INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF THE THIRTEENTH MEETING OF THE APANPIRG ATS/AIS/SAR SUB-GROUP (ATS/AIS/SAR/SG/13)

Bangkok, Thailand, 23 – 27 June 2003

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

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

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The thirteenth meeting of the APANPIRG Air Traffic Services/Aeronautical Information Services/Search and Rescue Sub-Group (ATS/AIS/SAR/SG/13) was held at the ICAO Asia and Pacific Regional Office, Bangkok, Thailand on 23 to 27 June 2003.

2. Attendance

2.1 The meeting was attended by 60 participants from 21 States, 3 International Organizations and 1 Charting Company. A list of participants is given at **Attachment 1**.

3 Officers and Secretariat

3.1 Mr. George P.S. Chao acted as Chairman of the Sub-Group throughout its duration.

3.2 Mr. David J. Moores, Regional Officer ATM, ICAO Asia/Pacific Office, was Secretary of the meeting and was assisted by Mr. John E. Richardson, Regional Officer ATM, Capt. Roger Mulberge, Regional Officer SO, Mr. Li Peng, Regional Officer CNS, and Mr. Dimitar Ivanov, Regional Officer MET.

4. Language and Documentation

4.1 The discussions were conducted in English. Documentation was issued in English with a total of 40 Working Papers, 1 Flimsy and 18 Information Papers being considered by the meeting. A list of papers presented is included in **Attachment 2** to this report.

5. Opening of the Meeting

5.1 The meeting was opened by Mr. D. Moores, who welcomed participants on behalf of Mr. L.B. Shah, Regional Director, Asia and Pacific Regional Office. He expressed concern for the exceptional circumstances that prevail in the civil aviation industry and the wider community arising from a combination of extreme events following the tragic event of 11 September 2001. These included the outbreak of Severe Acute Respiratory Syndrome (SARS) in the Asia Region in late March 2003, combined with the Iraq war which commenced around the same time. Added to the already ailing world economy, this had led to severe economic difficulties for the airline industry. In spite of the distressing situation facing international civil aviation, there have been notable successes in the region this past year due to the implementation of several airspace improvements such as the revised ATS route structure from Asia to Middle East and Europe South of the Himalayas (EMARSSH) project implemented on 28 November 2002, and the continued implementation of RVSM in the Asia Region, had brought benefits to operators and ATS providers alike. He encouraged States to increase their efforts to improve the efficiency of air traffic operations, which would in turn provide considerable benefit to the airlines. He regretted that, due to SARS which unexpectedly struck the region in late March, there was major disruption to the Regional Office meeting programme leading to short notice cancellations and postponements. Also the Regional Office was experiencing significant constraints and a serious staff shortage in ATM. He was pleased to welcome back Mr. John Richardson, former Regional Officer ATM who retired in April, who was brought back to assist with this and other meetings. He finally wished participants a successful meeting.

5.2 Mr. George Chao, Chairman of the Sub-Group, welcomed participants. He too expressed grave concern for the state of the civil aviation industry, in particular in the Asia Region following the outbreak of SARS. He invited representatives of States affected by SARS to comment on their experience in ATS in combating the disease. China, Hong Kong, China and Singapore briefed the meeting that they had all taken similar measures to protect operational staff to ensure uninterrupted services. This included operational staff temperature being checked prior to reporting for duty and again at the end of their duty period; quarantine arrangements put in place; standby rosters prepared in the event staff became ill, and back-up ATC facilities made available. States were pleased to report that no untoward events had occurred.

5.3 Mr. Chao outlined the scope of the work for the meeting which would include holding ad hoc meetings to deal with issues arising, including from the tenth meeting of the Southeast Asia ATS Coordination Group (SEACG/10), due to the postponement of SEACG/11 that had been scheduled to take place in April 2003. In addition, follow-up action on outstanding post implementation EMARSSH issues, AIS and SAR matters would need to be progressed.

5.4 Mr. Chao invited the representative of the International Airline Transport Association (IATA) to update the meeting on the impact of recent events on airlines. IATA advised the meeting that their member airlines were facing the most serious economic crisis in the history of the airline industry. An indication of this was the limited participation by airlines at this meeting. An example of the problem was best summed up by the experience of one airline in Hong Kong that saw its daily passenger load reduce from 35,000 passengers to about 5300 at the height of the SARS crisis, a drop of about 80 percent over two months. This resulted in a daily loss of about US$3 million. The airline had taken radical cost cutting measures with 60 percent of scheduled flights cancelled. Staff were on one week unpaid leave each month. Two weeks ago a resurgence of traffic began but to date passenger levels had only returned to about 50 percent of pre-SARS levels. It would be well into next year before it was likely that pre-SARS loads would return. However, an even longer period of time was expected to return to a profit situation. The airlines operating in the region had implemented major SARS protection programmes, which had prevented the spread of SARS by passengers on board aircraft. IATA was of the opinion that, it was in part, the picture painted by the media that had led to near panic reaction of the public to stop flying. The impact of SARS and world events has had a major impact on the economy of nations, trade and tourism. The task faced by all was to redevelop a robust airline industry. The airlines were vitally interested in efficiencies in the ATM system and, for some, it was a matter of survival. There were still many areas of inefficiency in ATC especially in the Bay of Bengal area which needed to improve. IATA is committed to work with all partners to ensure that maximum benefits are achieved in terms of safety and efficiency, and looked forward to a productive year when real progress would be made on long outstanding issues.

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

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

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

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

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

6.2 **List of Draft Conclusions**

6.3 List of Draft Decisions

AGENDA ITEM 1

PART II – REPORT ON AGENDA ITEMS

Agenda Item 1: Adoption of Provisional Agenda

1.1 The meeting reviewed the following provisional agenda presented by the Secretariat and adopted it as the agenda for the meeting.

Agenda Item 1: Adoption of Provisional Agenda

Agenda Item 2: Review the APANPIRG/13 Report and subsequent ANC/Council Actions with respect to ATS/AIS/SAR issues

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

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

Agenda Item 5: Review progress of the Asia/Pacific Airspace Safety Monitoring Task Force (APASM TF)

Agenda Item 6: Deficiencies in the Air Navigation field

Agenda Item 7: Update the list of ATS/AIS/SAR Tasks together with priorities

Agenda Item 8: SEACG/11 issues
a) Review action taken since SEACG/10 Meeting; and
b) Review current operations across South-East Asia and identify problem area

Agenda Item 9: Any other business

Agenda Item 10: Date and venue for next meeting

Agenda Item 2: Review the APANPIRG/13 Report and subsequent ANC/Council Actions with respect to ATS/AIS/SAR issues

2.1 The meeting recalled that following each APANPIRG meeting, the report of APANPIRG is reviewed by the Air Navigation Commission and the Council of ICAO. During these reviews, the Commission and Council note the report, make comments thereon and provide guidance or take action as appropriate.

2.2 The meeting reviewed the comments, with respect to ATS/AIS/SAR issues, from the Commission and Council. Specifically the meeting noted:

a) RVSM – The Commission appreciated the preparatory work in hand, such as the assessment of mountain wave activity, publication of the Aeronautical Information Circular (AIC) by States before 27 November 2002, operator readiness and safety evaluation, etc. In relation to RVSM phraseologies (Conclusion 13/1), the Commission noted that the Secretariat had already commenced work on an amendment to the PANS-ATM to incorporate applicable RVSM phraseologies to support RVSM implementation worldwide.

b) NOTAM and NOTAM checks (Conclusion 13/2), the Commission was apprised of the fact that Amendment 32 to Annex 15 – *Aeronautical Information Services*, presently being processed, already contains a proposal that is addressing NOTAM check list and that, following the adoption of Amendment 32, the Secretariat would publish a new edition of the *Aeronautical Information Service Manual* (Doc 8126) with the guidance material covering the subject.

c) AIS - Development of guidance material for operating procedures for AIS dynamic data and use of Internet (Conclusion 13/3), the Commission noted the intent of the Secretariat to develop guidelines for the operational use of the Internet by States to access and/or disseminate various categories of aeronautical information (such as WAFS products, OPMET data, AIS information).

d) EMARSSH - The Commission was pleased to note that the Revised ATS Route Structure, Asia to the Middle East and Europe, South of the Himalayas (EMARSSH) project, which entailed restructuring of international ATS routes taking into account RNP/RNAV and RVSM implementation, was commissioned effective 28 November 2002.

e) Protected frequency (Conclusion 13/7) - The Commission noted that a regional agreement did not exist concerning a protected frequency for in-flight broadcasting in the Asia/Pacific Region and called upon the Secretary General to take appropriate action.

f) Contingency Plans – (Conclusion 13/8) - The Commission will submit to the Council, during its 168th Session amendments to Annex 11 — *Air Traffic Services* and Annex 15 with an applicability date of 27 November 2003 concerning the development and promulgation of contingency plans.

g) AIDC (Decision 13/9) - The Commission noted that the Operational Data Link Panel (OPLINKP) had already initiated the development of a comprehensive amendment to the PANS-ATM and the *Manual of Air Traffic Services Data Link Applications* (Doc 9694) concerning ATS inter-facility

data communications (AIDC).

h) D-VOLMET/SIGMET (Conclusion 13/29) - The Commission agreed that the introduction of VOLMET through a very high frequency (VHF) data link would be the most appropriate way to overcome the capacity problem of the voice VOLMET and thus include SIGMET information in VOLMET.

i) FANS Action Team (Conclusion 13/47) - The Commission welcomed the initiative of APANPIRG to reconvene the FANS action team to develop an action plan so as to identify and implement the elements of the key CNS/ATM priorities which have not been implemented on a coordinated basis.

j) Deficiencies (Conclusion 13/46) - The Commission expressed appreciation for the initiative of APANPIRG in setting up a separate task force to develop detailed regional procedures for identification, assessment, reporting and monitoring of the status of air navigation deficiencies.

2.3 The meeting was advised that the Council had also expressed its appreciation for the leadership of APANPIRG in the development of the air navigation infrastructure in the Asia/Pacific regions by citing regional projects such as EMARSSH and RVSM.

2.4 Following the review, the meeting decided that several issues warranted or required further action and accordingly included those in the work programme for the meeting. The results of these discussions are contained under subsequent Agenda Items.

Outstanding Conclusions and Decisions of APANPIRG in ATS/AIS/SAR fields

2.5 APANPIRG/13 under Agenda Item 5 reviewed the progress made on the outstanding conclusions and the decisions of previous APANPIRG meetings in the ATS/AIS/SAR fields, which are relevant to the work of the ATS/AIS/SAR Sub-Group. The meeting reviewed and updated the list as shown in Appendix A to the Report on Agenda Item 2.

Key priorities for CNS/ATM implementation in the Asia/Pacific Region

2.6 The meeting noted that APANPIRG/13 reviewed the Key Priorities for the CNS/ATM Implementation in the Asia/Pacific Region and included ADS-B as a key priority.

2.7 The meeting reviewed the Key Priorities for CNS/ATM Implementation in the Asia/Pacific Region. In its review, the meeting noted that action had been taken at this meeting to progress the following key priorities (KP) related to the Sub-Group:

a) follow-up on the revised South China Sea ATS route implementation (KP-No. 3);

b) updating the WGS-84 implementation status (KP-No. 4);

c) RVSM implementation and follow-up action (KP-No. 5);

d) RNP implementation (KP-No. 6);

e) automatic dependent surveillance (ADS) (KP-No.7);

f) airspace management with a major ATS route review initiated (KP-No. 11);

g) data link application - action taken to establish FANS Action Teams for the Bay of Bengal and South China Sea areas (KP-No. 14); and

h) ADS-B implementation programme to be developed (KP-No. 15).

FANS Action Teams for the Bay of Bengal and the Western Pacific/South China Sea

2.8 The meeting on reviewing the Key Priorities noted that APANPIRG/13 Conclusion 13/47 called for re-convening the FANS Action Team for the Bay of Bengal (FAT-BOB), and to form a similar group for the Western Pacific/South China Sea (FAT-SEA). In follow-up to APANPIRG/13 and noting the report of the ANC and Council in support of this APANPIRG initiative, the Asia/Pacific Regional Office had commenced planning to establish the FANS Action Teams on the basis that FAT-BOB would report to the Bay of Bengal ATS Coordination Group (BBACG) and that FAT-SEA would report to the South-East Asia ATS Coordination Group (SEACG).

2.9 The Regional Office had planned for the BBACG/13 and FAT-BOB/2 meetings to be held on 23-27 June 2003. However, due to the impact of the SARS virus on travel within the region, several meetings have either had to be cancelled or rescheduled. Consequently, the FAT-BOB and BBACG were rescheduled to be held on 8-12 September 2003 at Bangkok. The inaugural meeting of the FAT-SEA will be held in conjunction with the SEACG/11 meeting tentatively scheduled from 8 to 12 December 2003 at Bangkok.

LIST OF OUTSTANDING CONCLUSIONS/DECISIONS IN ATS/AIS/SAR FIELDS

PART A – List as published under Agenda Item 5 to APANPIRG/13 (Changes recommended by the ATS/AIS/SAR/SG/13 in redline and ~~strikeout~~)

