AGENDA ITEM 2:   ASIA/PACIFIC AIR NAVIGATION
                   SYSTEM AND RELATED ACTIVITIES

AGENDA ITEM 2.1:   ATM/AIS/SAR MATTERS

Agenda Item 2:   **Asia/Pacific Air Navigation System and Related Activities**

2.1   **ATM/AIS/SAR matters**

2.1.1   The meeting reviewed the report of the Fourteenth Meeting of the APANPIRG Air Traffic Management/Aeronautical Information Services/Search and Rescue (ATM/AIS/SAR/SG/14), which was held at the ICAO Asia/Pacific Regional Office, Bangkok, Thailand from 28 June to 2 July 2004. The meeting expressed its appreciation for the work progressed by the Sub-group.

RVSM implementation

2.1.2   The meeting reviewed the work of the RVSM Task Force (RVSM/TF) established by APANPIRG to implement and follow-up on implementation of RVSM in the Asia/Pacific region. The status of RVSM implementation in the Asia/Pacific region is included in **Appendix A** to the Report on Agenda Item 2.1.

2.1.3   Seven Task Force and special coordination meetings were held since its activities were reported to APANPIRG/14 (4-8 August 2003) as shown below:

> Special ATS Coordination Meeting – Finalization of RVSM Operational Plan for the Bay of Bengal and Beyond

> 2nd RVSM Joint Coordination Meeting (JCM/2) – Middle East/Asia region

> Special ATS Coordination Meeting – RVSM Transition Procedures

> RVSM/TF/20 – RVSM Implementation Bay of Bengal and Beyond (Go/No-Go)

> Special ATS Coordination Meeting – India and Pakistan RVSM Transition Procedures

> RVSM/TF/21 – 90-day Review of Bay of Bengal and Beyond Implementation

> Special ATS Coordination Meeting – RVSM Implementation in the Incheon, Naha and Tokyo FIRs

Bay of Bengal and Beyond Area implementation

SCM – Finalization of RVSM Operational Plan for the Bay of Bengal and Beyond

2.1.4   The RVSM/TF convened a SCM (August 2003) to finalize the operational plan for RVSM operations in the Bay of Bengal and Beyond, and to complete preparations for RVSM implementation. The meeting identified a number of operational matters that required consideration to improve the traffic flow across the Bay of Bengal, and agreed to follow-up action with the States concerned.

JCM/2 – Middle East/Asia region

2.1.5   The JCM/2 (August 2003) was held between the RVSM Task Forces of the Middle East and Asia regions to harmonize their implementation plans for a coordinated RVSN implementation on 27 November 2003. The meeting reviewed and agreed to a revised RVSM implementation strategy for the Middle East and Asia regions. The meeting noted that the Middle

East had made a final decision to go ahead with implementations as planned based on the outcome of their safety work.

SCM – RVSM transition procedures

2.1.6   The RVSM/TF convened a SCM (September 2003) to address issues concerning transition procedures arising from RVSM implementation in the Bay of Bengal and Beyond area, and adjacent non-RVSM airspaces, and where a different RVSM flight level orientation scheme was being used. In this regard, the Bay of Bengal and Beyond would implement the single alternate FLOS and the West Pacific/South China Sea was operating the modified single alternate (FLOS). The meeting agreed to transition procedures between China and Myanmar for the Kunming and Yangon FIRs respectively, and between Afghanistan and Pakistan for the Kabul (non-RVSM) and Karachi FIRs respectively. It was agreed that States should undertake a comprehensive study of the use of the modified single alternate FLOS in the WPAC/SCS with a view to harmonization with the single alternate FLOSs used elsewhere in the region. A RVSM/TF meeting would be held to consider the harmonization issues.

RVSM/TF/20 – RVSM implementation Bay of Bengal and Beyond (GO/NO-GO)

2.1.7   The RVSM/TF/20 meeting (October 2003) carried out a final review of the RVSM Implementation Plan for the Bay of Bengal and Beyond area, which had been completed by the States concerned. The Task Force noted that most States had finalized their Letters of Agreement (LOAs) with adjoining ATS Units and other States had exchanged draft LOAs ahead of finalization. Transition procedures between the Kunming FIR and the Yangon FIR were finalized but the meeting recognized that these procedures should be an interim arrangement and improved procedures developed for consideration by China and Myanmar. Also, the post implementation monitoring requirements and arrangements were agreed. The importance of timely submission of monthly large height deviation reports to the Regional Monitoring Agency (RMA), the Monitoring Agency for the Asia region (MAAR) for monitoring of airspace safety was emphasized.

2.1.8   The meeting reviewed the final safety assessment that had been completed by MAAR who verified that the total risk estimates had met the target level of safety (TLS) of 5×10^{-9} fatal accidents per flight hour.

2.1.9   The meeting considered the transition arrangements and air traffic flow management (AFTM) procedures between India and Pakistan for flights transiting the Afghanistan airspace (Kabul FIR), where RVSM would not be implemented. Measures were put in place on a trial basis and would be reviewed in January 2004. India had informed the meeting that the EMARSSH route P628, which had been partially implemented, was approved to be extended from ASOPO to Rahim Yar Khan (RK) VOR, and to lower the minimum en-route altitude (MEA) to FL300. This would improve the traffic flow across India and was expected to relieve congestion in the Delhi area.

2.1.10   In regard to problems with Myanmar communications, it was noted that Myanmar had taken action to improve arrangements by making use of the Mandalay Airport Approach Control facilities as an interim measure until permanent communication improvements were made. In regard to RVSM training of Myanmar air traffic controllers, the Civil Aviation Authority of Singapore (CAAS) had offered to provide training, and was arranging for training to take place in Yangon, Myanmar in October 2003.

2.1.11   In light of the progress made and the result of the safety assessment, the meeting agreed to go ahead with RVSM implementation in the Bay of Bengal and Beyond area as planned on 27 November 2003 simultaneously with the Middle East region at 0200 UTC.

<u>SCM – India and Pakistan RVSM transition procedures</u>

2.1.12   The SCM to review the India and Pakistan RVSM transition procedures was held in January 2004. The meeting recognized that further improvements were required by implementing the route segment RK – Kandahar, and this should be implemented as soon as possible. This matter would be coordinated by the Regional Office with the parties concerned.

2.1.13   The meeting agreed that in the short term, the main concern was to optimize the use of available airspace by applying a flexible use of flight levels and routes, and to improve coordination and sharing of flight plan information between the ACCs concerned. It was agreed that all flight level assignments for the Bay of Bengal routes should be subject to a flexible approach where due consideration would be given to airports with the higher traffic load. The States concerned agreed to review their practices and to optimize flight level assignment. In addition, the meeting identified areas where long term improvements could be made. This included a route network review, integrated ATFM system, integration of ATM systems (e.g. ADS, CPDLC and ADS-B), reduction of longitudinal separation to 50 NM, and improvement to the ATS infrastructure in Afghanistan.

<u>RVSM/TF/21 – 90-day review of Bay of Bengal and Beyond implementation</u>

2.1.14   The RVSM/TF/21 (March 2004) carried out the 90-day review of RVSM implementation in the Bay of Bengal and Beyond area. The meeting reviewed the operation of RVSM taking into account the experience of the operators. It was noted that RVSM, which had doubled the flight levels available had led to an overall easing of traffic congestion and assignment of more economic flight levels to both overflying and Indian domestic traffic. However, there were a number of outstanding issues, such as longitudinal separation requirements for A466 and N644 for traffic transiting the Kabul FIR, flight level transition and communications in the Yangon FIR, air traffic management in the Bay of Bengal area, and overall optimization of airspace capacity. The meeting agreed that further improvements to the traffic flow between Asia and Europe during the peak period was required, and this was on the work programme of the Bay of Bengal ATS Coordination Group (BBACG).

2.1.15   The meeting continued to consider the air traffic flow management (ATFM) plan being developed for the Bay of Bengal, and noted the users requirements to provide a comprehensive air traffic management plan for the whole of the Bay of Bengal including provision of ATS automated systems. The meeting also recognized the need to further enhance the allocation of all RVSM levels during the night time peak period and agreed to convene a special coordination meeting of the States concerned.

2.1.16   The meeting reviewed the on-going monitoring requirements and acknowledged the need for consistency in applying global monitoring requirements. In this regard, MAAR intended to adopt the monitoring requirements recommended by ICAO which would be contained in an RMA Handbook expected to be published in late 2004. Operators were reminded that there was a limited number of GPS Monitoring Units (GMUs) available in the Asia/Pacific region, and they should make arrangements with MAAR for monitoring before their RVSM operational approvals expired.

2.1.17   In regard to safety matters, MAAR reported that the TLS continued to be well within the required safety level. It was agreed to update the safety assessment for the one-year review meeting in November 2004 using a traffic sample data for July 2004.

Action arising from the RVSM reports

2.1.18   The meeting noted that the following matters required further follow-up action:

a)   the MEA for P628 and L333 was restricted to FL310 by Pakistan although India could accept FL300 and coordination to continue;

b)   radar service was provided on A202 by Sanya ACC and the entire route Hong Kong, China to Bangkok was under radar service. This would need to be taken into account by MAAR when reviewing the safety assessment, which included a portion that was previously not under radar service;

c)   pilot radio communication reporting procedures on routes in the Yangon, Dhaka and Kolkata FIRs required imporvement taking into account ICAO provisions in the PANS-ATM;

d)   the RVSM transition procedures for the Kunming and Yangon FIRs required improvement in line with the proposal submitted to China and Myanmar and coordinated by the Regional Office; and

e)   the minimum monitoring requirements for the Asia/Pacific region needed to be determined in line with the ICAO RMA handbook and be reviewed by MAAR, PARMO and RASMAG.

2.1.19   The meeting congratulated the RVSM/TF on the successful implementation of RVSM in the Bay of Bengal and Beyond Area on 27 November 2003, and noted the considerable safety, operational, environmental and passenger service benefits accrued as a result.

RVSM implementation in the Incheon, Naha and Tokyo FIRs

2.1.20   The meeting was updated on progress by Japan and the Republic of Korea to implement RVSM in the Naha and Tokyo FIRs (domestic) and Incheon FIR respectively. It was recalled that at the RVSM/TF/18 meeting in July 2003, Japan and the Republic of Korea had indicated that they would appreciate the participation of the ICAO RVSM/TF to support their implementation planning.

