenda Item 3. Any changes would be notified to the ICAO Regional Office, Bangkok as they occurred. The meeting updated the ICAO List of SAR Agreements accordingly and appreciated the information provided by Tonga.

National SAR Agency of Indonesia

3.156 Indonesia provided information on the activities, system communication and organization of the SAR Agency of Indonesia. In 1972 Indonesia established the National SAR Agency called Badan SAR Nasional (BASARNAS) under the Ministry of Communication. The National SAR Agency has been assigned 3 main functions :

1) to conduct SAR operations in connection with aircraft accidents;
2. to conduct SAR operations in connection with shipping accidents; and
3) to be involved in natural disaster relief and other accidents.

3.157 Details of agreements between SAR Agency of Indonesia with other SAR agencies of adjacent States were provided to the meeting. The meeting appreciated the information and updated the List of SAR Agreements accordingly.

3.158 Indonesia took the opportunity provided by the meeting to express their gratitude and thanks for the support and assistance that had been provided to Indonesia in the wake of the tsunami tragedy of December 2004. In respect of civil aviation activities, including the conduct of an unprecedented number of humanitarian operations, Indonesia had received the full cooperation and assistance of neighbouring States and thanked Singapore in particular for the loan of a mobile control tower to assist operations in Indonesia.

Viet Nam – Update of SAR Agreements

3.159 Viet Nam update the meeting in respect of the status of SAR agreements, providing information that SAR Letters of Agreement (LOAs) had been signed with Singapore, Philippines, Lao PDR and Cambodia. Viet Nam was interested in entering similar arrangements with other neighbouring States and requested assistance from such States in entering into SAR agreements.

3.160 The meeting appreciated the updated information from Viet Nam and updated the List of SAR Agreements accordingly.

ATM safety management seminar

3.161 The General Administration of Civil Aviation of China (CAAC) hosted the ICAO ATM Safety Management Seminar at the Air Traffic Management Bureau (ATMB) Headquarters Building at Beijing, China from 15 to 19 November 2004. The Seminar was attended by 80 participants from 12 States, 3 international organizations and 1 ATM consultant company.The seminar provided participants with up to date information on ICAO provisions and developments on ATM safety management, in particular in follow-up to the Eleventh Air Navigation Conference held in September 2003 and the 35th Session of the Assembly of ICAO to be held in September/October 2004. An emphasis was placed on practical aspects of establishing and operating ATS safety management systems in respect to the safety of airspaces and aerodromes. The seminar also addressed the important subject of runway safety and considered initiatives being taken by civil aviation safety authorities and airline operators worldwide to improve overall safety at airports.

Civil/Military Seminar

3.162 The Secretariat provided information on the ICAO Civil/Military Co-ordination Seminar held at the Asia and Pacific Regional Office from 14 to 17 December 2004. The seminar was attended by 63 experts from 13 States and 3 International Organizations. The Regional Office had arranged the seminar pursuant to the requirements of APANPIRG/13 Conclusion 13/34. The purpose of the seminar was to forge closer understanding and cooperation between Civil and Military authorities in the Asia and Pacific Region to enhance safety, security and efficiency of international civil aviation.

3.163 The Seminar noted the importance of ICAO documentation relating to the provision of Civil/Military coordination. In particular, it noted Recommendation 1/2 of the 11th Air Navigation Conference in respect of coordination with military authorities and Resolution 35/14, Appendix P, of the 35th Assembly of ICAO in respect of the common use of airspace and facilities by civil and military authorities. The seminar acknowledged the significant role played by the military in regard to humanitarian missions worldwide, noting the substantial access required by the military to civil airspace in order to perform these missions. In this regard, effective cooperation and coordination was essential and the seminar endorsed the principle of equitable sharing of both convenience and inconvenience in gaining access to the airspace by civil and military users. The meeting endorsed the understanding inherent in this principle and, in order to ensure regional promulgation, formulated the following draft conclusion:

Draft Conclusion 15/11 – Equitable Sharing by Civil and Military Users

That, in respect of Recommendation 1/2 (*Coordination with Military Authorities*) of the 11th Air Navigation Conference and Resolution A35-14, Appendix P [regarding the common use of airspace and facilities] of the 35th Assembly of ICAO, and noting that effectual coordination between civil and military agencies was essential, States of the Asia and Pacific Region adopt the principle of the ***equitable sharing of both convenience and inconvenience*** in the use of airspace and facilities by civil and military users, and include Civil Military Coordination as an item on the agendas and/or task lists of regional ATS working groups.

3.164 The seminar reviewed the *Asia/Pacific Regional Civil/Military Cooperation Guidelines* as described in the ASIA/PAC FASID (Doc 9673, 2001), but did not identify any need to amend the existing provisions. However, the seminar urged States to undertake a thorough review of current arrangements in the light of ICAO provisions and the deliberations of the seminar and to incorporate the FASID guidelines in all current and future airspace planning.

3.165 The meeting was pleased that this seminar, originally called for by APANPIRG 13 (September 2002) but delayed for unavoidable reasons, had been held. The results of the seminar ably demonstrated the value of periodically holding this event, and this should be kept under review and a future venue planned after a suitable period as determined by the Regional Office.

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

Air Traffic Flow Management Task Force – Bay of Bengal

4.1 The meeting reviewed progress by the Air Traffic Flow Management Task Force (ATFM/TF) to initially address flow management issues associated with the night time westbound traffic flows from South-East Asia to Europe through the Kabul FIR, Afghanistan.

4.2 It was recalled that a special coordination meeting for the Bay of Bengal on ATFM (SCM BOB ATFM) was convened in conjunction with the BBACG/16 meeting (February 2005) in follow-up to the recommendation of the RVSM/TF/24 meeting (BOB one-year review, November 2004) to progress the establishment of an ATFM plan and implementation of ATFM automated systems for the Bay of Bengal traffic flows. This matter was considered a high priority by users and ATS providers, and was to be progressed in a timely manner.

4.3 The SCM BOB ATFM, on reviewing the issues, agreed that a dedicated Task Force should be established under BBACG to progress the matter. Accordingly, the SCM BOB ATFM prepared the following Terms of Reference of the "ATFM Task Force for the Bay of Bengal and South Asia":

Objectives:

The objectives of the Task Force are to:

1. To enhance and facilitate the orderly and efficient flow of Air Traffic across the Bay of Bengal and South Asia;

2. To minimize ground and en route delays;

3. To maximize capacity and optimize the flow of air traffic within the area;

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

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

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

Phase One: Flights planning to transit the Kabul FIR

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

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

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

4.4 In order to save time and allow an early start to the work of the ATFM/TF, the ATFM/TF/1 meeting was held in conjunction with the previously scheduled combined meeting of the FANS Implementation Teams for the Bay of Bengal and South East Asia (FIT-BOB/5 & FIT-SEA/2) during April 2005. Recognizing that the ATFM/TF would report via the BBACG to the ATM/AIS/SAR/SG, the ATFM/TF/1 meeting reviewed and updated the Terms of Reference (TOR) set by the SCM BOB ATFM.

4.5 The SCM-BOB ATFM had agreed that the first priority of the task force should be towards resolving the immediate problems encountered by westbound traffic operating across the Bay of Bengal to Europe during the night time period. In order to progress toward a solution, the following steps were identified to assist in the implementation of ATFM in this context by the third quarter of 2005:

a) complete an analysis of the traffic data including Departure/Arrival data;

b) identify bottleneck areas;

c) develop an ATFM tool to optimize the usage of all ATS routes and levels available through the Kabul FIR;

d) Undertake a series of trials and demonstrations of the ATFM tool; and

e) Develop the ATFM/TF Task List.

Summary of the ATFM/TF/1 report

4.6 ATFM/TF/1 was held at the Asia/Pacific Regional Office on 18-19 April 2005. The meeting considered that the Task List was the primary tool for progressing the work of the task force and, agreed that an ATFM Operations Handbook should be developed as a task list item. The Operations Handbook should include the operating procedures and associated guidance material for the ATFM Unit, ACCs and Airline operators. The meeting updated the Task List in light of the inputs and discussions that occurred during the ATFM/TF/1 meeting.

4.7 In regard to the implementation process of a Bay of Bengal ATFM system, ATFM/TF/1 had considered ATFM system tools for use in the Bay of Bengal and South Asia and noted a presentation by the FAA to RVSM/TF/24 (November 2004) of the DOTS+ automated flow management system and the earlier investigations/demonstrations of this system conducted by IATA and the FAA.

4.8 ATFM/TF/1 took into account Thailand's previous advice to the SCM-BOB ATFM that in recognition of a flow management need, Thailand would be prepared to take an active lead role in developing an appropriate ATFM system in coordination with States and the airlines with a target date for implementation of AIRAC date 29 September 2005. In this regard, Thailand presented the ATFM/TF/1 meeting with details of an AEROTHAI proposal to develop and implement an ATFM system in the Bay of Bengal and South Asia for aircraft transiting the Kabul FIR.

4.9 It was agreed that the selection of an ATFM system tool be deferred until ATFM/TF/2, at which time the two systems would be evaluated by way of "Proof of Concept" demonstrations to the ATFM/TF/2 meeting. The meeting agreed that the development of an ATFM operational requirement would also be of assistance in the selection process. In addition, an operational trial would be required and this matter would be considered further by the ATFM/TF/2 meeting.

Summary of the ATFM/TF/2 report

4.10 The ATFM/TF/2 meeting was held in New Delhi, India from 28 June to 1 July 2005. However, due to the resource constraints at the Regional Office, an ICAO official was unable to attend the Task Force meeting.

4.11 ATFM/TF/2 noted the progress made by Thailand to further development its AFTM automated system which took into account: the traffic flows, the route systems and bottlenecks on transit routes leading to Kabul FIR, crossing and intersecting points associated with Kabul FIR transit routes prior to entering the Kabul airspace, comparison between route distance from each departure point, gateway and intermediate fixes in India and Pakistan, transition from RVSM to CVSM for entry into Kabul FIR and other operational factors.

4.12 In reviewing the above developments, ARNR/TF/2 agreed that Thailand's considerations in developing the ATFM system tool were provisional in nature and needed further analysis by the ATFM Project Management Team.

4.13 Taking all of these matters into consideration, ATFM/TF/2 was presented with a Thailand Concept of Operations on the Bay of Bengal Cooperative ATFM Advisory System (BOBCAT). The purpose of BOBCAT was to regulate the flow of air traffic departing airports from East Asia, Southeast Asia and South Asia who plan to transit the Kabul FIR between the hours of 1900UTC and 2359UTC. Additional to this requirement, the automated programme will also take into account the present bottlenecks caused by merging routes by applying appropriate spacing between aircraft wishing to cross intermediate Gateways enroute to Kabul FIR. A presentation on the capabilities of BOBCAT was presented to the meeting.

4.14 The attention of ATFM/TF/2 was also drawn to the two previous DOTS+ presentations that had been delivered by the FAA at the RVSM/TF/24 meeting (8 – 12 November 2004) and the ATFM/TF/1 meeting (18 – 22 April 2005). In both instances, the FAA had proposed that the "Online Track Advisory" function could be utilised in a DOTS+ ATFM system for the Bay of Bengal. However it was emphasised that the FAA's proposed "Online Track Advisory" function currently existed in prototype only at this stage. In addition, the meeting was informed that the FAA was willing to work with Airservices Australia and others to provide a web-based ATFM system tool for deployment in the Bay of Bengal. ATFM/TF/2 noted both the FAA's and Airservices Australia present position on this matter.

4.15 ATFM/TF/2 considered available options for the conduct of an ATFM Operational Trial in accordance with Phase One of ATFM across the Bay of Bengal and South Asia. In this regard, the meeting noted Thailand's readiness to proceed to an operational trial and accordingly, the meeting requested Thailand to continue to develop BOBCAT to the stage of an operational trial in close cooperation with concerned States and IATA.

4.16 In considering the number of specialized tasks that would be required before the implementation of an Operational Trial, ATFM/TF/2 formed the view that these matters would be best progressed through the establishment of an ATFM Project Management Team (PMT). It was further agreed that the Project Management Team would comprise members of the Core Team as well as designated Subject Matter Experts (SMEs). The project management team would define the parameters to be applied in the ATFM system tool to facilitate the application of the required longitudinal spacing between aircraft operating at the same flight level transiting the Kabul FIR.

4.17 ATFM/TF/2 was presented with a first draft of the "Bay of Bengal and South Asia ATFM Operations Manual (V1.0)" for consideration and amendment by the meeting. The structure of the Manual provided for a two-part format, under which Part I was assigned to the "Traffic Management Plan" and Part II assigned to the "ATFM System Tool & Operations.

4.18 The ATFM/TF/2 meeting was also updated by the Manager of the Kabul ACC on the Kabul ACC services which were implemented on 15 May 2005. The Kabul FIC had been upgraded to provide ACC services in the upper airspace and was expected to provide ACC services in the lower airspace from late July 2005. Under these new arrangements, Air Traffic is controlled under authority of the Afghanistan Government (MOT) in collaboration with the United States Military CENTAF forces.

4.19 The meeting noted that Class A airspace now exists along those ATS routes which are approved for use by civil aircraft, between FL310 and FL430 (inclusive). Class E airspace now exists at or below FL290 along the same ATS routes. All other airspace within the Kabul FIR remains as Class G.

4.20 In regard to the ATS routes in the Kabul FIR, these were restricted to only 10NM either side of centerline track. More details are provided on the May 2005 publication of charts for Afghanistan. In addition to these airspace changes, the meeting noted proposed improvements to ATS facilities, including VSAT voice coordination channels, VHF, and AFTN communications.

Update on Thailand's Progress for the trial application of ATFM

4.21 Thailand presented an update in regard to their work completed or in progress by since the ATFM/2 meeting in Delhi, India. Work that needs to be completed to enable implementation of the ATFM Trial by the agreed Target date of AIRAC 22 December 2005 was also highlighted.

4.22 It was Thailand's view that there were a considerable number of items which required attention and resolution prior to the proposed operational trial in December 2005. Some of these items to be considered were:

a) role and method of operation of the Project Management Team;

b) definition of the area of operations for ATFM;

c) establishment of Entry Gates to the ATFM area;

d) production of appropriate aeronautical publications; and

e) preparation and production of an ATFM Operations Manual

Role and method of operation of the PMT

4.23 The meeting recalled that the Project Management Team would define the parameters to be applied in the ATFM system tool to facilitate the application of the required longitudinal spacing between aircraft operating at the same flight level transiting the Kabul FIR. Due to the limited time available prior to the Target date for the ATFM Operational Trial, it had been decided to hold a special coordination meeting (SCM) to establish the PMT at the Singapore Aviation Academy under the kind sponsorship of the Civil Aviation Authority of Singapore (CAAS) on 10-11 August 2005.

4.24 It was further suggested to the meeting that investigations should be conducted in respect of utilizing web-based linkage programmes between all PMT participants for ongoing discussion, as well as multi-party telephone hook-up. This would allow several meetings to be held in the lead-up to the third meeting of the ATFM task force which was scheduled to be held in September 2005.

Establishment of Entry Gates into the ATFM area

4.25 The meeting was advised by Thailand that, after further examination and discussions with several concerned parties, consideration is being given to the use of Entry Gates into the ATFM area, especially in regard to aircraft departing a considerable distance from the Eastern/Northeastern side of the Bay of Bengal. For example an entry gate may be defined for an aircraft departing Hong Kong, China so as the pilot could have flexibility in adjusting his flight to meet the allotted gate time. The initial meeting of the PMT will consider the advantages of utilizing this concept for aircraft departing from other locations such as Bangkok, Kuala Lumpur, Singapore and perhaps Delhi, to enable tactical ATC adjustments if necessary.

On-going work of AEROTHAI

4.26 Thailand advised the meeting that, since ATFM TF/2, continued progress has been made in the following areas:

a) discussions have taken place with several computer hardware suppliers and firm orders will be made within two weeks;

b) progress on software development is continuing;

c) a programme had already commenced and is on-going to consult with selected airline dispatchers to ensure that the design of the ATFM web page they will use to input data to the ATFM Unit is user friendly to their requirements; and

d) although rare, in case of internet failure an alternative system is being designed whereby airline dispatchers will have the ability to send their slot requests via another medium and when available, receive their allocated slot times for each of their flights in sufficient time to submit their flight plan information.

4.27 In summarizing Thailand's role in this ATFM project, the meeting noted that, as in all projects where procedures by many parties are required to be followed, a fully cooperative approach by all parties is required if the ATFM project is to be a success.

4.28 It was emphasized to the meeting that the proposed ATFM advisory tool (BOBCAT) and the work required by an ATFM unit does not take away the responsibility of air traffic service providers in the control of aircraft during the period of operation of air traffic flow management. It was further mentioned that airlines concerned had their part to play in meeting the requirements on their allocated slot times. This is not only the case with respect to BOBCAT but also would be the case in other flow management systems such as across the Pacific on PACOTS routes and in Europe.

4.29 The meeting endorsed the work being undertaken by the ATFM/TF, and discussed regional issues in respect of flow management. Japan updated the meeting regarding flow issues in Japan and the work of the Fukuoka flow management centre. Japan noted that the flow difficulties experienced by aircraft departing Japanese ports and joining underneath long haul traffic from South East Asia transiting Japanese airspace on the way to the United States was a significant problem that was similar to the difficulties described by India in respect of traffic departing India and joining underneath the westbound traffic flow to Europe. Japan expressed the hope that in the not too distant future some measure of flow management could be applied in respect of this traffic by the States of the South China Sea and offered assistance in this respect.