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 2/28		**Implementation of Area Control Service** That in view of recent improvements in the point-to-point communications and imminent improvement in HF air-ground communication, States concerned be urged to take urgent action to upgrade advisory and flight information services to area control service in the area over the Bay of Bengal by early 1993 along major ATS routes in their respective FIRs to enhance the safety of the rapidly increasing air traffic movement.	a) Area Control Services is now provided over the Bay of Bengal area. b) States to update the Regional Office on the current status. c) Some routes in the Arabian Sea within the Mumbai FIR are still classified Class F with Advisory Services.	~~On-going~~ ~~completed~~ On-going
C 3/24		**Implementation of RVSM & RNP in the Pacific Region** That, Australia, New Zealand and United States requested to prepare proposals for the implementation of RVSM and RNP in the Pacific Region based on the work done by the ISPACG.	a) RNP-10 has been implemented in most of the Pacific Region. Central Pacific in October 2002. b) RNP4 implementation being considered. Note: RVSM was implemented in the Pacific Region on 24 February 2000. This action on RVSM was completed.	~~On-going~~ Completed On-going
C 4/2	 C	**States in the Asia Region to review their SAR system** That, a) States in the Asia Region review their SAR system in the context of the matters which require urgent addressing in the PAC Region and detailed in Appendix B, and advise the ICAO Regional Office. Noted the Conclusion**.**	a) Review of Asian States SAR is continuing. The ICAO Regional Office is actively fostering the enhancement of SAR throughout the Region as part of the normal work programme. Deficiencies will be listed as they become apparent. b) States to update the Regional Office by 30 April each year	On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 6/13		**SAR Agreements** That, a) States are encouraged to develop formal SAR agreements on a bi-lateral or multi-lateral basis; and b) ICAO establish and maintain a register of SAR agreements between States.	a) The Regional Office continues to encourage States at regular intervals; and b) A register has not yet been established. Monitoring undertaken by ATS/AIS/SAR/SG. * This Task is superseded by Conclusion 11/9.	Closed Closed
C 6/19	C	**Japan Area "G"** That, the Task associated with Japan area "G" be removed from the work programme of ATS/AIS/SAR/SG as the problem had been determined not to be of an ATS or AIS technical nature, noting that APANPIRG and ICAO will take further steps as appropriate. Noted the conclusion and requested the Secretary General to pursue the subject as a matter of high priority and report the outcome to the Council and inform the APANPIRG accordingly.	The Task has been removed from the work programme of ATS/AIS/SAR/SG. No progress could be made by the Secretariat on this subject. Japan is currently undertaking internal co-ordination with respect to resolving this issue.	Completed ~~On-going~~
C 8/9	ANC	**Co-ordinated Activity – SAR** That, ICAO undertakes co-ordinated activity on a regional basis to improve the level of SAR response throughout the Asia/Pacific Region. Noted the conclusion and requested the Secretary General to take appropriate action.	a) A SAREX and associated SAR seminar focused on the Bay of Bengal area is programmed to take place in 2003~~3~~4; and b) A similar project will be organized for the South China Sea and Pacific islands areas. Note: To consider holding an ICAO seminar with the Hong Kong, China annual SAREX in November 2003)	2003~~3~~ 4 On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 8/39		**CNS/ATM Training Workshops and Seminars** That, the ICAO Regional Office continue to arrange CNS/ATM training workshops and seminars with the assistance of CNS/ATM Stakeholders and partners as necessary.	Several CNS/ATM workshops and seminars were held in the year 2000. Further workshops and seminar will be programmed to be held in 2004/05.	To be completed in 2004/05
	C	Noted the conclusion		
C 9/1		**Implementation of the Revised South China Sea ATS Route Structure** Noting the need to expedite progress, it is reiterated that, in the interest of improved efficiency and to enhance the on-going safety of operations over the South China Sea (SCS), China and Viet Nam are strongly urged to continue their efforts, under the auspices of ICAO, with the aim of resolving outstanding issues which will permit the early implementation of the Revised South China Sea ATS Route Structure.	The revised South China Sea ATS route structure was implemented on 1 November 2001.	~~Completed~~ Closed
	C	Noted the conclusion, its relation to APANPIRG/8 Conclusion 8/2 and the need to continue the on-going efforts of the parties with the support of ICAO to implement the revised South China Sea ATS route structure.		
C 9/2		**Transition to WGS-84 in the ASIA/PAC Region** That, in order to achieve uniformity in aeronautical data publication across the Regions, those States which have not yet determined and published WGS-84 data, urgently undertake to complete the task in the shortest possible time frame.	States are reminded that CNS/ATM relies on WGS84 as the only datum that can be loaded into the FMS database and is fundamental to the implementation of RNP, GNSS, and ADS. ICAO Regional Office continues to undertake follow-up action with States concerned. The non-implementation of WGS-84 is listed as a Deficiency.	On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
9/6		**Establishment of Area Control Service and 10-Minute Longitudinal Separation using Mach Number Technique** That, States, a) Identify ATS routes where the 10-minute longitudinal separation minima for RNAV equipped aircraft using MNT could be applied and subsequently implement such minima before the end of 1999. b) Identify ATS routes where 10-minute longitudinal separation minima can be applied for RNAV equipped aircraft without using MNT.	a) With respect to the application of MNT, an amendment proposal to the Regional Supplementary Procedures (Doc 7030) (APAC-S 00/5), which enables the application of the minimum longitudinal separation of 10 minute using MNT within the whole Asia/Pacific Region, was approved on 21 September 2001; and b) Implementation subject to provisions of ICAO separation standards.	Completed
	C	Noted the conclusion.	*This Task is Superseded by C 10/4	~~On-going~~ Completed
C 9/8		**ATS Route Amendments** It is reiterated that, States should provide information regarding implemented, re-aligned or deleted ATS routes to ICAO by 30 April of each year in order to permit the periodic update of the Document of ATS Route Network.	Some information has been received. States were reminded of this Conclusion at ATS/AIS/SAR/SG/12. The Document of ATS Route Network has been revised and updated. Any changes to the RANP should be notified by the State through an Amendment Proposal. An ATS Route Network Review Task Force is proposed under Conclusion 13/6 of ATS/AIS/SAR/SG/13.	On-going
C 9/9		**Human Factor in the Provision of ATS** That, a) ICAO consider holding Human Factors seminars in the Asia/Pacific Region which are focused directly on Human Factors associated with the provision of ATS, and; b) States be urged to make regular presentations to Sub-Group meetings regarding "lessons learned" relating to Human Factors associated with the implementation of the new CNS/ATM Systems.	a) The first ATS Human Factors Seminar was conducted in 2000. b) States are urged to provide information to ICAO on lessons learned.	On-going On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
	ANC	Noted the conclusion		
D 9/39		**CNS/ATM Training and Human Resource Development Task Force** That, a CNS/ATM Training and Human Resource Development Task Force be established with the following Terms of Reference: a) Recommend a strategy for a regional approach towards planning the development and implementation of CNS/ATM training; b) Recommend a co-ordination mechanism for the establishment of regional training capabilities in CNS/ATM systems; c) Recommend a framework for regional training plans and consider the applicability of including this material in the Regional Air Navigation Plan; d) Take into consideration the work of ICAO TRAINAIR, the ICAO Regional Human Resources Planning and Training Needs Study Group and the APANPIRG/7 Training Task Force and recommend mechanisms for regional integration of the outputs from these groups.	The Task Force held its first meeting in July 1999. A Regional CNS/ATM Training & Human Resource Development Strategy was developed. Further work may be progressed when the outputs of the ICAO Human Resource Planning and Training Needs Study Group become available.	On-going
C 9/51		**Strengthening the Regional Office Resources** That, the ASIA/PAC Regional Office resources be strengthened to permit the proper maintenance of the ASIA/PAC FASID and implementation of uniform methodology for the identification of shortcomings, the first step being the filling of the vacant AIS/MAP post.	Secretary General has been requested to take appropriate action.	On-going
	C	Noted the conclusion and requested the Secretary General to take appropriate action thereon		
C 10/2		**Uniform Promulgation of FIR Boundary Way-points** That, States review their aeronautical materials and that of their adjacent States and, through co-ordination with adjacent States, ensure uniform promulgation of FIR boundary way-points using WGS-84 as the basis of the Datum.	ICAO continues to monitor situation and will co-ordinate with individual States where the uniform promulgation of FIR Boundary way-points has not been achieved.	On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 10/3		**ANP Amendment Proposal to include SIGMET in VOLMET Broadcasts (ASIA)** That, the ASIA/PAC Air Navigation Plan (Doc 9673) be amended to add a requirement for inclusion of SIGMET in VOLMET broadcasts for the Asia Region.	Amendment proposal APAC 99/9-ATS has been drafted and will be sent to States and Organizations concerned. ~~consultation with provider States and users is continuing.~~	On-going
C 10/4		**Implementation of Area Control Service and 10-Minute Longitudinal Separation using Mach Number Technique in the Bay of Bengal area** 1) That, States in the Bay of Bengal area a) Complete the upgrade of airspace from advisory and flight information services to area control service along ATS routes, as appropriate; b) complete the implementation of 10-minute longitudinal separation minima using Mach Number Technique; and c) identify ATS routes where 10-minute longitudinal separation minima for RNAV equipped aircraft without using MNT could be applied and implement such minima. 2) That, Sub-regional ATS Co-ordination Groups concerned place a high priority on items 1) a), b) and c) above.	1) a) implemented; b) Implemented; and c) Implementation subject to provisions of ICAO separation standards. 2) Implementation continues to be co-ordinated through the Bay of Bengal ATS Co-ordination Group (BBACG).	 Completed Completed On-going completed
C 10/7	C	**Carriage of ACAS and Pressure-Altitude Reporting Transponders** That, a) ICAO survey States in the Asia Pacific Region and ascertain the implementation plans of States regarding the carriage of ACAS and pressure-altitude reporting transponders with respect to APAC-S 98/4 B ASIA/PAC RAC; b) Operators upgrade to ACAS as soon as possible. Noted the conclusion in relation to the worldwide implementation of ACAS II by January 2003 and requested the Secretary General to initiate a worldwide survey to ascertain the implementation plans of States for ACAS II.	a) ICAO conducted a survey on 22 October 1999, and information provided by States was compiled. In order to obtain additional and more specific information, ICAO conducted the 2nd survey in Aug 2000; and b) ATS/AIS/SAR SG recognized a need to establish a transition period to allow operators to use TCAS version 6.04 as an interim measurement before equipping their aircraft with ACAS II completely by 1 January 2002. * Superceded by Annex 6 provisions on ACAS II	Completed ~~On-going~~ Completed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 10/37		**Development of General Contingency Plans** That, The Asia Pacific Regional and State Y2K Contingency Plans and SLOAs or MOUs be used to form the basis on which to develop general contingency arrangements which will permit the continuation of air traffic in the event of any significant degradation of air traffic services and systems.	States have agreed to revise their general contingency plans using their Y2k State Contingency Plans as a model. A target date for finalization of State Contingency Plans to be the end of 2003. * Superseded by C12/6.	~~To be completed by 2003~~ Completed
C 11/1	ANC	**RVSM Minimum Monitoring Requirements** That, ICAO be requested to develop globally applicable short and long-term RVSM minimum monitoring requirements for aircraft. Noted the conclusion and that SASP is studying the short- and long –term objectives for RVSM monitoring.	The ICAO Separation and Airspace Safety Panel (SASP) is studying the short- and long-term objectives for RVSM monitoring.	On-going
C 11/4		**Guidance Material on CNS/ATM Operations in the Asia/Pacific Region** That, the revised Guidance Material on CNS/ATM Operations in the Asia/Pacific Region be adopted and circulated to States and appropriate International Organizations.	The Air Navigation Commission on reviewing the report of APANPIRG/11, was of the view that the revised edition of the document should not include material on the application of separation based on ADS until proposed amendments to the Procedures for Air Navigation Services – Rules of the Air and Air Traffic Services (PANS-RAC, Doc 4444), had been approved by ICAO. The revised Guidance Material on CNS/ATM Operations in the Asia/Pacific Region will be published in accordance with the guidance provided by the Air Navigation Commission, as soon as practicable. * This Task is superseded by Conclusions 12/38 and 12/39.	Closed
C 11/6		**Mandatory Carriage and Operation of Pressure-Altitude Reporting Transponders** That, States take immediate steps to mandate the carriage and operation of pressure-altitude reporting transponders within all FIRs in the Asia/Pacific Region.	Two surveys have been conducted in conjunction with the survey relating to the carriage of ACAS II for the purpose of monitoring the implementation status in the Region.	On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
			States, as a matter of urgency, to update the Regional Office on the status of implementation.	
C 11/7	C	**Implementation of ACAS II** That States; a) promulgate their implementation plans mandating the carriage and operation of ACAS II; and a) where this is in advance of the globally agreed date of 1 January 2003, provide for the continuing use of TCAS with Version 6.04A logic with a transition plan to phase out systems with Version 6.04A logic by 1 January 2002. Noted the conclusion and requested the Secretary General to urge States to take action to mandate the carriage of ACAS II by the globally agreed date of 1 January 2003.	Two surveys have been conducted. The secretariat continues to monitor the implementation. The result was presented to APANPIRG in the ATS/AIS/SAR/SG/11 Report. Non-implementation of ACAS II after 1 January 2003 is to be identified as Deficiency. *Superseded by Annex 6 provision effective 1 January 2003	~~1 January 2003~~ Completed
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.	a) The "SAR Capability Matrix" was distributed to States; b) Updated information to be presented at ATS/AIS/SAR/SG.	~~Completed~~ Closed ~~Completed~~ Closed
C 11/9	C 11/9	**Search and Rescue Agreements between States and Establishment of a Search and Rescue Register** That, States are to complete their SAR agreements with their neighbouring States and forward such agreements to the ICAO office to be included in a register on SAR Agreements.	States have been urged to complete their SAR agreements with their neighboring States. Information has been received from some ASEAN States on signed agreements with their neighbours.	On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
		Noted the conclusion and requested the Secretary General to urge States to complete SAR agreements with their neighbouring States and forward such agreements to ICAO.	A registry of SAR agreements is maintained by the Regional Office and States to update.	
C 11/10		**Development of a Revised ATS Route Structure - Asia to/from Europe/Middle East, South of the Himalayas (EMARSSH)** That, taking into account the introduction of Required Navigation Performance (RNP), Area Navigation (RNAV) and Reduced Vertical Separation (RVSM) into the Asia Pacific region, States, ICAO and IATA develop a revised ATS route structure - Asia to/from Europe and the Middle East south of the Himalayas, to gain the benefits of existing aircraft capabilities together with CNS/ATM enhancements.	A Task Force was established, led by a Core Team. Seven sub-regional meetings have taken place. Phase 1 implementation involving Australia, Indonesia, Malaysia and Singapore took place on 29 November 2001. Further Task Force meetings are planned to complete the work. Implementation of the revised route structure is scheduled for AIRAC Date of 28 November 2002.	~~To be completed on 28 November 2002~~ Completed
	ANC	Noted the conclusion and requested the Secretary General to organize an interregional coordination meeting to address interface issues to ensure end-to-end connectivity in the revised ATS route structure.	Note: EMARSSH Project Implemented on 28 November 2003.	
C 11/11		**Planning and Implementation Strategy** That, to achieve the success of the project, the following Strategy will be used:		
		a) development of a set of principles for restructuring the routes;	a) a set of Principles were adopted and agreed to;	Completed
		b) development of a project plan;	b) a project plan has been formulated;	Completed
		c) form a small project or core team to initiate, develop and lead the project through to implementation;	c) a Core Team was established consisting of Australia, Hong Kong, China, India, Singapore, IATA and ICAO as Chairman of the Core Team;	Completed
		d) plan a number of sub-regional meetings to progress the work; and	d) seven meetings have taken place. Further meetings, including a post-implementation review meeting, are planned; and	~~On-going~~ Completed
		e) full co-ordination with adjacent regions with regard to the development of the route structure and procedures to be maintained.	e) inter-regional coordination was conducted throughout the planning and implementation of this project.	~~On-going~~ Completed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 11/12		**Principles to be Used in the Development of the Route Network** That, the following Principles will be used in developing this route structure: 1. that, using the advantages of CNS/ATM implementation, a revised ATS trunk route structure between Southeast Asia and Europe/Middle East will be developed. The planning of these routes structures should take advantage of existing and on-going CNS/ATM technologies in order to provide safe and efficient air traffic management with the least impact to environmental concerns; 2. that, these ATS trunk routes be developed primarily for international long-haul and medium-haul flights, however they may also be used where necessary for other regional and domestic operations; 3. that, as much as possible, planning of ATS trunk routes will be on the basis that each route is laterally separated from each other; 4. that, the development of these route structures will be fully co-ordinated amongst the involved Asia/Pacific ATS Providers and airlines. Also, due to the length of these trunk routes, harmonisation is required with both MID and EUR Regions; and 5. that co-operation is required between all concerned states and the aviation industry to ensure an efficient flow of international aircraft operations between Asia, Europe and the Middle East.	All 5 Principles are being considered in the development and implementation of the revised ATS route structure.	~~Completed~~ Closed
C 12/1		**Observation of non-compliance of RVSM operational approval procedures** That, States are urged to co-operate with APARMO to investigate RVSM approval status of operators and aircraft with the aim of resolving problems of RVSM non-compliant operations.	States were urged to co-operate with APARMO in this regard.	On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 12/2	ANC	**Implementation of RVSM in the Western Pacific/South China Sea area** That, States are urged to continue their efforts to implement RVSM in the Western Pacific/South China Sea area in order to realize the foreseen benefits as early as possible. Noted the conclusion and was pleased to receive information that RVSM had been implemented successfully in this designated area effective from 21 February 2002.	The implementation of RVSM in the Western Pacific/South China Sea area which took place at 1930 UTC on 21 February 2002 went smoothly. Phnom Penh, Kota Kinabalu/Kuala Lumpur, Manila, Singapore, Bangkok, Ho Chi Minh FIRs and Sanya AOR were involved in this implementation. RVSM Task Force has been progressing its tasks towards the next phase implementation in the remainder of Western Pacific/South China Sea area, more specifically in Hong Kong, Bali/Jakarta/Ujung Pandang, Vientiane, and Hanoi FIRs and Sanya AOR, on 31 October 2002, which will complete RVSM implementation in the Western Pacific/South China Sea area.	~~On-going~~ Completed
C 12/3	ANC	**Implementation of RVSM in the Bay of Bengal area and beyond in conjunction with the planned implementation in the Middle East Region** That, States are urged to implement RVSM in the Bay of Bengal area and beyond in conjunction with the planned implementation in the Middle East Region on 27 November 2003 in order to realize the end-to-end seamless RVSM operation between Asia/Middle East/Europe south of the Himalayas. Noted the conclusion and requested the Secretary General to urge the States concerned to implement RVSM to provide an end-to-end Asia/Europe RVSM environment.	RVSM Task Force defined the airspace in which RVSM will be implemented on 27 November 2003, which includes Bangkok, Calcutta, Chennai, Colombo, Delhi, Dhaka, Jakarta, Karachi, Katmandu, Kuala Lumpur, Lahore, Male, Mumbai and Yangon FIRs. All States concerned have agreed to the implementation date of 27 November 2003. RVSM Task Force has been progressing its tasks towards the planned implementation in the Bay of Bengal and beyond.	On-going
C 12/4		**Inter-regional co-ordination between the Asia and Middle East Regions in relation to RVSM implementation** That, ICAO facilitate inter-regional co-ordination between the Asia and Middle East Regions involving States concerned with the aim of joint harmonized implementation of RVSM.	A Joint Interface Meeting of RVSM Task Forces between the Asia/Pacific and Middle East Regions involving India, Maldives and Pakistan from the Asia Region and Afghanistan, Islamic Republic of Iran, Oman, the United Arab Emirates (UAE) and Yemen from the Middle East Region, as well as IATA and IFALPA, ~~is scheduled~~ was held in Abu Dhabi, UAE, from 19 to 20 October 2002. A second and final meeting before implementation on 27 November 2003 is scheduled in Abu Dhabi on 27-28 August 2003.	On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 12/5		**Implementation of the EMARSSH project** That, to gain benefits in terms of safety, efficiency and capacity enhancements that meet the objectives envisaged in the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750), participant States and international organizations concerned are urged to make full commitment to the EMARSSH project to meet the implementation date of 28 November 2002.	Six EMARSSH Task Force meetings have taken place since APANPIRG/12. The revised ATS route structure has been agreed to by all States concerned and IATA. AIS documentation will be promulgated on AIRAC date of 5 September 2002 with an effective date for implementation of the revised route structure and subsequent deletion of some previous routes of 28 November 2002.	~~On-going~~ Completed
	ANC	Noted the conclusion and requested the Secretary General to call upon participating States and international organizations to make a full commitment to this project.		
C 12/6		**Regional Contingency Planning Survey** That, ICAO survey Sates in the Asia/Pacific Region to determine the status of contingency planning and the extent to which contingency plans are exchanged between neighbouring States.	A survey from States on the status of their National Contingency Plan arrangements has not been completed. Nevertheless, a framework for National Contingency Plans was presented to States at ATS/AIS/SAR/SG/12. States were encouraged to use this framework in developing their Plans in coordination with their neighbouring States. States had agreed under C10/37 to revise their Contingency Plans by 2003 and to update the Regional Office	On-going
C 12/7		**Guidance Manual for Aeronautical Information Services in the Asia/Pacific Region** That, the *Guidance Manual for Aeronautical Information Services in the Asia/Pacific Region* shown at Appendix G to the Report on Agenda Item 2.1 be published in accordance with the established procedures.	The first edition of the Guidance Manual will be distributed to States in the Region shortly.	~~On-going~~ Completed
	ANC	Noted the conclusion and that the guidance manual would be published in accordance with established procedures.		