2.1.21   A SCM to review progress on the RVSM implementation and planning process, and to consider the impact of RVSM implementation on the traffic flows and air traffic management in adjacent FIRs was held at the Regional Office in July 2004.

2.1.22   The SCM meeting reviewed the implementation plan of Japan and Republic of Korea and noted that they had adopted the single alternate FLOS, a flight level band of FL290 to FL410 inclusive, and the airspace would be exclusive with provisions for special flights to be accommodated. Appropriate transition areas would be established with the adjacent non-RVSM airspace. The target implementation date agreed was 9 June 2005.

2.1.23   It was recognized that an important outstanding issue was harmonization of the flight level orientation schemes between the single alternate FLOS and the modified single alternate FLOS being used in the SCS airspace. It was noted that this subject would be addressed by the RVSM/TF/22 meeting to be held at the Regional Office on 20-24 September 2004.

2.1.24   Japan had carried out the safety assessment for RVSM implementation in the Naha and Tokyo FIRs, and the technical risk calculated was 1.56×10^{-9}, which was well below the required level of safety of 2.5×10^{-9} fatal accidents per flight hour. Planning includes provisions for further assessment of operational risk before implementation.

2.1.25   The safety assessment for the Republic of Korea was being carried out by the Pacific Approvals Registry and Monitoring Organization (PARMO) operated by the Federal Aviation Administration (FAA) of the United States. However, due to PARMO's resource constraints arising from the domestic RVSM implementation in the United States planned for June 2005, as an interim measure, and in view of the urgency to progress the readiness and safety assessment for the Incheon FIR, MAAR would assist PARMO by conducting the safety assessment.

2.1.26   The SCM agreed to the following meeting schedule for RVSM implementation and follow-up:

RVSM/TF/23	18-22 October 2004	Bangkok
RVSM/TF/25	January 2005	Bangkok
RVSM/TF/26	May 2005	Bangkok
(Go/No-go decision)		
RVSM/TF/27	September 2005	Bangkok
(90-day follow-up review)		
RVSM/TF/28		
(One-year follow-up review)	June 2006	Bangkok

SCM – Air Traffic Flow Management Bay of Bengal

2.1.27   The SCM to review the air traffic flow management arrangements put in place on a trial basis following RVSM/21was held at Singapore on 12-13 April 2004. The meeting reviewed the existing assignment of RVSM levels to reduce ground delays for westbound international departures from Bangkok, Kuala Lumpur and Singapore during the night time peak traffic periods. In particular, the SCM took into account the current No-PDC procedures with a view to introducing a flexible system that would cater for traffic based on actual demand at departure airports.

2.1.28   The SCM agreed that the assignment of FL280 and FL320 (as No-PDC levels) for westbound international departures from Kuala Lumpur and Singapore would continue on a 24-hour basis. In the event that additional levels were required, Kuala Lumpur ACC would coordinate with Bangkok ACC on the assignment of FL300 or FL340 respectively.

2.1.29   In addition, during the period 1330-1930 UTC, pre-departure coordination would be effected between the ACCs concerned on the assignment of other levels, in order to maximize traffic flows on the respective ATS routes.

2.1.30   The SCM also agreed that the assignment of RVSM levels for traffic operating outside the period 1330-1930 UTC would be based on existing procedures specified in the respective State AIP Supplement for RVSM operations in the Bay of Bengal area. In addition, current No-PDC procedures between Malaysia, Singapore and Thailand would continue to be applied and the present operational trial on the assignment of RVSM levels would be extended until 16 May 2004. The States concerned would hold a review meeting in June 2004.

EMARSSH One-year post implementation review

2.1.31   The meeting reviewed the outcome of the EMARSSH One-year Post Implementation Review Meeting (OYR) held on 12-16 January 2004 at the Regional Office. The EMARSSH OYR considered operational and technical aspects of air traffic management and flight operations related to the route structure as well as further enhancements since implementation on 28 November 2002. The review also took into account the results of the EMARSSH Post Implementation Review Meeting (PIRM) held at the Gold Coast, Australia on 31 March to 2 April 2003.

2.1.32   In considering air traffic management and operational issues concerning the operation of the revised route structure, the OYR meeting identified outstanding issues that would require further action by States. In this regard, the meeting noted that the following operational issues required follow-up:

a)   route and airspace restrictions affecting the traffic flow across the Bay of Bengal and Kabul FIR;

b)   six EMARSSH routes pass through the Yangon FIR where RVSM operates and safety concerns arising from poor ATS communications require Myanmar to make immediate improvements to their communication infrastructure, and to address the deficiency contained on APANPIRG's List of Deficiencies;

c)   extend the use of N563, which was restricted across Indian airspace as it entered a military restricted area that was operational during day time hours (India was not confident that any further concessions from the military for the extended use of N563 could be gained in the short term);

d)   harmonization of the application of 10 minute longitudinal separation using the Mach number technique (MNT) across the Bay of Bengal in respect to the faster aircraft following in accordance with ICAO provisions. States should update their LOAs taking into account entry/exit points on the Bay of Bengal routes where the procedure should be applied;

e)   consider applying a fixed Mach number, M0.84 on L759 as part of ATFMP measures being introduced to improve departure delays experienced at South-East Asia airports; and

f)   consider further refinements and modifications to the alignment of routes and introduction of additional routes, taking into account future requirements of long-haul flights and new city pairs.

2.1.33   The meeting acknowledged the successful implementation of the EMARSSH routes, noting that follow-up matters were being appropriately addressed by the BBACG and other ICAO ATS coordination groups and task forces. All matters associated with ATS routes would be considered by the ATS Route network Review task Force (ARNR/TF).

2.1.34   In view of the above, the meeting formulated the following Decision:

Decision 15/1   –   To dissolve the EMARSSH Task Force

That, as the EMARSSH Task Force has completed the EMARSSH project, and that all outstanding issues have been identified and follow up actions completed or assigned to ATS coordination groups as appropriate, the EMARSSH Task Force be dissolved.

Lessons learnt

2.1.35   The meeting recognized that the planning and implementation of the EMARSSH project had led to a number of important lessons learnt and benefits that would be of considerable value to States and other ICAO PIRGs when planning similar activities, and should be brought to their attention. The list of lessons learnt are at **Appendix B** to the Report on Agenda Item 2.1.

2.1.36   The meeting agreed that the Regional Office should issue a State Letter informing States of the lessons learnt from the EMARSSH project and formulated the following Conclusion:

Conclusion 15/2   –   Capture and circulate lessons learnt from EMARSSH Task Force

That, the valuable lessons learnt by the EMARSSH Task Force be highlighted to ICAO and States as beneficial in the conduct of project based Task Force activities.

2.1.37   Singapore also acknowledged the value of the ATS and AIS lessons learnt during the implementations completed in the Western Pacific and South China Sea areas and urged States to draw on these experiences to facilitate further implementations in all areas, including the Bay of Bengal.

Implementation of ATS routes

2.1.38   The meeting reviewed progress by the ARNR/TF to undertake the review of the Asia/Pacific ATS route network called for under APANPIRG/14 Conclusion 14/2. In regard to the outstanding routes in the Asia/Pacific region Basic Air Navigation Plan (BANP, Doc 9673) that had been agreed to by the Third Asia/Pacific Regional Air Navigation Meeting (RAN/3) in 1993 and not implemented, these routes were on the APANPIRG List of Deficiencies, and the meeting agreed that these would be included in the ARNR/TF review.

2.1.39   The meeting recognized that the ARNR/TF work programme would be substantial, taking up considerable Regional Office resources. The constraints on Regional Office resources over the past two years had led to the need for an update of the BANP route network database including a large number of changes to the ATS routes and assignment of five-letter name-codes with corresponding coordinates of the significant points on these routes. The majority of these changes had not yet been recorded in the BANP. Also, it was noted that the revised Asia/Pacific ANP, comprising the BANP and FASID had not yet been published by ICAO, and there would be a large number of amendments to be incorporated.

2.1.40   In light of foregoing, the meeting was advised that the Regional Office was unable to convene the first meeting of the ARNR/TF before September 2004. Further, the meeting 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. This was a fundamental

building block necessary for the aviation industry and a primary activity of the Regional Office. Therefore, it was imperative that the Regional Office had adequate resources to undertake this work programme. The meeting urged ICAO to take this into account in its budgetary consideration for allocation of resources to the Asia/Pacific Regional Office.

2.1.41   In preparation for the ARNR/TF/1 meeting on 6-10 September 2004, it was agreed that States and users should undertake a thorough review of the their ATS route requirements, provide details of any changes made to existing routes and notify future route requirements. In support of this initiative, the meeting formulated the following Conclusion:

Conclusion 15/3   –   Review of ATS route requirements

That, States and users undertake a thorough review of their ATS route requirements (including future requirements) and any changes that have been made to existing routes, and submit this information to the ATS Route Network Review Task Force meeting on 6-10 September 2004.

SCM – Implementation of direct routing between Hong Kong, China and Jakarta

2.1.42   The meeting considered the report of the SCM on implementation of direct routing between Hong Kong, China and Jakarta (city-pair) held at Manila, Philippines on 11-13 August 2004. It was recalled that the SEACG/11 Meeting in May 2004 had agreed to an IATA request to implement improvements to the Hong Kong/Jakarta routing. This was necessary due to the inefficient and uneconomic routing presently being used, arising from the implementation of the revised SCS route structure implemented on 1 November 2001.

2.1.43   At SEACG/11, the States concerned: Hong Kong, China, Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam agreed to implement the route improvements and determined the operational requirements. In this regard, a northbound one-way route, M772 would be introduced from Jakarta to Hong Kong, China via the Jakarta, Singapore, Kota Kinabalu, Manila and Hong Kong FIRs. For the southbound route, the existing L642 would be utilized from Hong Kong, China to position CONSON then a new one-way route, L644 would be implemented direct to Jakarta via the Ho Chi Minh, Singapore and Jakarta FIRs. To complete the arrangements a SCM would be convened.

2.1.44   The SCM meeting completed the implementation process and considered some concerns of the Manila ACC on operational matters regarding weather deviation, ATC coordination and harmonization of the RVSM FLOSs. The meeting agreed to introduce a weather deviation contingency procedure to cater for aircraft on M772 in the Manila FIR deviating westward into the adjacent Ho Chi Minh FIR and Sanya AOR. This procedure would be included in the Philippines AIP and the LOAs between States. In regard to coordination problems arising from the proximity of M772 to the adjacent airspace, use of HF for radio communications and RVSM transition procedures, imposing a one-way restriction on M772 northbound for traffic between Jakarta and Hong Kong, China and beyond in the initial phase, would ease the coordination burden for Manila ACC. Issues related to the harmonization of the RVSM FLOSs would be addressed by the RVSM/TF/22.