4.30 China briefly updated the meeting, advising that China was in the final stages of establishing one large flow management centre and 7 sub centers. China would adopt a two stage approach, in which the first stage would be to gather traffic data and the second stage would analyze the traffic data to identify areas in which improvements could be made.

4.31 The meeting agreed that although the flow operations guidance document that was 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 document when it had reached a mature stage. Viet Nam supported this position and requested that the flow management issues be included on the agenda of the South East Asia ATS Coordination Group (SEACG). The Regional Office agreed and undertook to update the SEACG and ATFM/TF in this regard and circulate the Bay of Bengal document at a later stage when it reached maturity.

Air traffic management of the A593/B576 intersection

4.32 IATA informed the meeting that the A593/ B576 intersection (including AKARA Corridor) in the Incheon FIR was under the control of two separate ATC units. In IATA's view, this air traffic management arrangement was not in compliance with Annex 11 (paragraph 3.5.2 refers) that requires "Responsibility for the control of all aircraft operating within a given block of airspace shall be vested in a single air traffic control unit".

4.33 IATA provided information on the present air traffic arrangements between the ATCF units responsible for this airspace, namely:

1) Incheon ACC for aircraft on B576 proceeding North/South;
2) Shanghai ACC on A593 west of the crossing point NIRAT; and
3) Fukuoka ACC east of position SADLI.

4.34 The flight level allocations for the north/south direction on B576 were interwoven with the levels in the east/west direction and shared between ACCs according to the level allocation scheme. This arrangement added to the complexity. All traffic on the A593 corridor and between Incheon and Shanghai were coordinated through Fukuoka ACC.

4.35 IATA noted that this arrangement had been in place for about 20 years, however, the traffic had since then increased many fold. The based on traffic statistics presented at the RVSM/TF/25 meeting, the daily average was about 265 movements through the intersection. IATA also drew attention to operational difficulties that could arise in the event of an emergency descent in the vicinity of the intersection.

4.36 The meeting was requested by IATA to note what they considered to be a serious deficiency, and to take urgent appropriate action to regularize it, to be in compliance with ICAO requirements.

4.37 The meeting recalled that this matter had been raised by IATA at RVSM/TF/25 and it had been recognized that operation of A593 and B576 presented operational difficulties that could not be resolved at the meeting; however, the measures agreed to at the meeting in respect of flight level assignment provided a basis for implementing RVSM. In order to realize the full benefits of RVSM and provide additional capacity, there was a need to examine in detail the various options for assigning of flight levels and ATC procedures.

4.38 At RVSM/TF/6 IATA sought clarification whether the operational arrangement for the control of aircraft by two ACCs on ATS routes A593 and B576 at the intersection point of NIRAT was taken into account in the calculation of risk for the Japan and ROK RVSM implementation. MAAR informed RVSM/TF/26 that the calculation was conducted based on the aircraft system height-keeping performance and traffic characteristics within the assessed airspace, which derived the level of technical risk for the RVSM implementation. This issue was not included in the calculation as it was related to ATC operations. Nonetheless, from the mathematical and statistical points of view, these indicated that there was no evidence of unacceptable risks involved.

4.39 The meeting noted that the matter had not been progressed further by the RVSM/TF. In considering the matter, the meeting was of the view that the issues concerning the air traffic arrangements by the States concerned were complex and had been agreed upon in response to the circumstances prevailing at the time. The arrangement put in place provided a workable solution that had not lead to serious operational difficulties. However, in light of present circumstances, the meeting requested the States concerned to re-examine the arrangements, bearing in mind the concerns expressed by IATA and the Annex 11 provisions, to determine whether improvement could be made to the air traffic management of the airspace. In order to provide an opportunity to study this matter, the Regional Office would be prepared to host a special coordination meeting on the matter.

Implementation of fuel saving measures

4.40 IATA provided information on the continued impact of the extraordinarily high level of oil prices which threatens the industry with yet another year of airline losses in spite of international passenger and cargo traffic growth exceeding expectations. In addition, the high cost of fuel has spotlighted existing inefficiencies in the air traffic services infrastructure and IATA highlighted areas were State ATS Providers could assist in reducing fuel inefficiencies.

4.41 In response to the problems, IATA had urgently launched a Fuel Savings Action group that reviewed every aspect of airline operations and identified best practices of aircraft operations as well as areas that urgently need to be addressed with State ATS Providers. IATA had informed all Civil Aviation Authorities worldwide, urgently requesting them to review specific areas that could bring fuel savings to airlines and requesting feedback on actions that could be considered by States. IATA expressed disappointment with the responses from States.

4.42 The core of the IATA's request to States on fuel conservation measures was in the following areas:

a) airspace and air route design;

b) ATC techniques that take advantage of aircraft navigation capabilities rather than vectoring or assigning speed restrictions;

c) review of Noise Abatement Procedures;

d) closer coordination and cooperation with military authorities to facilitate transit of military restricted airspace;

e) reviewing opportunities that would allow aircraft to operate closer to preferred flight levels; and

f) discussing fuel conservation with local airlines and seek their assistance in better understanding fuel conversation target areas.

4.43 The meeting noted IATA's concerns and the specific areas where they sought States cooperation to in addressing fuel savings. The meeting was in full agreement with the need to continue to strive for efficiencies in the provision of ATS, and was only too aware of the impact of high fuel costs on the aviation industry. The meeting urged States to continue to give top priority to this matter.

4.44 IATA drew the attention of the meeting to ICAO Circular 303, AN/176 which had been published in February 2004. The Circular, comprising approximately 90 pages, was titled *"Operational Opportunities to Minimize Fuel Use and Reduce Emissions*" and included valuable information about ways that fuel consumption could be minimized. The Circular was intended, among others, for air traffic management and air traffic service providers. IATA urged States to implement the guidance provided in the document wherever possible.

Contingency planning for volcanic eruptions

4.45 IATA informed the meeting of some of the more important points and lessons learned in contingency planning in the event of a volcanic eruption. In this regard, it should be noted that the success of any contingency plan to mitigate aircraft encounters with volcanic ash depends on a large network of services and communications between regulators, controllers, pilots, airline operations centres, meteorologists, vulcanologists and Volcanic Ash Advisory Centres (VAAC's).

4.46 IATA outlined the main elements that should be considered in the development of contingency plans to avoid aircraft encounters with volcanic ash:

a) real time seismic monitoring essential for precursory activities as well as detection of explosive events;

b) detection of volcanic events;

c) communication including rapid communication between adjacent State ATS providers, to pilots in the air, airline operations, VAACs Meteorological Watch Offices, military and other civil authorities; and

d) proper air traffic management, which was critical to flight safety as any aircraft encounter with ash could be very damaging and potentially fatal.

4.47 IATA emphasised that volcanic eruptions posed one of the more serious threats to flight safety and a coordinated team effort must occur as soon as possible after a volcanic eruption that emits ash into airspace shared with aircraft. The best way to achieve this and ensure positive outcomes was to have contingency plans already developed, in place and understood by all parties.

4.48 The Secretariat informed the meeting that the concerns expressed by IATA in regard to the ATM contingency planning for volcanic ash have been proved valid by a recent volcanic ash eruption in Iceland (Grimsvoth volcano) in November 2004. The volcanic ash produced by this eruption was spread by the winds over large areas of Europe and caused major disruption to air traffic. An ad-hoc EUR/NAT Volcanic Ash Working Group (VAWG) was therefore established with the goal to study the effect of potential volcanic ash eruptions and their effect on the air traffic flows, and to develop appropriate ATM contingency procedures. Information on the work done in European region was included in the ICAO Journal, Vol. 60, Number 3, 2005 (available on-line on: http://www.icao.int/icao/en/jr/2005/6003.djvu).

4.49 The meeting was further informed that the CNS/MET Sub-group of APANPIRG has also been addressing the volcanic ash issues such as the improvement of data collection and dissemination with the emphasis on volcanic ash SIGMET, which should be the primary warning product for the airlines and ACCs. In addition, the global aspects of the International Airways Volcano Watch (IAVW) have been dealt with by the IAVW Operations Group (IAVWOPSG) established by the Air Navigation Commission (ANC) in 2003. It has been recognized that the IAVW has made a good progress, in particular, in the provision of volcanic ash advisories by the designated Volcanic Ash Advisory Centres (VAAC), five of which serve the Asia and Pacific Region. One of the major shortcomings of the system, however, was the lack in some States of specific ATM contingency plans and procedures providing adequate reaction to the volcanic ash occurrences. In recognizing this deficiency, the meeting formulated the following draft conclusion:

Draft Conclusion 15/12 – ATM Contingency Planning for Volcanic Ash Cloud avoidance

That, ASIA/PAC States be urged 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.

4.50 The meeting appreciated the information provided by IATA and recommendations to mitigate the volcanic ash threat to aircraft in flight. The meeting agreed that volcanic ash was a serious matter and required urgent and appropriate responses by all parties concerned.

Operational requirements for volcanic ash

4.51 The United States and IATA provided information regarding the need to improve the coordination between the providers of information on volcanic ash and the decision makers that utilize the information for tactical and strategic flight planning. Also, details of a model interagency operating plan for volcanic ash episodes were provided and a copy is attached at **Appendix A** to the Report on Agenda Item 4.

4.52 A summary was provided of the various activities of ICAO and the International Airways Volcano Watch Operations Group (IAVWOPSG), and regarding measures put in place by some State agencies. ICAO had introduced Annex 3 Amendment 71 (1998) relating to implementation of VAACs and Amendment 73 (2004) in respect to the importance of State Volcano Observatories to the IAVW and provisions to list these State Volcano Observatories in the Regional Air Navigation Plans.

4.53 It was important that the Sub-Group understood the operational needs for services from the ACCs and AOCs. Recent experience with existing coded messages, graphics, and procedures in place have identified needed improvements for services. VAAC provider States who would be attending the next IAVWOPSG would address some of the known issues, but may not have identified all the shortfalls. Therefore States, in recognizing the significance of this hazard, were encouraged to provide information, document deficiencies or shortfalls in operational procedures that could be addressed by the IAVWOPSG to improve the Handbook on the IAVW.

4.54 The meeting appreciated the information and encouraged States to ensure that the IAVWOPSG/2 meeting was provided with timely and relevant information to assist with the improvement to the Handbook on the IAVW.

Discrepancy in recording of latitude and longitude for NOTAM and ASHTAM between Annex 3 and Annex 11

4.55 The United States provided information on the IAVWOPSG/1 meeting held in Bangkok, which noted that NOTAMs and ASHTAMs were considered an essential means to communicate information to pilots and dispatchers on pre-eruption, eruption, and ash clouds and recommended that these messages be made available to the World Area Forecast Center for satellite broadcast.

4.56 It had come to light that there was a discrepancy between Annex 15 – *Aeronautical Information Service* and Annex 3 – *Meteorology* in the manner in which the latitude and longitude was recorded. In the case of Annex 15, the degrees and minutes precede the cardinal point and there was no space between each referenced point e.g. 4700N01140E043 (the last three digits the distance in NM if required). In Annex 3, the degree and minutes follow the cardinal point and have a space between each point, e.g. N4230 E14048 – N4300 E14130.

4.57 The IAVWOPSG/2 meeting at Lima, Peru to be held from 26 - 30 September 2005 would address this matter and it was expected that ICAO would recommend actions to bring the formats in Annex 3 and Annex 15 into alignment.

4.58 The meeting noted the information and this would be passed on to ICAO Headquarters by the Regional Officer MET.

On-the-job training requirement for the grant of non-radar Approach Control proficiency in high density Terminal Control Centres

4.59 India brought to the attention of the meeting difficulties they had experienced in meeting the requirements of ICAO SARPs in regard to Approach radar controllers keeping their ratings current for non-radar Approach Control in high density Terminal Control Centres. In view of the provisions contained in PANS─ATM, Doc 4444 (Chapter 8, section 8.8.4.1), a non–radar approach controller is required to be deployed in the approach control unit to take over the traffic in the event of radar failure. A non-radar controller is therefore required by ICAO to hold a current non-radar approach control rating in accordance with the provisions outlined in Annex 1.

4.60 Further, after acquiring the rating, the controller was expected to keep this rating current by performing actual non-radar approach control duties in a live traffic environment so as to maintain proficiency and skill. A controller who did not practice regularly was likely to lose the desired level of competency. Therefore, controllers must get regular opportunities to practice their skill, if they are to function satisfactorily in the event of radar outage.

4.61 India noted that, in a high density complex traffic environment with a radar approach control unit, there was hardly any scope for obtaining non-radar approach control training, as this would result in delays to both arrival and departure, and aircraft would not accept procedural approach control practices. Therefore, in this environment it was not practical or operationally viable to provide practical procedural training opportunities for controllers. This kind of situation may have been faced by other States also.

4.62 In India's view, under such circumstances it becomes impracticable to fulfill ICAO Annex 1 requirement for the on-the-job training for non-radar approach control i.e. 90 days / 180 hours. India considers that the only possible alternate would be to provide simulator based training, recreating the actual traffic scenario for the non radar approach control training.

4.63 The meeting recognized the difficulties outlined by India and acknowledged that this was a common problem experienced by Approach Control units providing such radar services. The meeting agreed with India that making use of appropriate hi-fidelity simulator based training was the most effective method in overcoming this problem.

4.64 As an initial step in addressing this problem, the Regional Office would bring this matter to the attention of ICAO Headquarters and seek guidance on how States could satisfy ICAO requirements. In light of the issues raised by India, ICAO would also be requested to consider an amendment to Annex 1 to include simulator training as a means to meet the OJT requirement.

ICAO Special Implementation Projects

Bay of Bengal SIP

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

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

a) Air Traffic Flow Management (AFTM) issues,

b) ADS/CPDLC issues,

c) Airspace Safety Services in the Asia region,

d) ATS Coordination with Adjacent ACCs,

e) Airspace Classification,

f) Air Traffic growth and proposed Upper International Airspace Management within the Bay of Bengal,

g) Aeronautical Fixed Service – AFTN,

h) Aeronautical Fixed Service – ATS Direct Speech Circuits, and

i) Aeronautical Mobile Service – HF and VHF.

4.67 The meeting supported and noted the value of conducting these SIPs and the assistance it provided to States.

South-East Asia - ATM Safety Management SIP

4.68 The meeting was advised by the Secretariat of a Special Implementation Project (SIP) approved by the Council of ICAO planned by the Regional Office during the August 2005 to Cambodia, Indonesia, Philippines and Viet Nam. A similar SIP conducted in 2004 had covered a number of States in the Bay of Bengal area and included consideration of operational safety matters. This SIP would focus on the South-East Asia area.

4.69 In view of the ICAO regional implementation projects undertaken in the Asia Region in recent times for RVSM and reduced horizontal separation, and the present planning underway under APANPIRG to introduce ADS and CPDLC, and in view of all these activities requiring safety assessments to be carried out, the Regional Office considered it of value to evaluate the safety management programmes established by some of the States concerned and to provide assistance as appropriate.

4.70 The main objective of the SIP was to ensure that all concerned States have established appropriate mechanisms to ensure the safe implementation and operation of RVSM and reduced horizontal separation in accordance with Annex 11 provisions, and to assist States as necessary, to draw up an action plan with a view to meeting their obligations thereto.

4.71 Based on the outcome of the evaluation visits to the States concerned, in the SIP it was proposed that a regional strategy be developed to assist States to establish safety management programmes in accordance with Annex 11. This was essential for implementation of airspace changes and assurance of ongoing safety of operations of the airspaces concerned.

4.72 The meeting noted the SIP arrangements and the value in considering a regional strategy to assist States to establish ATS safety management systems.

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/14 in June/July 2004 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) 13-17 September 2004, Asia/Pacific Office, Bangkok, Thailand

Combined meetings of the Fifteenth Meeting of the Bay of Bengal ATS Coordination Group (BBACG/15) and the Fourth Meeting of the FANS Implementation Team for the Bay of Bengal (FIT-BOB/4);

b) 31 January to 4 February 2005, Asia/Pacific Office, Bangkok, Thailand

Combined Special Coordination Meeting Bay of Bengal in respect of flow management (SCM BOB ATFM) and BBACG/16;

c) 18-22 April 2005, Asia/Pacific Office, Bangkok, Thailand

Combined Fifth Meeting of the FIT-Bay of Bengal (FIT-BOB/5), Second Meeting of the FIT-South-East Asia (FIT-SEA/2), ADS/CPDLC Seminar and the First Meeting of the Air Traffic Flow Management Task Force (ATFM/TF/1);

d) 2-3 June 2005, Asia/Pacific Office, Bangkok, Thailand

Special Coordination Meeting Central Reporting Agency for the Bay of Bengal (SCM CRA BOB (Funding));

State ATS Coordination Groups

a) 24-28 January 2005, Los Angeles, United States

Twenty-second Meeting of the Informal Pacific ATS Coordinating Group (IPACG/22)

b) 28 February – 3 March 2005, Brisbane, Australia

Nineteenth Meeting of the Informal South Pacific ATS Coordination Group (ISPACG/19)

c) 11-23 July 2005, Tokyo, Japan

Twenty-third Meeting of the Informal Pacific ATS Coordinating Group (IPACG/23)

FIT-BOB/4

5.2 The FIT-BOB/4 meeting noted that BBACG/14 (February 2004) had recognized that the establishment of a CRA was critical to enabling States to implement operational ADS and CPDLC systems. The CRA performed the essential technical analysis of the performance of these systems and undertook the investigation of system failures and other technical malfunctions.