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 12/8		**Special implementation project for an AIS seminar in 2002** That, ICAO urgently consider a proposal for an Asia/Pacific Special Implementation Project to be established in order to hold an AIS Seminar in 2002 with the primary objective to improve AIS in relation to AIS automation and quality assurance programme.	ATS/AIS/SAR/SG AIS Automation Task Force developed a detailed programme of the Seminar. The AIS Seminar is planned in Bangkok in mid-December 2002.	~~On-going~~ Completed
	C	Noted the conclusion and that such a project would be put forward for the Council's approval through established procedures.		
D 12/9		**Development of lateral offset procedures for application in the Asia/Pacific Region** That, as a matter of urgency, the ATS/AIS/SAR/SG develop lateral offset procedures for application in the Asia/Pacific Region, and in co-ordination with other regional planning groups and bodies concerned, develop global offset procedures.	ATS/AIS/SAR SG/12 meeting reviewed progress to develop regional and global lateral offset procedures. The meeting noted that APANPIRG/12, D12/9 had been overtaken by events and ICAO had revised the global guidelines and issued a State letter. Work is ongoing by SASP to develop further guidelines and global procedures are being progressed by ICAO HQ. At the regional level, ISPACG is considering implementing of 1 NM lateral offsets in the South Pacific Region in September 2002 and the results of this activity should be analysed before proceeding with a regional implementation programme. The meeting recommended that APANPIRG/13 D 12/9 is no longer relevant. Consideration should be given to conduct a study of States' requirements to implement lateral offsets and based on this information, to develop a coordinated approach to regional implementation. *Note: SASP is developing a 2 NM offset procedure which will have global application and D12/9 is overtaken by events. Also, C13/4 refers.	~~On-going~~ Completed
	ANC	Noted the conclusion and that the development of lateral offset procedures for regional implementation should be in accordance with global guidelines.		

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 12/10	C	**Special implementation project – International seminar and SAREX** That, ICAO urgently consider a proposal for an Asia/Pacific Special Implementation Project to be established with the primary objective to improve search and rescue services, co-ordination and cooperation between States. Noted the conclusion and that such a project would be put forward for the Council's approval through established procedures.	Due to other priorities in the ATM field, it was decided to defer the Special Implementation Project on the International Seminar and SAREX to 2002. States will be approached regarding the hosting of this SAREX/Seminar. When this decision has been finalized, other States of the Bay of Bengal area will be invited to contribute to the conduct and organizational aspects of making this event a success. Note: The Seminar and SAREX has been further deferred until 2004 and consideration to be given to holding an ICAO seminar with the Hong Kong China annual SAREX In November 2003.	On-going
D 12/11		**ATS/AIS/SAR Subject/Task List** That, the ATS/AIS/SAR Subject/Task List as contained in Appendix I to the Report on Agenda Item 2.1 be adopted as the current work assignment for the ATS/AIS/SAR Sub-Group replacing the current Subject/Task List as assigned by APANPIRG/11.	ATS/AIS/SAR/SG/12 meeting reviewed and updated the Subject/Task List. This updated List is at Appendix A to the Report on Agenda Item 7. The meeting formulated the Draft Decision 12/9.	~~Complete~~d Closed
C 12/38		**Revision and Publication of Guidance Material on CNS/ATM Operations in the Asia/Pacific Region** That, a) the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region*, Chapter 4, paragraph 6 on the application of separation using ADS be revised in line with the views of the Air Navigation Commission (157-2) on reviewing the report of APANPIRG/11 as follows: **6. Application of procedural horizontal separation using ADS** Aircraft position information obtained by ADS may be used for the application of procedural horizontal separation minima contained in the PANS-RAC (Doc 4444), Part III. Area Control Service where aircraft position reports are necessary to apply the appropriate separation minimum.	~~Events have overtaken this Conclusion. The ANC (159-7) on agreeing to Amendment 1 to PANS-ATM (applicability date 28 November 2002), also agreed that the Asia/Pacific Guidance Material should be reviewed to ensure it was in accordance with the procedures contained in PANS-ATM. Accordingly, a comprehensive technical review was carried out by ANB and revealed significant differences with PANS-ATM, therefore it will be necessary to revise the Guidance Material. Also, the HQ review noted that informal ATS coordinating groups also publish similar guidance material and there is a need to consider whether a proliferation of such documents is necessary, particular in terms of promoting uniform application of ATS data link applications and supporting transparency between ICAO regions.~~ ICAO Regional Office will coordinate with IPACG and ISPACG (jointly responsible for the POM) and ICAO Headquarters to revise the POM to meet ICAO requirements. In regard to the introduction of	On-going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
		Note: - ICAO is processing amendments to the PANS-RAC to include procedures for the provision of ADS services for air traffic control with an applicability date in November 2002. b) the revised *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region* be published by ICAO as soon as practicable	ADS and CPDLC in the Asia Region, States should base their operational procedures on the POM, and the document developed to become the Asia/Pacific Operations Manual. This would ensure that common procedures are used within the Region. The meeting agreed to refer this matter to the SEACG and BBACG for further action (Draft Conclusion 13/13 of ATS/AIS/SAR/SG/13 refers). ~~A working paper is being presented to APANPIRG/13 addressing the above issues~~. Note: This Task is on the work programme of the ATS/AIS/SAR/SG and will be progressed with priority.	
D 12/39		**Development of guidance material on the use of ADS for the application of separation** That, the CNS/ATM/IC/SG review the provisions in the PANS-ATM. Part XII (Doc 4444) on ADS services, and develop guidance material on the use of ADS for the application of separation to be included in the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region* as appropriate.	In light of Amendment 1 to PANS-ATM and the review by ANB of the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region*, work on this item has not been progressed and needs to be taken into account in the overall review of this Guidance Material.	On-going
D 12/41	ANC	**Establishment of a Target Level of Safety for the Asia/Pacific Region** That, a target level of safety of 5×10^{-9} fatal accidents per flight hour per dimension be established for en-route systems in the Asia/Pacific Region where a TLS is required for implementation of separation minima. Noted that APANPIRG had established, by a regional agreement and in accordance with ICAO provisions, a target level of safety (TLS) of 5×10^{-9} fatal accidents per flight hour per dimension for en-route systems in the Asia/Pacific Regions, where a TLS is required for implementation of separation minima	A target level of safety of 5×10^{-9} fatal accidents per flight hour per dimension was adopted for en-route systems in the Asia/Pacific Region.	~~Completed~~ Closed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 12/43		**Provision of ICAO guidance material on the establishment of airspace safety arrangements**		
		That, as matter of urgency, ICAO develop guidance material for States to establish safety management arrangements in accordance with Annex 11 and PANS-ATM provisions on airspace safety management applicable on 1 November 2001.	ICAO is preparing a global guidance material.	~~On-going~~ Completed
	ANC	Noted the conclusion and that the Secretariat had already made considerable progress in the development of draft material, which is scheduled for completion by mid-2002.	Note: ICAO has completed guidance material to be presented to the AN-Conference /11 and this Task is no longer required.	
D 12/44		**Establishment of a task force to develop an airspace safety system performance-monitoring structure for the Asia/Pacific Regions**		
		That**,** a Task Force be established reporting to APANPIRG to develop an airspace safety system performance monitoring structure and funding mechanism for the Asia/Pacific Region in accordance with ICAO provisions. The composition, guiding principles and Terms of Reference of the Task Force are as shown in the Appendix B to the Report on Agenda Item 3.	The APASM TF held three meetings and one working group meeting in Bangkok since APANPIRG/12 and prepared a business plan recommending the establishment of a Regional Airspace Safety Monitoring Agency (RASMA) for the Asia/Pacific Region, which will be presented in a working paper to APANPIRG/13.	Completed
	ANC	Noted the decision and requested the Secretary General to develop provisions for a global approach to establishing airspace safety performance-monitoring arrangements.	Note: The APASM/TF continued its work and will present a final report to APANPIRG/14.	
C 12/45		**Key Priorities for CNS/ATM Implementation**		
		That, the updated key priorities for CNS/ATM implementation at Appendix E to the Report on Agenda Item 3 be adopted.	The Key Priorities for CNS/ATM Implementation were reviewed at CNS/ATM/IC/SG/9 as well as at ATS/AIS/SAR/SG/12.	~~Completed~~ Closed
D 12/46		**Amendment to the Terms of Reference of the CNS/ATM/IC/SG**		
		That, the CNS/ATM/IC/SG should continue as an active Sub-Group of APANPIRG and the revised Terms of Reference be adopted as shown in Appendix F to the report on Agenda Item 3.	The Terms of Reference of the CNS/ATM/IC/SG were reviewed at APANPIRG/12.	~~Completed~~ Closed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
D 12/47		**Follow-up actions on the Conclusions of ALLPIRG/4 Meeting** That, the following conclusions of ALLPIRG/4 meeting be addressed by the relevant sub-groups as part of their work programme and report its outcome. Conclusions 4/1, 4/2, 4/8 and 4/13- CNS/ATM IC SG Conclusions 4/3 and 4/7- ATS/AIS/SAR SG Conclusions 4/3 - CNS/MET SG Conclusions 4/10 and 4/11- All Subgroups Conclusion 4/1 - A general framework and terms of reference for interregional coordination meetings That the Council agree to adopt a general framework and terms of reference for interregional coordination meetings (IRCMs) as set out in Appendices A and B to the report on Agenda Item 2. Conclusion 4/2 - Interregional meetings specifically dedicated to interface areas That ICAO convene interregional meetings, as and when required, to address the specifically focused interface problems and other issues of neighbouring States and/or neighbouring regions as a whole. Conclusion 4/3 - Increased emphasis on addressing interregional issues and missing elements That, with a view to facilitating interregional planning and the harmonization of air navigation systems, ICAO and the CNS/ATM partners put more emphasis on the addressing of interregional issues and the missing elements as outlined in Appendix C to the report on Agenda Item 2. Conclusion 4/7 - Adoption of a uniform format for the reporting of WGS-84 implementation That the table available at Appendix D to the report on Agenda Item 2 be adopted as a uniform format for the reporting of WGS-84 implementation by PIRGs and States.	Both CNS/ATM/IC/SG and ATS/AIS/SAR/SG noted the results of ALLPIRG/4 Conclusions. Action already in hand as part of the work programme of the Sub-Groups. Further follow-up action will be taken as appropriate.	On Going

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
		Conclusion 4/8 - Environmental benefits of CNS/ATM systems That: a) ICAO Regional Offices and PIRGs support ICAO/CAEP efforts to expand the methodology for the quantification of CNS/ATM environmental benefits to each region by collecting data, as necessary; b) ICAO/CAEP continue its work on the expansion of the methodology for the assessment of the environmental benefits associated with the implementation of CNS/ATM systems to the various regions; and c) ICAO proceeds with the revision of the methodology for inclusion in the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750) at the earliest opportunity. Conclusion 4/10 - Reporting of shortcomings and deficiencies That where a State, by virtue of Article 38, has notified ICAO of a difference to Standards and Recommended Practices governing the actual provision of facilities and services listed in an air navigation plan, the non-implementation of a facility or service, in the context of the uniform methodology for the identification and reporting of air navigation shortcomings and deficiencies, should not be reported as either a shortcoming or a deficiency when it has no negative impact on safety, regularity and/or efficiency. Conclusion 4/11 - Single definition That ICAO be invited to refine the following single definition of a shortcoming/deficiency with a view to its incorporation into the uniform methodology for the identification and reporting of air navigation shortcomings and deficiencies: "A *deficiency* is a situation where a facility, service or a procedure is not provided in accordance with ICAO Standards and Recommended Practices which has a negative impact on the safety, regularity and/or efficiency of international civil aviation". Conclusion 4/13 - Database developments That ICAO:	Conclusion 4/8: CNS/ATM/IC/SG/9 considered the advantages of establishing a Working Group to develop a position paper regarding environment benefits of CNS/ATM systems for consideration at the next CNS/ATM/IC/SG meeting. The Secretariat recommended that the Working Group's first priority should be the development of Terms of Reference for an environmental Task Force. Australia, Japan, New Zealand and the United States of America agreed to participate in the Working Group. Input would be sought from other States and Organizations. To save on cost, it was suggested that the co-ordination could be achieved by e-mail and, if necessary, conference telephone facilities. It was further proposed that a dedicated area on the ICAO Asia/Pacific web-site be established, where States and Organizations could post environmental papers and related materials.	

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
		a) post promptly all tabular material from all regional air navigation plans relating to facilities and services to an ICAO-controlled web site in a simple PDF format; b) invite CNS/ATM partners to post their relevant planning material on the web site referred to in a) above; c) provide appropriate free access to relevant ICAO Headquarters' Sections, Regional Offices, PIRGs and participating CNS/ATM partners; d) maintain the currency of this database, *inter alia*, to take account of amendments made to hard copy ANPs; e) with the assistance of PIRGs and interested CNS/ATM partners, refine and develop the database, as a matter of urgency, to provide access and functionality commensurate with its use as a planning tool and in line with ICAO sale of publications		

PART B – List of Conclusions/Decisions in ATS/AIS/SAR Fields from APANPIRG/13

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/1		**Inclusion of phraseologies related to RVSM operations in the ICAO Regional Supplementary Procedures (Doc 7030) for Asia and Pacific Region** That, the phraseologies related to RVSM operations contained at **Appendix B** to this Report on Agenda Item 2.1, be adopted for inclusion in the ICAO Regional Supplementary Procedures (Doc 7030) for application in the Asia and Pacific Region, subject to coordination and harmonization with other Regions.	ICAO Regional Office to update status of proposed amendment to SUPPS. Note: The proposed amendment to the PANS-ATM supersedes a requirement to amend the SUPPs.	Completed
	ANC	Noted the conclusion and that the Secretariat had already commenced the work on an amendment to the PANS-ATM to incorporate applicable RVSM phraseologies to support RVSM implementation worldwide.		
C 13/2		**Development of procedures relating to multi-part NOTAM and NOTAM Checks by NOTAM** That, ICAO consider developing procedures relating to multi-part NOTAM and NOTAM Checks by NOTAM based on the procedures contained in the draft Chapter 3 of the *Guidance Manual for AIS in the Asia/Pacific Region* at Appendix C to the Report on Agenda Item 2.1, for global application, and including them in the *Aeronautical Information Services Manual* (Doc 8126).	ICAO to include guidance material covering NOTAM Check Lists in update to Aeronautical Information Services Manual (Doc 8126)	Ongoing
	ANC	Noted the conclusion and requested the Secretary General to take this into account when updating the *Aeronautical Information Services Manual* (Doc 8126).		
C 13/3		**Guidance Materials concerning the operating procedures for AIS dynamic data (OPADD) and the use of the Internet for information transfer as Chapters 3 and 4 respectively of the Guidance Manual for AIS in the Asia/Pacific Region** That, the guidance materials concerning the operating procedures for AIS dynamic data (OPADD) (at Appendix C to the Report on Agenda Item 2.1) and the use of the Internet for information transfer (at Appendix D) be published as Chapters 3 and 4 respectively of the *Guidance Manual for AIS in the Asia/Pacific Region* be published in accordance with the established procedures.	ICAO to develop guidelines for the operational use of the Internet by States to access and/or disseminate various categories of aeronautical information.	Completed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
	ANC	Noted the conclusion and that the Secretariat was developing a proposal for the development of guidelines for the operational use of the Internet by States to access and/or disseminate various categories of aeronautical information.	Chapter 3 (OPADD) already included in regional Guidance Manual – Chapter 4 (Internet) being developed by ICAO Headquarters	Ongoing
C 13/4		**Survey of State planning to implement lateral offset procedures** That, the Asia/Pacific Regional Office undertake a survey of State planning to implement lateral offset procedures, and to remind States that implementation of lateral offset procedures should be done in a coordinated and harmonized manner based on the ICAO guidelines, and taking into account planning by States in adjacent FIRs and regions.	Regional Supp Amendment for implementation of 1 NM offset in specified FIRs in Pacific Region in final stage of processing by ICAO. Further development of offset procedures ongoing by SASP and other bodies for use of 2NM offset procedure. Note: This task is overtaken by events and the provision of new guidelines for 2 NM offset is under development by SASP.	Completed
C 13/5		**Development of lateral offset procedures for application in the Asia/Pacific Region** That, as a matter of urgency, the ATS/AIS/SAR Sub-Group develop lateral offset procedures for application in the Asia/Pacific Region in coordination with other regional planning groups and bodies concerned.	Further development of the use of lateral offsets to be considered by the Bay of Bengal ATS Coordination Group (BBACG) and the South-East Asia ATS Co-ordination Group. Note: This task is overtaken by events and the provision of new guidelines for 2 NM offset is under development by SASP.	Ongoing

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/6		**Amendment to the Regional Supplementary Procedures** That, the MID/ASIA and PAC *Regional Supplementary Procedures*, ICAO Doc 7030 be amended in accordance with the proposed amendment in Appendix x to the Report on Agenda Item 2.1.	The proposed amendment to the SUPPs in relation to the application of 55.5 km (30 NM) using ADS and 93 km (50 NM) lateral and longitudinal separation minima within the Asia/Pacific Regions is currently being coordinated with the originating States and ICAO Headquarters prior to circulation.	Ongoing

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/7		**Adoption of a regionally protected frequency for Traffic Information Broadcasts by Aircraft (TIBA)** That, a) A designated VHF radio telephony (RTF) frequency of 128.95 MHz be promulgated in the Regional Supplementary Procedures (Doc 7030) for the Asia/Pacific Region for the use of Traffic Information Broadcasts by Aircraft to permit reports and relevant supplementary information of an advisory nature to be transmitted by pilots; and, b) All States in the Asia/Pacific Region to include the frequency of 128.95 for the use of TIBA in their contingency plans.	The SUPPS to be amended as follows: a) Delete 128.95 as the Air-to-Air frequency and replace with 123.45 in accordance with Annexe 10; and b) 128.95 to be re-assigned for TIBA procedures.	Ongoing Ongoing
	ANC	Noted the conclusion and requested the Secretary General to take appropriate action.		
C 13/8		**Contingency Planning** That, States review, amend or develop contingency plans that will: a) provide a safe and orderly flow of international air traffic in the event of disruptions of air traffic services and related supporting services, b) preserve the availability of major world air traffic routes within the air transportation system: and c) ensure continuous access to airspace for international civil flights over areas of the high seas.	ICAO Headquarters to amend Annexes 11 and 15 – intended applicability date 27 November 2003	Completed
	ANC	Noted the conclusion and that the Commission will submit to the Council, during its 168th Session, amendments to Annexes 11 and 15 with an applicability date of 27 November 2003 concerning the development and promulgation of contingency plans.		