2.1.45   The implementation date was agreed as AIRAC date 20 January 2005 at 0000 UTC and ATS providers would issue their AIP Supplements on 11 November 2004. The meeting agreed that a Go/No-Go decision would be made on 1 November 2004. The Asia/Pacific BANP would be amended in due course.

2.1.46   The safety assessment for the RVSM/TF would be conducted by MAAR and lateral separation aspects would be considered by the States concerned. This work would need to be completed prior to making the Go/No-Go decision by 1 November 2004.

Cambodia ANP route proposals

2.1.47   Cambodia presented the meeting with proposals for realignment and linkage of the ATS/ RNAV routes in the South China Sea area to facilitate air traffic movement from Hong Kong – Phnom Penh – Phuket and beyond. As a basis for the proposals, Cambodia reported that this was due to the difficulty of traffic movement in the South China Sea area on ATS/RNAV route A202, A1 and P901 from Hong Kong through Bangkok to Phuket and beyond, where the aircraft operators encounter traffic congestion and optimum level constraints.

2.1.48   In facilitating traffic movement from Hong Kong, Phnom Penh to Phuket and beyond, the proposed realignment would bring positive benefits to airline operators and users, such as direct routing, less heading changes, shorter distances, less traffic congestion, time saving, less fuel consumption and more optimum cruising levels.

2.1.49   The meeting appreciated the detailed proposal presented by Cambodia and noted that it would be submitted to the ARNR/TF/1.

Development of ATS routes, AIS and SAR activities in Mongolia

2.1.50   Mongolia updated the meeting regarding the activities of the Civil Aviation Authority of Mongolia (CAAM) on ATS routes, AIS and SAR matters. Mongolia services a number international air routes, including A575, A91, B330 (ASIA-1), M520, B480 (POLAR-2), G218 (POLAR-3), B339 and G588. Mongolia reported that the next step would be the establishment of some new ATS routes to support cross-polar operations and advised that work to utilize ADS-C and ADS-B capability was on-going, and use of ADS-B for domestic operations had been approved. In addition, a number of proposals were being considered to increase the number of routes using ground based navigation aids and to enhance radar systems in order to increase total airspace capacity. Twenty-two VSAT stations have been installed throughout Mongolia, which provides a total coverage of VHF communications. In addition, there was approximately 50 percent coverage of VHF Data-link for ADS/CPDLC.

2.1.51   Mongolia advised that they had also established an AIS section as a separate department, and work was on-going to increase the automation of activities in this area. Also, an agreement between the Mongolian and Russian governments regarding mutual cooperation in the SAR sector would be signed in the near future.

IATA ANP route review and proposals

2.1.52   IATA presented information on the review carried out by the IATA Asia Pacific Route Review Working Group on airline route requirements for the Asia/Pacific region. IATA had formed recommendations for the implementation, amendments, deletions or additions to the routes found in the Air Navigation Plan.

2.1.53   The meeting noted IATA's recommendations on the 32 routes of the existing Asia Pacific ANP, which were contained on the APANPIRG List of Deficiencies. IATA also provided draft route proposals for new routes to be included into the ANP. In addition, IATA would be submitting a comprehensive list of route requirements to the ARNR/TF.

2.1.54   Japan replied to IATA comments on the requirements for connecting significant points defining ATS routes. Japan stated that the Basic ANP lists only prominent locations to define ATS routes. Additional points, where facilities are provided to complete navigational guidance along a route, have normally not been included, therefore it is not necessary to establish ATS routes directly connecting the significant points detailed in the ANP. The meeting considered that this matter would be discussed further by the ARNR/TF.

2.1.55   The meeting noted that the current Asia/Pacific Basic ANP did not fully reflect airlines' requirements for Asia/Pacific and that IATA's proposals would be considered by the ARNR/TF at its first meeting on 6-10 September 2004.

Review of the Report of the Regional Airspace Safety Monitoring Advisory Group (RASMAG)

2.1.56   The meeting recalled that APANPIRG/14 in considering the increasing implementation of data link capability and reduced horizontal and vertical separation minima throughout the Asia/Pacific region, acknowledged that the already extensive airspace safety monitoring requirements would continue to increase. APANPIRG/14 addressed the need for a transparent airspace safety oversight capability, to which all States could contribute and participate. Under APANPIRG/14 Decision 14/48, the RASMAG was established.

2.1.57   The first meeting of the RASMAG was held on 26 – 30 April, 2004 and its primary objective was to set up its working practices, review the airspace safety arrangements established in the Asia/Pacific region and to establish its future work programme.

2.1.58   The meeting reviewed the report of RASMAG/1 and recognized the important role that RASMAG would play in the future to support the safe implementation and operation of CNS/ATM systems in the region, as well as providing APANPIRG with a source of expertise on airspace safety management, which would be highly beneficial to States in meeting Annex 11 provisions on ATS safety management.

2.1.59   RASMAG/1, on reviewing its Terms of Reference and Task List, proposed an amendment to address the need for coordination with the contributory bodies of APANPIRG. In this regard, the meeting agreed to the proposal and formulated the following Decision.

Decision 15/4   –   Revision to the Terms of Reference of RASMAG

That the Terms of Reference and Task List of RASMAG be revised as shown in **Appendix C** to the Report on Agenda Item 2.1.

2.1.60   The meeting noted that RASMAG/1 in its review of the airspace safety monitoring activities in the region, identified airspace and route systems including the implementation and operation of data link systems (e.g. ADS and CPDLC), where regional safety monitoring arrangements needed to be established as follows:

a)   South-East Asia area including the South China Sea route system;

b)   Bay of Bengal and Arabian Sea route systems; and

c)   Indian Ocean area.

2.1.61   In consideration monitoring agencies that could provide safety monitoring services in the region, RASMAG noted the various terms that described these bodies, e.g. Central Monitoring Agency (CMA), Regional Monitoring Agency (RMA), Monitoring Authority (MA), and Central Reporting Agency (CRA). In regard to RVSM, the term RMA had been adopted by ICAO (Doc 9574 refers) and was generally understood as applying to RVSM specific monitoring activities. A variety of terms were used in respect to naming entities that provide services for separation applications in the horizontal dimension. RASMAG proposed that for the Asia/Pacific region, a new term should be adopted, Safety Monitoring Agency (SMA) that described an organization that provided all safety management services for an airspace and would include the RMA when this function was being carried out. The term RMA would continue to be used to refer to RVSM monitoring activities.

2.1.62   In light of the foregoing, the meeting formulated the following Decision:

Decision 15/5   –   Adoption of the term Safety Monitoring Agency (SMA)

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

2.1.63   The RASMAG recognized that Airservices Australia, who had provided the safety assessment services for the implementation of the SCS and Bay of Bengal route systems and reduced lateral separation, was presently providing safety monitoring services including conducting safety assessments for the international airspace of the Brisbane and Melbourne FIRs that included the airspace of the southern Indian Ocean. In addition, they were responsible for RVSM operations and associated safety management services. RASMAG recommended that Airservices Australia be designated as an RMA and SMA for the airspace where it provides these services.

2.1.64   In light of the foregoing, the meeting formulated the following Conclusion:

Conclusion 15/6   –   Designation of Airservices Australia to provide RMA and SMA services for the international airspace within the western part of the Melbourne and Brisbane FIRs

That, recognizing the safety management services provided by Airservices Australia for RVSM with the international airspace of the western part of the Melbourne and Brisbane FIRs, they be designated as the Regional Monitoring Agency for RVSM and as the Safety Monitoring Agency for RNP, data link services and related separation minima.

Revision of the guidance material on CNS/ATM operations in the Asia/Pacific region

2.1.65   The meeting recalled that under APANPIRG/14 Conclusion 14/2, a Task Force was set up to review the regional *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region* (hereafter referred to as the *Guidance Material*). APANPIRG/14 took this action on the request of the Air Navigation Commission to ensure that the *Guidance Material* was brought in line with ICAO Standards and Recommended Practices (SARPs) and the *Procedures for Air Navigation Services—Air Traffic Management* (PANS-ATM, Doc 4444), and in particular with Amendment 1 to PANS-ATM applicable on 28 November 2002.

2.1.66   The Commission also wished to see other ADS and CPDLC operating procedures being used by States brought into line with ICAO provisions to the extent possible. In this regard, APANPIRG/14 requested the Review Task Force to coordinate its work with States responsible for the Pacific Operations Manual (POM) with the intent of harmonizing the *Guidance Material* and the POM. The POM contains the FANS-1/A operating procedures and requirements being applied by States in the Pacific region in the provision of data link services (ADS and CPDLC).

2.1.67   The meeting recalled that ICAO Headquarters had carried out a detailed technical review of the *Guidance Material*, which provided the basis for the Review Task Force's work. The Task Force at its meeting in Honolulu, Hawaii, United States on 2-4 October 2003 completed its review of the *Guidance Material* taking into account the detailed analysis carried out by ICAO Headquarters. The Task Force recognized that the POM would be adopted by other States in the Asia region planning to implement data link services, which was in the interest of safety, whereby it was essential that common operating procedures were used by ATS providers in the region. The Task Force suggested that the name of the POM should be changed to the FANS-1/A Operations Manual (FOM) for the document to be more readily adapted by States in other areas. Subsequently, States in the Pacific region through ISPACG and IPACG agreed to change the name of the POM to the FOM.

2.1.68   The meeting noted that ATM/AIS/SAR/SG/14 had endorsed the outcome of the Review Task Force, and drafted a conclusion that States and users in the Asia/Pacific region should adopt the FOM as the operations procedures and requirements document. The Secretariat advised the meeting that the report of the Review Task Force had been coordinated with ICAO Headquarters, who drew attention to ICAO provisions and guidance that were applicable to operating data link services and should be followed by States in conjunction with the FOM.

2.1.69   The meeting agreed that States should take all relevant ICAO provisions on data link into account when establishing their operating requirements and procedures. Further, the meeting agreed that the FOM provided necessary operating procedures for ATS providers and should be used as a basis to operate ADS and CPDLC with aircraft equipped with the FANS-1/A system.