5.3 FIT-BOB/4 noted that Boeing, who provided the CRA services for the Pacific Region, had indicated to BBACG/13 (September 2003) that they would be willing to provide the CRA services for FIT-BOB to support the operational trial and subsequently for States in the Bay of Bengal area to implement ADS and CPDLC services. However, to undertake this work, it would be necessary for Boeing's cost to provide CRA services to be funded. In this regard, FIT-BOB/3 had agreed to accept Boeing's offer to provide CRA services and IATA and Boeing were requested to pursue the establishment of a contract on behalf of the FIT-BOB States participating in the operational trial for Boeing to set up and operate the CRA.

5.4 Boeing CRA confirmed to FIT/BOB/4 that satisfactory arrangements had been made and that the finalization of the legal aspects was imminent. Boeing indicated that the CRA should be able to commence work related to the Bay of Bengal operational trial from October 2004.

5.5 FIT-BOB/4 noted that in considering implementation of data link systems, APANPIRG/15 (August 2004) agreed that States should take all relevant ICAO provisions on data link into account when establishing their operating requirements and procedures and 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**.** Accordingly, APANPIRG/15 adopted Conclusion 15/ 7 for States and users in the Asia and Pacific Regions to use the FOM as a basis for operating ADS and CPDLC along with appropriate ICAO documentation.

5.6 FIT-BOB/4 noted that RASMAG/1 (April 2004) was developing draft *Guidance Material for End-to-End Safety and Performance Monitoring of ATS Data Link Systems in the Asia/Pacific Region*. It was intended that this guidance material would help promote a standardized approach for monitoring the performance of ATS data link systems within the Region. The meeting agreed that the guidance material would be used to set up and operate the data link monitoring services under the CRA for the Bay of Bengal area.

5.7 India updated the meeting with regard to problems experienced in the Chennai and Kolkata FIRs during the ADS/CPDLC operational trial, which commenced on 19 February 2004. Chennai and Kolkata ACCs were maintaining a record of the number of aircraft logging on to their systems as well as a record of the problems encountered. Since the commencement of the trial, a total of 62 problems were observed at Chennai and more than 200 at Kolkata and were being analyzed.

5.8 India reported that the problems had been were mainly related to:

a) inability to exchange messages in spite of AFN window indicating connected;

b) inability to disconnect ADS/CPDLC when end of service was sent;

c) inability to effect transfer of control to the next data authority (NDA) (Yangon), by Kolkata;

d) an ADS connection was established but not CPDLC;

e) delays in receipt of ADS Reports; and

f) inability to uplink in spite of receiving repeated downlink messages.

5.9 In light of the problems experienced so far, India advised that they were not pursuing a reduction in separation standards based on ADS/CPDLC. In addition, route conformance monitoring and distance-based conflict alerts were yet to be incorporated into the ground system. India welcomed the establishment of the CRA and looked forward to the assistance that would be provided by the CRA.

5.10 FIT-BOB/4 noted that the Bay of Bengal area comprised only one portion of the Indian Ocean. The Secretariat encouraged States to commence planning towards the implementation of ADS/CPDLC operations throughout the entire Indian Ocean. This would necessarily involve coordination with Australia, island States in the Indian Ocean and East African States, in addition to the member States of the BBACG.

5.11 The Secretariat proposed an arrangement under which an annual meeting of the whole Indian Ocean Group would be conducted subsequent to meetings of three main subsidiary groups – an Arabian Sea Group, a Bay of Bengal Group and a southern Indian Ocean Group. IATA supported the proposal in regard to the ability to facilitate simultaneous implementations in contiguous airspaces and considered that a group of this nature would assist in accelerating the implementation process. The meeting was invited to consider this proposal and provide feedback at the next BBACG meeting.

5.12 The meeting noted the lack of guidance available regarding the requirements for ground based equipment for use in ADS/CPDLC operations. States were seeking information on technical requirements in order to ensure the equipment they purchased was suitable for the implementation of ADS/CPDLC to a point where the application of reduced separation minima would be achieved.

5.13 Boeing CRA informed the meeting that there was some technical information available in the FOM regarding equipment performance requirements that may be of assistance to States.

5.14 The meeting was reminded that the intent of CNS/ATM was to increase airspace capacity by allowing the safe implementation of reduced separation requirements. In this regard, ADS/CPDLC equipment purchased by States should be able to facilitate reduced lateral and longitudinal separation as low as 30 NM in the future.

BBACG/15

5.15 The BBACG/15 meeting's primary objectives were to progress implementation of data link services and development of a cohesive air traffic flow management plan for the Bay of Bengal area. The meeting recognized that, since the EMARSSH routes were implemented in November 2002, considerable attention had been given to improving air traffic management for the major traffic flows westwards over the Bay of Bengal to Europe via Afghanistan airspace where significant bottlenecks occur. Operators continued to seek further improvements to obviate ground delays at some South-East Asia airports and improve the efficiency of fight level allocation on the long-haul flights to Europe that were fuel critical.

5.16 The meeting was updated on Myanmar's long standing air-ground communications difficulties. It had been recognized that further action should be taken on a complete systems basis to correct the communication deficiencies, and Myanmar was in the process of taking the following actions:

a) VHF system to be completely replaced with a new systems of 5 RCAG stations;

b) provision of reliable power supply system with solar power system as a main system with a back up of the city supply;

c) VSAT link to be established between RCAG sites and Yangon ACC with the back up of the MPT links; and

d) relocation of Yangon ACC to the new operations building as soon as possible.

5.17 Nepal updated the meeting on the current status of it CNS/ATM implementation and future implementation strategy. Nepal's airspace and air route structure were being revised in preparation for the implementation of RNAV.

5.18 The BBACG/15 meeting considered the ongoing problems surrounding the implementation of effective ATFM in the Bay of Bengal, noting that as well as the RVSM Task Force and BBACG meetings that had considered the issue, several special meetings had taken place over the past two years in an effort to develop a flow management system or traffic orientation scheme to overcome these serious problems. BBACG/15 also reviewed the deliberations of APANPIRG/15 meeting, which had noted that the route network capacity was constrained by restrictions in the Kabul FIR, including the loss of levels due to RVSM not being implemented.

5.19 BBACG/15 considered the benefits of using automated systems that would allow airlines to collaborate and manage the slots over Afghanistan. IATA briefed the meeting on two such systems operated by the United States and Airservices Australia. IATA urgently requested that the Bay of Bengal ATS providers adopt a collaborative decision making programme to manage the traffic flows to Europe during the night time peak period.

5.20 In considering the issues raised, BBACG/15 agreed that there were two distinct problems to be dealt with – a regional ATFM Plan and the ATC coordination arrangements. In this regard BBACG/15 agreed that further work should be undertaken by the BBACG with a view to formulating a regional ATFM Plan as soon as practicable and further study the use of automated systems suggested by IATA.

5.21 Considerable discussion had taken place concerning the use of a fixed Mach number on L759, which had been introduced to overcome the problem of optimizing the traffic flow with a faster aircraft following when applying 10 minute longitudinal separation using the Mach number technique (MNT). The meeting agreed to consider the implementation of M0.82 as the common speed for use at FL280 on L759, whilst retaining M0.83 for FL300 and above.

5.22 The meeting was updated regarding the progress of the ARNR/TF to undertake a review of the Asia/Pacific ATS route network. BBACG/15 noted that at the ARNR/TF/1 (September 2004), it was agreed that although ARNR/TF activities would be undertaken to clarify the route structures required, the respective States and ATS coordination groups would retain responsibility for the implementation of routes.

5.23 The BBACG/15 also considered: implementation of 2 NM offset right of centre line procedures; IATA's Shortcoming and Deficiency Programme; language proficiency; MAAR Traffic Sample Data (TSD); developments to improve air navigation services in Afghanistan; ATM Safety Management Seminar – Beijing; and Civil Military Seminar – Bangkok

SCM BOB (ATFM)

5.24 The review of this meeting has been included under Agenda Item 4.

BBACG/16

5.25 The BBACG/16 meeting on reviewing its Work Plan, agreed that as the items related to ATS routes were being dealt with by the ARNR/TF, these would be removed from the Work Plan. However, the meeting would be kept up to date with progress being made by the ARNR/TF.

5.26 BBACG/16 reviewed the outcomes of the BOB SIP carried out by CNS and ATM experts from the Regional Office. In general terms, the SIP reports provided identification of specific problems with discussion and proposals to address the problems identified. One of the issues identified concerned upper airspace management over the international airspace of the Bay of Bengal. The BBACG/16 meeting recognized this type of airspace management would significantly simplify and enhance operations in this airspace, and agreed that this should be studied further by States.

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

5.28 The meeting was updated on the outcomes of the RASMAG/2 meeting, and noted that it had been determined that a number of areas were not being provided with safety monitoring services for ongoing operations of reduced horizontal separation and updating of safety assessments had not been done for some time. The Bay of Bengal area was one of those areas affected and RASMAG called upon those States responsible to establish the required safety management services and undertake the safety assessment updates as soon as practicable.

5.29 In light of the outcome of RASMAG/2, BBACG/16 considered the establishment of a SMA. The meeting appreciated information provided by CSSI Inc of the United States of its interest its interest to undertake airspace monitoring in connection with RNP-based horizontal-plane separation minima. Thailand also informed the meeting that was also interested in providing SMA services for the Bay of Bengal area.

5.30 The BBACG/16 meeting requested that the States concerned indicate to the Regional Office prior to the RASMAG/3 meeting, their position on the establishment of SMA. In this regard, the Regional Office would write to States concerned to provide detailed information on the requirements to establish an SMA and the offers made by Thailand and CSSI.

5.31 The Secretariat pointed out that ongoing safety monitoring services and updating of safety assessments was a responsibility of States under Annex 11, and in ICAO's view, it was now an urgent matter to meet this requirement and the interest of both Thailand and CSSI expressed at this meeting to provide such services was timely and welcomed.

5.32 In consideration of a possible need for States to recover costs of providing these services through air navigation charges, the Regional Officer, Air Transport (RO/AT) briefed the meeting on financing arrangements that could be adopted. To progress this matter States were requested to raise this matter within their administrations, stressing the safety issues involved and urgency to provide the safety management services for the airspaces concerned. The matter would be referred to the RASMAG/3 meeting on 6-10 June 2005 and States were requested to be prepared to resolve this issue at that meeting.

5.33 In regard to State contingency plans, BBACG/16 was reminded that APANPIRG/12 had called for a survey of States in the Asia/Pacific Region to determine the status of contingency planning and the extent to which contingency plans are exchanged between neighbouring States. This survey had been delayed and would be carried out in the coming months and the results would be reported to APANPIRG/16, States were urged to take action to review their contingency arrangements and to provide copies of contingency plans to the Regional Office.

5.34 The BBACG/16 also considered the following matters: ICAO language proficiency requirements, the Informal Indian Ocean ATS Coordination Group, Civil and military coordination, Electronic Locator Transmitters (ELT); implementation of 30/30 NM lateral and longitudinal separation standards

FIT-BOB/5 and FIT-SEA/2

5.35 FIT-BOB/5 was updated on the status of further development of the FANS-1/A Operations Manual (FOM) and the ICAO regional *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region* and harmonizing these documents with ICAO provisions to provide global guidance material, This was now being undertaken by ICAO Headquarters with support from the North Atlantic FANS Interoperability Group Eleventh (NAT-FIG) and the Asia/Pacific Regional Office. It was expected that an initial draft document would be circulated for preliminary comment during the 3rd quarter 2005.

5.36 India updated on the ADS/CPDLC Operational Trial in the Chennai and Kolkata FIRs. India advised that they would very much appreciate assistance from a CRA in order to analyze and correct the problem reports received so far during the trial. The trials were proceeding positively, with confidence increasing amongst pilots and controllers. The ground system, which would receive software update modifications shortly, had already reached a level of stability where failures were now very infrequent. Unfortunately, although the system had capacity to accommodate additional traffic, the number of participating airlines had not increased significantly.

5.37 Sri Lanka advised that they had installed ADS/CPDLC equipment in early 2001 and commenced trial operations on 15 June 2001 within Colombo FIR. Currently, the system was not operational due to an equipment malfunction which was expected to be fully restored by mid May 2005 when the operational trial would be reactivated.

5.38 FIT-BOB/5 noting Sri Lanka's need to gain technical knowledge and expertise, called upon Airservices Australia who pioneered, along with their partners in the South Pacific Region, the introduction of the first ADS and CPDLC operations, to support the efforts of States in the Asia Region to implement ADS and CPDLC.

5.39 In this regard, the meeting was advised that Australia was presently working with African States through the Informal Indian Ocean ATS Coordination Group to implement ADS and CPDLC in the Southern Indian Ocean area. The FIT-BOB/4 meeting 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 who had recommended that the Regional Office bring this to the attention of APANPIRG/16. This would allow for integration of all the various coordinating groups and implementation plans into a consolidated approach.

5.40 On reviewing the FIT-SEA Work Plan it was recognized that the Work Plan contained minimal detail and had not been developed sufficiently for an implementation project. Accordingly, the meeting requested the Secretariat to adopt the FIT-BOB model.

5.41 The two principal ATS providers for the non-radar airspace over the South China Sea where ADS was needed were the Philippines and Viet Nam.

5.42 IATA expressed concern that continued delay in upgrading air traffic services to introduce ADS and CPDLC in the South China Sea area had a major negative impact on flight operations. The States concerned were urged to review their implementations plans and do their utmost to accelerate implementation of data link services in accordance with the ICAO's regional CNS/ATM plan. FIT-SEA/2 agreed that the Regional Office should bring this to the attention of States, and in view of the growth in traffic in the region and the safety and environmental concerns being expressed, to request that they give priority to funding the necessary ATM improvements.

5.43 Japan informed the meeting that in follow-up to the FIT-SEA/1 in May 2004, and the offer made by CRA Japan to undertake the role of CRA activity for the South China Sea area, CRA Japan confirmed that it would be willing to provide the CRA service and requested the meeting to consider this offer. The provision of CRA services would be an extension of its existing activities in the Tokyo FIR as aircraft were operating from the Tokyo FIR to the South-East Asia area. Also this would provide continuous CRA services across this geographical area.

5.44 CRA Japan advised that initially there would be no charge for setting up and operating the CRA, but consideration would need to be given for funding its ongoing service, and this matter should be taken into account in the CRA funding discussions in due course.

5.45 In regard to the formalities to establish the CRA, the Secretariat advised that this was a matter for the States concerned to decide as they were responsible for the provision of the CRA services. In this case, as CRA Japan was an established CRA, the States could all agree through the FIT-SEA to appoint CRA Japan. Also, it would be necessary to obtain the cooperation of the aircraft manufacturers and data link service providers and in this regard the Secretariat was requested to confirm their participation at future FIT-SEA meetings.

5.46 CRA Japan advised that at the next FIT-SEA/3 meeting it would be necessary to confirm the role of the CRA, clarify who were the FIT-SEA members and their roles, and put in place the procedures and process for operating the CRA. CRA Japan advised that they were willing to start work with Singapore on any problem reports that they had experienced as they were the only State presently operating ADS and CPDLC services in the area. Singapore agreed to provide these reports to the CRA Japan.

5.47 The Secretariat presented the meeting with a review of the background and work undertaken to date to put viable CRA funding arrangements in place to support an operational trial for implementation and operation of ADS and CPDLC in the Bay of Bengal area. A presentation was made on how States could best organize to provide necessary safety monitoring services. ICAO's policies and guidance related to the recovery of necessary expenditures were summarized and various options for financing cooperative approaches to the provision of air navigation services were described.

5.48 The meeting was encouraged by the progress being made between IATA and Boeing to establish the BOB CRA on behalf of the States concerned.

5.49 FIT-SEA/2 was presented with a draft copy of the Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region for review. It was intended that this guidance material would help promote a standardized approach for monitoring the performance of ATS data link systems within the Region. The draft guidance material would be presented to RASMAG/3 during June 2005, with a view to

bringing the material to APANPIRG/16 in August 2005 for endorsement as regional guidance material.

5.50 The meeting was advised that, as a result of reports of widespread misunderstanding of the use of CPDLC, ICAO Operational Data Link Panel (OPLINKP) was developing a document containing guidance material for the use of CPDLC. It was considered that the draft material would be of value to States operating CPDLC systems.

5.51 States and Organizations were invited to review the draft Guidance Material and provide feedback to the OPLINKP. Comments from airlines, pilots, ATS providers and all other interested parties should be directed to OPLINKP via the primary author adam.watkin@airservicesaustralia.com or via the Regional Office for relay to OPLINKP.

5.52 The following matters were also considered: ICAO language proficiency requirements, 30/30 Implementation in the Tasman Sea area; the Australian Organized Track Structure (AUSOTS), India VHF upgrade using VSAT, and RVSM issues.

ADS/CPDLC Seminar

5.53 The ICAO ADS/CPDLC Seminar was held in conjunction with the combined meetings of the FIT-BOB/5, FIT-SEA/2 and ATFM/TF/1 was attended by 42 participants from 14 States, 2 International organizations and 1 data link service provider.