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
D 13/9		**ATS interfacility data communications (AIDC)Review Task Force** That, the Task Force established by Decision 5/1 of APANPIRG for the development Interface Control Document (ICD) for ATS Inter-facility Data Communication (AIDC) be reconvened to undertake the task of reviewing and updating the ICD. The task be completed prior to the ATS/AIS/SAR SG/13 meeting in order to permit the Sub Group to review the ICD.	Follow-up suspension a) The AIDC Review Task Force completed it's review at a meeting convened in Brisbane, Australia on 27 – 28 March 2003.	Completed
	ANC	Noted the decision and that the OPLINKP had already initiated the development of a comprehensive amendment to the PANS-ATM and the *Manual of Air Traffic Services Data Link Applications* (Doc 9694) concerning AIDC which would facilitate the amendment at the regional interface control document (ICD) level.	b) ICAO Headquarters is currently developing a comprehensive amendment to the PANS-ATM and the *Manual of Air Traffic Services Data link Applications* (Doc 9694)	Ongoing
D 13/10		**ATS/AIS/SAR Subject/Task List** That, the ATS/AIS/SAR Subject/Task List as contained in Appendix L to the Report on Agenda Item 2.1 be adopted as the current work assignment for the ATS/AIS/SAR Sub-Group replacing the current Subject/Tasks List as assigned by APANPIRG/12		Ongoing
C 13/19		**ADS-B Study and Implementation Task Force** That, a) a multidisciplinary Task Force be established consisting of members from Australia, China, Hong Kong China, Fiji, India, Japan, Mongolia, Singapore, United States, IATA, IFALPA, IFATCA and SITA with the Term of Reference provided in Appendix G to the report on Agenda Item 2.2; and b) the result of the study to be presented to APANPIRG/14 meeting in 2003.	The ADS-B Study and Implementation Task Force has been established and the first meeting was convened in Brisbane, Australia on 24 – 26 March 2003 (ADS-B SITF/1)	Completed
	ANC	Noted the conclusion and requested the Secretary General to monitor task force developments and encourage States to participate in studies to select an ADS-B link, taking into account cost/benefit analyses.	Under the TORs, the ADS-B Study and Implementation TF is to complete its work and present the result to the ATS/AIS/SAR/SG, CNS/MET/SG and to the APANPIRG/14 meetings to be held in 2003.	Completed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/23	C	**Process of review and Notification of difference *(to Annexes)*** That, States establish a procedure with assistance of a database for review of SARPs and notification of differences to Annexes in a timely and comprehensive manner. Noted the conclusion and invited the Secretary General to encourage States to establish procedures for implementation of SARPs and notification of differences to Annexes in a timely and comprehensive manner.	ICAO Regional Office to coordinate with Australia to obtain guidance on Australian practice and methodology for use by States in the development of a similar approach.	Completed
C 13/29	ANC	**Inclusion of SIGMET in VOLMET** That, States be encouraged to fully implement D-VOLMET to permit suitably equipped aircraft to receive timely SIGMET information amongst other requisite meteorological information. Noted the conclusion and requested the Secretary General to encourage States to implement VOLMET data link service (D-VOLMET) to permit suitably equipped aircraft to receive timely SIGMET information amongst other requisite meteorological information.	Action being taken by ICAO Headquarters to circulate State Letter urging States to implement D-VOLMET.	Completed
C 13/34		**Strengthening the Civil/Military Coordination Programme** That, due to an increase in military activity within and adjacent to the Asia Pacific Region, 1. States are urged to: a) remain vigilant with regard to military activity within or near their area of responsibility; b) continue effective civil/military coordination with military authorities concerned; and, c) advise and coordinate with adjacent States and ICAO of any significant increase in military activity which may have an affect on international aircraft operations. 2. ICAO to arrange an Asia/Pacific Regional Seminar on Civil/Military Coordination and, if considered necessary, to follow-up with sub-regional Civil/Military Co-ordination Workshops in areas as deemed appropriate.	A Seminar had been planned for 2003, but postponed due to disrupted meeting schedule, and to be re-scheduled for 2004.	Ongoing

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
D 13/38		**Developing an Asia/Pacific Regional Position for AN-Conf/11** That, the subjects of the following agenda items of AN-Conf/11 be studied and taking into account the State's position Subgroups develop and present the regional perspective to APANPIRG/14 scheduled for 4-8 August 2003. Agenda Items 1, 2.1, 3 and 4: ATS/AIS/SAR SG Agenda Items 2.3, 2.4 and 2.5 CNS/ATM IC SG Agenda Items 2.2, 5,6 and 7: CNS/MET SG	In consultation with ICAO Headquarters and in light of the Agenda of AN Conf/11, it is considered that a regional position on the issues is not required	Ongoing
C 13/39		**Asia/Pacific Regional Plan for the New CNS/ATM Systems** That, the updated Asia/Pacific Regional Plan for the New CNS/ATM Systems be adopted and circulated for use by States and International Organizations.	.	Completed
C 13/41		**Inclusion of ADS-B on the list of Key Priorities of the CNS/ATM Implementation in the Asia/Pacific Region** That, a task on ADS-B be included on the list of Key Priorities of the CNS/ATM Implementation in the Asia/Pacific Region.	ADS-B has been included on the list of Key Priorities of the CNS/ATM Implementation in the Asia/Pacific region	Completed
D 13/42		**Inclusion of a table of APANPIRG contributor bodies and associated groups in the APANPIRG report** That, a table of APANPIRG contributory bodies and associated groups be included in the report of APANPIRG meetings and be updated periodically by the APANPIRG Sub-Groups.	The lists of contributory bodies of APANPIRG and associated groups issues will be presented to ATS/AIS/SAR/SG/13 for review and update.	Completed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/44		**Support for States to establish Safety Management Systems to meet the obligation of Annex 11** That, ICAO and States with safety management expertise support the implementation of Annex 11 safety management system requirements through holding seminars, workshops and the provision of guidance material.	This subject has been addressed by the APASM TF which endorses the need for assistance to States to establish Safety Management Systems, supported by the following: a) Hold SMS Seminar in the first quarter of 2004; b) Consideration be given to development of regional guidance material; and c) Encourage States with appropriate expertise to assist other States with the development of their SMS.	 Ongoing Ongoing Ongoing
C 13/45	 ANC	**Continuation of the work of the Asia Pacific Airspace Safety Monitoring (APASM) Task Force to develop a Regional Airspace Safety Monitoring Agency (RASMA) for the Asia/Pacific Region** That**,** the APASM Task Force continue as a priority the development of an Asia Pacific Region RASMA in accordance with ICAO provisions. The amended Terms of Reference and composition of the Task Force are shown in the Appendix F to the Report on Agenda Item 3. Noted the conclusion and requested the Secretary General to monitor the regional developments and formulate a uniform approach for global harmonization of regional safety monitoring arrangements through consultative meetings with regional bodies.	 The APASM Task Force has completed it's Work Program and recommends the establishment of a RASMA SG of APANPIRG.	 Completed

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
D 13/46		**Establishment of a Task Force on Deficiencies in the Air Navigation Field** That, a) an APANPIRG Task Force be established with Terms of Reference and composition shown in Appendix A to the Report on Agenda Item 4; b) the Task Force develop detailed regional procedures for identification, assessment, reporting and monitoring of the status of air navigation deficiencies as a supplement to the Uniform Methodology; and c) the Task Force report its results to APANPIRG/14.	The Deficiencies Task Force has been established and the first meeting is scheduled to commence on 21 July 2003	Ongoing Ongoing Ongoing
	ANC	Noted the decision and requested the Secretary General to extend this approach to other regions so as to develop detailed regional procedures for identification, assessment, reporting and monitoring of the status of air navigation deficiencies as a supplement to the uniform methodology.		

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/47 (Corrig. No.1)		**Key Priorities for CNS/ATM Implementation** That, in order to facilitate the implementation of the Key Priorities for CNS/ATM in the Asia/Pacific Region, ICAO is requested to: a) re-convene the FANS Action Team for the Bay of Bengal (FAT-BOB), and form a similar group for the Western Pacific/South China Sea; and, b) adopt the broad terms of reference for these groups as follows: i. identify elements of the key CNS/ATM priorities which have not been implemented on a coordinated basis; ii. consider the implementation of these elements, on a prioritized basis, taking into account user operational requirements, cost-benefit and environmental concerns; and, iii. develop action plans for CNS/ATM implementation as appropriate on a collaborative basis.	Meetings to be scheduled for the fourth quarter 2003	Ongoing Ongoing
	ANC	Noted the conclusion and that the FANS action team has been reconvened to develop an action plan so as to identify and implement the elements of the key CNS/ATM priorities which have not been implemented on a coordinated basis.		

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

3.1 **RVSM Implementation**

3.1.1 The meeting recalled that the APANPIRG/9 meeting (August 1998) established the ICAO RVSM Implementation Task Force (RVSM/TF) to implement the RVSM within the Asia Pacific Region. The meeting reviewed the work of the RVSM Task Force since the ATS/AIS/SAR/SG/12 Meeting (June 2002).

3.1.2 The Task Force met five times since its activities were reported to ATS/AIS/SAR/SG/12 as shown below:

Special Coordination Meeting: 29-31 July 2002, Manila, Philippines

RVSM TF/16: 23-25 September 2002, Bangkok, Thailand

RVSM Joint Coordination Meeting MID/ASIA: 9-20 Oct 2002, Abu Dhabi, United Arab Emirates

5th RVSM Seminar: 15-17 January 2003, Bangkok, Thailand

RVSM TF/17: 20-24 January 2003, Bangkok, Thailand

3.1.3 The Task Force meetings included wide representation from States planning to implement RVSM, operators, international organizations and industry groups. In order to accomplish its work programme, the Task Force had been divided into three Work Groups to focus on the following:

a) Safety and Airspace Monitoring;

b) ATC Operations; and

c) Aircraft Operations and Airworthiness.

Western Pacific/South China Sea Implementation

3.1.4 RVSM was introduced in the Western Pacific/South China Sea area in two phases. In Phase I, which was reported to ATS/AIS/SAR/SG/12, RVSM was implemented on 21 February 2002 in the following airspace:

a) Phnom Penh, Kuala Lumpur, Kota Kinabalu, Manila, Singapore, Bangkok and Ho Chi Minh FIRs; and

b) on N892 (within the oceanic airspace of the Sanya Area of Responsibility (AOR).

Phase II Implementation – 31 October 2002

3.1.5 Under the second phase, RVSM was implemented on 31 October 2002 in the following airspace:

a) Hong Kong, Bali, Jakarta, Ujung Pandang, Vientiane and Ha Noi FIRs; and

b) in the rest of the oceanic airspace of the Sanya AOR.

3.1.6 In Phase II the following operational issues were completed:

a) Cambodia extended RVSM operations from FL290 to FL410 and included R468 (PNH – SAPEN) in the operational plan;

b) China implemented RVSM in the rest of the Sanya AOR (except A202) from FL290 to FL410;

c) Hong Kong China implemented RVSM in the Hong Kong FIR from FL290 to FL410;

d) Indonesia implemented RVSM on 36 routes (viz. 12 routes in Jakarta FIR and 24 routes in Ujung Pandang FIR) from FL350 to FL390;

e) Lao PDR implemented RVSM from FL290 to FL410 on routes B465, R474, A1, A202, B202, B329, B346, and B218;

f) Malaysia, Philippines, Singapore and Thailand expanded the application of RVSM in their respective FIRs from FL290 to FL410; and

g) Viet Nam implemented RVSM from FL290 to FL410 in the Ha Noi FIR and expanded the application of RVSM in the Ho Chin Minh FIR from FL290 to FL410.

Operator Readiness Assessment

3.1.7 The RVSM/TF adopted a target of 90 percent operator approval for RVSM implementation. The readiness assessment was carried out by the Asia Pacific Approvals Registry and Monitoring Organization (APARMO) using traffic samples in the Western Pacific/South China Sea airspace for the period 15 November to 15 December 2001. State RVSM approvals reported to the North Atlantic Central Monitoring Agency and APARMO, as well as MASPS-compliant airframes identified by EUROCONTROL, were compared to the traffic sample. The percentage of operations conducted by RVSM-approved operators and aircraft in the Western Pacific/South China Sea area was 91 percent.

Safety Assessments

3.1.8 A pre-requisite for RVSM implementation was the monitoring of the overall system performance to ensure that the established target level of safety (TLS) was met and maintained. In this context, States provided monthly reports on large height deviations (LHDs) to the APARMO. Details of operational errors were also provided to the airlines/operators of aircraft involved.

Publication of Documents

3.1.9 The States that implemented RVSM published their respective AIP Supplements to provide operators with information on the policies and procedures for RVSM operations, including corresponding contingency procedures. The AIP Supplements were published in October 2001 and July 2002 for Phase I and Phase II implementation respectively.

RVSM Website

3.1.10 The Task Force established the RVSM Website through the FAA at www.faa.gov/ats/ato/rvsm1.htm to provide comprehensive information on the requirements for RVSM implementation and operations to States and operators.

Review of Bay of Bengal and Beyond Implementation

3.1.11 The RVSM airspace for the Bay of Bengal and Beyond would include the Bangkok, Kolkata, Chennai, Colombo, Delhi, Dhaka, Jakarta, Karachi, Katmandu, Kuala Lumpur, Lahore, Male, Mumbai and Yangon FIRs.

Operational Implementation Plan

3.1.12 The Task Force agreed that the operational plan for the implementation of RVSM in the Bay of Bengal and Beyond should be harmonized with the RVSM plan of the Middle East Region. The aim was to achieve seamless RVSM operations for traffic flows from Asia to Europe, through the Middle East. The Task Force also agreed to examine orographic flow, known as mountain wave activity and other meteorological effects, which may have an impact on the safe implementation of RVSM in the area.

Preliminary implementation plans of the States involved

3.1.13 India proposed to implement RVSM from FL330 to FL410 in the Kolkata, Chennai Delhi and Mumbai FIRs to allow domestic traffic that were not RVSM approved to continue to operate at FL310 and below. The Task Force recognized that the proposed band of RVSM levels would not be operationally viable to international flights operating from Asia to Europe. The Task Force requested India to review its implementation plan for RVSM to be applied from FL290 to FL410. In addition, priority in the assignment of levels should be considered for international traffic flows from Asia to Europe (especially from 1630 UTC to 0030 UTC daily).

3.1.14 Indonesia planned to extend the application of RVSM from FL290 to FL410 into the Bay of Bengal area. Indonesia would also expand the use of RVSM from FL290 to FL410 for traffic operating between the Jakarta FIR and Australia. In addition, Indonesia would apply RVSM from FL310 to FL410 for flights between Singapore and Jakarta FIRs.

3.1.15 Malaysia would extend the application of RVSM from FL290 to FL410 in the Kuala Lumpur FIR into the Bay of Bengal area.

3.1.16 Pakistan would implement RVSM from FL290 to FL410 in the Karachi and Lahore FIRs.

3.1.17 Maldives would implement RVSM from FL290 to FL410 in the Male FIR.

3.1.18 Nepal would coordinate with India (in particular for the band of usable RVSM levels) before finalizing their implementation plan.

3.1.19 Sri Lanka would implement RVSM from FL290 to FL410 in the Colombo FIR.

3.1.20 Thailand would extend the application of RVSM from FL290 to FL410 in the Bangkok FIR into the Bay of Bengal area.

3.1.21 Since Bangladesh and Myanmar were not represented, the Task Force requested ICAO to liaise with these States and ascertain their plans for implementation of RVSM.

3.1.22 The Task Force would finalize the RVSM operational plan for the Bay of Bengal and Beyond at the 19th ICAO RVSM Task Force Meeting on 2-4 July 2003. Where necessary, States would establish transition areas and procedures to facilitate the transit of aircraft between the FIRs concerned.

3.1.23 The preliminary operational plan for the implementation of RVSM in the Bay of Bengal and Beyond is shown in the table below.