2.1.70   In light of the foregoing, the meeting formulated the following Conclusion:

Conclusion 15/7   –   FANS 1/A Operations Manual (FOM)

That, the FANS 1/A Operations Manual (FOM) be used by States and users in the Asia/Pacific region as a basis for operating automatic dependent surveillance (ADS) and controller pilot data link communications (CPDLC) in conjunction with Annex 10 – *Aeronautical Telecommunications* Volume II – *Communications Procedures* including those with PANS status, the *Procedures for Air Navigation Services – Air Traffic Management* (PANS–ATM. Doc 4444) and the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region*.

2.1.71   In regard to further development of the regional *Guidance Material* and the FOM, and harmonizing these documents with ICAO provisions, in light of information provided by ICAO Headquarters, the meeting recognized that additional work was required to more closely align the material of the documents concerned. In this regard, the meeting appreciated that ICAO Headquarters was willing to undertake the lead to progress this work in coordination with the Regional Office and the States responsible for the FOM. In consideration of global issues, the meeting agreed that this was a matter for ICAO Headquarters to pursue. The meeting reiterated the importance of common data link operating procedures for global applicability, and urged States to continue to support ICAO's efforts to achieving this goal.

Implementation of lateral offsets

2.1.72   The meeting recalled that following the issue of ICAO State letter AN 13/11.6-00/96 dated 3 November 2000 on the use of lateral offsets as a safety measure to reduce the risk of collision in the event of loss of vertical separation, the implementation of lateral separation in the Asia/Pacific region had been considered by the ATM/AIS/SAR/SG. The guidelines allowed for the use of a 1 NM offset right of centre line in cases where the lateral separation was not less than 50 NM in an RNP 10 non-radar environment.

2.1.73   The SASP revised the guidelines and ICAO issued State letter AN 13/11.6-02/21 dated 31 May 2002 to allow for the application of offset procedures of up to 2 NM right of centre line, provided that a safety analysis for the particular airspace had shown that the proposed procedures would meet appropriate safety criteria.

2.1.74   The MID/ASIA/PAC/RAC *Regional Supplementary Procedures* (Doc 7030) was amended (APAC-S 00/4 refers) on 4 March 2004 allowing for implementation of 1 NM offset procedures in designated FIRs in the Asia/Pacific region. The following FIRs were approved to apply the 1 NM offset procedures: Auckland Oceanic, Brisbane, Honiara, Melbourne, Nauru, New Zealand, Port Moresby, Easter Island, Nadi and Tahiti.

2.1.74   The Secretariat informed the meeting that SASP had completed its work to provide global guidelines on the use of 2 NM lateral offsets to the right of centre line. A State Letter was issued on 27 August 2004 (AN 13/11.6-04/85) that circulated the guidelines for the application of 2 NM lateral offsets to the right of centre line to States and international organizations. In this regard, application of 2 NM lateral offset procedures achieved greater safety benefit than 1 NM offsets and also incorporated wake turbulence procedures. The 2 NM lateral offset procedures to the right of centre line could also be applied where 30 NM lateral separation was used based on RNP 4.

2.1.75   The meeting recalled that APANPIRG/14 Conclusion 14/7 recommended that States should develop 2 NM lateral offset procedures to be implemented in all relevant airspace in the Asia/Pacific region. In this regard, the meeting recognized that as guidance on global 2 NM lateral offset procedures to the right of centre line were now provided by ICAO, State were no longer required to develop offset procedures. Accordingly, the meeting urged States to implement the ICAO guidance for 2 NM lateral offset procedures in all relevant airspace as soon as practicable.

2.1.76   IATA requested that when implementing 2 NM offset procedures, this should be done in a coordinated manner over contiguous airspaces. The meeting agreed that the Asia/Pacific region should adopt a coordinated approach to implementing the 2 NM offset procedures to the right of centre line simultaneously, and the Regional Office should coordinate an implementation date coincident with an AIRAC date as soon as practicable. In this regard, a draft AIP amendment is provided in **Appendix D**.

2.1.77   In light of the foregoing, the meeting agreed to the following Conclusion:

> **Conclusion 15/8   –   Implementation of a 2 NM lateral offset procedures in the Asia/Pacific region**
>
> That, States in the Asia/Pacific region implement the 2 NM lateral offset procedures to the right of centre line in accordance with ICAO guidance on a common AIRAC date to be coordinated by the ICAO Regional Office with States, ATS Coordination Groups and users concerned.

Air Traffic Flow Management over the Bay of Bengal

2.1.78   The meeting was informed by IATA of difficulties being experienced both by air traffic control and airlines with the westbound traffic flows across the Bay of Bengal to Europe through Afghanistan airspace (Kabul FIR) during peak periods. In IATA's view, this was primarily because there was no air traffic management programme in place that looked at the total flow with the capability to ensure that all traffic would fit through the known bottlenecks in the system. The traffic flow mainly originated from Singapore, Kuala Lumpur and Bangkok and merged over India with traffic departing from Indian airports and traffic joining the routes from Pakistan airports.

2.1.79   The route capacity was constrained by restrictions in the Kabul FIR, including the loss of levels due to RVSM not being implemented. At times, aircraft required costly reroutes resulting in technical stops to take on additional fuel. The full benefits of the EMARSSH route implementation on 28 November 2002 and RVSM on 27 November 2003 had not been realized, as the envisaged four independent Asia to Europe routes had been reduced to two. However, with the implementation of the ASOPO – Rahim Yar Khan (RK) segment in January this year, and the expected implementation of the RK – Kandahar leg by the end of the year, this would improve the situation. However, there was still the problem of a shortage of viable levels with only FL310 and FL350 available. FL280 had been made available in the Kabul FIR on a restricted basis for the period 2400-0400 UTC but at times this level was withdrawn.

2.1.80   The IATA Asia Pacific Regional Coordination Group (RCG) of airlines were extremely concerned with the lack of air traffic management provided for this traffic flow and requested IATA to take a closer look at available options for a collaborative decision making (CDM) means of slot control. In this regard, IATA had investigated automated systems used by two States that would be suitable and allow airlines to collaborate and manage the slots over Afghanistan. Based on these systems, IATA and airlines conducted a paper test on actual flights and demonstrated that substantial improvements could be achieved. This had led to the conclusion that such automated tools could manage the traffic flows with the desired results.

2.1.81   Based on the positive results of the test, 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.

2.1.82   The meeting noted the problems being encountered and the potential of automated ATFM tools to offer a solution. The Secretariat informed the meeting that the air traffic flow management difficulties were well known to the ATS providers and were being addressed primarily by the BBACG. Further, the matter had been discussed at all the RVSM/TF meetings concerning the Bay of Bengal RVSM implementation. A special coordination meeting on ATFM was held in Singapore in April 2004 attended by IATA to specifically address the issues.

2.1.83   The meeting was advised that the States concerned were making a concerted effort and had shown considerable flexibility in accommodating users' requests to make improvements to air traffic operations. Planning measures to make available additional levels and more flexible use had been implemented and some improvements gained. Through the considerable discussions that had been held, it was evident that the operating conditions over the Bay of Bengal through the Kabul FIR were complex and influenced by many factors. One of the contributing problems was caused by economic considerations that led to over demand on a single preferred route, and a lack of distribution of traffic on all available routes.

2.1.84   Whilst, it was recognized that the route system had sufficient capacity to meet present demand, inefficiencies in making use of available slots was a contributing factor to delays. However, the primary problem was the inadequate air navigation services in the Kabul FIR. Improvements

were dependent on the Afghanistan civil aviation rehabilitation programme and availability of funding, which had not been forthcoming until recently. On a positive note, the meeting was informed by the Secretariat that significant progress was now being made. The military authority in Afghanistan was making major upgrades to the Kabul Flight information Centre (FIC), and by January 2005 it was anticipated that an ATC service would be provided and the Kabul ACC established. The communications systems were expected to be restored by the end of this year. Also, the route segment RK - Kandahar had been agreed by all parties, and the LOAs were intended to be signed in September 2004.

2.1.85   In light of the foregoing, the meeting was pleased to note that ICAO was playing a major role in assisting the Afghanistan Ministry of Civil Aviation and Tourism to reconstruct their air navigation infrastructure and to establish civil air traffic services. ICAO has an on-going Technical Cooperation project in Afghanistan and in July 2004, completed a master plan for civil aviation. Given the present pace of developments and continued stability of the civil society in Afghanistan, 2005 should see significant improvements to the operation of civil flights into and transiting Afghanistan's airspace.

2.1.86   The meeting noted the considerable effort being made by States to collaborate together and with IATA and the airlines to improve the air traffic flow management over the Bay of Bengal. It was recognized that considerable constraints on the airspace were beyond the control of the States concerned. All parties were encouraged to continue their efforts and to take into account the benefits to be derived from ATM automated systems.

AIS – Amendments to Annex 4 and Annex 15

2.1.87   The meeting noted that since ATS/AIS/SAR/SG/13, some important amendments to Annexes 4 ― *Aeronautical Charts* and Annex 15 ― *Aeronautical Information Services* had been adopted by ICAO with effective date 25 November 2004. Amendment 53 to Annex 4 would introduce changes concerning: the new definitions; common reference system and the introduction of a new Radar Minimum Altitude Chart. Amendment 33 to Annex 15 included new provisions concerning definitions, the vertical reference system and the temporal reference system for international civil aviation, electronic terrain data (effective 2008), obstacle data (effective 2010) and aeronautical data quality requirements, and new requirements to include GNSS-related elements in the Aeronautical Information Publication (AIP) and in NOTAM.

2.1.88   The meeting reminded States to take note of the above amendments.

AIS Implementation Task Force (AITF)

2.1.89   The meeting recalled that APANPIRG/14 had reactivated the AIS Implementation Task Force to study AIS automation and related matters and to assist States to implement ICAO SARPs on AIS in an expeditious manner. The first meeting of the Task Force was scheduled for 29 November – 3 December 2004.

Importance of timely and accurate AIS data

2.1.90   The meeting recalled that APANPIRG/14 Decision 14/9 requested ICAO again to reinforce to States the critical safety nature of AIS and of adherence to Annex 15 provisions, particular those relating to AIRAC, as well as the need to ensure accurate and timely publication of AIS data. This matter would be included on the agenda of the AITF.