5.54 The ADS/CPDLC seminar was arranged to coincide with the FIT-BOB/5 and FIT-SEA/2 meetings in response to discussions at the FIT-BOB/4 meeting in September 2004. FIT-BOB/4 in considering comments made by Boeing CRA concerning the complex technical nature of ADS/CPDLC, and operational problems so far identified by the ADS/CPDLC trial in the Bay of Bengal, considered that an ADS/CPDLC seminar would be an effective way to educate ATS providers and operators in the region about ADS/CPDLC operations. The seminar was designed to provide information from experienced operators and pilots, ATS providers and controllers, network system providers and technical background to the work undertaken by the CRA.

5.55 The meeting noted the successful outcome of the seminar and the value it provided to the States involved in the ADS/CPDLC implementation process. The meeting expressed appreciation to the experts who participated and provided high quality and relevant presentations.

SCM BOB CRA (Funding)

5.56 The SCM BOB CRA (Funding) had been convened to address a very specific task, that of the funding of the CRA for the Bay of Bengal. The SCM noted the background in progressing arrangements to establish the CRA for the Bay of Bengal. These had been were reviewed by previous meetings involved and updated at FIT-BOB/4 and BBACG/15. Subsequently, the status of the CRA was again reviewed during the Combined Meetings of the FIT-BOB/5 and FIT-SEA/2, held in conjunction with the First Meeting of the Air Traffic Flow Management Task Force (ATFM/TF/1) and ADS/CPDLC Seminar in April 2005.

5.57 The initial contract between IATA and Boeing to establish the CRA would be for 18 months, the meeting was advised that it would be possible to extend the arrangement on an annual or triennial basis thereafter, should this interim approach to funding the CRA prove successful for the parties concerned. IATA reported that to bring the CRA into operation, it would be necessary for IATA to also enter into formal arrangements with the States concerned to ensure provision of the necessary data and to enable IATA to collect charges from the users of the data link services.

5.58 The SCM meeting considered a draft legal agreement between IATA and relevant States, which comprised the legal arrangements necessary to enable and facilitate the collection by IATA of a specific 'CRA Charge' from operators for the purposes of funding CRA services in the Bay of Bengal area. The draft legal agreement was thoroughly reviewed and updated by the meeting, addressing many of the concerns raised at this and previous meetings. In recognition that India and Sri Lanka would be the two States initially involved in supporting the provision of data to IATA in order to facilitate the collection of a specific 'CRA Charge' from airspace users, the meeting drafted separate agreements between IATA and India, and IATA and Sri Lanka, for consideration by the parties involved as final agreements suitable for implementation.

5.59 The meeting considered implementation arrangements for the CRA. Once the agreements between IATA and the States concerned had been signed and the enabling activities described in the agreements had been commenced, IATA would be in a position to sign the agreement between IATA and Boeing, thereby allowing Boeing to commence the provision of CRA services.

5.60 In order to ensure that the work toward implementation of CRA services continued at best speed, the SCM meeting agreed to the following steps:

1) IATA to complete the fine detail and editorial work to the Agreements and provide 'execution' copies of the agreement documents to India and Sri Lanka as soon as possible;

2) IATA to coordinate with Sri Lanka in respect of progressing the Agreement to signature through State approval processes;

3) Airports Authority of India (AAI) to present the Agreement to the Board of AAI as soon as possible;

4) Subject to AAI Board approval, AAI to present the Agreement to the Government of India as soon as possible;

5) AAI to advise IATA immediately when Board and Government approval had been granted; and

6) AAI to coordinate with IATA to conduct formal signing of the Agreement.

7) Regional Office to coordinate with surrounding States in respect of the issuance of a suitable AIP SUP notifying the implementation of CRA services.

SEACG/12

5.61 The SEACG/12 meeting reviewed and updated the Action Agreed Items arising from the SEACG/11 meeting held on 24-28 May 2004. The SEACG/12 meeting closed five of the 22 Action Agreed Items and added five Items.

5.62 The Meeting reviewed the Safety Assessment for post-implementation of RVSM in the Western Pacific/South China Sea (WPAC/SCS) Area. It was noted that although the TLS had not been infringed, the RVSM/TF/18 meeting (July 2004) agreed that the States concerned in the Asia Region should review current ATC operations and put measures in place to reduce operational errors, including a review of FLOS arrangements.

5.63 The meeting was updated on progress by the RVSM Task Force to address the application of the RVSM flight level orientation scheme (FLOS) in the Western Pacific/South China Sea (WPAC/SCS) area. It was originally anticipated that the safety assessment would be reviewed by the RVSM/TF/26 FLOS review meeting scheduled on 25-29 April 2005. However, in spite of frequent reminders by MAAR and a State letter issued by the Regional Office, several States responsible for significant portions of the airspace concerned failed to submit the required data in time for MAAR to complete the safety assessment to be reviewed at the RVSM/TF26 review meeting.

5.64 The SEACG/12 meeting was informed of the ICAO provisions with regard to the requirements for States to have in place contingency measures for application in the event of disruptions to ATS and associated services.

5.65 The SEACG/12 meeting recalled that at RASMAG/1 (April 2004), it was agreed that it was necessary to establish SMAs to undertake safety management programme for the application of data link services and related horizontal separation minima. The SCS area had been identified as requiring a SMA to be established for the safety assessment of the RNP 10 route structure and further reduced horizontal separation, and application of data link services.

5.66 The SEACG/12 meeting was advised that AEROTHAI, who had been appointed by APANPIRG to operate the RVSM RMA for the Asia Region was also interested in providing SMA services for the Bay of Bengal area. In addition to their RMA activities, AEROTHAI was studying the issues concerning the setting up of SMA services for the safety assessment work and monitoring activities related to the horizontal plane (i.e. RNP 10 and 50 NM lateral and longitudinal separation), and to include consideration of future separation reduction of 30 NM based on ADS and RNP 4.

5.67 It was pointed out that ongoing safety monitoring services and updating of safety assessments had not been put in place for the SCS route structure RNP 10 routes where 60 NM route spacing was applied. As no updated safety assessment had been undertaken since implementation of the route system in November 2001, a review of the safety assessment was long overdue.

5.68 SEACG/12, noting the background to the present situation, agreed that setting up of safety monitoring services was essential and this would be given priority. As RASMAG was the body with appropriate expertise, the SEACG/12 meeting requested RASMAG's assistance. Detailed information was required on the cost of setting up and operating an SMA. The main area of interest was regarding the cost issue and arrangements to obtain funding.

5.69 SEACG/12 also considered the following matters: Guidelines for the implementation of RNP operations; Special Implementation Project on ATS safety management; the First Air Traffic Flow Management Task Force Meeting; use of No-prior departure coordination (No-PDC) procedures; Amendment 4 to the PANS-ATM; Amendment 43 to Annex 11which introduced a Standard that required States to establish a monitoring programme for aircraft height keeping

performance in RVSM airspace; civil military coordination; and ICAO language proficiency requirements; Electronic Locator Transmitters (ELT).

IPACG/23

5.70 The IPACG/23 meeting was hosted by the Japan Civil Aviation Bureau (JCAB). The IPACG/23 meeting was preceded by 10th Meeting of the FANS Interoperability Team meeting (FIT/10), which was held at the same venue from 11-12 July 2005.

5.71 The final meeting report had not been finalized in time for this meeting however, when completed, it would be available on the FAA web site: http://www.faa.gov/ats/ato/ipacg.htm. The main issues covered were as follows:

- concluded that the hotline tests between the FAA Air Traffic Control System Command Center (ATCSCC) and JCAB Air Traffic Flow Management Center (ATFMC) had been successful and appropriate procedures were in place;

- established procedures between Anchorage Air Route Traffic Control Center (ARTCC) and Tokyo Area Control Center (ACC) permitting the use of non-standard altitude for direction of flight on routes to enhance efficiency;

- finalized dates and exchanged technical information for the transfer of the communications circuit between Tokyo and Naha ACCs, Anchorage and Oakland ARTCCs in preparation for JCAB Air Traffic Management Center (ATMC) to take over oceanic ATC responsibilities from Tokyo and Naha ACCs;

- agreed with the conclusions of the North Pacific Airspace Cost Effective (NPACE) Study that a full migration of the aircraft population to meet RNP-4 approval requirements would have to occur by 2010 in order to mitigate increases in flight demand in the North Pacific;

- agreed to continue inter-agency discussions in hopes of reaching a mutually acceptable agreement on the exchange of traffic data for air traffic flow management;

- agreed to develop a plan to conduct a study to evaluate the effectiveness of the current airspace and route structures;

- agreed to establish a task force to review the proposed course of action to adopt version 2 of the ATS Inter-facility Data Communications (AIDC) Interface Control Document;

- agreed to initiate steps to reduce dependence on high frequency (HF) communications.

ISPACG/19

5.72 The ISPACG/19 meeting was hosted by Airservices Australia at the Brisbane Marriott Hotel from 1 to 3 March 2005. The meeting was preceded by the twelfth meeting of the FANS Interoperability Team meeting (FIT/12).

5.73 The outcomes and accomplishments of the meeting included the following:

a) review of the successful implementation of the 30NM lateral and 30NM longitudinal (30/30) separation (based on RNP4) across the Brisbane Eastern Oceanic airspace, Auckland Oceanic, Nadi, and Nauru FIRs on 20 January 2005;

b) updating the table of CNS/ATM technologies and enhancements;

c) noted the finalization of a contingency plan between Port Moresby and Brisbane Centre;

d) agreement was reached on the regional implementation of lateral offset procedures. The FAA had implemented the procedures on 20 January 2005, and Australia, Fiji and New Zealand will implement on 17 March 2005; *[Note: Australia, Fiji and New Zealand subsequently implemented the lateral offset procedures on 17 March 2005].*

e) the issue of CRA funding was reopened and the ISPACG co-chairs agreed to jointly develop a plan for funding arrangements to take effect after 30 September 2005;

f) the co-chairs gave an undertaking to obtain and review the materials from the ICAO Flight Plan Study Group and develop a position to forward to ICAO;

g) regional draft guidance material for end-to-end performance monitoring of ATS datalink systems in the Asia/Pacific region was presented to the meeting for review and comment;

h) a draft Letter of Agreement was developed for the continuation of the ISPACG through 2008;

i) an ad-hoc working group reviewed total loss of communications, individual loss of communications, weather deviations and turn back procedures which resulted in an undertaking by the FAA to conduct a data analysis and provide a recommendation for revised turn back procedures; and

j) ISPACG endorsed NASA's development of the ADS-B in-trail procedure.

5.74 The issue of new funding arrangements for FIT/CRA activities has emerged as a matter of high priority with a target date of 30 September 2005 for the implementation of new funding arrangements.

5.75 A copy of the Final Report of ISPACG/19, together with copies of all ISPACG/19 Working Papers and Information Papers is available on the Airservices Australia website at the following address: https://www.airservicesaustralia.com/customer/ispacg/.

Eight and Ninth North East Air Traffic (NEAT) Meetings

NEAT 8

5.76 The International Federation of Air Traffic Controllers' Associations (IFATCA) had initiated the NEAT meetings to consider operational air traffic matters in the North-East Asia area

5.77 NEAT 8 was held in Taipei on 13-14 September 2004 with members from IFATCA and the following ATC Associations: HKATCA, ROCATCA, JATCA and PATCO, together with representatives from the following ATM providers: Hong Kong, China Taiwan, Japan and the Philippines.

5.78 The meeting discussed the RVSM (FLOS to be adopted by Japan and the Republic of Korea when they implement RVSM on 29 September 2005, and the impact of this on the Modified Single Alternate FLOS currently used in the South China Sea RVSM airspace. It was recommended that the Single Alternate FLOS be the preferred FLOS for North East Asia and the South China Sea RVSM airspace.

5.79 It was recommended that a uni-directional route system based on B576 between Taipei and Incheon FIRs be established.

5.80 It was recommended that Taipei and Hong Kong establish a direct track between KADLO and KAPLI to facilitate departures from Taipei.

5.81 The capacity of trans-Pacific routes and the variations in longitudinal separation in the North East Asia airspace was discussed. It was proposed to conduct a trial of reduced separation for trans-Pacific flights between Taipei and Naha FIRs.

NEAT 9

5.82 NEAT 9 was held in Manila on 2-3 June 2005 with members from the following ATC Associations: HKATCA, ROCATCA, JATCA and PATCO, together with representatives from the following ATM providers: Hong Kong, Taiwan, Japan and the Philippines.

5.83 There was further discussion on the implementation of the Single Alternate FLOS in Japan and the Republic of Korea RVSM airspace and the status of the Single Modified FLOS used in the South China Sea. Although it was the intent of the meeting to promote a Single Alternate FLOS throughout the region, it was agreed that any change to the South China Sea FLOS must be co-ordinated with the implementation of an acceptable FLOS in all other areas, and this was not possible at this time. Therefore it was accepted that there would be no change in the South China Sea, and the meeting went on to address the specific issue of the transition of traffic on individual routes between Japan and Taipei and Japan and Manila. Agreement was reached on each of these matters and proposals for revised Letters of Agreement were tabled.

5.84 Taipei and Hong Kong agreed to evaluate a one-way parallel route based on G86 for overflying traffic.

5.85 A mid-term report on the 3 month trial of the Taipei-Naha reduction of longitudinal separation for trans-Pacific flights indicated that there were no significant problems with the procedure and the overall result of the trial is satisfactory, a similar reduction in longitudinal separation will be implemented with Hong Kong FIR.

5.86 There was discussion on the significant impact of a major airport closure or major delays on region-wide traffic. It was agreed that thought should be given to establishing one or more regional ATM Flow Control Centres to manage such situations.

5.87 The meeting appreciated the initiatives taken by IFATCA towards addressing, with its member controller's associations and other involved parties, air traffic operational matters of concern to controllers and for providing helpful assistance in progressing these matters.

Agenda Item 6: Review progress of the Regional Airspace Safety Monitoring Advisory Group (RASMAG)

6.1 In reviewing the work of the Regional Airspace Safety Monitoring Group (RASMAG), the meeting recalled that RASMAG was established under the terms of APANPIRG/14 (August 2003) Decision 14/48, which also required RASMAG to report annually to the ATM/AIS/SAR Sub-Group and APANPIRG in respect of its airspace safety monitoring activities.

6.2 The establishment of RASMAG resulted from the initiatives of APANPIRG in addressing the inclusion by ICAO of safety management provisions in Annex 11 and the extensive implementation of reduced separation applications like RVSM that had necessitated increased safety planning and monitoring activities by States of the Asia and Pacific Region. RASMAG was the first safety group being formed by ICAO to centralize the assistance to States and provide advice on regional airspace safety and monitoring activities involving flight operations and the provision of air traffic services.

6.3 The meeting noted that RASMAG had now met three times – RASMAG/1 in April 2004, RASMAG/2 in October 2004 and RASMAG/3 in June 2005, and had conducted a 3-day ATS Safety Management Seminar (as reported in **paragraphs 6.56 to 6.60)** in June 2005 subsequent to the RASMAG/3 meeting.

Funding of Airspace Monitoring Activities

6.4 RASMAG/3, in noting the work being undertaken in respect of the funding of CRA services for the Bay of Bengal ADS/CPDLC operational trial, acknowledged that many difficulties were being experienced in the provision of safety monitoring services throughout the Region. There were many issues associated with the need to effectively fund and operate multinational infrastructure and air navigation services, including services related to airspace safety. In many instances, the expertise required for safety monitoring activities was not readily available in each State, requiring States to collaborate in the provision of safety services and to work towards establishing suitable mechanisms for the funding of multinational infrastructure and services.

6.5 RASMAG/3 recognized that the provision of safety monitoring services was essential for continued operation of reduced separation minima including RVSM. It was therefore important to understand how States could best organize to provide necessary safety monitoring services and to consider the wider issues of funding necessary for the provision safety services for the international airspaces in the region such as for the application of RVSM and reduced horizontal separation.

6.6 RASMAG/3 was advised that at the ISPACG/19 meeting (Brisbane, February 2005), the United States had informed the meeting that the funding of the ISPACG CRA by the FAA would expire in September 2005, and other funding arrangements would need to be considered.

6.7 The meeting noted the difficulties that had recently been experienced in respect of the provision of RVSM safety monitoring services in the Middle East (MID) Region of ICAO. Prior to the 1st June 2004, the United Arab Emirates (UAE) provided full technical and financial support to the activities of the Middle East Central Monitoring Agency (MECMA), the RVSM Regional Monitoring Agency (RMA) for the Middle East Region. Subsequent to 1st June 2004, the UAE withdrew support for MECMA leading to the discontinuation of monitoring mechanisms for RVSM operations in the Middle East Region.

6.8 On 9th May 2005, the ICAO Secretary General had issued State Letter SWG20/1-IND/05/13, highlighting the concerns of ICAO in respect to the non-availability of RVSM monitoring in the MID Region and noting that unless a concrete action plan was developed by affected States, the withdrawal of RVSM operations from the MID Region would be considered by ICAO. A copy of the State Letter is reproduced as **Appendix A** to the Report on Agenda Item 6.