RVSM Implementation in Bay of Bengal and Beyond (within the ICAO Asia Region)

Flight Information Region/Area of Responsibility	**Flight Levels**	**Flight Level Orientation Scheme (FLOS)**	**Exclusive Airspace** **** Note 1***	**Initial Implementation**	**Remarks**
Bangkok (South China Sea)	290 – 410	Single Alternate	Yes	21 Feb 2002 (Phase 1)	G474 R468(BKK-BOKAK) R588(KAKET-SOPOL) R334 N891(BKK-XONAN)
Bangkok (Bay of Bengal and Beyond)	290 - 410	Single Alternate	Yes	27 Nov 2003 (Phase 2)	Domestic and International routes in the entire BKK FIR
Chennai	330 - 410	Single Alternate	Exclusive over Oceanic airspace and non-exclusive over territorial airspace	27 Nov 2003	P570 M300 N563 P762. FL290 - FL410 on L645 request prior coordination levels
Colombo	290 - 410	Single Alternate	Yes	27 Nov 2003	Levels to be reserved for crossing routes P762, L645 and A327
Delhi	330 - 410	Single Alternate	Exclusive over Oceanic airspace and non-exclusive over territorial airspace	27 Nov 2003	
Dhaka	TBD	Single Alternate	Yes	27 Nov 2003	To be coordinated by ICAO
Jakarta (South China Sea)	350 - 390 (phase 1)	Single Alternate	Yes	31 Oct 2002	Phase 1: N646, N752, L764, L895, L511, B592, G464, A464, A576, G462, A585, G220

Flight Information Region/Area of Responsibility	**Flight Levels**	**Flight Level Orientation Scheme (FLOS)**	**Exclusive Airspace** **** Note 1***	**Initial Implementation**	**Remarks**
Jakarta (South China Sea)	290 - 410 (phase 2)	Single Alternate	Yes	17 April 2003	Jakarta – Australia FL290 – FL410 and Jakarta – Singapore FL310 – FL410 on existing routes where RVSM is currently being applied.
Jakarta (South China Sea)	290 - 410 (phase 3)	Single Alternate	Yes	AIRAC Feb 2004	
Jakarta (Bay of Bengal)	310 - 410	Single Alternate	Yes	27 Nov 2003	EMARSSH routes and R461, B344, A585, A576, B335, G468, B466, A327, R469, A330
Karachi	290 - 410	Single Alternate	Yes	27 Nov 2003	Subject to coordination with adjacent FIRs. Implementation on a route specific basis. Transition issues (including Afghanistan) being examined.
Katmandu	330 - 410	Single Alternate	Yes	27 Nov 2003	Subject to coordination with adjacent FIRs.
Kolkata	330 - 410	Single Alternate	Exclusive over Oceanic airspace and non-exclusive over territorial airspace	27 Nov 2003	L301 FL290 – FL410 (subject to prior coordination)
Kuala Lumpur (South China Sea)	290 - 410 (Phase 2)	Single Alternate/ Modified Single Alternate	Yes	31 Oct 2002	
Kuala Lumpur (Bay of Bengal)	290 - 410	Single Alternate	Yes	27 Nov 2003	Subject to coordination with adjacent FIRs.
Lahore	290 - 410	Single Alternate	Yes	27 Nov 2003	Subject to coordination with adjacent FIRs. Implementation on a route specific basis. Transition issues (including Afghanistan) being examined.
Male	290 - 410	Single Alternate	Yes	27 Nov 2003	

Flight Information Region/Area of Responsibility	**Flight Levels**	**Flight Level Orientation Scheme (FLOS)**	**Exclusive Airspace** **** Note 1***	**Initial Implementation**	**Remarks**
Mumbai	290 - 410	Single Alternate	Exclusive over Oceanic airspace and non-exclusive over territorial airspace	27 Nov 2003	Routes passing through Calcutta will be FL330 – FL410. A451, G450, B459, A474 FL290 – FL410 with level reservations
Singapore (South China Sea)	310-410	Modified Single Alternate ****Note 2***	Yes	21 Feb 2002	
Singapore (Phase 2)	290-410	Modified Single Alternate ****Note 2***	Yes	31 Oct 2002	Routes from Singapore to Jakarta FIR FL350 – FL390
Singapore (Phase 3)	290 - 410	Modified Single Alternate ****Note 2***	Yes	17April 2003	Routes from Singapore to Jakarta FIRs will expand to FL310 – FL410
Yangon	TBD	TBD	TBD	27 November 2003	To be coordinated by ICAO

Note 1: **—** "Exclusive" means non-RVSM approved aircraft may NOT flight plan into airspace where RVSM may be applied. Aircraft that have not received State RVSM approval may be cleared to operate in airspace where RVSM may be applied in accordance with policy and procedures established by the ATS Provider States provided that 2,000 feet vertical separation is applied. Some States may choose to allow non-RVSM State aircraft to flight plan into RVSM airspace.

Note 2: **—** "Single Alternate" indicates an assignment of levels that complies with the RVSM Table of Cruising Levels. "Modified Single Alternate" means the RVSM levels for the six major RNAV routes (L642, M771, N892, L625, N884 and M767) in the South China Sea Region i.e. FL320, FL340, FL360, FL380 and FL400. RVSM approved aircraft operating on routes that cross the six one-way tracks would be assigned the eastbound levels FL330, FL370 and FL410 or westbound levels FL310, FL350 and FL390 accordingly. Individual State AIPs describe the details.

Note 3: **—** This Draft Operational Implementation Plan has been developed as an indication of States' current implementation plans – elements of this plan are subject to review by States.

Operator Readiness Assessment

3.1.24 The Task Force adopted the guidelines and procedures in the Asia Pacific RVSM Programme for Operator and Aircraft Approval in the Bay of Bengal and Beyond airspace. The Task Force also adopted a target of 90 percent operator approval for the implementation of RVSM in the area. The readiness assessment would be done by the APARMO, using traffic samples in the Bay of Bengal and Beyond airspace. As at 31 January 2003, about 70 percent of operators had obtained RVSM approval. IATA advised that most international operators in the Bay of Bengal and Beyond area would be RVSM approved prior to the implementation of RVSM on 27 November 2003.

Safety Assessments

3.1.25 To facilitate the safety assessments for RVSM implementation, States would provide data on traffic movement in the area where RVSM would be applied (viz, the EMARSSH routes) for the period 15 December 2002 to 15 February 2003. This would enable the APARMO to assess the height-keeping performance of RVSM-approved aircraft. A second period would be defined by the APARMO at the 19th ICAO RVSM Task Force Meeting.

3.1.26 In addition, States would provide monthly reports on large height deviations to the APARMO. Details of operational errors would also be provided to the airlines/operators of aircraft involved.

Publication of Documents

3.1.27 The States involved in the implementation of RVSM in the Bay of Bengal and Beyond would publish the AIP Supplement in June 2003, to provide operators with information on the policies and procedures relating to RVSM operations.

Monitoring Agency for RVSM Operations in the Asia Region (MAAR)

3.1.28 The Task Force reviewed progress on the transfer of responsibility for RVSM monitoring between AEROTHAI (responsible for operating MAAR) and the FAA William J. Hughes Technical Center (responsible for operating APARMO). The Task Force noted the arrangements between AEROTHAI and the FAA Technical Center in the area of airspace analysis and data collection process pertaining to RVSM, as well as arrangements for training of AEROTHAI personnel at the FAA Technical Center. Subject to the approval of the APANPIRG/14 Meeting in August, AEROTHAI would assume responsibility as the regional monitoring agency for RVSM operations in the Asia Region by October 2003.

Status of RVSM implementation in Asia Pacific Region

3.1.29 An update on the status of RVSM implementation in the Asia Pacific Region is shown in the table below:

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	Phased implementation
Bangkok	21 Feb 2002	Phased implementation
Beijing		
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
Kolkata	27 Nov 2003	

FIR/AOR	RVSM Implementation Date	Comments
Chennai	27 Nov 2003	
Colombo	27 Nov 2003	
Delhi	27 Nov 2003	
Dhaka	27 Nov 2003	
Guangzhou		
Hanoi	31 Oct 2002	Phased Implementation
Ho Chi Minh	21 Feb 2002	Phased Implementation
Hong Kong	31 Oct 2002	
Honiara	24 Feb 2000	
Incheon	TBD	
Jakarta	31 Oct 2002	Phased Implementation
Karachi	27 Nov 2003	
Kathmandu	27 Nov 2003	
Kota Kinabalu	21 Feb 2002	
Kuala Lumpur	21 Feb 2002	Phased Implementation – Western part 27 November 2003
Kunming		
Lahore	27 Nov 2003	
Lanzhou		
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) Further phased implementation planned
Nauru	24 Feb 2000	
New Zealand (Domestic)	13 July 2000	Non-exclusive
Oakland Oceanic	24 Feb 2000	
Phnom Penh	21 Feb 2002	
Port Moresby	13 Apr 2000	

FIR/AOR	RVSM Implementation Date	Comments
Pyongyang		
Sanya AOR	31 Oct 2002	N892 within the oceanic airspace of Sanya AOR on 21 February 2002
Shanghai		
Shenyang		
Singapore	21 Feb 2002	
Tahiti	24 Feb 2000	Non-exclusive RVSM airspace
Taibei	21 Feb 2002	
Tokyo	24 Feb 2000	Oceanic
Ujung Pandang	31 Oct 2002	Phased Implementation
Ulaan Baatar		
Urumqi		
Vientiane	31 Oct 2002	
Wuhan		
Yangon	27 Nov 2003	

Future work of the Task Force

3.1.30 The future work of the Task Force with respect to the implementation of RVSM in the Asia Pacific Region is as follows:

RVSM/TF/18: 30 June – 1 July 2003, Bangkok, Thailand
(90-day and 1-year follow up review on Western Pacific/South China Sea focus)

RVSM/TF/19: 2 – 4 July 2003 Bangkok, Thailand
(Bay of Bengal and Beyond focus)

RVSM/TF/20: 5 days October 2003, Delhi, India
(Bay of Bengal and Beyond focus)

(Target implementation Bay of Bengal and Beyond AIRAC date 27 November 2003)

RVSM/TF/21: 3 days February 2004 location TBD
(90-day follow up review on Bay of Bengal and Beyond focus)

RVSM/TF/22: 2 days November 2004 location TBD
(1-year follow up review on Bay of Bengal and Beyond focus)

3.1.31 The meeting complimented the RVSM Task Force on the excellent work it had accomplished, which had ensured timely and successful RVSM implementation from the Pacific Region in February 2000 to the Asia Region, and now with the final phase of the implementation plan nearing completion, a substantial portion of the international airspace in the Asia/Pacific Region will be operating RVSM. IATA added their compliments to the Task Force and reaffirmed their continued full support for this project, which is providing significant benefits to operators.

3.1.32 In regard to the future requirements for implementation of RVSM, the meeting recognized that the RVSM/TF had gained extensive expertise, and this could be invaluable in assisting States in the Asia/Pacific Region to implement RVSM in their sovereign airspace and those parts of their FIRs in international airspace that had not been included in the implementation plan to date. The meeting agreed that the Task Force should continue its work to identify areas where RVSM should be implemented, and to coordinate with States to assist them develop an RVSM implementation plan as appropriate. The meeting was of the view that the RVSM implementation effort should not be relaxed and a sustained effort maintained until all relevant airspace was operating RVSM in the Asia/Pacific Region. The meeting further considered that in view of the all round benefits to be gained from RVSM operations, this warranted continuing the work of the Task Force.

3.1.33 In light of the foregoing, the meeting formulated the following Draft Conclusion:

Draft Conclusion 13/1 – Development of future RVSM implementation plans in the Asia/Pacific Region

That, as a matter of priority, the RVSM Task Force shall:

a) develop an RVSM implementation plan for the remaining areas in the Asia/Pacific Region where RVSM could be implemented; and

b) assist States with their national planning and implementation of RVSM as appropriate.

3.2 **Longitudinal Separation**

Longitudinal spacing for traffic from Hong Kong and Taipei to North America

3.2.1 IATA advised the meeting that the airspace capacity between Hong Kong, Taipei, the airspace of Japan and beyond to North America was currently constrained by the application of 15-minute longitudinal spacing.

3.2.2 Japan had a requirement whereby aircraft exiting Naha airspace and proceeding beyond Tokyo airspace to North America, were spaced at a minimum of 15-minute intervals if aircraft were flying at the same level. Consequently, Naha ACC, in their Letter of Agreement with Taipei ACC, also require 15 minutes spacing for aircraft from Taipei airspace. This included Taipei and Hong Kong departures. Taipei ACC, in turn, in their Letter of Agreement with Hong Kong ACC also required 15 minutes spacing for departures from Hong Kong bound for North America. These restrictions have been in place and remained unchanged for 20 years.

3.2.3 However during the last 20 years:

- the number of air routes across the North Pacific has increased;
- procedures have been developed for the general use of a 10-minute longitudinal separation standard;
- RVSM has been implemented; and
- radar coverage extends uninterrupted from Hong Kong all the way to

approximately 200 NM east of Tokyo.

3.2.4 IATA considered it appropriate to re-examine the need for 15 minutes spacing for departures from Hong Kong and Taipei, particularly as this spacing only exists in order to address a potential need some 3 to 4 hours, depending on the route, after the commencement of flight. Procedures were currently available which would permit the use of 10 minutes spacing in this area. Given the performance of modern long haul aircraft, by the time non-radar separation was required, the aircraft concerned would have been in the air for a considerable period of time and should typically be able to accept higher levels so as to be afforded vertical separation.

3.2.5 The current practice of providing considerably more than the minimum required spacing up to four hours before it was required for a particular airspace, creates increased workload at the originating airport and en-route while causing the loss of valuable airspace efficiency and consequent additional costs to the operators.

3.2.6 Japan advised the meeting that the restriction was necessary for sequencing traffic joining from China, Korea and Japan bound for North America and should be able to be removed in about two years when ADS became operationally available in the airspace concerned.

3.2.7 The IFATCA representative advised the meeting that IFATCA would be willing to organize a meeting with the parties concerned as soon as practicable to further address this issue.

RNP flight planning requirements in Australia

3.2.8 IATA reminded the meeting that according to the list of equipment suffixes which may be included in Field 10 of the ICAO Flight Plan, the inclusion of the letter <R> (*RNP Type Certification*), indicates that an aircraft meets the RNP type prescribed for the route segment(s), route(s) and/or area concerned.

3.2.9 An example of the practical application of this would be demonstrated in the case of an operator filing a flight plan, which includes an RNP-5 segment joining an RNP-10 route and descending into destination on an RNP-0.3 standard arrival route (STAR). The inclusion of the equipment suffix <R> in Field 10 would indicate that the flight in question was approved and capable to fly the whole route comprising all the RNP types specified.

3.2.10 IATA advised the meeting that Australia was in the process of linking service provision to the specific RNP capability of each aircraft. For example, RNP-4 capable aircraft could be offered a separation service based on a 30 NM minimum while RNP-10 capable aircraft might be offered a separation service based on a 50 NM separation minimum. In order for ATC to provide this service, knowledge of the RNP capability of each aircraft would be required. Australian flight planning requirements therefore specify that aircraft with RNP-4 or RNP-10 approval must include the equipment suffix <Z> in Field 10, and include <NAV/RNP4> or <NAV/RNP10> in Field 18.

3.2.11 While supporting the service delivery initiatives of Australia, IATA expressed concern about the possible implications of such annotations in Field 18. The inclusion of, say, <NAV/RNP10> in Field 18 of the flight plan for Australian purposes, when the same flight may also operate in Middle East or European RNP-5 airspace, could cause confusion with other ATC providers and it may be construed that the flight was only RNP10 capable.

3.2.12 After consideration, the meeting was of the opinion that the equipment suffix <R> no longer met the requirements of all States, and accordingly developed the following Draft Conclusion:

Draft Conclusion 13/2 – Review of the ICAO Flight Plan to include aircraft RNP type approval status

That, in light of the requirements of some States for a detailed knowledge of the RNP approval status of aircraft, ICAO be requested to review current flight planning equipment suffix provisions and revise the ICAO Flight Plan accordingly.

Development of an RNP-4 approval process for oceanic and remote airspace operations in support of 30 NM lateral and longitudinal separation minima

3.2.13 Australia provided a brief overview of the current status of the development of an RNP 4 operational approval process. The meeting noted the information and the intent of both Australia and the US to issue RNP 4 operational approvals based on the process endorsed by the ICAO Separation and Airspace Safety Panel (SASP).

3.3 Revision of the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region*

3.3.1 The meeting recalled that APANPIRG/13 reviewed the results of a review by ICAO requested by the Air Navigation Commission to ensure that the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region* was in accordance with the SARPs and PANS, and in particular with the procedures contained in Amendment 1 to the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444).

3.3.2 The review carried out by ICAO emphasized the need to identify and highlight material that was included as a result of differences between the FANS-1/A implementation and the progress of ICAO panels in developing the operational and technical requirements for ATS data link applications, for example automatic dependent surveillance (ADS) and controller pilot data link communications (CPDLC). The meeting recognized that to revise the Guidance Material would require a substantial effort and would be beyond the resources of the Regional Office, and therefore it would be necessary to form a special group to carry out this work.

3.3.3 The meeting recalled that the Guidance Material was developed by APANPIRG to make available to all States information which had been accumulated during the initial introduction of CNS/ATM systems in the South Pacific, as well as to facilitate standardization of CNS/ATM operational procedures throughout the region. In this regard, the meeting noted that the Guidance Material was based on the South Pacific Operations Manual (SPOM) developed by the Informal South Pacific ATS Coordination Group (ISPACG) for operation of the FANS-1/A ADS and CPDLC aircraft systems.

3.3.4 The Secretariat commented that the Guidance Material primarily contained operating procedures to be used by controllers and pilots for ADS and CPDLC services using the FANS -1/A system. Further, the Secretariat was of the view that operational procedures should not be contained in ICAO guidance material but reside in a procedures document such as an operations manual, and for global application, in the PANS-ATM. It was noted that the ISPACG and the Informal Pacific ATS Coordinating Group (IPACG) had merged the North and South Pacific Operations Manuals into the Pacific Operations Manual (POM), thus providing harmonized procedures for the Pacific Region. This document was updated as required through the forums of IPACG and ISPACG. Any revisions to this document would require consequential amendment to the ICAO Regional Guidance Material, which was based on the SPOM. In this regard, it had proved to be a lengthy process to amend the Guidance Material through the ICAO process.

3.3.5 The meeting agreed that operating procedures should be contained in an operations manual but it was recognized that some States required a document endorsed by ICAO in order to implement and operate these data link systems. As a result of the detailed review of the Guidance Material provided by ICAO, it would be appropriate to revise the POM to bring it in line with ICAO requirements, and align it with the Guidance Material. This would ensure that States using the POM were operating ICAO recognized procedures relevant to the FANS-1/A system.

3.3.6 In regard to the above, IATA commented that the FANS-1/A system is the only ADS/CPDLC system available to operators and ATS providers and was likely to be in service for some considerable time. Therefore, it was necessary that States made use of these data link systems and for ICAO to acknowledge the validity of the documentation being used, once it had been revised to meet ICAO requirements. Accordingly, ICAO should continue to assist in this effort, review the POM and endorse the document as appropriate.

3.3.7 The meeting further noted that ICAO had already acknowledged that the FANS-1/A system was an acceptable means for ATS to provide data link services and developed the 30 and 50 NM separation minima contained in Annex 11 and the PANS-ATM based on studies carried out by SASP using the technical performance of FANS-1/A. The safety assessments that supported the application of these separation minima were contained in the ICAO *Manual on Airspace Planning Methodology for the Determination of Separation Minima* (Doc 9689). This work drew upon the experience gained by States in the South Pacific Region who first introduced ADS and CPDLC using FANS-1/A.