2.1.91   The ATM/AIS/SAR/SG/14 had expressed concern that the Regional Office AIS post remained vacant and reiterated the need for expertise at the Regional Office to manage AIS matters which were critical to effective implementation of airspace improvements.

Regional Office ATM resources

2.1.92   The meeting was informed that due to ICAO's budget situation, which required a reduction in its overall operating budget, the ICAO Regional Offices were required to reduce costs and eliminate posts. Regrettably, the Asia/Pacific Regional Office AIS/MAP post, which had not been filled for over 10 years, had been eliminated. The meeting was also advised that with a senior ATM officer retiring in May 2005, this post was also expected to be eliminated. This would result in serious consequences for the Regional Office, and the present ATM work programme could not be sustained without additional resources at a time when major ATM work was being initiated, e.g. regional route network review, implementation of data link services in Asia, development of ATS safety management programmes, and commencement of the expanded USOAP programme. States were urged to bring matters relating to the Regional Office ATM staffing to the attention of the highest levels in their administrations, and to make known their views at the 35th Session of the Assembly of ICAO in September/October this year, which would decide on ICAO's budget for the next triennium (2005-2007).

Building and operating Aeronautical Information Service (AIS) in the Republic of Korea

2.1.93   The meeting was provided with information on the AIS developments in the Republic of Korea**.** The Civil Aviation Safety Authority (CASA) of Korea was responsible for publishing and updating the AIP and NOTAMs for the Republic of Korea. In response to the increasing demand for the flexible provision of these services, a review was carried out into methods of providing web based AIP and NOTAM information.

2.1.94   The CASA of Korea has now developed a web based system that accesses multiple diverse information sources, enabling the provision of real time AIP and NOTAM information to operators. The system includes a number of interface mechanisms to provide access for a variety of users. Development of the system, known as the Aeronautical Information Service (AIS) System, has now been completed.

2.1.95   The AIS System is conveniently providing all users with real time AIP and NOTAM information. This system was ultimately expected to assist with the safety of civil aviation while enhancing the development of the air transport industry. The AIP component of the system was consistent with ICAO Annex 15. The NOTAM component has a number of search functions that increase the flexibility of the system, enabling users to search for information.

Carriage and operation of the airborne collision avoidance system (ACAS-II) and pressure-altitude reporting transponders

2.1.96   The meeting recalled that APANPIRG/14 had noted and endorsed the APANPIRG/12 position (paragraph 2.1.68 to the Report on Agenda Item 2.1 refers) that where States had not established the requirement for the carriage and operation of pressure-altitude reporting transponders specified as a Standard in Annex 6, this should be reported and managed as a deficiency on the APANPIRG List of Deficiencies.

2.1.97   The meeting drew the attention of States to the importance of complying with Annex 6 provisions on the carriage of ACAS II and pressure-altitude reporting transponders and the potential safety consequences of operators being non-compliant especially in RVSM operations. The

Regional Office had issued a letter to States in July 2004 requesting an update on the status of implementation.

2.1.98   In light of the foregoing, the meeting agreed that States who had not implemented the ICAO provisions in respect to pressure reporting transponders and ACAS II would be included on the List of Deficiencies presented to APANPIRG/16.

Search and Rescue matters

SAR capability of ICAO States in the Asia/Pacific region

2.1.99   The meeting reviewed and updated the SAR Capability Matrix Table, which provided a comprehensive listing of the SAR Capability of ICAO States in the Asia/Pacific region. The SAR Capability Table was updated by the meeting as shown in **Appendix E** to the Report on Agenda Item 2.1.

2.1.100   The meeting noted that the Rescue Coordination Centre New Zealand (RCCNZ) had taken over responsibility from the National Rescue Coordination Centre for search and rescue in New Zealand at 0000 UTC on 5 July 2004. The New Zealand SAR region remains unchanged but SAR activities would be coordinated by the RCCNZ.

Provision of SAR and SAR agreements

2.1.101   The meeting reviewed the ICAO register of SAR agreements for the Asia/Pacific region and updated the register with the following information:

        a)   New Zealand was developing SAR agreements with the Cook Islands, Fiji, Samoa, Tonga and French Polynesia;

        b)   France had exchanged working papers with New Zealand and the United States for SAR agreements with Auckland and Hawaii;

        c)   the Australian Maritime Safety Authority provided an updated SAR Agreement between Australia and Indonesia; and

        d)   LAO PDR notified the Regional Office that a LOA had been put in place with View Nam since 1998 for provision of assistance for SAR.

2.1.102   In light of the foregoing, the meeting agreed that States who had not implemented the ICAO provisions would be included on the List of Deficiencies presented to APANPIRG/16.

2.1.103   The updated register of SAR Agreements is shown at **Appendix F** to the Report on Agenda Item 2.1.

SAR seminar and exercises

2.1.104   The meeting recalled that in accordance with previous APANPIRG conclusions, States were requested to develop formal programmes for SAR exercises and forward these to the ICAO Asia/Pacific Regional Office on an annual basis by 30 April. Such exercises should be made available for other States to participate in as observers. States were requested to provide information on such activities to the Regional Office.

2.1.105   The meeting noted that the ICAO Asia/Pacific regional seminar and SAREX planned for the Bay of Bengal area as recommended by APANPIRG/12 was deferred to 2003, and then, due to the outbreak of the Severe Acute Respiratory Syndrome (SARS) in the Asia region in February 2003, it was further deferred to 2004. The ICAO seminar and SAREX for the Bay of Bengal area would be held in India during March 2005.

2.1.106   The Regional Office conducted a two-day ICAO SAR Seminar in conjunction with the Hong Kong, China Annual SAREX hosted by the Civil Aviation Department, Hong Kong, China on 24-25 November 2003.

Amendment 17 to Annex 12

2.1.107   The meeting reminded States of Amendment 17 to Annex 12 ― *Search and Rescue* with an applicability date of 25 November 2004. This amendment stemmed from a review by ICAO to align Annex 12 with the International Maritime Organization (IMO) Convention to the extent possible, and to make provision for more cost-effective civil SAR services by more closely harmonizing them with maritime SAR services and facilitating, where practicable, organization on a cooperative regional basis.

40th Conference of Director-Generals of Civil Aviation in the Asia/Pacific region

2.1.108   The meeting considered the 40th DGCA Conference Action Item 40/4 in regard to SAR agreements;

> *Recognizing the complexity and the need to place highly specialized resources at a short notice for search and rescue, the Conference urged States to cooperate fully in sharing information and resources as far as practicable and to keep ICAO Regional Office informed of all agreements in this regard.*

2.1.109   The meeting endorsed this position, which was being given priority by the ATM/AIS/SAR/SG. In addition, APANPIRG maintained and updated a register of SAR agreements between States. In this regard, the Regional Office reminded States prior to APANPIRG meetings on action to be taken to establish SAR agreements. Further, at ICAO SAR seminars, the importance of SAR agreements was always highlighted as a priority matter to be addressed by States.

ATC contingency procedures during failure of data link system

2.1.110   The meeting considered an amendment proposal to the Regional Supplementary Procedures (Doc 7030) MID/ASIA/PAC/RAC-5 presented by Japan relating to ATC contingency procedures in the event of failure of data link systems in the oceanic airspace of the Pacific region. This proposal had been coordinated through IPACG and ISPACG.   In this regard, IPACG was planning to implement 50 NM longitudinal separation minimum in the North and Central Pacific using data link systems (ADS and CPDLC), and intended in the future to further reduce longitudinal separation minimum to 30 NM based on the use of ADS. ISPACG was planning to implement 30 NM longitudinal separation in the South Pacific in November 2004.

2.1.111   The meeting noted that ATM/AIS/SAR/SG/14 had reviewed the proposal and suggested that further information was needed on the intent of the procedure and time limitations for applying alternate separation. The meeting also agreed that the amendment proposal would need to be harmonized with existing PANS-ATM provisions related to short-term data link outage. The Regional Office would review and coordinate with the Japan Civil Aviation Bureau (JCAB) and ICAO Headquarters to finalize the proposal.

Classification of airspace in RVSM and RNP environments

2.1.112   The meeting considered the airspace classification requirements in Annex 11 in respect to airspace where RVSM and RNP were specified. RVSM and RNP requirements had been widely implemented in the Asia/Pacific region and a variety of airspace classifications ranging from Class A to Class F had been assigned to these airspaces, and this showed a lack of consistency in assigning airspace classifications.

2.1.113   The meeting recognized the stringent safety requirements necessary for implementation and operation of reduced vertical and horizontal separation minima. In addition, airspace safety monitoring was required to monitor aircraft height-keeping and navigation performance. Further, in the event that aircraft were unable to maintain the requirements specified in the respective operational approvals, ATC would be required to apply an alternate form of separation and be able to intervene within the time parameters specified by the appropriate safety assessment. Inherent in these requirements was a need for an ATC service. Therefore, in RVSM and RNP airspace, it was important to specify the appropriate classification commensurate with the stringent operating restrictions that applied.

Exclusion of VFR aircraft from RVSM airspace

2.1.114   ICAO SARPs do not explicitly provide for airspace classification in regard to RVSM or RNP designated airspace. In regard to RVSM airspace (FL290-410 inclusive), Annex 2 – *Rules of the Air* does not permit VFR*:*

2.1.115   Under Class A airspace, only IFR flights were permitted, and in the view of the Secretariat, as Class A airspace excludes VFR operations, it should be used for RVSM airspace in accordance with Annex 2.

RNP considerations

2.1.116   In the case of RNP being applied in RVSM airspace, VFR operations would be excluded as per Annex 2. But in non-RVSM airspace, there were no ICAO provisions that related to what airspace classification should be used.

2.1.117   Where RNP was used as the basis for applying reduced horizontal separation, a safety assessment had to be performed using the appropriate collision risk model against a TLS, to implement reduced separation. In the view of the Secretariat, VFR operations were not taken into account in the safety assessments necessary for application of 30 and 50 NM horizontal separation. This would also be the case for RVSM safety assessments. Therefore, there did not appear to be any valid operational reason why a VFR aircraft should be permitted to operate in RNP airspace, and to do so, could compromise the safety assessment.

2.1.118   The meeting considered the issues concerning the classification of airspace for RVSM and RNP operations, and agreed that further study of the subject was required. Accordingly, ICAO should be requested to look into this issue.