6.9 The meeting was informed that subsequent meetings of MID States had resulted in agreement amongst States to share the necessary RMA funding and administrative arrangements by establishing the Middle East Regional Monitoring Agency Board. The first meeting of the Board is scheduled in September 2005 at which Terms of Reference and nominations of Board members would be agreed. The meeting agreed to monitor developments in this regard.

APANPIRG/15 Review

6.10 In reviewing the work of APANPIRG/15 (August 2004), RASMAG/2 had noted the recommendation under APANPIRG Decision 15/5 to adopt the term safety monitoring agency (SMA). RASMAG/2 recognized the need for a clear distinction between the monitoring or assessment of technical performance and the assessment of the safety of a particular implementation. RASMAG/2 noted that CRAs and FITs monitor technical performance but do not assess system safety. The latter task was the role of an SMA in the case of reduced horizontal separation. In order to remove any confusion regarding the role and function of an SMA RASMAG/2 agreed that a recommendation should be put to APANPIRG/16 (August 2005) to amend Decision 15/5 to read as follows:

Draft Decision X/XX

That, the term Safety Monitoring Agency (SMA) be used to describe an organization approved by regional agreement to provide airspace safety services for international airspace in the Asia/Pacific region for implementation and operation of reduced horizontal separation.

Australia as RMA/SMA

6.11 RASMAG/2 noted that APANPIRG/15 had agreed under Conclusion 15/6 that Airservices Australia be designated as an RVSM Regional Monitoring Agency (RMA) and SMA for the airspace where it was undertaking this responsibility, as well as to provide safety services for the implementation of data link for the specified airspace. APANPIRG had recognized that Airservices Australia was responsible for RVSM operations and associated safety management services west of a line 12 NM east of the east coast of Australia (i.e. that international airspace for which PARMO was not the approved RMA). Also, it was noted that Airservices had provided the safety assessment services for the implementation of the South China Sea and Bay of Bengal route systems and associated reduced lateral separation. They were also providing similar and additional safety services for data link services in the international airspace of the Brisbane and Melbourne FIRs that included the airspace of the southern Indian Ocean.

Report of Australia's RMA activities

6.12 RASMAG/3 was informed that the estimate of technical risk in the Australian domestic RVSM airspace and the Indian Oceanic RVSM airspace was found to be more than one order of magnitude less (i.e. less risky) than the technical TLS in each case. However, Australia reported that the results for the operational risk did not meet the TLS. There were a total of 236 minutes of operational errors in the 12 month period to December 31, 2004 resulting in an estimate of risk due to operational errors that exceeded the TLS in both Australian domestic RVSM airspace and Indian Oceanic RVSM airspace. Consequently, the overall (i.e. technical plus operational risk)

vertical risk in RVSM airspace, weighed by flight hours in each airspace, is 9.26×10^{-9} fatal accidents per flight hour which exceeds the TLS of 5×10^{-9} fatal accidents per flight hour.

6.13 Australia confirmed to RASMAG/3 that although the TLS had not been met within the Australian FIRs during 2004, an inspection of the operational error data indicated that this was a direct consequence of three or four large height deviation (LHD) reports of extended time duration. Of note is the fact that none of these LHD reports identified issues specific to RVSM per se, but were errors that were likely to be equally resident in CVSM airspace. However, Airservices Australia had investigated the circumstances surrounding these incidents by formal process, with the result that specific recommendations and actions had been identified and were being implemented in an effort to reduce the likelihood of similar incidents occurring in the future.

Report of PARMO's RMA activities

6.14 The Pacific Approvals Registry and Monitoring Organization (PARMO) briefed RASMAG/3 in respect of PARMO activities and provided the most recent in a series of quarterly reports issued by PARMO for review by the meeting. The report detailed safety monitoring outcomes for the Pacific RVSM airspace over the first quarter of 2005. RASMAG/3 was advised that while most States involved had provided the necessary data to enable suitable safety analysis, some States had not provided any data. RASMAG/3 noted with concern the lack of routine provision of large height deviation reports (LHD) from some States (including 'NIL' reports) and the fact that 2 States had not reported any data since April 2004.

6.15 PARMO informed RASMAG/3 that the analysis indicated that the overall vertical collision risk for the Pacific was 1.64×10^{-9} fatal accidents per flight hour, which is approximately 67% below the Target Level of Safety (TLS) and therefore satisfies the TLS.

Report of MAAR's RMA activities

Bay of Bengal

6.16 The Monitoring Agency for the Asia Region (MAAR) presented a report to RASMAG/3 on their review of airspace safety for the RVSM implementation in the Bay of Bengal (BOB) area. MAAR noted that there were a number of instances where some States had not provided the required data for analysis. However, MAAR considered that the lack of data, while of note, did not impact significantly on the review in a statistical sense. MAAR reported that total time allocated to LHD since 2003 in the BOB totaled 48.4 minutes resulting from 9 reports. RASMAG/3 was informed that in the BOB airspace the total risk was assessed as 3.18×10^{-9}, thereby satisfying the agreed TLS value of no more than 5.0×10^{-9} fatal accidents per flight hour.

Western Pacific/South China Sea

6.17 MAAR informed RASMAG/3 that in the case of the Western Pacific (WPAC) and South China Sea (SCS) airspace there were significant issues regarding the lack of data provision by States which impacted on the level of confidence that could be placed in the results of the safety assessment. In contrast to the data from the BOB, the WPAC/SCS review evidenced a total time allocated to LHD since 2003 as 237.3 minutes resulting from 104 reports. This was in comparison to the 9 LHD reports (48.4 minutes) submitted in respect of the Bay of Bengal. MAAR noted that 88 of the WPAC/SCS reports (85%) related to issues with ATC-unit to ATC-unit transfer/transition messaging.

6.18 RASMAG/3 was informed that the technical risk for the WPAC/SCS area was provisionally calculated as 5.66×10^{-10} and the operational risk as 4.34×10^{-9}. The total risk was provisionally assessed as 4.90×10^{-9}. MAAR expressed their significant concern that the TLS may

have been exceeded given the calculated high risk value and the fact that there was a significant amount of data unavailable from some States. Accordingly, the information from MAAR should be considered as provisional and MAAR would update the safety assessment when the missing data became available.

6.19 MAAR commented that the main reason for the errors was the lack of coordination for the changes of flight level assignment between 2 adjacent FIRs in WPAC/SCS. However, it was difficult to ascertain whether the errors were directly caused by the RVSM transition issues. More information would be required from the States concerned. In this regard, MAAR recommended that the issue be discussed in detail in the next RVSM/TF (FLOS Review) when the comprehensive material is available to MAAR.

6.20 As a result of the high numbers of LHDs reported, RASMAG/3 strongly endorsed the recommendation made to States by the MAAR regarding the need to mitigate identified LHD occurrences, fully endorsing MAAR's statement that:

> *Based on the LHD summary, it is important to note that the number 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.*

6.21 RASMAG/3 requested that the Regional Office circulate a letter to affected States, alerting them to the issues raised by MAAR and seeking their urgent attention in respect of remedial actions.

6.22 The Sub-Group expressed concern at the high numbers of LHDs that were occurring and wholly supported the actions taken by RASMAG and MAAR in the circumstances. The Regional Office was requested to circulate the letter referred to above to affected States without delay, and affected States present at the meeting were requested to urgently undertake suitable investigation and take any actions considered necessary to resolve the situation.

What is meant by a Target Level of Safety (TLS)?

6.23 In view of the fact that the TLS was being exceeded in areas under the jurisdiction of the Australian RMA and, if sufficient data were available, were likely to be exceeded in areas under the jurisdiction of MAAR, RASMAG/3 considered the question of what was actually meant by a TLS and the necessary actions if the outcomes of airspace safety monitoring determined that the TLS had been exceeded.

6.24 RASMAG/3 reviewed references in Annex 11, the Air Traffic Services Planning Manual (Doc 9426) and the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) in this respect, noting guidance in respect to the derivation and application of TLS.

6.25 The meeting considered information provided in the ICAO Airspace Planning Manual, Doc 9426, Part II, Para 4.10.3.8. This information, while related to monitoring for minimum navigation performance specification (MNPS), was considered to be conceptually applicable.

> *… it must be kept in mind that the target level of safety is equivalent to an expectation of very long time intervals between collisions and that a small increase in the statistical probability of collision during a six (or even a twelve) month period can be therefore acceptable. Such an investigation may show that the causes for the*

large deviations can be eliminated by improved procedures. Such procedures should then be brought to the attention of the operators and/or air traffic controllers through the appropriate channels. Results should then be closely observed.

6.26 It was therefore considered by RASMAG/3 that a single event in which airspace safety monitoring identified that the target level of safety had been exceeded, was not sufficient cause to cease the application of the separation minimum. However, it would be important continue closely monitoring and re-assessing the safety level on a regular basis to ensure that there was not an unsafe trend. RASMAG/3 recognized the importance of providing guidance to States in respect of the TLS issues discussed above and agreed to add an item to the RASMAG Task List in this regard, for future action.

Traffic Sampling Requirements

6.27 In considering the requirements for routine safety assessments, RASMAG/2 agreed that the annual provision by States of suitable traffic sample data (TSD) for both vertical (RMA) and horizontal (SMA) analysis, in addition to the ongoing routine reporting of large height deviation and gross navigational errors, was suitable for FIRs in the MAAR area of jurisdiction. RASMAG/2 agreed that as the month of December routinely experienced high traffic levels, this should be adopted as the standard sample period for traffic sample data collection throughout the MAAR areas of responsibility, commencing from December 2005. Traffic sample data collected in December would be submitted to MAAR by the end of January, allowing analysis by the RMAs in order to update RASMAG in April/May and allow time for RASMAG to prepare an update for APANPIRG in August/September each year.

6.28 The meeting noted the adoption of December as the standard month for the collection of traffic sample data and endorsed the attempts to minimize the impact on States by aligning the arrangements for the collection of data to ensure that all required data was collected simultaneously during the annual December sampling.

MAAR Future Role

6.29 The Monitoring Agency for the Asia Region (MAAR) updated RASMAG/3 in regards to their proposals to expand their services to include, as well as RMA services, the provision of airspace safety monitoring for the implementation of the RNP-based horizontal-plane separation minima in the Asia Region. MAAR would still need to acquire the specific technical/operational know-how for the provision of RNP-based horizontal-plane separation minima airspace monitoring. MAAR reported that in this regard, they were in consultation with the FAA Technical Center and coordinating a business arrangement with CSSI of the United States in order to allow MAAR to fulfill the roles and responsibilities of the SMA for the Asia Region.

6.30 MAAR reported that in order to expand its role to provide SMA services in addition to the RMA services currently provided at no charge, MAAR would require financial support on a cost-recovery basis. Also, aircraft operators intending to conduct height keeping performance monitoring for RVSM-approved aircraft through AEROTHAI would be charged on a cost-recovery basis.

6.31 RASMAG/3 had expressed appreciation for MAAR's existing RMA work and encouraged MAAR to continue to its present initiatives in respect of moving towards the provision of SMA services. The options to obtain SMA services regionally were very limited and having an operational SMA readily accessible would assist States in meeting their obligations in respect of ICAO safety provisions.

Safety assessment for RNP10 Operations in the SCS area

6.32 RASMAG/3 recalled that a safety analysis was required to be carried out prior to implementation of RNP 10 operations in the SCS in November 2001, in order to confirm that the navigation accuracy and other safety considerations expected to be achieved would not exceed the agreed TLS. As this task required mathematical expertise that was not generally available within the South China Sea ATS Route Structure Implementation Task Force (SCS/TF), assistance was requested from Australia to carry out the safety assessment. The safety assessment conducted by Airservices Australia concluded that the lateral collision risk would be less than the required TLS of 5 x 10^{-9} fatal accidents per flight hour, Accordingly, the SCS route network was implemented in November 2001.

6.33 SCS/TF/7 (January 2002) noted that the results of this safety assessment suggested that a new traffic movement sample should be collected to complete the safety assessment once the revised route structure had been implemented because the traffic data used for this preliminary assessment did not reflect the revised route structure. The Task Force agreed that a further safety assessment for RNP 10 operations in the revised South China Sea ATS route structure based on the actual traffic movement should be conducted.

6.34 SCS/TF/8 (December 2002) endorsed the position described above. SEACG/11 (May 2004) considered the matter and added an action item to the SEACG Action Plan. APANPIRG/15 noted that SEACG/11 had agreed to update the safety assessment in relation to the implementation on 1 November 2001 of RNP 10 and 60 NM lateral separation on the South China Sea routes. APANPIRG/15 also noted that RASMAG/1 had identified a need for a safety monitoring group to be responsible for safety assessment activities, and that there would be a need to designate such a safety organization for the SCS area.

6.35 SEACG/12 (May 2005) noted the delays in updating the safety assessment, acknowledging that as no updated safety assessment had been undertaken since before the implementation of the route system in November 2001 nearly 4 years ago a review of the safety assessment was long overdue.

6.36 RASMAG/3, in noting that Australia had conducted the original pre-implementation safety assessment, requested that Australia again be approached and requested to complete the post implementation safety assessment. The RASMAG Chairman undertook to follow up with Airservices Australia and coordinate a response with the Regional Office in the next few weeks.

6.37 The meeting was informed that Airservices Australia had recently updated the Regional Office in this respect, indicating that they could perhaps do the work depending on the type of data that was available and indicating that any work undertaken would need to be on the basis of a formal request for assistance from the Regional Office.

6.38 Japan informed the meeting that they believed that Japan would have the technical capacity to undertake the horizontal safety assessment and undertook to make enquiries in this regard and report back to the Regional Office. If Japan was technically able to do the work, they generously offered to provide the services at no cost.

6.39 MAAR reaffirmed with the meeting that they were one of the three RMAs appointed by APANPIRG and that internal preparations and planning were in progress to expand their services to include horizontal safety assessment capability. Although they were unable to give a definite date that these services would be available to this meeting, MAAR would also make enquiries in this regard and provide an action plan and progress report to RASMAG and the Regional Office.

6.40 The meeting agreed that, with three parties potentially able to undertake the services on behalf of affected States, it was likely that the next RASMAG meeting scheduled in October 2005 would be in a position to be updated as to the capabilities of each party and make decisions accordingly. The Regional Office thanked Australia, Japan and Thailand (MAAR) for their willingness to assist the States of the SCS to meet their safety responsibilities.

6.41 The Regional Office noted that the selection of a person or agency that was able to conduct the safety assessment was step one of a two step process. The second step required the provision of suitable data on which to base the safety assessment and this would require affected SCS States to undertake traffic sample data collection in accordance with the parameters specified by the party that would be completing the safety assessment work. Although the safety assessment was already long overdue, the meeting considered that it was appropriate that RASMAG be involved in the process and, as the selection of the party to undertake the safety assessment would be addressed at the October meeting of RASMAG, collection of suitable traffic sample data could be accomplished in December in accordance with the standardized sampling period established by RASMAG.

Delay to the Review of FLOS in the WPAC/SCS Area

6.42 The meeting was informed that during the review of regional Flight Level Allocation Scheme (FLOS) issues undertaken by RVSM/TF/22 (September 2004), States reached agreement in regard to commencing a work programme aimed at reviewing and amending the modified single alternate FLOS presently in use in the Western Pacific (WPAC) and South China Sea (SCS) areas.

6.43 The review of FLOS arrangements had been precipitated as a result of the RVSM implementation in the Bay of Bengal and Beyond area in November 2003 using a single alternate FLOS, requiring RVSM transition arrangements between the modified single alternate FLOS used in the WPAC/SCS areas. In support of the proposed changes, in addition to State safety assessments, the Monitoring Agency for Asia Region (MAAR) was required to carry out a safety assessment for the Western Pacific/South China Sea that included, amongst others, consideration of the revised level assignments proposed and resulting flight level transition areas and associated procedures. In order to undertake these activities, MAAR required the provision by States of complete traffic sample data (TSD) for the month of July 2004, and RVSM Large Height Deviation (LHD) data for a continuous 12-month period.

6.44 Although many affected States were able to provide data to MAAR as requested, in spite of frequent reminders by MAAR and a State letter issued by the Regional Office, several States responsible for significant portions of the airspace in the South China Sea area failed to submit the required data in time for MAAR to complete the safety assessment to be reviewed at the scheduled April 2005 FLOS review meeting. In the absence of the MAAR safety assessment, no change to the existing FLOS arrangements could be authorized and the April 2005 FLOS review meeting was postponed.

6.45 In acknowledgement of the issues associated with the implementation of RVSM in the Japan (domestic) and Incheon FIRs in September 2005, it was agreed that any change to the SCS FLOS should be delayed until after the 90-day review meeting of the Japan/Republic of Korea RVSM implementation. Accordingly, the meeting would be scheduled in February 2005.

6.46 The meeting recognized that the safety concerns intended to be addressed by RVSM/TF/22 in respect of RVSM transition arrangements would not be addressed until appropriate data had been provided to MAAR for analysis and a RVSM/TF meeting had considered the outcomes of the safety assessment The meeting also recognized that the non provision of safety data by some States and consequent inability of MAAR to complete the safety assessment would lead to a deferment of at least 10 months in the implementation of the proposed changes to the SCS FLOS.