3.3.8 In light of the foregoing, the meeting agreed that the Regional Office should coordinate with IPACG and ISPACG (jointly responsible for the POM) and ICAO Headquarters to revise the POM to meet ICAO requirements. In regard to the introduction of ADS and CPDLC in the Asia Region, States should base their operational procedures on the POM, and the document developed to become the Asia/Pacific Operations Manual. This would ensure that common procedures were used within the Region. The meeting agreed to refer this matter to the SEACG and BBACG for further action.

3.3.9 In view of the above, the meeting formulated the following Draft Conclusion:

Draft Conclusion 13/3 – Revision of the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region*

That, as a matter of priority, the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region* be revised in line with the ICAO review and harmonized with the Pacific Operations Manual.

3.4 ATS Interfacility Data Communications Review (AIDC/R) Task Force Meeting

3.4.1 In accordance with Decision 13/9 of APANPIRG/13, the AIDC Task Force established by APANPIRG/5 was reconvened to re-examine and update the ASIA/PAC Interface Control Document (ICD) for AIDC published in June 1995 in order to allow States to implement their systems in a consistent manner.

3.4.2 The AIDC/R Task Force meeting, hosted by Airservices Australia, was held in Brisbane from 27 to 28 March 2003. The existing ICD for AIDC shown in Appendix A to the Report on Agenda Item 3 was reviewed by the Task Force, taking into consideration the experience gained and the lessons learned in the implementation of the AIDC by States concerned.

3.4.3 A presentation on the work of the Task Force was given. Subsequently, the meeting endorsed the following draft conclusion.

Draft Conclusion 13/4 – ASIA/PAC Interface Control Document (ICD) for ATS Interfacility Data Communications (AIDC)

That, the updated ASIA/PAC ICD for AIDC provided in Appendix A and developed by the AIDC/R Task Force, be adopted and published as Version 2.0.

3.4.4 The meeting noted that current communication infrastructure used to support existing AIDC was based on AFTN procedures. The meeting also noted that the target date for implementation of the ground element of ATN in the ASIA/PAC Region was 2005. The meeting identified the need for supporting the current messages format and data as contained in the ICD for AIDC version 2.0.

3.4.5 The meeting noted that the AIDC Review Task Force considered that the task assigned by APANPIRG/13 had been completed, except for additional work required for message sets to be added into the ICD to support the positional information derived from the FANS 1/A based ADS messages.

3.5 **Inclusion of SIGMET in VOLMET broadcasts**

3.5.1 The meeting considered amendment proposal APAC 99/9-ATS to the Asia/Pacific Air Navigation Plan (Doc 9673), which provides for a requirement to include SIGMET messages in VOLMET broadcasts in the Asia Region. The meeting recalled that the inclusion of SIGMET in VOLMET broadcasts was first raised at APANPIRG/5 (October 1994) under Conclusion 5/26:

Conclusion 5/26 — Inclusion of SIGMET in VOLMET broadcasts

Based on the results of a survey to be undertaken by IATA and IFALPA, ATS/AIS/SAR/SG consider requirements for inclusion of SIGMETs in VOLMET broadcasts in the Asia Region.

3.5.2 At APANPIRG/10 (September 1999) the meeting noted that Annex 3, Section 11 recommends that SIGMET messages should be included in scheduled VOLMET broadcast if determined by regional air navigation agreement. Following consideration of the results of a survey carried out by IATA and IFALPA, APANPIRG/10 formulated Conclusion 10/3:

Conclusion 10/3 — ANP Amendment Proposal to include SIGMET in VOLMET Broadcasts (ASIA)

That, the ASIA/PAC Air Navigation Plan (Doc 9673) be amended to add a requirement for inclusion of SIGMET in VOLMET broadcasts for the Asia Region.

3.5.3 At APANPIRG/11 (October 2000), the meeting noted that following APANPIRG/10, ICAO drafted amendment proposal APAC 99/9-ATS to the Asia/Pacific ANP, which was forwarded in March 2000 to the States whose facility and services would be significantly affected for comments before it was formally circulated. Progress on the proposal was reviewed at ATS/AIS/SAR/SG/12 (June 2002) and it was noted that Australia, China and Japan had expressed concerns regarding the limited time for broadcast, though they were all in favour of the proposal in principle. In addition, New Zealand raised an objection to the proposal. They advised that States with very large FIRs would have difficulty in transmitting SIGMET in addition to other required meteorological information in the limited timeframe of 5 minutes.

3.5.4 The ATS/AIS/SAR/SG/12 meeting reviewed the proposal and recalled that several options addressed at previous meetings to deal with the technical problems of including SIGMET in the VOLMET broadcasts had not been resolved and consensus was not reached at ATS/AIS/SAR/SG/12. IATA had proposed a procedure and agreed to further study the issue with its member airlines so that a consolidated view could be presented to the Sub-Group.

3.5.5 The APANPIRG/13 meeting reviewed the ATS/AIS/SAR/SG/12 report on this subject but no progress was made on the difficulties reported. In considering the report of the CNS/MET/SG/6 meeting, APANPIRG/13 noted that CNS/MET/SG/6 emphasized that the introduction of D-VOLMET through VHF data link would be the most appropriate way to overcome

the capacity problem of the voice-VOLMET. APANPIRG/13 adopted Conclusion 13/29:

Conclusion 13/29 — Inclusion of SIGMET in VOLMET

That, States be encouraged to fully implement D-VOLMET to permit suitably equipped aircraft to receive timely SIGMET information amongst other requisite meteorological information.

3.5.6 Apart from the technical limitations of the voice-VOLMET, it had been discussed that the current situation with the issuance of SIGMET by the Meteorological Watch Offices (MWO) in the regions posed additional difficulty for inclusion of SIGMET in VOLMET. SIGMET messages were frequently too lengthy and wrongly formatted, which made them difficult to handle especially where computerized VOLMET systems were in use. The meeting was advised that Amendment 72 of Annex 3, which became applicable in November 2001, introduced provisions to overcome these problems. According to these provisions, SIGMET should be issued only for the most important en-route weather phenomena, without unnecessary descriptions, and strictly following the standard structure. In addition, as a follow-up of a recommendation by the MET Divisional Meeting (Montreal, September 2002), the ICAO Regional Office had recently developed an ASIA/PAC SIGMET Guide, which provides further instructions to MWOs regarding the standardization of SIGMET. These recent developments in the MET field would facilitate the inclusion of SIGMET in VOLMET.

3.5.7 In light of the foregoing, the meeting agreed that SIGMET in VOLMET should be included in the ANP and that the amendment proposal APAC-S 99/9-ATS should be progressed to obtain regional agreement. By circulating the proposal, all parties concerned had the opportunity to reply officially and make known any difficulties they had to provide this service.

3.5.8 The meeting formulated the following draft conclusion:

Draft Conclusion 13/5 – Circulation of amendment proposal APAC 99/9-ATS to the APAC ANP (Doc 9673)

That, the Asia/Pacific Regional Office circulate the amendment proposal APAC 99/9-ATS to the Asia/Pacific ANP (Doc 9673) to States and international organizations.

3.6 **Implementation of ATS routes**

3.6.1 The meeting was reminded that deficiencies related to ATS routes in the Asia/Pacific Region were routinely identified and included in the consolidated list of air navigation deficiencies. The majority of the ATS routes listed had previously been agreed to by the States concerned at the Third Asia/Pacific Regional Air Navigation Meeting in 1993. Generally the list contains routes that:

a) had not been implemented by States as required by the Asia/Pacific Basic Air Navigation Plan (BANP, Doc 9673);

b) had been implemented by States, but not in accordance with the established BANP requirement; and

c) had been implemented by States, although the requirement has not been established by regional air navigation agreement.

3.6.2 Significant changes to ATS route structures in the Asia/Pacific Region, in particular for the South China Sea and the EMARSSH project areas, had been implemented from 2001. Many other route changes had also taken place in the Region with much of this information not being contained in a consolidated record, and consequently Doc 9673 had not been amended to take into

account all these changes. In addition, agreed operational requirements for some new routes were yet to be recognized in the Basic ANP.

3.6.3 In light of the above, the meeting agreed that there was a need to thoroughly review and update the BANP, prepare a master database of the routes that had been implemented, update the five-letter name-codes and co-ordinates that had been assigned to the significant points on the ATS routes, and undertake a study of future route requirements.

3.6.4 In view of the magnitude of the task, the meeting was of the opinion that a Task Force should be formed to carry out this work, which was beyond the resources of the Regional Office, and accordingly developed the following Draft Conclusion:

Draft Conclusion 13/6 – ATS Route Network Review Task Force

That, a Task Force comprising representatives from States and appropriate International Organizations be formed to review the ATS route network for the Asia/Pacific Region with draft Terms of Reference as shown in Appendix B to the Report on Agenda Item 3.

3.6.5 The meeting was of the opinion that given the large geographical area to be addressed, the Secretariat should give consideration to addressing the task through a number of sub-regional meetings. Additionally, the meeting considered that invitations to Task Force meetings should be extended to all States in the area under consideration. The efficiency of the Task Force could be further enhanced by the adoption of a "Core Team" approach in a manner similar to that of other recent large-scale projects. The meeting was also advised by the Secretariat that outputs from the Task Force (route implementations/revisions to Doc 9673, etc) should be dealt with on a progressive basis where possible. Given the current Secretariat staffing situation, it was not anticipated that the first series of meeting could take place until the 1st quarter of 2004.

3.6.6 The meeting reviewed and further updated the list of ATS routes based on information provided to the Regional Office by States and the List of Deficiencies was amended accordingly as shown below.

ATS route information update by States

China

3.6.7 China provided information on the following changes to ATS routes and further information is provided under Agenda Item 6:

- A203 proposed deletion (route not required)
- A218 propose deletion (A212 and A588 met the requirement)
- A335 between HOHOT - TUMURTAN is implemented
- R216 proposed deletion (B215 - KUQA and A460 - REVI – Alma Ata met the requirement)
- R335 proposed deletion (not required by international flights)
- B213 proposed deletion (not required by international flights)

Hong Kong, China

3.6.8 Hong Kong, China supports the deletion of the following ATS routes:

- A202 (between Hong Kong and Taipei)
- R335 (between MAGOG and MAKUNG)

Hong Kong China and China were considering the establishment of ATS route R333 transiting Guangzhou and Hong Kong airspace.

Japan

3.6.9 Japan provided the following ATS route information:

- A202 and A223 (Japan was considering implementing as a conditional route)
- Significant points ANIMO on B337 and BISIV on G583 were relocated on 26 December 2002 on the Tokyo and Yuzhno-Sakhalinsk common FIR boundary with the following coordinates:
  - ANIMO 45 11.9N 143 40.8E
  - BISIV 44 59.5N 144 17.0E

Democratic People's Republic of Korea

3.6.10 The Democratic People's Republic of Korea provided information on the following ATS route:

- delete G589 (AVGOK on R211) - KANGNUNG (B467 is established in the Pyongyang FIR)

Malaysia

3.6.11 Malaysia provided the following ATS route information:

- Y331 was established between TAXUL - PIBOS on 31 October 2002
- Malaysia and Brunei deleted portion of G580 between Brunei and VJN and renamed that portion as B348

Mongolia

3.6.12 Mongolia provided the following ATS route information:

- A335 deleted (A575 and A91 meet the requirement)
- new routes to be implemented:
  - G218 SULOK – POLHO on 30 June 2003
  - M520 SERNA – POLHO on 30 June 2003

3.6.13 With regard to B339 to/from ULAANBAATAR – POLHO, Mongolia advised that this route would not be implemented at this stage. Further clarification was sought from Mongolia as this ATS route was agreed to at the recent fourth meeting of China, Mongolia, Russian Federation and

IATA (CMRI/4).

New Zealand

3.6.14 New Zealand provided information on the following ATS routes:

- R327 extended from FAROA – VISIK - Niue NDB (effective 23.1.03 aircraft can flight plan Auckland to Niue via B575 to SELKA then G457 to FAROA then R327 to Niue)

- B201 to be deleted

Samoa

3.6.15 The meeting was informed that all of Samoa's airspace was within the Auckland Oceanic FIR, with air traffic services above FL245 provided by Airways Corporation of New Zealand Ltd. Provision of ATS in the lower airspace was as follows:

- Pago TMA and CTR - Pago ATC (when off-watch, by Faleolo ATC)

- Faleolo CTR and Samoa Sector - Faleolo ATC

Changes to lower airspace were scheduled to take place on 30 October 2003. Any proposed changes to or deletion of ATS routes were carried out by Airways Corporation on behalf of and in consultation with Samoa. Changes to waypoints on current routes, plus changes to routes between Faleolo and Pago Pago were scheduled to take place on 30 October 2003.

Thailand

3.6.16 Thailand provided information on the following ATS route changes:

a)

Implementation	Realignment	Deletion
A202	A1	A349
B346	A581	B469
G474	G463	B579
L507	R201	G467
L515	R203	G592
L645	R325	R209
L759		UM501
M751		
M770		
N891		
P646		

b) L759 (TAVUN-PUT) and L515 (IKULA-PUT) lower limit decreased to from FL 275 to FL 105.

3.6.17 The Secretariat thanked all States concerned for their input on changes to the ATS route structure in the Asia/Pacific Region. The meeting was reminded that any changes to the ANP for ATS routes would require an appropriate amendment proposal to be submitted by States to processed by ICAO for agreement by States and other parties concerned.

3.7 **APANPIRG Contributory Bodies, Associated Groups and related issues**

3.7.1 The meeting was advised that, in order to identify all work in progress from established and disestablished constituted bodies within APANPIRG and its Sub-Groups, a tabulated list identifying the work in progress and issues for inclusion in work programmes had been developed by APANPIRG. APANPIRG/13 noted that further work was required to complete the table, and that this would be completed by the Sub-Groups and included in following APANPIRG reports.

3.7.2 In recognizing the importance of the tabulated list, APANPIRG/13 formulated the following decision:

Decision 13/42 – Inclusion of a table of APANPIRG contributory bodies and associated groups in the APANPIRG report

That, a table of APANPIRG contributory bodies and associated groups be included in the report of APANPIRG meetings and be updated periodically by the APANPIRG Sub-Groups.

3.7.3 The meeting reviewed and updated the list of APANPIRG contributing bodies as appropriate on ATS/AIS/SAR matters, which is contained in Appendix C to the Report on Agenda Item 3.

3.8 **Carriage and Operation of Pressure-Altitude Transponders and Airborne Collision Avoidance Systems II (ACAS II)**

3.8.1 The meeting was reminded that a survey was conducted by the Asia/Pacific Regional Office in August 2000 to obtain detailed information from States clearly differentiating between the implementation plans for the carriage and operation of pressure-altitude reporting transponders and those of ACAS II. The results were presented to APANPIRG/12.

3.8.2 The meeting recalled that APANPIRG/12 considered it necessary that situations where States had not established the requirement for the carriage and operation of pressure-altitude reporting transponders specified as a Standard in Annex 6, be listed as a "Deficiency".

3.8.3 The meeting noted that from 1 January 2003, Annex 6 requires aeroplanes that have a maximum certificated take-off mass in excess of 15000 kg or that are authorized to carry more than 30 passengers to be fitted with ACAS II. Further, with effect from 1 January 2002, Annex 10, Volume IV requires all aeroplanes to be equipped with a pressure-altitude reporting transponder

3.8.4 The meeting reviewed the tables updated by APANPIRG/13 on the status of States' implementation plans for the mandatory carriage and operation of pressure-altitude reporting transponders and ACAS II. The updated tables are shown at Appendices D and E to the Report on Agenda Item 3.

3.8.5 The meeting reiterated its concern that twelve States were listed as not having implemented the Annex 6 requirements for carriage of ACAS II by 1 January 2003, and the meeting urged those States to take necessary action to implement this requirement. The meeting was reminded of incidents that occurred recently whereby potential collisions were avoided by aircraft operating their ACAS and taking avoiding action.

3.8.6 The meeting stressed that it was of critical importance that aircraft not equipped with a pressure reporting transponder should not be permitted to share airspace used by aircraft equipped with ACAS II. The performance of ACAS was totally dependant on all aircraft in the vicinity being equipped with pressure-altitude reporting transponders in order to detect conflicting traffic and for the ACAS II system to issue a Traffic Advisory (TA) or Resolution Advisory (RA).

3.8.7 The meeting on reviewing the status of ACAS II implementation recognized that TCAS Version 6.04a was not designed for an RVSM environment and it was not compatible with RVSM. However, ACAS II (TCAS Version 7.0) had improved capability and was compatible with RVSM operations.

3.8.8 In light of the above the meeting agreed that it was a matter of urgency that States implement Annex 6 requirements in regard to ACAS II and pressure-altitude reporting transponders especially in RVSM operations. The meeting formulated the following Draft Conclusion:

Draft Conclusion 13/7 – Implementation of ACAS II and pressure-altitude reporting transponders in the Asia Pacific Region

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

3.8.9 The meeting was advised that the ICAO provisions relating to the operation of ACAS II were reviewed by the Air Navigation Commission following the publication of an accident investigation report dated 12 July 2002, concerning a near mid-air collision over Japan on 31 January 2001. This accident involved two wide-bodied aircraft equipped with ACAS II and resulted in injuries to passengers and crew. Also, the meeting noted that there was an on-going accident investigation of a

mid-air collision over Germany on 1 July 2002, which involved two aircraft equipped with ACAS II. In both accidents, it appeared that common factors concerned ATC issuing instructions which conflicted with an ACAS II RA, and flight crews had maneuvered their aircraft in the opposite sense to the RAs that had been issued.

3.8.10 The meeting was reminded that ACAS II provides a proven independent safety net to prevent mid-air collisions. Operational monitoring programmes had highlighted in numerous actual events the significant contribution ACAS II made to improved flight safety.