2.1.119   In light of the foregoing, the meeting formulated the following Conclusion:

Conclusion 15/9   –   Review of Annex 11 airspace classification provisions for RVSM and RNP operations

That, ICAO review the airspace classification provisions in Annex 11 to clarify requirements for specifying the class of airspace appropriate for RVSM and RNP operations (where reduced horizontal separation was introduced based on safety assessments requiring a collision risk model to be carried out).

2.1.120   The meeting urged States to review their airspace classifications specified for RVSM and RNP airspaces, and where necessary, to change the airspace classification, taking into account the safety issues raised above, and specify Class A for such airspaces.

United States Pacific military altitude reservation function (PACMARF)

2.1.121   The meeting noted information provided by the United States regarding some of the issues related to PACMARF altitude reservation (ALTRV) activities in the Pacific region.

2.1.122   The meeting was reminded that PANS-ATM (Doc 4444, paragraph 16.1) addresses responsibilities in regard to military aircraft. Temporary airspace reservations, either stationary or mobile, may be established for the use of large formation flights or other military air operations. Arrangements for the reservation of such airspace were required to be accomplished by coordination between the user and the appropriate ATS authority. The coordination was required to be effected in accordance with the provisions of Annex 11, and completed early enough to permit timely promulgation of information in accordance with the provisions of Annex 15.

2.1.123   An ALTRV was an authorization between PACMARF and the appropriate ATS provider, "for airspace utilization under prescribed conditions." The PACMARF located in Hawaii has responsibility for coordinating all ALTRV requests in the Pacific region where a memorandum of understanding (MOU) exists with the appropriate civil aviation authorities.

2.1.124   The purpose of implementing ALTRV procedures was to provide a higher level of safety when a number of aircraft must be moved with less IFR separation between participating aircraft than required by standard ATC criteria. It was also used when multiple aircraft must operate within prescribed altitudes, times, and/or areas. The objective of the ALTRV co-ordination was to achieve the best arrangement in order to avoid hazards to civil aircraft and minimize interference with the normal operation of military aircraft.

2.1.125   The United States advised that the U.S. Department of Defense (DOD) would like to partner with individual ATS units in providing an ALTRV co-ordination capability in their airspace/FIRs. The DOD currently has agreements that establish ALTRV procedures with ACCs in Japan, the Republic of Korea and the Philippines. The establishment of an MOU did not eliminate diplomatic clearance requirements, and the decision to approve any request would remain solely with the appropriate air traffic control authority.

2.1.126   The United States encouraged States to consider developing an MOU as a means to ease coordination and increase the level of safety for all airspace users. The outcome would be a formal process for States to receive ALTRV requests, transmit their decision on the ALTRV request, and operate ALTRVs within their appropriate FIRs. A sample MOU format was available from PACMARF on request. In the interim, appropriate ATS providers within the Asia/Pacific region were requested to identify a point of contact to PACMARF for ALTRV requests and future discussions on this topic.

2.1.127   The meeting appreciated the initiative taken by the U.S. DOD to encourage States to enter into MOUs to adopt the ALTRV procedures. The meeting supported this effort and urged States to enter into appropriate arrangements, which would greatly facilitate coordination and enhance safety.

Draft guidance on RNP 4 oceanic and remote area approval

2.1.128   The United States presented information on a DRAFT FAA Order on *Required Navigation Performance 4 (RNP 4) Oceanic and Remote Operational Approval*. The meeting welcomed the development of this draft document, which would enable the implementation of RNP 4 in oceanic airspace. Also, with States in the Pacific region planning to implement 30 NM separation requiring RNP 4 to be specified, the FAA order would provide a basis for States to develop their operational approval documentation.

Establishment of an Air Traffic Management Centre in Japan

2.1.129   Japan provided information on the JCAB's planning to implement the ICAO ATM Operational Concept by integrating the air space management function and some parts of ATS function into the Air Traffic Flow Management Center (ATFMC) established at Fukuoka in 1994. The ATFMC was responsible for the ATFM in the Tokyo and Naha FIRs. The planned facility, provisionally named the Air Traffic Management Center (ATMC), was expected to commence its initial operations in October 2005.

2.1.130   The meeting was informed that, in considering the current roles of the ATFMC, JCAB had reviewed the role of the ATFMC and the four ACCs, Sapporo, Tokyo, Fukuoka and Naha, and decided to reorganize the overall structure. The ATMC will be responsible for ATFM, ASM and the oceanic ATC, and the four ACCs, Sapporo, Tokyo, Fukuoka and Naha would be responsible for ATC in the domestic airspace.

2.1.131   At present Tokyo and Naha ACCs provided the oceanic ATC service in Tokyo and Naha FIRs. For more efficient ATFM of international flights and for more efficient oceanic ATC service, the Tokyo FIR and the Naha FIR would be consolidated into a single FIR, and the ATMC would take over the responsibility from the ACCs for the oceanic ATC service. Data link applications, such as ADS and CPDLC would be fully utilized for the efficient use of the airspace.

2.1.132   The meeting noted that the consolidation of Tokyo and Naha FIRs, and the relocation of the Flight Data Processing System (FDPS) and the AFTN station were planned on an AIRAC date of 16 February 2006. The ATMC was expected to commence its initial operation in October 2005. The meeting recognized that the reorganization of Japan's airspace and air traffic control services by incorporating the ICAO ATM Operational Concept was a significant step forward to rationalizing airspace and air traffic services, and should result in greater operational efficiency and capacity.

Unknown military flight movements - Mumbai FIR

2.1.133   India advised the meeting that the Arabian Sea area of the Mumbai FIR was a busy airspace encompassing seven major international ATS routes (EMARSSH) between South-East Asia and the Middle East, as well as traffic flows between Hong Kong, China and Johannesburg, Mumbai and Mauritius/Seychelles/Mogadishu/Yemen. RVSM exclusive airspace was implemented in a major portion of this area on 27 November 2003.

2.1.134   India reported that during the Afghanistan conflict there were approximately 65 reports of unknown military flights crossing flight paths in close proximity to civil flights in this airspace. Generally these military flights were not squawking SSR codes readable by civil equipment.

Further, Mumbai ATC did not receive any information (flight plan information or position reports, etc) in respect of such flights. India had informed ICAO, the United States FAA and the National Transportation Safety Board (NTSB) of the United States during May 2002 of the prevalence of these incidents.

2.1.135   ICAO had clarified that since the incidents had taken place in areas over the high seas and that State aircraft were not subject to compliance with the Convention on International Civil Aviation, there was no requirement for these military flights to be coordinated with the ATC authorities responsible for the Mumbai FIR. In international airspace, Article 3[d] of the Convention requires States when issuing regulations for their state aircraft, that they have "Due Regard" for the safety of navigation of civil aircraft.

2.1.136   India further advised that a number of the incidents reported were extensively investigated by the U.S. DOD. Subsequently, at a SCM on Afghanistan airspace held at the ICAO Regional Office, Bangkok in August 2002, United States military representatives agreed to suitable procedures for these operations, which included circumstances where military aircraft would generally operate at levels which included some segregation from civil traffic (e.g. ±500 feet), and that some flight information would be provided to the responsible civil ATS unit. The implementation of these procedures reduced the number of incidents reported.

2.1.137   India raised concerns that the introduction of RVSM in the Mumbai FIR meant that the procedures previously agreed were no longer suitable as the vertical separation between aircraft was now 1000 feet, leaving less scope for military aircraft to operate at segregated levels between civil levels.

2.1.138   India informed the meeting that on 30 July 2004 and on 1 August 2004, i.e. subsequent to the introduction of RVSM, two reports were received of civil aircraft taking collision avoidance action with respect to military flights unknown to Mumbai ATC near waypoint DONSA (N 143518.5, E 06511133.4).

2.1.139   The United States advised the meeting that reports of this nature were taken very seriously and were routinely investigated by the U.S. DOD, and that this would be the case with these incidents. IATA advised the meeting that since the changes agreed at the SCM in August 2002, they had received very few reports of this type of incident in the area, but would like to be involved in any related discussions.

2.1.140   The meeting noted and understood India's concerns, and acknowledged the complex issues surrounding operations conducted under "Due Regard". The United States and IATA undertook to follow up on the two incidents reported by India and provide feedback as it became available.

2.1.141   The meeting was advised that ICAO had scheduled a four day regional Civil/Military Seminar at the Regional Office on 14-17 December 2004, and encouraged States to bring their military compatriots to the seminar in order to improve coordination linkages between civil and military agencies. Further details of the seminar would be advised by the Regional Office in due course.

ATS incident reporting

2.1.142   The meeting recalled that the ICAO *ATS Planning Manual*, Doc 9426, Part II, Chapter 3 required 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 of ground facilities were identified as air traffic incidents and were reportable.

2.1.143   IATA informed that they routinely receive a large number of incident reports from operators that often contain an ATS related factor. In order to undertake appropriate investigation, information was required from the ATS provider in relation to the report, and the information was required in a timely manner to ensure the investigation could move forward and before the expiry of ATS records/recordings, etc. In order to allow ATS providers to meet their investigation responsibilities, IATA was able to provide data to ATS providers to assist with their investigations.

2.1.144   Considering the lack of success in obtaining from the respective ATS providers suitable contact details of a person or position to which incident reports could be provided and discussions held, the meeting requested States to consider providing details of a responsible contact person to which operators could send incident reports for investigation and resolution.

Review of the Terms of Reference of the ATM/AIS/SAR Sub-group

2.1.145   The ATM/AIS/SAR/SG/14 meeting reviewed its Terms of Reference (TORs) to ensure that the Sub-group maintained a suitable focus for its work programme. It was recalled that during APANPIRG/14, it was considered timely in view of the wider area of interest of the ATS/AIS/SAR SG, which included matters related to airspace management, airspace safety management and air traffic flow management, to revise the title to the ATM/AIS/SAR Sub-group (APANPIRG Decision 14/11 refers) but the TORs were not updated.

2.1.146   The meeting agreed that it was appropriate to revise the TORs of the ATM/AIS/SAR SG to properly reflect its expanded role, as shown in **Appendix G** to the Report on Agenda Item 2.1.

2.1.147   In light of the foregoing the meeting formulated the following Decision:

> **Decision 15/10 – Amendment to the Terms of Reference of the ATM/AIS/SAR SG**
>
> That, proposed amendments to the Terms of Reference of the ATM/AIS/SAR SG as presented in Appendix G to the Report on Agenda Item 2.1 be adopted.