6.47 The meeting, noting that the proposed changes to the SCS FLOS were derived in order to address identified operational safety concerns reviewed during RVSM/TF/22, expressed strong concerns in respect of the delay. In this regard, the meeting also noted the matters raised by MAAR's recent reporting in respect of the large numbers of Large Height Deviations (LHDs) recorded for the SCS airspace and the implications in respect of the RVSM transition arrangements, expressing very strong concerns that arrangements agreed at RVSM/TF/22 were expected to assist in reducing the numbers of LHDs and therefore should be progressed with the minimum of delay.

Non Submission by States of Safety Related Data

6.48 RASMAG/2 (October 2004) was concerned that some States had failed to fulfill their obligations towards ICAO safety requirements for ongoing operation of RVSM, noting a number of disturbing issues that had been identified by MAAR and PARMO that required urgent follow up:

a) missing traffic sample data;

b) missing large height deviation reports;

c) incomplete and non-reporting of State approvals registry data; and

d) incomplete information on follow-up monitoring of aircraft height-keeping performance in accordance with the minimum monitoring requirements.

6.49 RASMAG/2 recognized that these problems should be made known to State safety authorities to reinforce the need for due diligence in their safety management programmes and to fully cooperate with the regional RVSM monitoring programme. Accordingly, RASMAG/2 prepared a draft letter highlighting these concerns and requesting the immediate submission of safety data. Letters of this type were transmitted by the Regional Office during early December 2004 to 13 States of the Asia and Pacific Regions who were identified as not having submitted data in accordance with the requirements of approved RMAs. Whilst many States provided safety data in response to the letter, some States have still not provided suitable data to MAAR.

6.50 In accordance with the concerns raised by RASMAG/2 in respect of the non provision of data by States, the Regional Office had presented a discussion paper in relation to RASMAG to the 41st Conference of the Director Generals of Civil Aviation of the Asia and Pacific Region (the 41st DGCA's Conference), held in Hong Kong, China during November 2004. In respect of this discussion paper, the meeting noted that the Report of the 41st DGCA's Conference recorded the following:

> *RASMAG/2 (October 2004) emphasized that the implementation and continued application of RVSM and other reduced separation minima were predicated on safety assessments being performed and updated, and the target level of safety being demonstrated as having been met. Accordingly, RASMAG/2 requested that the 41st Conference of the Director Generals of Civil Aviation of the Asia and Pacific Region be advised, in order to alert DGCA's to the disturbing problem of the non provision of safety data by many States and the consequent inability to demonstrate the current safety performance of some aspects of regional operations, including those related to the application of reduced separation minima.*

6.51 As a result of the Conference discussions, the 41st DGCA's Conference formulated 10 action items. One of these actions items was in respect of RASMAG and is recorded as follows:

DGCA Action Item 41/6

Recognizing the ICAO provisions on implementing Safety Management Systems, the Conference urged all Administrations in the Asia/Pacific Region to fully support the APANPIRG Regional Airspace Safety Monitoring Advisory Group (RASMAG)

6.52 RASMAG/3 had also expressed significant concern in respect of the non-provision of data and formulated a statement and two draft Conclusions for consideration by APANPIRG/16, as follows:

RASMAG is aware that despite efforts to encourage States to provide data to enable the assessment of mandated safety targets for the implementation of reduced separation minima, some States have not met their responsibilities.

RASMAG considers that the failure of some States to provide monitoring data as required in accordance with Annex 11 provisions and Regional Supplementary Procedures (Doc 7030), has led to an inability to update required safety assessments. This leads to a lack of confidence in the safety of the operating system, in particular with respect to reduced separation applications i.e. an inability to demonstrate whether target levels of safety are being achieved.

Accordingly RASMAG has drafted the following two conclusions for consideration by APANPIRG/16:

Draft Conclusion X/XX

That, recognizing that some States had not adequately complied with safety management provisions, further implementation of reduced separation minima within the Asia and Pacific Region 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.

Draft Conclusion X/XX

*That the non provision by States of safety related data to approved monitoring agencies be included in the APANPIRG Deficiencies List in respect of a deficiency in a safety management system, in order to promote the resolution of these issues***.**

6.53 The Regional Office reported that the follow up actions that have had to be continually undertaken by the Regional Office and regional RMAs in an effort to ensure States provide suitable safety data in respect of their responsibilities under Annex 11 - *Air Traffic Services* provisions are excessive and cannot be sustained.

6.54 The meeting noted that the non provision by States of appropriate safety data in a timely manner, in accordance with ICAO provisions and the requirements of RMAs appointed by APANPIRG, means that the safety performance of the regional airspaces in which reduced separation has been implemented cannot be fully demonstrated. The meeting expressed support for the draft conclusions that had been prepared by RASMAG and urged all States to review their circumstances in regard to the provision of data to ensure that data was passed in an accurate and timely manner, and in accordance with the requirements of APANPIRG appointed safety related agencies.

6.55 The meeting thanked RASMAG for their hard work in identifying and bringing to the attention of the Sub-Group the safety matters discussed above, including the outstanding safety assessment for the South China Sea Route Network, the high number of large height deviations occurring in the South China Sea area, the delay to implementation of the changes identified by the RVSM/TF in respect to operational safety concerns associated with the SCS FLOS arrangements and the non provision of safety data by some States which was directly impeding the conduct of regional safety assessments. The Sub-Group expressed strong support for the work of RASMAG and for the actions taken in respect of attempting to address regional safety issues, and requested that RASMAG continue a high involvement with the SCS States in arranging to have the follow up safety assessment for the SCS Route Network satisfactorily completed at the earliest opportunity.

RASMAG ATS Safety Management Seminar

6.56 The 3-day RASMAG ATS Safety Management Seminar was conducted from 8 to 10 June 2005 at the ICAO Asia/Pacific Regional Office and was attended by 42 participants from 16 States and 2 International Organizations. The objective of the seminar was to raise the awareness of States in the Asia and Pacific Region in relation to the ICAO provisions regarding safety management systems, with emphasis on compliance with Annex 11- *Air Traffic Services* provisions regarding the implementation of systematic and appropriate ATS safety management programmes.

6.57 RASMAG/1 had expressed concern that, because the Annex 11 provisions on safety management programme only came into effect on 27 November 2003, there was little lead time for States to establish safety management systems and to develop safety assessment expertise to address complex airspace environments where reduced separation minima was being implemented and operating. It was recognized that States who had implemented safety management systems and used a systematic approach to evaluating operational risk and managing ongoing operations, were much better equipped to deal with airspace safety matters. States that had little experience with safety management systems and had not put in place arrangements specifically to deal with ATS safety matters, would find it difficult to manage complex airspace and reduced separation that required safety assessments to be performed.

6.58 Accordingly, RASMAG considered that more attention needed to be given to education, and a start could be made by holding an ATS safety management seminar/workshop on the matters described above with an emphasis on practical hands-on experience. As a result, the 3 day Seminar was held.

6.59 In convening the seminar, RASMAG/3 noted that the original proposals had included provision for the Seminar material to form the basis for a small team of experts to travel to States and provide on site safety management training. The meeting was informed that, despite the generous commitment of IATA to assist with travel arrangements, the concept of presenting a traveling safety workshop to States of the region was not able to proceed as a result of resource limitations of the Regional Office and some of the States involved.

6.60 RASMAG/3 expressed regret in respect of these circumstances. The Regional Office advised that a CD-ROM of the presentations to the Seminar would be widely available to States. Whilst recognizing the value of a CD-ROM, RASMAG/3 acknowledged that simply reading the material on the CD would be of significantly less value than hearing the commentary that went with the CD presentations and proposed that arrangements be made to produce a video or DVD of the seminar. As it was too late to make these arrangements for this seminar, the meeting elected to pursue the idea further at a later time. The matter was included in the RASMAG task list.

Approval of Amendment 43 To Annex 11 and complementary amendments to Annex 6

6.61 The Regional Office briefed the meeting in regard to amendments to Annex 11 and Annex 6 − *Operation of Aircraft*. On 2 March 2005, the ICAO Council adopted Amendment 43 to Annex 11 and amendments 29, 24 and 10 to Annex 6 (Parts I, II and III, respectively), prescribing 11th July 2005 as the date upon which they would become effective and 24th November 2005 as the applicability date. State Letters, dated 24 March 2005, had been issued describing the nature and scope of the amendments to Annexes 6 and 11.

6.62 Amendment 43 to Annex 11 introduced a Standard that required States to establish a monitoring programme for aircraft height keeping performance in RVSM airspace. Complementary provisions have been added to Annex 6, which specify the responsibility of the relevant State authority to take prompt and appropriate action if the monitoring results indicate that the height keeping performance of a particular aircraft or an aircraft type group exceeded prescribed limits.

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

6.63 RASMAG/3 had reviewed the *Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region*, noting the development of the material that had occurred since the material was initially presented at RASMAG/1 (April 2004). 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).

6.64 RASMAG/3 noted that the draft *Guidance Material* had also been reviewed by the FIT-BOB, FIT-SEA, IPACG and ISPACG forums and enhancements had been incorporated based on the experience of these groups. RASMAG/3 was pleased to note the maturity of the material and submitted the material to the ATM/AIS/SAR Sub-Group, with a request that the material be considered for submission to APANPIRG/16 in August 2005 for adoption as regional guidance material.

6.65 After reviewing the *Guidance Material* and noting the history of its development under the auspices of RASMAG, including the reviews that had been undertaken by the specialist FIT Groups, the meeting drafted the following conclusion:

Draft Conclusion 15/13 – 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 6, be published and circulated as regional guidance material in accordance with established procedures.

Agenda Item 7: Review developments relating to CNS/ATM implementation

7.1 The meeting was updated in respect to the work of the Third meeting of Automatic Dependent Surveillance-Broadcast (ADS-B) Study and Implementation Task Force (ADS-B/TF/3, March 2005). An ADS-B Seminar was held on 21 to 22 March in conjunction with the ADS-B/TF/3 meeting.

7.2 The ADS-B/TF/3 meeting continued the development of a draft ADS-B Implementation and Operational Guidance Document (AIGD), reviewed and updated the information contained in the Table CNS 4 – Surveillance System of the ASIA/PAC Air Navigation Plan FASID and agreed an amendment to the regional plan of the new CNS/ATM system. ADS-B/TF/3 also developed a proposal to amend the BORPC in regard to ADS-B.

7.3 The CNS/MET/SG/9 (July2005) reviewed and endorsed the draft amendment proposal developed by the ADS-B/ITF to the ASIA/PAC Regional Plan for CNS/ATM System to include ADS-B. The plan required revision to include ADS-B related planning and descriptive material. The proposed changes are contained in the Chapter 3, 5, 6 and Chapter 9. The CNS/MET/SG/9 meeting also updated time lines of national trials and implementation activities of surveillance systems in the Table 9-1 of the Plan and agreed to replace the term “ADS” used in the document with the term “ADS-C”.

7.4 The CNS/MET SG/9 also reviewed and endorsed the comments made by the ADS-B SITF regarding the Surveillance component contained in the revised Statement of Basic Operational Requirements and Planning Criteria (BORPC) approved by Air Navigation Commission on 22 February 2005. ADS-B/TF/3 noted that ADS-B based air-ground surveillance had been identified by APANPIRG as one cost effective alternative to the radar system in remote continental airspace and for backup or redundant surveillance systems. ADS-B had also been identified as an enabler for the new ATM concept. Accordingly, ADS-B/TF/3 agreed to some variations in the wording of the BORPC to reflect these circumstances.

7.5 ADS-B/TF/3 also considered a number of tasks related to the operational implementation of ADS-B which would be of specific interest to the ATM/AIS/SAR Sub-Group. Relevant extracts from the Task List and actions taken by ADS-B/TF/3 are shown below. The ATM/AIS/SAR meeting noted that an ADS-B seminar had been held in conjunction with the ADS-B/TF/3 and that during the ADS-B/TF/3 meeting a side meeting of long duration had been convened to progress the work of the ADS-B Implementation Guidance Document. In aggregate, this had left limited time available to progress some aspects of the work of the Task Force and consequently some matters had not moved forward in the manner that had been anticipated by the ATM/AIS/SAR/SG.

a) Task # 4 - Subject: Draft amendment proposal to SUPPs 7030 Regional Supplemental Procedures

Task: Prepare a draft for consideration by ATM/AIS/SAR Sub-Group of APANPIRG / Prepare a draft for amendment to Doc7030 for implementation of ADS-B in the ASIA/PAC region pending separation criteria developed by relevant ICAO Panel.

Action by ADS-B TF/3: Australia agreed to submit an amendment proposal to Doc.7030 – Regional Supplementary Procedures (SUPPs) – timeline 2005.

b) Task # 6 - Subject: Coordination between States at planning level

Task: Coordination for timing of implementation / Develop a coordinated implementation plan by city pairs

Action by ADS-B TF/3: While the meeting agreed to continue efforts on the city-pair study and considering the result of a study on three city pairs, the meeting agreed that the future study and implementation should be focus on an area along major traffic flow even for great circle routes rather than along one or two specific ATS routes. This approach would provide greater benefits and assist the cost/benefit analysis and broad business case. Such an approach would also have the flexibility to support dynamic routes.

c) Task # 7 - Subject: Regional implementation plan

Task: Develop a Regional implementation plan taking into account the individual national plans in accordance with a coordinated plan between city pairs.

Action by ADS-B TF/3: The ADS-B TF/3 meeting noted the need to further carry out inter-regional coordination with neighboring regions as emphasized by the ATM/AIS/SAR/SG/14 meeting and agreed to identify an interface standard for the exchange of ADS-B data.

7.6 The draft ADS-B Implementation and Operation Guidance Document (AIGD) had been prepared by the ADS-B SITF to provide guidance material for States in the Asia and Pacific Region that intend to deploy ADS-B technology to enhance surveillance service. It was intended to be a user friendly document with comprehensive information and is modeled on the FANS 1/A Operations Manual (FOM). The AIGD was considered by OPLINK during its February 2005 meeting and feedback and comments were incorporated.

7.7 CNS/MET SG/9 reviewed the updated draft AIGD and made some editorial changes. The meeting noted that the AIGD would be a living document and that care should be taken to retain alignment with the provisions of the PANS-ATM. CNS/MET SG/9 endorsed the draft Conclusion formulated by the ADS-B SITF, as follows:

That, the ADS-B Implementation and Operation Guidance Document as provided in the Appendix be adopted and circulated to States in the Asia and Pacific Region and International Organizations.

7.8 As the AIGD contains significant material relating to the operating integrity and provision of ADS-B services, including ATS operational ADS-B procedures, it was necessary that the ATM/AIS/SAR/ SG undertake a careful review of the draft AIGD, with a view to endorsing the position of CNS/MET/SG/9 regarding the adoption and circulation of the AIGD as guidance material.

7.9 Subsequent to a review of the document, the meeting supported the work of ADS-B SITF/3 and CNS/MET/SG/9, endorsing the position that the ADS-B Implementation and Operation Guidance Document, as amended by CNS/MET/SG/9 and contained in **Appendix A** to the Report on Agenda Item 7**,** be recommended to APANPIRG for adoption and circulation to States in the Asia and Pacific Region and International Organizations. Rather than raise a separate draft Conclusion in this respect, the meeting agreed to join the CNS/MET/SG draft Conclusion as co-sponsor.

RNAV Implementation Plan For Japan (JCAB RNAV Roadmap)

7.10 Japan informed the meeting that in order to provide safer and more efficient operation and to accommodate growing traffic, the Civil Aviation Bureau of Japan (JCAB) developed the *RNAV Roadmap for Japan.* The JCAB established a Steering Committee and RNAV Planning Group in 2004 with the aim of developing an RNAV implementation plan for Japan. The Planning Group took the following steps for developing the Roadmap.

a) Identify needs for RNAV implementation (safety, capacity, efficiency, environment);

- Airspace user requirements
- Airspace design requirements
- Route/track spacing requirements
- Navigation infrastructure
- Safety analysis, etc.

b) Review procedures currently available and identify procedures to be developed;

- airworthiness certification
- operational approval
- design criteria
- ATC procedures

c) Study aircraft equipage and forecast;

d) Harmonization with international and regional procedures; and

e) Establish timeframe.

7.11 The meeting was informed that the Roadmap was approved and released in April 2005. A summary of the *RNAV Roadmap for Japan* is attached as **Appendix B** to the Report on Agenda Item 7.

7.12 The meeting also noted that in order to implement RNAV and RNP procedures for each flight phase in accordance with the Roadmap, JCAB would establish a special team with the operators for implementation of RNAV and RNP in October 2005. JCAB would continue collaboratively working with the operators.

7.13 IATA appreciated JCAB for their initiative to fully utilize the aircraft navigation capacity of RNAV to provide more direct routings.

The Australian Organised Track Structure (AUSOTS)

7.14 The Regional Office provided material on behalf of Australia in respect of plans by Airservices Australia to introduce Flex Track operations between Asia and Australia/New Zealand, based on the Australian Organised Track Structure (AUSOTS) which utilises the FAA's DOTS+ system technology. DOTS+ has been licensed to Airservices Australia under a commercial agreement with the FAA, with the equipment installed at Melbourne Centre.

7.15 Initially, AUSOTS is being used to generate Flex Tracks for daily operations from Singapore to Brisbane, Melbourne and Sydney. In addition, other flights overflying the Singapore FIR may also benefit from the daily Flex Track (e.g. Bangkok to Sydney). In the medium term, other city pairs will be opened up for Flex Track operations and Airservices Australia is committed to working with other States, ANSPs and Operators to develop plans for the introduction of Flex Track operations across the broader Asia and Middle East regions.