3.8.11 The meeting noted that ICAO State letter AN11/19-02/82, dated 30 August 2002, requested urgent action by States, to ensure that national aviation documentation, and that of aircraft operators under their authority, highlight the critical importance of following an ACAS RA, and of not manoeuvring opposite to the sense of an RA, even if ATC issues conflicting instructions. The importance of following the RA was based on the possibility that ATC may not be aware of an RA, and may unknowingly issue instructions that were contrary to the RA. The importance of avoiding manoeuvres opposite to the sense of an RA was based on the fact that in an ACAS to ACAS coordinated encounter, the RAs complement each other in order to reduce the potential of a collision. Manoeuvres, or lack of manoeuvres, that result in vertical rates opposite to the sense of an RA could result in a collision with the threat aircraft.

3.8.12 After reviewing the ACAS II operating procedures in the *Procedures for Air Navigation Services – Aircraft Operations, Volume 1 – Flight Procedures* (Doc 8168, PANS OPS), the Commission agreed to consult States concerning a proposal to strengthen and clarify the operating procedures in PANS-OPS, Volume 1, by highlighting the importance of following an RA, and of not manoeuvring in a sense opposite to that of an RA. The Commission also agreed to circulate a proposal for amendment of Annex 6 – Operations of Aircraft, Part 1 – *International Commercial Aircraft Transport – Aeroplanes* to include a new Standard in Appendix 2 concerning the content of an operations manual in regard to policy, instructions, procedures and training requirements for the avoidance of collisions and the use of ACAS II. These proposals are contained in State letter AN 11/1.1.23, AN 11/19.1-02/99, and were adopted by the Council on 13 March 2003 and will become applicable on 27 November 2003.

3.8.13 The meeting was advised that ICAO was continuing to look into this matter so that consistent procedures could be adopted to ensure safety of operations when RAs were received by pilots.

3.9 EMARSSH Update

3.9.1 The Revised ATS Route Structure, Asia to the Middle East and Europe, South of the Himalayas (EMARSSH) was initiated by the ICAO Asia/Pacific Office in collaboration with the Middle East and European Offices to increase efficiencies in the provision of air traffic services on the major traffic flows in these particular areas.

3.9.2 The meeting recalled that the concept of EMARSSH was discussed and endorsed by various APAC Regional meetings held since March 2000. It should also be noted that APANPIRG/11 under Conclusion 1/10 agreed to the project in September 2000, and an ICAO Inter-Regional Co-ordination Group Meeting comprising Regional Directors from Paris, Cairo and Bangkok plus the Chief of the Regional Affairs Office, ICAO Headquarters, further endorsed the EMARSSH Project. The APANPIRG Conclusion on the EMARSSH Project was endorsed by the Air Navigation Commission and the ICAO Council later in 2000.

3.9.3 A Core Team approach was used for this project, similar to the Y2K Contingency Planning formula. Members of the Core Team came from States, ICAO and IATA with additional States from the area being considered joining the Core Team as meetings moved to the MID and European regions. By using this strategy, the Core Team always had members which were familiar

with the area being discussed.

3.9.4 There were nine EMARSSH meetings between February 2001 and August 2002, which were held in Brisbane, Australia; Cairo, Egypt; Paris, France (3); India, I.R. Iran; and Bangkok, Thailand (2). Over 32 States were involved in this project which included ATS routes crossing 40 FIRs.

3.9.5 The meeting noted that this project took less than two years from the first EMARSSH meeting to implementation on 28 November 2002. It had been acknowledged that, taking into consideration that EMARSSH covered three ICAO regions from Australasia to the Middle East and through European joining the ECAC routing system, it was the largest revised route structure project ever undertaken by ICAO, States concerned, IATA and their airlines.

3.9.6 Notwithstanding that substantial benefits had been realized since implementation, further improvements in procedures and route design were required to gain the maximum effect from the EMARSSH project.

3.9.7 Since implementation of the revised route structure, there had been several teething problems identified in the operational procedures used by States and the international airlines concerned. This has led to an eroding of the expected efficiencies, which were hoped to be gained by both the airlines and the providers alike.

3.9.8 Several special meetings were arranged to overcome the outstanding issues. Whereas some of these matters were successfully resolved, there was still further work to be accomplished to gain the maximum benefits, which this route structure was designed to provide. These included:

a) restrictions on the use of some flight levels through Afghanistan due to military activity;

b) restrictions on flight levels on ATS route L333 over India due to military considerations;

c) an important new ATS route joining ASOPO to Rahim Yar Khan (RK) within Indian airspace which at present is unable to be established due to military considerations. RK westwards in Pakistan airspace is available;

d) bottlenecks over Delhi, India causing significant delays for Delhi westbound departures;

e) international aircraft from Singapore and Kuala Lumpur using northern routes across the Bay of Bengal designed for departures out of Bangkok, thus causing additional delays to Bangkok departures; and

f) Mach Number Technique (MNT) procedures applied by some Bay of Bengal States is inconsistent and not in accordance with the ICAO ATS Planning Manual, causing unnecessary delays to long-haul international aircraft.

3.9.9 At the EMARSSH Post Implementation Review Meeting (PIRM) held at the end of March 2003, these matters were further discussed. As a result of these discussions, some progress was made and a list of Assigned Tasks was agreed to by States concerned to be reported back to this meeting.

3.9.10 The meeting was also advised that westbound delays could be further reduced if:

a) flights were distributed across the available routes over the Bay of Bengal;

b) one route could be set aside for flights that agree to operate at a common mach number, say M0.84; and

c) airlines spread out their scheduled departure times.

3.9.11 The meeting noted that the Civil Aviation Authority of Singapore (CAAS) actively encouraged airlines to spread out their flights using a variety of operational routings by faxing out routing details of westbound flights by 2100 local time (1300 UTC) each day to all airlines.

3.9.12 It was decided by the meeting to convene an EMARSSH Working Group, which met concurrently outside the plenary to discuss these post implementation issues.

3.9.13 Seven concerned States together with IATA, IFALPA, IFATCA, Jeppesen and the ICAO Asia and Pacific Regional Office participated.

3.9.14 The items below were considered by the Working Group.

Reactivation of the FANS Action Team, Bay of Bengal (FAT-BOB) and the creation of a FANS Action Team, Southeast Asia (FAT-SEA) for the South China Sea route structure

3.9.15 The proposed reactivation of FAT-BOB was considered essential to alleviate the problems presently encountered over the Bay of Bengal due to poor HF air/ground communications. It was noted that all FIRs with Bay of Bengal responsibility have CNS/ATM workstations, and procedures to use this facility for Trials and Demonstrations were required to be developed to overcome the HF problem and provide an alternative method to ensure more reliable communications. It was agreed that this issue would be formally discussed at the BBACG meeting scheduled to be held in September 2003.

3.9.16 It was also decided that the creation of FAT-SEA for the South China Sea route structure would also assist this area of operation.

3.9.17 The meeting noted that this was being dealt with by the Regional Office and a meeting of SEACG/11 was scheduled for early December 2003 and included the establishment of the FAT-SEA.

Pursuit of consistent application of proper Mach Number Technique (MNT)

3.9.18 The meeting noted that there had been an improvement in the application of MNT by States with responsibility for Bay of Bengal airspace in accordance with ICAO Standards and guidance material as provided in the PANS-ATM (Doc 4444) and the ATS Planning Manual (Doc 9426) for the establishment and implementation of MNT procedures.

3.9.19 The meeting noted however that MNT was not applied on M770/L759 between Kuala Lumpur and Kolkata FIRs because the routes converge at Varansi in mainland India where procedural control was applied, even though there was radar coverage of the area. Unfortunately, Varansi did not use radar control on these routes and India was urged to review the situation at Varansi as a matter of priority.

Create a procedure whereby a fixed Mach number requirement is applied to a route

3.9.20 Singapore advised the meeting that a procedure whereby MNT with a requirement for aircraft operating on L759 at peak times to maintain M0.84 had been used to achieve 10 minute longitudinal separation. This procedure was no longer in operation.

3.9.21 It was noted that a common MNT procedure should be adopted for all routes and it was agreed that when applicable, MNT shall be used on all routes when required by ATC.

Review the route description of L333 to include FL280

3.9.22 It was noted that the current minimum en-route altitude (MEA) of FL 310 on ATS route L333 was very restrictive and could result in traffic at FL280 that were unable to climb due to other aircraft, being re-routed over Delhi with consequent delays and repercussions for clearance to enter Afghanistan airspace.

3.9.23 It was agreed that the Indian authorities would be requested to lower the MEA to FL280 at least for the period of 1730 – 0100 UTC daily to permit the efficient flow of westbound traffic. India would give a further report on this item at the next BBACG meeting.

Opening the EMARSSH route linking ASOPO to Rahim Yar Khan (RK)

3.9.24 The meeting considered that the opening of the EMARSSH route linking ASOPO with RK would alleviate the critical bottleneck of routes that converge over Delhi. This route would be an extension of P628 and create an efficient route through to Pakistan and Afghanistan airspace. The meeting was advised that this route west of RK would be available in Pakistan airspace.

3.9.25 Because the airspace on the intended route contains a number of military training areas, it was proposed that the new route should have an MEA of preferably FL 280 or FL 310 to permit continued military operations at the lower levels. If it was necessary to do so, the period of 1730 – 0100 UTC daily would be sufficient to cover the daily peak period westbound.

Pursue additional levels FL280/290 on ATS routes A466, N644 and L750 in Kabul FIR

3.9.26 ICAO Headquarters held meetings with high-level US military authorities on this issue, but no practical progress had been forthcoming to date. The meeting also noted that the ICAO EUR Office would be meeting with NATO authorities in early July to discuss Afghanistan issues and this item would be included in the agenda.

3.9.27 The meeting further considered that, if it was necessary to do so, the availability of FL280 to FL390 for the period 2000 – 2400 UTC daily on ATS routes A466, N644, and L750 would be sufficient to relieve the large traffic flow wishing to transit the Kabul FIR westbound. Due to restrictions in I.R. Iran, FL280 was not available on ATS route G792, which joins V390 at the Tehran/Kabul FIR boundary thus restricting its use through the Kabul FIR.

Investigate the capability of some flights climbing to FL350 before Kabul FIR

3.9.28 The meeting considered that due to the requirement to be at FL310 or above prior to entering the Kabul FIR, international aircraft operators should be encouraged to climb from FL310 to FL350 as soon as possible within Indian airspace, even though it may not be the optimum time to reach that level. The benefits of doing this would be to allow aircraft restricted to FL280 to climb to FL310 in order to transit the Kabul FIR. Failure to do so penalizes traffic at FL280 because they may be required to re-route around Afghanistan. IATA advised the meeting that many flights from Southeast Asia should be able to climb to FL350 at or around Delhi.

3.9.29 For aircraft electing to climb but not reaching FL350 by the India/Pakistan boundary, India was requested to coordinate and seek Pakistan's agreement to permit aircraft to cross the India/Pakistan FIR Boundary in a climbing profile where necessary.

The development of a westbound Flow Management Plan

3.9.30 The meeting looked at the possibility of developing a Flow Management Plan based on the lines of the CRAME-03 Flow Management System, however it was considered that it may be difficult to implement and manage such a system on a regular basis for the short peak period each day. It was noted that if many of the proposed improvements to the airspace and procedures were implanted, the need for a flow control system may be significantly eased.

Follow-up implementation of BB17 and BB18 with States concerned

3.9.31 The meeting was advised that due to political constraints affecting the States concerned, there was nothing to report on this item but the issue would again be raised at the next BBACG meeting.

Singapore departures routing B463

3.9.32 Thailand advised the meeting that one operator routes B463 from Singapore to BGO to join L507. This routing crosses many other routes and causes excessive restrictions to other traffic departing out of Bangkok. Thailand was strongly considering to restrict the use of B463 within its airspace to FL240 or to FL350 and above. It was presently co-ordinating this action with Myanmar and hoped to implement the procedure soon.

IATA Afghanistan Traffic Orientation Scheme and Flow Control

3.9.33 Details of this IATA proposal were not available and ICAO would liaise with the IATA Asia/Pacific Office for more information.

3.9.34 The meeting thanked the Working Group for their input to the meeting on this very important matter. Due to the significant amount of work, which was given to this important project, all parties concerned were strongly encouraged to overcome the issues presented to allow the full benefits of the EMARSSH route structure to be achieved. Further reports on progress in these matters would continue to be addressed at other meetings concerning the Bay of Bengal States and westwards which are scheduled to be held over the coming months.

3.10 **Implementation of lateral offsets**

3.10.1 The meeting considered developments and implementation of lateral offset procedures in the Asia/Pacific Region in light of the ongoing work of the Separation and Airspace Safety Panel (SASP).

Revised ICAO Guidelines on use of lateral offsets

3.10.2 The meeting recalled that APANPIRG/12 Decision 12/9 required the Sub-Group, as a matter of urgency, to develop lateral offset procedures for application in the Asia/Pacific Region, and in co-ordination with other regional planning groups and bodies concerned, develop global offset procedures.

3.10.3 ICAO guidelines on the use of lateral offsets and the effect on airspace safety were developed by the SASP and issued by ICAO State letter AN 13/11.6-00/96 dated 3 November 2000. The purpose of these guidelines was to standardize procedures to reduce the likelihood of pilots inadvertently applying procedures different from those specified for the airspace in which they were operating. The guidelines were limited in their application and provided for a 1 NM offset to the right of track. It was also necessary to ensure that application of offsets to reduce the risk of collision as a result of loss of vertical separation would not increase the lateral risk between aircraft on adjacent tracks due to the magnitude of the offset being used.

3.10.4 The SASP revised the guidelines to allow for application of offset procedures different from those specified, provided that a safety analysis for the particular airspace had shown that the proposed procedures would meet appropriate safety criteria. These revised guidelines were issued by State letter AN 13/11.6-02/21 dated 31 May 2002.

3.10.5 In line with APANPIRG/13 *Conclusion 13/4 — Survey of State planning to implement lateral offset procedures*, States had been requested to advise the Regional Office of their plans to implement lateral offset procedures. To date there has been little information available on State planning.

3.10.6 The SASP was continuing to develop guidelines for global applicability, and was considering an amendment to Annex 2, which was intended to remove any concerns about the authority for pilots to routinely offset from track without an ATC clearance.

3.10.7 A proposed amendment, APAC-S 03/2 to the MID/ASIA and PAC SUPPs (Doc 7030) for a 1 NM lateral offset procedure based on the ICAO guidelines was circulated to States and international organizations by State letter dated 24 February 2003. Following circulation of the proposal, there were no objections but the United States stated that they would not be applying this procedures in the Pacific Region, and instead would be looking to apply a 2 NM procedure similar to the procedure used in the West Atlantic Region.

3.10.8 The meeting noted that the guidelines provided by ICAO for application of lateral offsets described above, did not provide procedures that suit all operating environments. Also, they do not apply to the use of tactical offsets by ATC, nor to the application of offsets by pilots when following published contingency procedures to avoid wake turbulence.

3.10.9 In light of the work of the SASP on a 2 NM offset described below that would apply in route structures with 30 and 50 NM route spacing, it was expected that this offset would be included in revised guidelines and approved by ICAO in the near future. In light of these developments, the meeting agreed that the 2 NM offset would provide greater safety benefit and should be implemented in all relevant airspace in the APAC Region. Accordingly, the meeting formulated the following Draft Conclusion:

Draft Conclusion 13/8 – Implementation of a 2 NM lateral offset procedure

That, subject to the ICAO guidelines being revised, States should develop a 2 NM lateral offset procedure to be implemented in all relevant airspace in the Asia/Pacific Region, and the Regional Supplementary Procedures amended as appropriate. This procedure to be harmonized with other regions to ensure uniform application globally.

Lateral Offset and SASP

3.10.10 The United States provided an update on the Strategic Lateral Offset procedures that were being developed, and the results of the SASP work on the lateral offset proposal. In this regard, the third meeting of the SASP Working Group of the Whole met in May 2003 and did extensive work on the issue of lateral offsets.

3.10.11 The SASP Lateral Offset Project Team, based on material provided by the Mathematicians Sub-Group, discussed lateral offsets of up to 2 NM. SASP recognized the need for additional analyses of the effect of lateral offsets of up to 2 NM in airspace with routes spaced at 30 NM, and in particular in crossing route scenarios. In light of developments, SASP was considering revising the Phase 1 guidelines to allow offsets of up to 2 NM for all aircraft that have automatic offset tracking capability.

3.10.12 SASP considered information that analyzed the effect of lateral offsets on the lateral collision risk of the NOPAC routes. The results were based on a hypothetical scenario of offset tracking on a portion of the NOPAC routes, data on flights from November 2002 on these routes and some parameters taken from previous studies. The results indicate that the estimated lateral collision risk for the assumed scenario was (slightly) less than that for the system without offsets.

3.10.13 Taking also into account previous studies of the SASP Mathematician Sub-Group, the SASP WG of the Whole meeting concluded that offsets up to 2 NM (to the right) would not significantly increase the lateral collision risk on route systems with 50 NM spacing between the centrelines.

3.10.14 SASP also received information on the results of calculating lateral overlap probabilities of opposite-direction airplanes flying on a bi-directional oceanic route. The material compared the overlap probability without any offset with five other options over a range of RNP types from 2 to 10. The results showed that significant reductions in lateral overlap probability would be achieved with any offset option. Reductions were largest with compulsory offsets for GNSS equipped aircraft.