Updated Task List

2.1.148   The meeting reviewed the updated Task List for ATM/AIS/SAR SG approved by APANPIRG/14.

2.1.149   The meeting noted that the Future Directions Task Force had made three recommendations to APANPIRG/15 to include 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.

2.1.150   The meeting agreed with the Future Directions Task Force's recommendations and included the items on the Task List as Items 17, 18 and 19 respectively.

2.1.151   The meeting agreed that the agenda for the ATM/AIS/SAR/SG meeting should include items for CNS/ATM developments and a review of ATS coordination group meetings. In addition, as a result of the dissolution of the CNS/ATM/IC/SG, the meeting agreed to include on the Task List additional items for environmental issues, training and business cases. The updated Task List is shown in **Appendix H** to the Report on Agenda Item 2.1.

RVSM IMPLEMENTATION STATUS IN THE ASIA/PACIFIC REGION

(Last updated June 2004)

FIR/AOR	RVSM Implementation Date	Comments
Anchorage Arctic	24 Feb 2000	RVSM Transition Airspace only
Anchorage Continental	24 Feb 2000	RVSM Transition Airspace only
Anchorage Oceanic	24 Feb 2000	
Auckland Oceanic	24 Feb 2000	
Bali	31 Oct 2002	
Bangkok	21 Feb 2002	Specific routes on 21 Feb 2002. Whole FIR on 27 Nov 2003
Beijing	TBD	
Biak	Not applicable	Subject to Indonesia upper airspace consolidation
Brisbane	24 Feb 2000	Oceanic East of Australia 24 Feb 2000 - Remainder of FIR 1 Nov 2001
Calcutta	27 Nov 2003	
Chennai	27 Nov 2003	
Colombo	27 Nov 2003	
Delhi	27 Nov 2003	
Dhaka	27 Nov 2003	
Guangzhou	TBD	
Hanoi	31 Oct 2002	
Ho Chi Minh	21 Feb 2002	
Hong Kong	31 Oct 2002	
Honiara	24 Feb 2000	
Incheon	9 June 2005	Planned implementation
Jakarta	31 Oct 2002	
Karachi	27 Nov 2003	
Kathmandu	27 Nov 2003	

FIR/AOR	RVSM Implementation Date	Comments
Kota Kinabalu	21 Feb 2002	
Kuala Lumpur	21 Feb 2002	Eastern part on 21 Feb 2002. Western part on 27 November 2003
Kunming	TBD	
Lahore	27 Nov 2003	
Lanzhou	TBD	
Male	27 Nov 2003	
Manila	21 Feb 2002	
Melbourne	1 Nov 2001	
Mumbai	27 Nov 2003	
Nadi	24 Feb 2000	
Naha	24 Feb 2000	Pacific Oceanic (non-exclusive RVSM airspace) on 24 Feb 2000. Whole FIR planned on 9 June 2005.
Nauru	24 Feb 2000	
New Zealand (Domestic)	13 July 2000	Non-exclusive RVSM airspace
Oakland Oceanic	24 Feb 2000	
Phnom Penh	21 Feb 2002	
Port Moresby	13 Apr 2000	
Pyongyang	TBD	
Sanya AOR	31 Oct 2002	N892 within the oceanic airspace of Sanya AOR on 21 February 2002
Shanghai	TBD	
Shenyang	TBD	
Singapore	21 Feb 2002	
Tahiti	24 Feb 2000	Non-exclusive RVSM airspace
Taibei	21 Feb 2002	
Tokyo	24 Feb 2000	Pacific Oceanic (non-exclusive RVSM airspace) on 24 Feb 2000. Whole FIR planned on 9 June 2005.
Ujung Pandang	31 Oct 2002	Phased Implementation

FIR/AOR	RVSM Implementation Date	Comments
Ulaan Baatar	TBD	
Urumqi	TBD	
Vientiane	31 Oct 2002	
Wuhan	TBD	
Yangon	27 Nov 2003	

**LESSONS LEARNT FROM THE EMARSSH PROJECT ON
IMPLEMENTATION PLANNING FOR THE REVISED ROUTE STRUCTURE**

a)   using a small core team of experts to manage the project provided continuity, impetus and centralized project management. This arrangement was highly recommended for projects of this size;

b)   AIS is an integral and essential element of a modern ATM system and as such the composition of future core teams should include an AIS expert;

c)   in planning airspace arrangements, careful attention needed to be given to operational end use ensuring that the airspace structure met operational requirements. Also, users should take full advantage of all routing options available;

d)   unexpected international events could seriously impair the effectiveness of route operations and attention needed to be given to contingency arrangements;

e)   data collection and management should be assigned to a single management source;

f)   project timing should be kept to a minimum and careful attention given to meeting timelines;

g)   Regional Monitoring Agency (RMA) services should be identified and established early in the process;

h)   cooperation and coordination from military authorities was essential. They must be involved early in the process and well informed on the objectives of the project;

i)   meeting requirements for international operators, domestic operations must be fully considered and measures put in place to ensure minimum disruption to their operations;

j)   with complex airspace changes, information on developments must be kept in the public forum to ensure all operators remain up-to-date on the changes to be implemented and the operational requirements;

k)   planning should be forward looking and cognizant of the potentially rapidly changing technological advances in aircraft operations and commercial imperatives;

l)   close coordination with adjacent regions was necessary to harmonize procedures and planning objectives;

m)   information flow for the planning process should be broadly available and especially at the operational level;

n)   early provision for training requirements must be thoroughly developed and timely delivered;

o)   awareness of and coordination on other related changes being planned or implemented by other groups, and to continually update the ICAO Regional Office on progress especially on early advice of potential difficulties; and

p)   plan must be well defined, meet user requirements, be realistic, achievable in a timely manner and supported by all parties.

TERMS OF REFERENCE
REGIONAL AIRSPACE SAFETY MONITORING ADVISORY GROUP (RASMAG)

<u>**Terms of Reference of the RASMAG**</u>

The objectives of the Group are to:

a)   facilitate the safe implementation of reduced separation minima and CNS/ATM applications within the Asia and Pacific regions in regard to airspace safety monitoring; and

b)   assist States to achieve the established levels of airspace safety for international airspace within the Asia and Pacific regions.

To meet these objectives the Group shall:

a)   review airspace safety performance in the Asia and Pacific regions at the regional level and within international airspace;

b)   review and develop as necessary guidance material for airspace safety monitoring, assessment and reporting activities;

c)   recommend and facilitate the implementation of airspace safety monitoring and performance assessment services;

d)   review and recommend on the competency and compatibility of monitoring organizations;

e)   review, coordinate and harmonize regional and inter-regional airspace safety monitoring activities;

f)   review regional and global airspace planning and developments in order to anticipate requirements for airspace safety monitoring and assessment activities;

g)   address other airspace safety related issues as necessary;

h)   facilitate the distribution of safety related information to States, and

i)   provide to APANPIRG comprehensive reports on regional airspace safety and coordinate with other contributory bodies of APANPIRG as appropriate.

<u>**Task List**</u>

To review the safety monitoring programmes in the Asia and Pacific regions for implementation and operation of:

a)   reduced vertical separation minimum (RVSM);

b)   reduced horizontal (lateral and longitudinal) separation minima using RNP; and

c)   aircraft separation applications using data link, e.g. ADS and CPDLC.

DRAFT AIP AMENDMENT

IMPLEMENTATION OF STRATEGIC LATERAL OFFSET PROCEDURES

X.   STRATEGIC LATERAL OFFSETS IN OCEANIC AIRSPACE

X.1   Offsets are only applied in the oceanic (or remote continental) airspace in the XXX FIR.

X.2   Offsets are applied only by aircraft with automatic offset tracking capability.

X.3   The following requirements apply to the use of the offset:

a.   The decision to apply a strategic lateral offset is the responsibility of the flight crew.

b.   The offset shall be established at a distance of one or two nautical miles to the right of the centre line relative to the direction of flight.

c.   The strategic lateral offset procedure has been designed to include offsets to mitigate the effects of wake turbulence of preceding aircraft. If wake turbulence needs to be avoided, one of the three available options (centreline, 1NM or 2NM right offset) shall be used.

d.   In airspace where the use of lateral offsets has been authorized, pilots are not required to inform air traffic control (ATC) that an offset is being applied.

e.   Aircraft transiting areas of radar coverage in airspace where offset tracking is permitted may initiate or continue an offset.

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

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

Updated 28 June 2004

Categorisations:

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

STATE SAR AGREEMENTS
(updated 28 June 2004)

ID NO.	DATE	STATES	REMARKS
1	June 1982	Indonesia / Singapore	
2	August 1984	Malaysia / Singapore	
3	July 1996	Viet Nam / Singapore	
4		Singapore / Thailand	
5		Philippines / Singapore	
6	November 1990	Australia / Indonesia	Updated 5 April 2004
7	February 1999	Cambodia / Viet Nam	
8	December 2000	Malaysia / Singapore Malaysia / Philippines Malaysia / Thailand Malaysia / Indonesia Malaysia / Brunei Darussalam	
9	February 2001	Australia / Papua New Guinea	
10	September 2002	New Caledonia / New Zealand	
11	November 2002	United States / Republic of Palau	
12	1998	Lao PDR/Vietnam	LOA for provision of assistance
		New Zealand/ Cook Islands, Fiji, Samoa, Tonga and French Polynesia	Under development

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TERMS OF REFERENCE

**AIR TRAFFIC MANAGEMENT/AERONAUTICAL INFORMATION SERVICES
AND SEARCH AND RESCUE (ATM/AIS/SAR) SUB-GROUP OF APANPIRG**

1.   Ensure the continuing and coherent development of the ASIA/PAC Regional Air Navigation Plan and the ASIA/PAC Regional Plan for the New CNS/ATM Systems in the ATM/AIS/SAR fields.

2.   Review and identify deficiencies that impede the implementation or provision of efficient ATM/AIS/SAR services in the Asia/Pacific region

3.   Monitor CNS/ATM systems research and development, trials and demonstrations in the fields of ATM/AIS/SAR and facilitate the transfer of this information and expertise between States.

4.   Make specific recommendations aimed at improving ATM/AIS/SAR services by the use of existing procedures and facilities and/or through the evolutionary implementation of CNS/ATM systems.

5.   Review and identify inter-regional co-ordination issues in the fields of ATM/AIS/SAR and recommend actions to address those issues.