7.16 To assist with the planning for the broader implementation of Flex Tracks, the Melbourne-based AUSOTS system will commence loading MET data for the Bay of Bengal as from June 2005. In order to achieve the long-term goal, Airservices Australia will work with other States, ANSPs and Operators to deliver the successful implementation of User Preferred Trajectories on a "Gate-to-Gate" basis.

7.17 The meeting noted the work being undertaken by Airservices Australia in the development of Flex Track operations in the region, utilizing the FAA's DOTS+ system based in Melbourne Centre. The results of this effort and the operational experienced gained by Australia would be very useful to States considering introducing similar operations.

Agenda Item 8: Deficiencies in the Air Navigation field

Review of APANPIRG's List of Deficiencies

8.1 In regard to the review of the report of ARNR/TF/3 meeting as discussed in Agenda Item 3 and the draft conclusion arising regarding the removal of ATS routes that were contained in the ATS Route Catalogue from the List of Deficiencies, the List was revised to indicate removal of the ATS routes by APANPIRG/16 in the event that they adopt the **Draft Conclusion 15/3** to the Report on Agenda Item 3 from this meeting.

8.2 The meeting reviewed the Annex 6 requirement in respect to civil aircraft being fitted with ACAS II and pressure-altitude reporting transponders, and action taken by this Sub-Group and APANPIRG over a considerable period to address the problem of some States not being fully compliant in implementing the standards.

8.3 At APANPIRG/14 it was agreed that it was a matter of urgency that States implement Annex 6 requirements in regard to ACAS II and pressure-altitude reporting transponders especially in RVSM operations and formulated the following Conclusion:

Conclusion 14/6 – Implementation of ACAS II and pressure-altitude reporting transponders in the Asia/Pacific Region

That, States in the Asia/Pacific Region as a matter of urgency implement ACAS II and pressure-altitude reporting transponders required by Annex 6 especially in view of RVSM operations.

8.4 At APANPIRG/15 this matter was reviewed again (paragraph 2.196 to 2.198, Report on Agenda Item 2.1 refers) and it was agreed that States who had not implemented the ICAO provisions in represent of ACAS II and pressure-altitude reporting transponders would be included on the list of deficiencies to be presented to APANPIRG/16.

8.5 In regard to placing States on the deficiency list, the meeting was reminded of the results of the June 2001 update reviewed by APANPIRG/12 (20-24 August 2001) and the following information had been noted:

a) thirteen (13) States have already mandated the carriage and operation of **pressure-altitude reporting transponders**;

b) six (6) have an implementation plan of the carriage and operation of **pressure-altitude reporting transponders**;

c) one (1) indicates that there is no implementation plan of the carriage and operation of **pressure-altitude reporting transponders**;

d) nine (9) have already mandated the carriage and operation of **ACAS but NOT ACAS II**; while two (2) have mandated the carriage of **ACAS II** specifically;

e) nine (9) have a plan to mandate the carriage of **ACAS II** specifically on or earlier dates before the worldwide applicability date of Annex 6, i.e. 1 January 2003;

f) one (1) has a plan to mandate the carriage of **ACAS II** specifically on dates after the worldwide applicability date of Annex 6, i.e. 1 January 2003;

g) one (1) indicates that there is no implementation plan of the carriage and operation of **ACAS II**; and

i) nineteen (19) States and Territories have not replied.

8.6 Subsequent amendments to the information above received from States by the Regional Office were reviewed and updated during the APANPIRG/14 meeting. These lists were further updated by the Regional Office as shown in **Appendix A** to the Report on Agenda Item 8 (pressure-altitude transponder) and **Appendix B** to the Report on Agenda Item 8 (ACAS II) and will be the basis for submitting the deficient States to APANPIRG/16. The lists will be closed two weeks prior to the APANPIRG/16 meeting and States are urged to review these appendices and their position in respect to implementation of ICAO Annex 6 provisions and update the information to the Regional Office as soon as possible in order to enable accurate reporting to APANPIRG.

8.7 The meeting reviewed and updated the List of Deficiencies from APANPIRG/15 based on information provided to the Regional Office by States. The updated List of Deficiencies is included as **Appendix C** to the Report on Agenda Item 8.

IATA's position on ATS deficiencies in the Asia/Pacific Region

8.8 The meeting was advised by IATA of details of deficiencies related to the provision of air traffic services in the Asia/Pacific region. The information provided was not new, some of them have been in existence for a long time. Examples were given of deficiencies that appear to be endemic. These included 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 Annex 15 notification requirements, etc. Operators continue to encounter airspace and air route closures, changes to navigation procedures, etc., where insufficient notice was given. Annex 15 states "at least 7 days" must be provided. There had been many cases experienced where hardly any, and very often no lead-time at all, was given.

8.9 In regard to ATS incident reporting, IATA drew attention to ICAO Doc 9426, Part II, Chapter 3, which requires that reporting of air traffic incidents and ATS investigation procedures be established in order to ensure high standards of safety in the conduct and control of air traffic. Near collisions, serious difficulty caused by faulty procedures or lack of compliance with applicable procedures and serious difficulty caused by failure or ground facilities are identified as air traffic incidents and are reportable.

8.10 It should be noted that an initial report would most likely be made on radio by the pilot. Following an air traffic incident the ATC unit involved should ensure that the accident/incident authority and the national ATS authority are notified of all reportable incidents.

8.11 To ensure that incident reports were sent by operators, and are received in good time at the appropriate ATS unit, it was imperative that every FIR provides a contact address with a responsible person.

8.12 The meeting recalled that this matter had been raised at ATM/AIS/SAR/SG14 and, while supporting IATA's request to provide a contact address by drafting a conclusion to APANPIRG/15, it considered that the matter was "probably outside the scope of the meeting and more the responsibility of the operators and the respective regulatory authorities".

8.13 In regard to APANPIRG/15's review of this matter, the meeting did not adopt the draft conclusion for States to nominate a safety contact point as recommended by ATM/AIS/SAR/SG/14, however did request States to provide details of a suitable safety contact to the Regional Office. APANPIRG/15 had noted IATA's development of a systematic approach to users reporting shortcomings and deficiencies according to IATA's definition. ICAO recognized that IATA, along with IFALPA and IFATCA, were primary sources of information on operational and related occurrences that impacted on safety and welcomed this development that would compliment ICAO's programme. The meeting encouraged States' to fully cooperate with the user groups to take prompt action on reported occurrences in the interest of enhancing the safety of the air navigation system.

8.14 The meeting recognized that ICAO had placed considerable priority on identifying and rectify deficiencies and strongly supported the sharing of safety data. With the expansion of the USOAP this year in the Asia/Pacific Region and in view of the persistence of operational deficiencies as reported by IATA, the meeting agreed that a renewed effort should be made by States to take proactive action in tackling such deficiencies. An important step in this process would be to provide to the Regional Office a contact address and person who would respond in a timely and effective manner in addressing operational deficiencies notified by operators.

8.15 In noting that APANPIRG/15's request that States provide details of a safety contact point to the Regional Office had not been taken up by States, the meeting formulated the following draft Conclusion:

Draft Conclusion 15/14 – State contact point for submission of ATS incident reports

That, States notify to the Regional Office 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.

Agenda Item 9: Update the list of ATM/AIS/SAR Tasks together with priorities

9.1 The meeting reviewed the updated Task List approved by APANPIRG/15, further updating the Task List to reflect the information presented by the meeting. The updated Task List is shown in **Appendix A** to the Report on Agenda Item 9.

9.2 The meeting recalled that APANPIRG/15 had included three additional items on the ATM/AIS/SAR/SG Task List as follows:

a) review key priorities for implementation of CNS/ATM systems for the Asia/Pacific Region, identify new items as required and monitor implementation;

b) make recommendation aimed at improving ATM and CNS support for Terminal Area and Airport Operations, respectively; and

c) to study and take action to implement AN-Conf/11 Recommendations 1/1, 1/10, 1/13, 4/1, 4/2, 4/4, 6/11 and 7/1.

9.3 The meeting noted that the above items had already been placed on the task list by ATM/AIS/SAR/SG/14 following the recommendation to APANPIRG/15 by the Future Direction Task Force and that these matters had been included in the considerations of the meeting.

Key Priorities

9.4 On reviewing the list of APANPIRG Key Priorities for CNS/ATM Implementation in the Asia/Pacific Region, as updated by the CNS/MET/SG/8 and ATM/AIS/SAR/SG/14 meetings, APANPIRG/15 (August 2004) recognized that the list now contained 17 items. In this regard, the effectiveness and appropriateness of the current Key Priorities list was questioned, and in the subsequent discussion, the meeting agreed to the following Decision:

APANPIRG Decision 15/52 – Sub-Group Key Priority Lists

That, in order to identify priorities for CNS/ATM implementation programmes or highlight other critical functions of the Sub-Groups' work programmes, the CNS/MET and ATM/AIS/SAR Sub-Groups are to compile and evaluate Key Priority lists relevant to their activities for review by APANPIRG. Lists should be highly focused, fit the purpose intended and be time bounded

9.5 It was considered by APANPIRG/15 that it was important to maintain some type of key priorities list in order to provide summary information on the activities considered particularly important to APANPIRG. The Sub-Groups would compile and maintain key priority lists of matters relevant to the respective Sub-Group. Further, the list should also be reviewed and updated regularly, and be kept to a minimum number of items.

9.6 In accordance with Conclusion 15/52, the issue of Key Priority lists had also been reviewed by the Ninth Meeting of the CNS/MET Sub-Group (CNS/MET/SG/9), held in Bangkok, Thailand from 11-15 July 2005. Subsequently, the updated APANPIRG list, as amended by CNS/MET/SG/9, had been provided to the ATM/AIS/SAR/SG/15 for consideration.

9.7 The meeting considered the Key Priority List as amended by the CNS/MET/SG and undertook a critical review of the items listed to achieve the focus, timeliness and relevance that APANPIRG had requested. In reviewing the items it became obvious that there were overlaps with some items between the two Sub-Groups. Consequently, the meeting agreed that it was appropriate to maintain a single list with three discrete areas - items solely relevant to the CNS/MET Sub-Group, items solely relevant to the ATM/AIS/SAR Sub-Group and items that are of relevance to both Sub-Groups. Accordingly, the meeting restructured and updated the Key Priority list in this manner, including the amendments previously proposed by the CNS/MET Sub-Group. The revised list is reproduced as **Appendix B** to the Report on Agenda Item 9.

Regional Office Resource Issues

9.8 In considering its future work, the meeting took into account information provided by the Secretariat concerning the staffing cutbacks at the Regional Office arising from ICAO's budget constraints. The ATM Section at the Regional Office had an extremely demanding work programme and during the period since ATM/AIS/SAR/SG/14, had to deal with a high number of meetings as shown in the table below.

#	DATE	EVENT	LOCATION	REMARKS	MEETING DAYS
1	5-8/7/04	RVSM SCM Japan/ROK	Bangkok		4
2	11-13/8/04	SCM Hong Kong/Jakarta Route	Manila		3
3	23-27/8/04	APANPIRG/15	Bangkok		5
4	6-10/9/04	ARNR/TF/1	Bangkok		5
5	13-17/9/04	Combined FIT-BOB/4 & BBACG/15	Bangkok		5
6	16-17/9/04	SCM China/Viet Nam	Bangkok		2
7	20-24/9/04	RVSM/TF/22 FLOS	Bangkok		5
8	4-8/10/04	RASMAG/2	Bangkok		5
9	18-22/10/04	RVSM/TF/23 Japan/ROK	Bangkok		5
10	1-5/11/04	DGCA	Hong Kong	Non-attendance, preparatory work	5
11	8-12/11/04	RVSM/TF/24 OYR BOB	Bangkok		5
12	15-19/11/04	ATM/SMS Seminar	Beijing		5
13	29-30/11/04	COSCAP-SA & India Mission	Delhi		4
14	6-8/12/04	Mission to Indonesia	Jakarta		3
15	8-10/12/04	Language Seminar	Tokyo		3
16	14-17/12/04	Civil/Military Seminar	Bangkok		4
17	26-28/1/05	SCM China/Viet Nam	Bangkok		3
18	31/1-4/2/05	BBACG/16 & SCM ATFM	Bangkok		5
19	14-18/2/05	ARNR/TF/2	Bangkok		5
20	28/2-3/3/05	ISPACG/19	Brisbane		4
21	7-11/3/05	SAR Seminar/ SAREX	Chennai		5
22	21-25/3/05	RVSM/TF/25 &	Incheon		5

#	DATE	EVENT	LOCATION	REMARKS	MEETING DAYS
		Seminar			
23	21-25/3/05	ADS-B/TF	Bangkok		5
24	18-22/4/05	FIT-BOB/5, FIT-SEA/2 & ADS/CPDLC Seminar & ATFM/TF/1	Bangkok		5
25	2-3/5/05	ARNR/TF/3	Bangkok		2
26	4-6/5/05	SEACG/12	Bangkok		3
27	30-31/5/05	SCM RVSM/China-Myanmar	Kunming		2
28	2-3/6/05	SCM CRA Funding	Bangkok		2
29	14-23/6/05	USOAP Auditor Training	Bangkok		9
30	27/6-7/7/05	USOAP Audit	Bangkok		9
31	28/6-1/7/05	ATFM/TF/2	Delhi	Non-attendance, preparatory work	4
32	4-8/7/05	RVSM/TF/26	Tokyo		5
33	11-13/7/05	IPACG/23	Tokyo		3
				Sub-total 1	**144**
Preparatory/post meeting work (231+165=396) *Note: calculated as 7 days preparatory and 5 days post meeting over 33 meetings during July 2004/ July 2005*				**Sub-total 2**	**396**
				Total	**540**

9.9 The Secretariat advised the meeting that ICAO regional ATM work programme focuses on implementation of the regional CNS/ATM plan along with its primary focus on safety. ICAO has also expanded the Universal Safety Oversight Audit Programme (USOAP) to include all safety related Annexes, requiring a significant increase in the ATM component of the audit programme. This will have an impact on increasing the Regional Office ATM activities.

9.10 The ATM staffing levels had been reduced from 3 to 2 ATM officers since May 2005 and there was also a loss of 3 general service staff effective from 1 January 2005. The AIS/MAP post had not been filled since early 1990's, and this work had been absorbed to the extent possible by the ATM Section officers. In the main, the meetings shown above had been carried out with the staff levels prior to the recent staff reductions.

9.11 The Secretariat advised that with the reduction in staff available to the ATM Section, further cuts would have to be made to its core activities. Any additional work required could only be included by reducing other activities of the ATM section. This matter should be taken into account by the Sub-Group in determining its future work programme.

9.12 The United States thanked the meeting for the hard work that was evident from the ATM Section and, while noting that many areas of the aviation industry were facing similar difficulties, regretted the staff cuts that had been made at the Regional Office. The United States was fully prepared to support the Regional Office in practical ways, and offered assistance with the preparation of meetings and meeting papers etc. The United States recognized that it was not possible for the Regional Office to attend or participate in all the regional meetings and, although it was preferable that the Regional Office undertook a leadership role in as many areas as possible, noted that work that was continuing under State leadership. This included the activities of the ISPACG and

IPACG informal ATS Coordination Groups and the 30/30 Task Force in the South Pacific. The United States urged other States to note the effectiveness of these groups and take leadership roles in a similar way in their respective sub regions.

9.13 Japan supported the comments of the United States, offering assistance to the Regional Office in any way practical. Japan, in acknowledging the workload involved, complimented the ATM Section in regard to the large number of informative Secretariat meeting papers that had been prepared for this meeting. Japan remarked that States also held responsibilities in informing ICAO meetings and that some of the material in the Secretariat papers could, and should, have been prepared by States for presentation to the meeting. Japan also considered that it was possible for States to undertake bi-lateral or tri-lateral negotiations in many circumstances and report the results of these activities to the Regional Office, either by correspondence or at the regular ICAO coordination meetings.

9.14 IATA also expressed strong support for the Regional Office, reinforcing their previous long standing position in regard to providing assistance where possible. IATA stressed the necessity for the Regional Office to take the time to identify ways that States and International Organizations could possibly assist and relay this information to the parties concerned. In order to provide assistance, IATA needed to know what assistance was required.

9.15 Thailand echoed the sentiments expressed by the United States, Japan and IATA, offering assistance in any practical way to the Regional Office. Thailand confirmed that the services offered by MAAR on behalf of the Regional Office and the States of the Region would continue and that AEROTHAI would continue to absorb the costs involved. Thailand also recognized and appreciated the leadership of ICAO and would prefer to see the Regional Office continuing to fill this leadership role as often as possible.

9.16 All delegates to the meeting recognized the Secretariat workload resulting from the submission of late working papers to a meeting, and from the need to prepare paper copies of meeting papers and reports for delegates to a meeting. The Regional Office should make greater use of the ICAO website to publish meeting papers in advance of the meeting, and distribute meeting papers on CD-ROM as had occurred with this meeting. The meeting recognized that in some cases, delegates would still require paper copies of meeting materials but the increased utilization of electronic applications would save a significant amount of administrative workload. It was suggested the Regional Office include a paragraph in the invitation letter to each meeting advising States that meeting materials would not be provided on paper unless at the request of a specific State to meet an individual need. The meeting encouraged the Regional Office to utilize electronic media as widely as possible and to accelerate the installation of the wireless LAN that was being considered for the Regional Office meeting rooms.