……………………….

SUBJECT/TASKS IN THE ATM/AIS/SAR FIELDS

The priorities assigned in the list have the following connotation:

A = Tasks of a high priority on which work should be expedited;

B = Tasks of a medium priority on which work should be undertaken as soon as possible but not to the detriment of Priority "A" tasks; and

C = Tasks of a medium priority on which work should be undertaken as time and resources permit but not to the detriment of Priority "A" & "B" tasks.

No.	Reference	Subject/Task		Priority	Action Proposed / In Progress	Action By	Target Date
1	RAN/3 C 6/9 R 14/22 APANPIRG C 2/22 C 3/24 C 4/4 C 4/5 C 5/2 C 5/3	Subject:	Implementation of RNP	A	a) ~~Sub-Group to~~ Identify routes and areas where RNP implementation is required; and	ATM/AIS/SAR/SG	On-going
		Task:	Implement RNP into the Asia Pacific Region		i) ~~SUPPS amendment required to extend area of applicability of RNP10 (50NM longitudinal and lateral separation minima) beyond Pacific~~	~~ICAO~~	~~Completed~~
			~~b) Develop further SUPPS material by ISPACG for RNP4, 30NM longitudinal and lateral separation minima~~		b) ~~Sub-Group to~~ monitor progress	~~ICAO~~	~~Completed~~
2	APANPIRG C 3/22	Subject:	Traffic congestion within the region	A			
		Task:	Suggest ways of reducing this congestion by means of appropriate traffic management				Onging
			~~d) Develop revised ATS Route Structure Southeast Asia to/from Europe/Middle East, South of the Himalayas~~		~~EMARSSH/TF established - commenced work~~	~~EMARSSH/TF~~	~~11/02~~
3	RAN/3 C 13/14 APANPIRG D 2/35	Subject:	AIS Automation	B	a) Develop AIS automation plan and introduction of AIS quality systems and AIS databases ~~ANP amendment proposal following AIS/MAP Divisional Meeting, April 1998 introduction of quality systems and AIS databases~~	~~AA/TF~~ AITF ATM/AIS/SAR/SG	On-going
		Task:	Develop a Regional AIS Automation Plan		~~b) Develop AIS Guidance Material for static data procedure~~	ATM/AIS/SAR/SG	~~Completed~~
					Decision 14/8 reactivated the AIS Automation Task Force and changed the name and role of the task force to the AIS Implementation Task Force (AITF). First meeting expected November 2004	AITF	On-going

No.	Reference	Subject/Task		Priority	Action Proposed / In Progress		Action By	Target Date
4	APANPIRG C 2/31	Subject:	Provision of AIS within the Region	B	a)	Increase AIS support from the ICAO APAC Office	APANPIRG ICAO	On-going
		Task:	Examine and comment on the provision of AIS and develop a programme to improve the provision of AIS within the region		b)	Regional AIS seminars to be conducted periodically	ICAO	On-going ~~Dec. 2002~~
					c)	Review the use of Internet for aeronautical information taking into account results of the ICAO AUPI Study Group and update Chapter 4 to the AIS Guidance Manual	~~AATF~~ ATM/AIS/SAR/SG	No update avbl to ATM/AIS/ SAR/SG/14 re internet
5	APANPIRG C 3/24 C 9/3 D 9/4	Subject:	Implementation of RVSM in the Asia Pacific Region	A	a)	Plan schedule and facilitate implementation of RVSM in the Asia Pacific Region	RVSM/TF	On-going
		Task:	Plan for and facilitate implementation of RVSM, as appropriate, in the Asia Pacific Region					~~South China Sea and Western Pacific~~ ~~(phase one 2/2002)~~ ~~(phase two 10/2002)~~ ~~Parts of Asia and MID Regions - EMARSSH (11/2003)~~ North Asia - 2005
6	APANPIRG D 3/12 D 3/2 C 4/2	Subject:	Inappropriate provision of SAR facilities, services and procedures within the Asia Pacific Region	A	a)	Encourage States to delegate or negotiate SAR services	ICAO	On-going
		Task:	a) Review SAR facilities, services and procedures in the region		b)	Identify deficiencies	ATM/AIS/SAR/SG	On-going
			b) Assist States without SAR services to provide SAR coverage					

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
7	APANPIRG D 3/21 C 9/2	Subject: Transition to WGS-84 in the Asia Pacific Region Task: Monitor and facilitate the transition to WGS-84	A	a) Maintain status report of WGS-84 implementation within the Asia Pacific Region b) Identify States requiring assistance and where possible assist those States c) Identify deficiencies	ATM/AIS/SAR/SG States ICAO ATM/AIS/SAR/SG ATM/AIS/SAR/SG	On-going On-going On-going
8	RAN/3 R 14/13 APANPIRG C 5/12 D 6/21 C 9/8	Subject: Implementation of ATS route requirements Task: a) Identify ATS routes in the ANP which have not been implemented; and b) Propose guidelines for the establishment of ATS routes using RNP and/or with ADS functions.	B	a) ATS routes identified as not implemented ~~are considered by ATS/AIS/SAR/SG~~ b) ~~ATS/AIS/SAR/SG~~ Monitor progress c) Identify deficiencies Decision 14/4 created the ATS Route Network Review Task Force (ARNR/TF). ATM/AIS/SAR/SG/14 referred matters on the deficiencies list relating to ATS routes to the ARNR/TF for study. First meeting of ARNR/TF expected September 2004.	ATM/AIS/SAR/SG ATM/AIS/SAR/SG ATM/AIS/SAR/SG ARNR/TF	~~2004~~ 2005 On-going On-going On-going
9	C 11/8	**SAR Capability Matrix** That, a) the "SAR Capability Matrix" be distributed to States for information and action as appropriate; and b) States provide information to ICAO by 30 April ~~2001~~ each year to permit the periodic update of the Matrix.	C	a) The SAR Matrix is reviewed by States at all ATM/AIS/SAR/SG Meetings b) States to update the Matrix by providing information to ICAO by 30 April each year	ATM/ASI/SAR/SG States ICAO	On-going On-going
10	RAN/3 R 7/18 APANPIRG C 8/9	Subject: SAR training and exercises Task: Facilitate SAR training and exercises	B	a) Co-ordinate SAR training available in the region b) Facilitate international participation in SAR exercises c) Bay of Bengal SAREX planned for second quarter 2005	ICAO States India	On-going ~~2003~~ On-going 2005
11	APANPIRG C 6/13	Subject: Appropriate SAR legislation, National SAR Plans and Amendments Task: Establish appropriate documentation and National SAR Committee	A	a) Implement appropriate legislation, establish National SAR Committees and Plans to support SAR operations b) Monitor developments of SAR Agreements between SAR organizations c) Establish and maintain a Register of SAR Agreements	States ATM/AIS/SAR/SG ICAO	On-going On-going On-going

No.	Reference	Subject/Task		Priority	Action Proposed / In Progress		Action By	Target Date
12	APANPIRG C 9/9	Subject:	Lack of consideration of Human Factors in the provision of ATS	B	a)	~~States to~~ Provide input including lessons learned (ICAO to encourage States to submit reports)	States ICAO	On-going
		Task:	Consider ways by which Human Factors aspects in the provision of ATS within the region could be improved		b)	ICAO to conduct seminars	ICAO	~~2004~~ On-going
13	APANPIRG D 8/	Subject:	Maintenance of the CNS/ATM/GM for the Region	B	a)	Update the Guidance Material taking into account the ICAO Headquarter's review and coordinate with States responsible for the Pacific Operations Manual	ATM/AIS/SAR/SG States	~~2003~~ 2005
		Task:	~~Maintain the CNS/ATM/GM~~		~~b)~~	~~Develop "Concept of Operations" for application in an initial ADS environment~~	~~ATS/AIS/SA+R/SG States~~	~~Completed~~
14	APANPIRG C 9/48	Subject:	~~Shortcomings &~~ Deficiencies in the field of air navigation	A	a)	Identify unimplemented items in the ANP	ATM/AIS/SAR/SG	On-going
					b)	Review mission reports	ICAO	On-going
		Task:	Develop and maintain ~~Shortcomings &~~ Deficiencies list		c)	Analyze differences from SARPs	ICAO ATM/AIS/SAR/SG	On-going
					d)	Review accidents / incidents	ICAO ATM/AIS/SAR/SG	On-going
15	APANPIRG/12	Subject: Lateral Offset Procedures		A	a)	Review ICAO Guidelines on Lateral Offsets	ATM/AIS/SAR/SG	On-going
					~~b)~~	~~Identify bodies developing offset procedures~~		
					c)	Coordinate with all parties concerned		
					d)	Identify issues regarding route structures where offsets could be applied		
					~~e)~~	~~Consider methodologies for safety assessment~~		
					f)	Implement 2NM right of route offsets in accordance with ICAO guidelines	States	2004/2005
16	APANPIRG/13 C12/6	Subject: Regional Contingency Planning Survey		C	a)	States to complete their State Contingency Plans, using framework supplied in their Y2K CP	ICAO/States	On-going
		Task:	That, ICAO survey States in the Asia/Pacific Region to determine the status of contingency planning and the extent to which contingency plans are exchanged between neighboring States.		b)	Coordinate with neighboring States		On-going
					c)	Send copy of their Contingency Plan to ICAO		On-going

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
17	FDTF Draft Decision 1/3	Review key priorities for implementation of CNS/ATM systems for the ASIA/PAC region, identify new items as required and monitor implementation	A	a) Include new Agenda item on the Agenda of ATM/AIS/SAR/SG meetings - "Review CNS/ATM activities in the Asia Pacific Region"; b) Review key priorities and recommend appropriate actions	ICAO/States ATM/AIS/SAR/SG	On-going On-going
18	FDTF Draft Decision 1/3	Make recommendation aimed at improving ATM and CNS support for Terminal Area and Airport Operations, respectively.	B	a) Study operational problems being experienced; b) identify requirements/areas for improvement from States	ATM/AIS/SAR/SG States	On-going Ongoing
19	FDTF Draft Decision 1/2	That recommendations 1/1, 1/10, 1/13, 4/1, 4/2, 4/4, 6/11 and 7/1 of AN-Conf/11 be studied by the ATM/AIS/SAR/SG, and action be taken to implement them.	B	Review recommendations and take appropriate action to implement	ATM/AIS/SAR/SG	On-going