9.17 The Regional Office expressed its gratitude for the many expressions of support that had been offered by delegates to this and other meetings, indicating that it was very likely that States and Organizations would be called upon for assistance. The Regional Office would attempt to take the time to undertake the meeting planning for 2006 in the near future, in order to give an early indication of when assistance was likely to be required. The programme for the remainder of this year and next year would also need to include provision for the scheduled regional USOAP audits at which attendance of an ATM officer would be required and, by necessity, the 2006 programme would not be able to cover the scope and volume of work that had been achieved during the previous 12 months.

Global Plan

9.18 APANPIRG/14 had established the Future Directions Task Force (FDTF, Decision 14/47) to review provision for the effective regional management by APANPIRG of the outcomes of AN-Conf/11 and the coordination, effectiveness and efficiency of the Sub-Groups of APANPIRG. The report of the FDTF was reviewed by APANPIRG/15.

9.19 APANPIRG/15 on reviewing the report of the FDTF held on 17-19 May 2004, which had completed its work and was dissolved by APANPIRG/15, recommended to APANPIRG/15 that the CNS/ATM/IC/SG also be dissolved and outstanding items on its work programme be transferred to other relevant APANPIRG Sub-Groups. Accordingly, under D15/49 new tasks were assigned to the ATM/AIS/SAR/SG and the CNS/ATM/IC/SG was dissolved under the terms of Decision D15/50.

9.20 APANPIRG/15, on reviewing the report on the outcome of, and action taken by the Council of ICAO on the Eleventh Air Navigation Conference (AN-Cof/11) held on 22 September-3 October 2003, agreed to take appropriate action to follow-up on the recommendations of AN-Conf/11 by ICAO, and States and international organizations and Planning and Implementation Groups (PIRGs) were informed accordingly by ICAO. APANPIRG/15 included this task on the ATM/AIS/SAR Sub-Group's Task List.

9.21 In regard to An-Conf/11, Recommendation 6/11 (reproduced below), the ATM/AIS/SAR/SG was expected to review relevant paragraphs in respect to the time lines for CNS/ATM systems implementation for amendment of the Global Plan, Part II (**Appendix C** to the Report on Agenda Item 9 refers) and to propose an amendment accordingly.

Recommendation 6/11 — Amendment to the Global Plan — Navigation

That:

a) the Global Air Navigation Plan for CNS/ATM Systems (Doc 9750) be amended as shown in Appendix C to the report on Agenda Item 6; and

b) updated CNS/ATM systems implementation time lines contained in Part II of the Global Plan be reviewed by the regional Implementation Group and consolidated for incorporation in the next edition of the Global Plan.

9.22 The meeting was informed of the work of CNS/MET/SG/9 (July 2005) in this regard, that had undertaken a review of sections of the Asia/Pacific Regional Plan for CNS/ATM Systems and noted that the plan as a whole was in need of significant revision. The meeting was also informed that the Global Air Navigation Plan for the CNS/ATM System was being amended to incorporate in the plan relevant materials from the Industry Roadmap, with an objective of transforming the Global Plan into the baseline for measurable achievements. It was also noted that a considerable amount of information from the Regional Plan was now contained in the FASID.

9.23 Considering the information that was now provided in the FASID, the need to achieve alignment with the Global Plan and the extensive revision necessary to the ASIA/PAC Regional Plan for the CNS/ATM systems, the meeting considered the most appropriate action was eliminate the Regional Plan and to capture any specific regional information in a Supplement to the Global Air Navigation Plan for the CNS/ATM systems. Implementation plans and forecasts would be shown in the relevant FASID Table using the nomenclature available in the tables to show future intention for implementation.

9.24 This conclusion was in alignment with Draft Conclusion 9/36 of the CNS/MET Sub-Group, which proposes that the CNS/MET, ATM/AIS /SAR Sub-Groups and RASMAG be tasked to review the Global Air Navigation Plan for the CNS/ATM Systems and the ASIA/PAC Regional Plan for the CNS/ATM systems, compile specific regional information as a Supplement to the Global Air Navigation Plan for the CNS/ATM systems and eliminate the Regional Plan in their respective fields. Rather than raise a duplicate Draft Conclusion in this regard, the meeting agreed that this position be relayed to the CNS/MET Sub-Group and RASMAG Chairmen by the Regional Office and the ATM/AIS/SAR Sub-Group join as co sponsor of the CNS/MET Sub-Group draft Conclusion 9/36.

Agenda Item 10: Any other business

ICAO Universal Safety Oversight Audit Programme (USOAP)

10.1 During its 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,* as of 2005. The Assembly further requested that USAOP be restructured to adopt a comprehensive systems approach in conducting safety oversight audits in all Contracting States.

10.2 In simple terms, the USOAP involves the conduct of structured audits of all 188 ICAO Contracting States during a recurring 6 year cycle, in order to assess a State's capability for the safety oversight of civil aviation operations. In terms of the 35 States of the Asia and Pacific Region, on average 6 States would be audited each year in order to address the broad goal of completing audits of all States during each 6 year cycle. Full audit reports, including State corrective action plans aimed at addressing audit findings, would be 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 just Annexes 1, 6 and 8 as were considered during previous ICAO audit regimes. The two Annexes not considered by USOAP are Annex 9 (Facilitation) and Annex 17 (Aviation Security) – Annex 17 is subject to a separate ICAO audit programme and Annex 9 considers matters other than direct operational safety issues. In addition, the comprehensive systems approach considers ICAO PANS and guidance materials in respective of State safety oversight capability, not just Annex provisions.

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 The SAAQ and CC comprise comprehensive written (electronic) questionnaires that were designed to be completed by States and forwarded to ICAO HQ by 31 May 2005, and updated by States well prior to the commencement of the on-site audit. As the SAAQ and CC provide a thorough 'picture' of a States' civil aviation activity and level of compliance with some 9500 Standards and Recommended Practices, initial feedback from States has highlighted the substantial workload involved in the completion and ongoing update of these documents. Consequently, many States have not yet provided the completed questionnaires to ICAO. States are urged to make adequate resource provision to enable the completion and updating of these documents in a timely and ongoing manner.

10.6 Assessment and reporting of the level of State safety oversight capability is conducted against the eight critical elements of a safety oversight system, as identified by ICAO and described in the *Safety Oversight Manual* (Doc 9734 Part A and Part B) and the *Safety Oversight Audit Manual* (Doc 9735). In summary terms the eight critical elements of a safety oversight system are:

- Primary Aviation Legislation;
- Specific Operating Regulations;
- State Civil Aviation System and Safety Oversight Functions;

- Technical Personnel Qualifications and Training;
- Technical Guidance, tools and the provision of Safety Critical Information;
- Licensing, Certification, Authorization and Approval Obligations;
- Surveillance Obligations; and
- Resolution of Safety Concerns.

10.7 Since the commencement of the expanded programme in 2005, four States have been audited – Canada, Germany, Thailand and Malaysia. The ICAO USOAP tentative work programme includes proposed dates for audits of States of the Asia and Pacific Region during 2006 as described below. It should be carefully noted that these are tentative dates only and are therefore subject to change, both in the dates listed and the States identified for audit. Enquiries in relation to audit dates should be made directly to ICAO's Safety Oversight Audit Section via email to soa@icao.int.

- January 2006 Fiji, Vanuatu (including PASO)
- March 2006 New Zealand, Solomon Islands
- October 2006 Bhutan, India

ICAO Language Proficiency Requirements

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

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

10.10 In implementing the proficiency provisions, States should consider aspects of:

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

10.11 Pursuant to Article 42 of the Convention on International Civil Aviation, the introduction of the new language proficiency provisions were becoming applicable progressively. As of 27 November 2003, operational staff shall demonstrate the ability to speak and understand the language used for radio telephony. Until 5 March 2008, the licensing authority of each State is permitted to determine the way in which this ability is demonstrated.

10.12 From 5 March 2008, the demonstration of the ability to speak and understand the language used for radio telephony communications shall be conducted in accordance with the holistic descriptors and rating scale published by ICAO as attachment and appendices to Annex 1.

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

10.14 The meeting noted that the Regional Office did not have particular language expertise and any further assistance to States would best be sought from ICAO Headquarters, or use made of expertise in the public or private sectors. In this regard, use of a limited number of language services providers regionally was likely to result in increased standardization of the SARP requirements and would also probably result in efficiencies in time and cost for airlines and ATS providers.

10.15 The meeting recognized the high stakes involved in implementing the language proficiency SARPs, with particular regard to the potential loss of careers of industry participants that, although having worked operationally for many years, were unable to reach the operational Level 4 requirements.

10.16 One of the difficulties identified by the meeting was in relation to the current lack of definition of the size and location of the problem. No regional research had yet been undertaken to establish the magnitude of the problem. Accordingly, the meeting considered that the most effective strategy that could be adopted would be to attempt to clearly define to problem in a regional sense, with the expectation that once a clear understanding of the problem was established, suitable mechanisms could then be identified and put in place to address the problem.

10.17 In order to define the problem, information was required from States in respect to their particular circumstances. Mindful of the relatively limited time available prior to March 2008 in which to assess and, if applicable, provide language training to staff, the meeting considered that a regional survey should be undertaken as soon as possible. The survey should consider, among others what action (if any) had already been taken by a State, an estimate by the State of the percentage of operational staff that were likely to be at or below the margin of Level 4 competency, whether a State preferred to adopt a national approach to resolution or whether the preference was for each agency, airline etc of the State to conduct its own localized language activities, what type of assistance would benefit a State and whether a State was in a position to offer assistance to others. With this in mind, the meeting drafted the following conclusion:

Draft Conclusion 15/15 – Language Proficiency

That, the Regional Office urgently conduct a survey of all States of the Asia and Pacific Region for the purposes of ascertaining State circumstances in respect of compliance by March 2008 with ICAO provisions in respect of Operational Level 4 language proficiency.

10.18 The meeting stressed that the survey should be completed as soon as possible and the results analyzed and distributed as appropriate. As such, it would not be appropriate to wait for the annual meeting cycle of the ATM/AIS/SAR Sub-Group and APANPIRG and, accordingly, the outcomes of the survey should be circulated by Regional Office correspondence.

MET/ATM Coordination Seminar

10.19 The meeting was informed that as a follow-up of APANPIRG Conclusion 14/45, a MET/ATM coordination seminar for the Asia/Pacific Region has been under preparation. The CNS/MET SG/9 meeting, held in Bangkok from 11 to 15 July 2005, had adopted a tentative programme for the seminar, and considered that the seminar would provide a forum for the MET and ATM experts to exchange views and ensure better mutual understanding in regard to the new requirements for enhanced MET services to be provided in support to the new CNS/ATM systems.

10.20 Noting the importance of the MET/ATM seminar for the coordination of the current and future MET services for ATM and in developing further the MET component of the CNS/ATM systems in the Region, the CNS/MET SG/9 meeting had agreed that the seminar should be held in February 2006 at the ICAO Regional Office, Bangkok. CNS/MET SG/9 also emphasized that in order to ensure a successful exchange of views and ideas, adequate participation at the seminar from both the MET and ATM communities was necessary.

10.21 In agreeing to the need for the seminar, the meeting reviewed the tentative programme proposed for the MET/ATM seminar (reproduced in **Appendix B** to the Report on Agenda Item 10) and recommended that the programme be expanded to include the problems posed by volcanic ash. The meeting agreed that a 3 day seminar tentatively scheduled for mid February 2006 was appropriate and requested the Regional Office to make the arrangements.

ICAO Runway Safety Toolkit

10.22 The Runway Safety Toolkit was produced by ICAO and Embry-Riddle Aeronautical University, Florida, United States as part of a continuing effort to assist States in the implementation of runway incursion prevention programmes. The toolkit is the compilation of best available material, obtained over a period of several years, and also makes use of information and knowledge obtained during a series of ICAO seminars on the subject of runway safety, held between October 2002 and October 2004.

10.23 In addition to the above, a Runway incursion prevention manual is under development with the assistance of several States and organizations. It is expected that the seminars, the tool kit and the manual will assist States in reducing the incidence of runway incursions and improve overall runway safety.

10.24 The meeting was provided with a CD-ROM copy of the "*ICAO Runway Safety Toolkit*" and States were encouraged to make optimum use of the Toolkit, and to share the material within their respective areas of accreditation. Copies of the CD may be reproduced as required.

Tower Siting visibility analysis

10.25 The United States provided information of an illustrative example of how human factors research and engineering impacts the return on investment of FAA projects. This was one of many human factors projects that contribute to the U.S. NAS safety and capacity and helped to improve efficiency, enhance effectiveness, and save money.

10.26 The objective of the Human Factors Tower Siting Project was to incorporate human vision capability and limitation considerations (for object detection and airport surface viewing perspective) in the tower siting process and in the revised order (FAA Order 6480.XX).

10.27 A revised FAA Tower Siting Policy had been released for comment and interim use (06/2005). It established requirements and criteria, as well as a tool that incorporate quantifiable human visual perspective and performance capabilities to support tower height and location decisions at least cost. The potential cost savings to the FAA were estimated at $5 million/year based on building an estimated average of 7 towers, as a result of the lower Tower Cab heights that could be used in accordance with the results of this research.

10.28 FAA headquarters human factors specialists and Airport Facilities Terminal Integration Laboratory personnel at the W J Hughes Technical Center devised an experimental methodology to evaluate the human performance characteristics affecting tower siting decisions and conducted tower siting simulations to establish a baseline of a controller's visual capabilities.

10.29 The meeting noted the information and the interesting and informative findings achieved.

Proposed change to ASIA/PAC FASID Table AOP 1

10.30 The United States provided information related to the closure of Pago Pago Air Traffic Control Tower in American Samoa, and proposes an amendment to the Asia/Pacific Facilities and Services Implementation Document (FASID) to update the information published

10.31 The meeting was advised that the tower cab structure provided by the FAA at Pago Pago International Airport, American Samoa, was located atop an existing fire station. In early March 2001, the determination was made to condemn and demolish the Fire Station because of age and detritions. As a result the FAA developed plans to replace the tower.

10.32 American Samoa planned to replace the fire station, and the FAA developed a two phased approach for tower replacement: first, establish a temporary tower, at a cost of approximately US$2 million, and later build a permanent tower, for US$13.5 million. FAA set aside an initial allocation of US$800,000 and a tower cab was sent to American Samoa. In 2003, a typhoon damaged the tower cab that was to be used as the temporary tower.

10.33 The FAA completed an airspace and benefit/cost analysis for providing air traffic services at Pago Pago Airport, and determined the benefit/cost ratio was not at required levels to support construction of a new tower. Therefore the FAA has determined that the airspace would be classified as Class G, and only UNICOM services would be provided in the long term.

10.34 Based on the changes described above, it is proposed that the entry in the Facilities and Services Implementation Document (FASID) Table AOP 1 regarding American Samoa, NSTU/Pago Pago International Airport be amended. The aerodrome ATS entry APP TWR should be deleted.

10.35 The meeting noted the developments at Pago Pago and the Regional Office requested the United States to submit an amendment proposal in this respect.

Agenda Item 11: Date and venue for next meeting

11.1 The meeting agreed that the next ATM/AIS/SAR Sub-Group meeting would held over 5 working days during the first half of July 2006, at the Regional Office premises. The Regional Office expected that the meeting would be held from 3 – 7 July 2006, but would finalize the dates in due course and advise parties accordingly.

Closing remarks

11.2 In closing the meeting, the Chairman noted the hard work performed by the delegates and Secretariat during the meeting in addressing more than 60 working and information papers, and commended the Secretariat for the quality of the draft report that had been produced overnight.

11.3 In discussing the size and volume of meeting papers that had been presented, the meeting noted that some papers had been unable to be presented and, in some cases, discussions had been cut short under time pressure. The meeting considered that additional strategies should be explored, including breaking the Sub-Group up in to smaller groups of particular expertise, i.e. an AIS working group, for a short period of the meeting week and then having the work group report back to the plenary session in respect of its deliberations. In addition, as there were many tables and records to be routinely updated, States should come fully prepared with their latest information. Also, perhaps one or two delegates could be appointed to take responsibility for a particular table or set of records and follow up with each State on a one-to-one basis, rather than attempting to complete this work during plenary session.

11.4 The meeting again gave strong encouragement to the Regional Office to maximize the use of electronic methods of data management and transmission. The use of CD-ROMs should become the normal way of distributing meeting material. Priority should be given to placing all meeting material on the ICAO website at least a week prior to the meeting, to allow delegates to properly study the material and, if necessary, print specifically what was required. The initial steps that had been taken by the Regional Office towards a paperless environment were commendable and needed to be expanded.

11.5 The Chairman also expressed deep concern in relation to the matter of late lodgment of meeting papers, noting the stress that was placed on the Secretariat in attempting to process this work, particularly now that Regional Office resources were much reduced. The Chairman considered that all papers should be lodged at least 5 working days prior to the commencement of the meeting, to allow the Secretariat to undertake the preparation work and load the material to the ICAO website.

11.6 The Chairman thanked the meeting for their tolerance and support during his first meeting as their Chairman. He felt that the meeting had been very successful and that a number of useful matters had been identified and recorded in terms of draft conclusions for relay to the next APANPIRG meeting. The Chairman thanked delegates for their participation and wished them safe travel home.

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