3.10.15 The SASP Project Team 9 made the following recommendations on lateral offsets:

a) ICAO should urge States to make use of the guidelines on the use of lateral offsets;

b) offset tracking should not be mandated (but nevertheless be strongly recommended);

c) the required TLS should be achieved on any route/route system without taking into account any offset tracking;

d) ICAO should upgrade the revised guidelines on the use of lateral offsets to allow all aircraft with automatic offset tracking capability to use right offsets of up to 2 NM;

e) the Math Sub-Group should study, whether the 0, 1, 2 right-offset would be acceptable in a route system with 30 NM spacing, also taking into account crossing track situations;

f) further information on the effects of offset tracking in advanced and automated ATC systems should be made available to the Project Team; and

g) the Project Team investigates the possibility of incorporating the Phase II Offset Guidelines in Doc 4444 PANS-ATM and whether any changes to Annexes 2 and 11 and/or any other ICAO documents (especially Doc 9689) are required/desirable.

3.10.16 The Lateral Offset Project Team intended to finalize Phase II Guidelines as soon as the 30 NM spacing study was concluded. In the meantime, based on information available so far, an update to the (revised) Phase I Guidelines was recommended to allow offsets to the right of up to 2 NM for all aircraft that have automatic offset tracking capability. It was envisaged that this revision could be relatively quickly produced by ICAO and could be used as a basis for coordinated implementation in the whole Pacific area.

3.11 **U.S. Safety Management System Development**

3.11.1 The United States provided information which outlined the safety management system (SMS) under development in the U.S. in accordance with the ICAO Annex 11 requirement. In the SMS, the U.S. is committed to meeting ICAO requirements in a way that enhances the safety of a system that has been demonstrated to be among the safest in the world. The information summarized the development approach employed, the findings in comparing ICAO SMS requirements to existing FAA processes and procedures, safety risk management in the FAA and implementation and evolution of the system.

3.12 **Guidance Manual for AIS in the Asia/Pacific Region**

First Edition of the *Guidance Manual for AIS in the Asia/Pacific Region*

3.12.1 The meeting recalled that the AIS Automation Task Force (AATF) developed a draft Guidance Manual for AIS in the Asia/Pacific Region which was reviewed and adopted by APANPIRG/12. When reviewing the Report of APANPIRG/12, the Air Navigation Commission noted the conclusion of APANPIRG and that the guidance manual would be published in accordance with established procedures.

3.12.2 The meeting noted that the AATF finalized a draft Chapter 3 – Operating Procedures for AIS Dynamic Data (OPADD) and Chapter 4 –Use of the Internet for Information Transfer. These were forwarded to ATS/AIS/SAR/SG/12 and APANPIRG/13 for review and adoption.

3.12.3 The Commission reviewed the APANPIRG Conclusion 13/3 and noted the intent of the Secretariat to develop guidelines for the operational use of the Internet by States to access and/or disseminate various categories of aeronautical information, such as WAFS products, OPMET data and AIS information. The meeting questioned whether publication of Chapter 4 could be expected in the short term given that it contained generalized guidance material rather than specific technical instructions. The Secretariat advised the meeting that Chapter 3 had been incorporated in the Manual, and Chapter 4 would need to be reviewed in the light of developments by ICAO to address this matter and a coordinated approach was necessary.

3.12.4 While recognizing the unavoidable difficulties experienced by the ICAO Regional Office given the absence of a dedicated AIS Officer, the meeting expressed some disappointment with the apparent lack of progress in this area and the delay in publication of the guidance manual.

Dissemination of Aeronautical Information

3.12.5 The meeting reviewed the Action Agreed list from the 10th Meeting of the South East Asia ATS Coordination Group (SEACG/10) held in Denpasar, Indonesia, 18-22 March 2002. In particular the importance of strict adherence to AIRAC dates was stressed. Action Agreed No.11 – Dissemination of Aeronautical Information was endorsed by the meeting and is as follows:

Action Agreed No. 11 (ATS) – Dissemination of Aeronautical Information
All States (LONG TERM)

That, in planning changes to the ATS and/or Airways system, States are urged to review their internal and regional processes to ensure that accurate changes to aeronautical information are disseminated in sufficient time to allow AIP data to be processed prior to the effective date of implementation.

AIS Implementation Task Force

3.12.6 The meeting in considering the future of the AIS Automation Task Force, agreed that it should be reactivated and renamed the AIS Implementation Task Force (AITF) to ensure that AIS matters were progressed. The meeting was informed by the Secretariat that in the event that the Task Force was reactivated by APANPIRG, it was unlikely that the first meeting of the Task Force would be held until the second quarter of 2004 or later due to staff and resource constraints of the Regional Office. The meeting recalled that APANPIRG/2 (October 1992) Conclusion 2/31 addressed this problem and called upon ICAO to increase AIS support for the APAC Office. This item was still open and the situation had deteriorated at a time when AIS requirements reached a critical level with a considerable number of outstanding AIS issues not being progressed, and with rapid changes in ATS technology and practices. The meeting reiterated that AIS is an essential service that had safety implications and was crucial to the provision of air traffic services. This matter should be given priority by ICAO and to strengthen the AIS expertise in the Regional Office. The meeting developed draft Terms of Reference for the Task Force as shown at Appendix F to the Report on Agenda Item 3.

Draft Conclusion 13/9 – Reactivation and renaming of the AIS Automation Task Force

That, the AIS Automation Task Force be reactivated and renamed the AIS Implementation Task Force (AITF) to study AIS automation and related matters, and assist States to implement ICAO SARPs on AIS in an expeditious manner. Amended terms of reference are provided in Appendix F.

AIS Seminar 2002

3.12.7 The meeting was provided information on the AIS Seminar held at the ICAO Regional Office, Bangkok from 17 to 20 December 2002. The Seminar was attended by 59 participants from 18 States, one international organization and two AIS companies

3.12.8 The meeting recalled that APANPIRG/12 placed a special emphasis on the development and conduct of the AIS Seminar and formulated the following Conclusion:

Conclusion 12/8 – Special Implementation Project for an AIS Seminar in 2002

That, ICAO urgently consider a proposal for an Asia/Pacific Special Implementation Project to be established in order to hold an AIS Seminar in 2002 with the primary objective to improve AIS in relation to AIS automation and quality assurance

programme.

3.12.9 The ICAO Council subsequently considered and approved the Special Implementation Project in late March 2002.

3.12.10 The ATS/AIS/SAR Sub-Group's AIS Automation Task Force (AATF) was tasked with the development of the AIS seminar programme in line with APANPIRG/12 Conclusion 12/8. As a result of the development work undertaken by the AATF, the AIS seminar programme was prepared to provide an opportunity for technical personnel at the work level to become aware of new trends in the AIS field. It was also considered equally important to raise the awareness at the management level of the State's civil aviation authorities and/or AIS service providers.

3.12.11 In developing the AIS Seminar, the AATF placed a special focus on the implementation of a quality system for AIS and accordingly, two sessions were programmed under the respective headings of "*Quality System & Training for AIS"* and "*Implementation of Quality Systems in AIS"*.

3.12.12 The objectives of the AIS Seminar were as follows:

a) increase the level of awareness by AIS/MAP providers regarding the need for, and application of, the SARPs contained in Annex 15;

b) accelerate the application of quality systems supporting AIS/MAP across the regions;

c) provide briefings relating to international directions and advances being made in the fields of AIS/MAP;

d) provide a forum for open discussions relating to AIS matters of mutual interest between providers and users;

e) provide a forum for AIS/MAP users to articulate their specific needs and requirements; and

f) provide a forum where technological advancements and enhancements in the field of AIS/MAP can be displayed and demonstrated.

3.12.13 The Seminar was conducted by the following AIS experts: Mr. A. Pavlovic (Moderator), Chief AIS/MAP, ICAO, Mr. Chan Chi Fai, Ms Ma Hoi Ian, and Ms Choi Vai Man, Macao, China, Mr. K. Suzuki and Mr. H. Inoguchi, Japan Civil Aviation Bureau, Mr. D. Goodhue, Airways Corporation of New Zealand Ltd, Mr. P. Bossman, EUROCONTROL, Mr. P. Rudolf, Avitech, and Mr. C. Mason, Jeppesen. The seminar was assisted by Mr. D. Moores, Regional Officer ATM, Mr. Li Peng, Regional Officer CNS and Mr. D. Ivanov, Regional Officer MET from the Regional Office Bangkok.

3.12.14 The Seminar programme was conducted over five sessions covering the following subjects: **Session I – Update on AIS Developments**: Development of SARPs Global Aspects after AIS/MAP/98, ICAO Regional Aspects in the Asia/Pacific Region, and Developments in the European Region; **Session II – Quality System in AIS**: Overall Aspects of Introduction of Quality System in AIS, Implementation of Quality System in AIS, and ISO in AIS including ISO 9000 Standards; **Session III – Selection and Training for AIS:** TRAINAIR for AIS, and Regional Guidance Manual for AIS-Chapter 2; **Session IV– Automation of AIS**: Automation for Dynamic Data**,** Development of Database, and Use of Internet for AIS and Exchange of Aeronautical Data/Information; and **Session 5 – Adherence to AIRAC System**: the AIRAC System**.**

3.12.15 In discussion the Seminar highlighted the following issues:

a) need for States to complete WGS-84 surveys in accordance with SARPs;

b) implementation of quality assurance systems for AIS is an essential safety consideration;

c) development of the use of the internet to publish and update AIS information should be given high priority by ICAO;

d) higher profile should be given by ATS providers to AIS work and status of personnel;

e) priority should be given by those States who have not updated their AIPs in the Annex 15 format to complete the work and publish the document as soon as practicable;

f) greater emphasis to be placed on training AIS personnel;

g) ATS providers to implement automated systems and exchange of information as a matter of priority;

h) AIS is a key element in bringing about ATS route and airspace changes, and in major projects such as EMARRSH and the revised South China Sea route structure, timely and efficient handling of data was crucial to successful implementation, and some States had difficulties providing up-to-date data;

i) adherence to the AIRAC system is essential and is a major cause of breakdown in the timely preparation and distribution of aeronautical information;

j) for major aeronautical information changes, the Annex 15 recommendation of a publication date of at least 56 days in advance of the effective date should be adhered to; and

k) more frequent seminars and workshops should be held in the region.

3.12.16 The meeting recognized the seminar was of considerable value to participants and these should be held more frequently than in the past to raise awareness of the significant role AIS had in the provision of air traffic services. Also, it would be of considerable benefit to States to conduct workshops in view of the significant changes in technology, the use of databases and need for quality assurance in the production and management of aeronautical information.

3.12.17 IATA reminded the meeting of the critical safety nature of accurate and timely AIS data and the implementation of Annex 15 provisions, particularly those relating to the AIRAC system. Recent experience had shown that several States were regularly not complying with the AIRAC provisions. In this regard, IATA expressed frustration at the continuing non-implementation and/or non-application of these fundamental provisions, which were directly linked to safety of operations. IATA advised the meeting that it had received feedback from some States, which indicated that conformance to the AIRAC system was not a highly important or significant matter, a position which IATA could not condone.

3.12.18 Considering the comments from IATA and those from the AIS Seminar, the meeting developed the following Draft Conclusion:

Draft Conclusion 13/10 – AIRAC provisions

That, ICAO be requested to again reinforce to States the critical safety nature of AIS and adherence to Annex 15 provisions, particular those relating to AIRAC, as well as the need to ensuring accurate and timely publication of AIS data.

3.13 **Search and Rescue Matters**

Analysis of SAR Capability of ICAO States in the Asia/Pac Region

3.13.1 The meeting reviewed the SAR Matrix Table which provides a comprehensive listing of the SAR capability of ICAO States in the Asia/Pacific Region. This Table was developed by APANPIRG/7 in response to APANPIRG Conclusion 7/3 – *"that States provide information to ICAO by 30 April of each year to permit periodic update."* The Matrix Table was updated by the meeting and is shown at Appendix G to the Report on Agenda Item 3.

Provision of SAR and SAR Agreements

3.13.2 The meeting reviewed the ICAO register of SAR agreements and noted that no changes had occurred since ATS/AIS/SAR/12. Australia informed the meeting of the SAR agreements that it had completed with countries with which it had aviation and maritime boundaries.

3.13.3 The United States provided details of the SAR agreements it had concluded with Asian and Pacific States and presented the U.S. – New Zealand SAR agreement as a model that could be used by other States. Information on the SAR agreement is provided at Appendix H to the Report on Agenda Item 3.

3.13.4 Malaysia briefed the meeting on the arrangements it had concluded with neighbouring States.

3.13.5 The meeting emphasized the importance of States establishing SAR agreements with neighbouring States, which would also served to provide arrangements for rapid access to the territory of another State in the event of a request for SAR assistance. Other States which have concluded such SAR agreements are encouraged to send them to the ICAO Regional office for inclusion in the ICAO register.

SAR Exercises

3.13.6 The meeting noted that APANPIRG had requested States to develop formal programmes of SAR exercises and forward these to the ICAO Asia/Pacific Regional Office on an annual basis by 30th April each year. Apart from information provided by one State, no other information had been received by that date this year.

3.13.7 Australia informed the meeting that Australia has operational contact with many States in the region on an ongoing basis. Operational incidents had been recently managed in cooperation with Indonesia, Papua New Guinea, Solomon Islands, Fiji and New Zealand. While no formal international SAREXs had been held in the last 12 months, a SAREX was planned with New Zealand for late 2003 and a planned activity with Indonesia has yet to be given a date. Within Australia, four three day SAREXs had been held.

3.13.8 Australia also provided details of a Pacific Island Region Aviation Accident Preparedness Workshop held in Nadi, Fiji 21-24 October 2002, which addressed SAR as one topic. The meeting noted and concurred with Recommendation 4 of the Workshop: "That all nations in the

region consider developing bilateral search and rescue arrangements with those countries bordering their search and rescue regions or with those countries that have national responsibilities within another country's search and rescue region".

3.13.9 The United States provided an outline of a plan for a 3-year calendar of major SAR exercises. These would provide for involvement of other States in planning, conducting and observing the exercises. Lessons learned and "best practices" determined from the exercises would be available to the participants and to ICAO.

3.13.10 The meeting expressed its grateful appreciation to the United States for its offer to States to participate at its SAR exercises, and also expressed the same appreciation to Hong Kong, China for their generosity in inviting States to observe their annual SAREX.

3.13.11 Vietnam informed the meeting that it had a plan to conduct SAREX-2003 in a mountainous area in the Vietnamese Highlands in November 2003 and details would be made available shortly.

3.13.12 Over the past years, several international SAR seminars and SAREXs involving many States and international organizations had been held with significant success. A main contribution to this success was the intensive preparation and planning to create a "live" atmosphere for the exercise, as well as the harmonization of the event with a SAR seminar. In this way, participants at the seminar had a "front seat" to the exercise and were able to give worthwhile comment on the performance at the conclusion of the SAREX.

3.13.13 APANPIRG/12 endorsed a Conclusion to request a Special Implementation Project for an International Seminar and SAREX in the Bay of Bengal as follows:

Conclusion 12/10 – Special Implementation Project – International Seminar and SAREX

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

3.13.14 In regard to the above, this event was deferred due to other pressing matters and was due to be held in September 2003. Unfortunately, with the outbreak of the SARS in the Asia Region in late March 2003, significant disruption was caused to the Asia/Pacific Regional Office meeting programme with meetings being postponed or rescheduled to later in the year. Consequently, it was not possible to hold the Seminar/SAREX in 2003 and this was again deferred to 2004.

3.13.15 Noting that a SAR Seminar and SAREX was requested under the action items from SEACG/10, the meeting considered that this could be held in conjunction with the annual SAREX planned by Hong Kong, China, and requested the Secretariat to approach the Hong Kong Civil Aviation Department to explore the possibility of holding an ICAO SAR Seminar and SAREX in December 2003.

Emergency locator transmitter (ELT)

3.13.16 The meeting noted the adoption by the Council of ICAO of Amendment 78 to Annex 10 which included the introduction of registration requirements for emergency locator transmitters (ELT). The consequential amendment to Annex 6 was also noted.

National Plans for Search and Rescue

3.13.17 The United States provided information which explained the transfer of responsibility for international civil SAR to the Department of Homeland Security. It was emphasized that there would be no change in U.S. search and rescue services and that the U.S. Coast Guard would continue to be the focal point.

Annex 12

3.13.18 The United States provided background information on the Air Navigation Commission proposal to amend Annex 12 – *Search and Rescue*. The United States agreed that the proposed amendments would make a substantial contribution toward improving aeronautical SAR services and encouraged other States to support the amendment. Comments on the proposals were to reach Montreal by 15 August 2003.

3.13.19 In reviewing the Air Navigation Deficiencies in the ATS/AIS/SAR Fields in the Asia/Pacific Region from APANPIRG/13, the meeting noted that three States had not implemented Annex 12 requirements or concluded any agreements with adjacent States. The three States were not represented and no update on the deficiencies was received. The States concerned were urged to implement Annex 12 and enter into appropriate agreements.

Search and Rescue Training

3.13.20 Australia presented information outlining the formal SAR training conducted by the Australian National SAR School. Specialist aviation and maritime search and rescue training was provided for officers that work in the Australian RCC and also to defense, police and SAR staff from neighbouring countries. In order to keep costs to a minimum, distance learning using the World Wide Web was being developed.

Improving SAR capability in the Region

3.13.21 The meeting reviewed the List of Outstanding Conclusions/Decisions in ATS/AIS/SAR Fields with reference to Conclusion 4/2 and the list of SAR items requiring urgent addressing in the Pacific Region. There being limited Pacific representation, and time available being severely limited, the list is appended as Appendix I for States review and action.

3.14 **Eleventh Air Navigation Conference (AN-Conf/11) review**

3.14.1 The meeting recalled that APANPIRG/13 Decision 13/38 requested the ATS/AIS/SAR/SG to review the following AN-Conf/11 Agenda Items: Agenda Item 1: Introduction and assessment of a global air traffic management operational concept; Agenda Item 2: Safety and security in air traffic management**;** Agenda Item 3: Air traffic management performance targets for safety, efficiency and regularity and the role of required total system performance (RTSP) in this respect; and Agenda Item 4: Capacity - enhancement measures. The meeting also took into account the report of the regional preparatory meeting for AN-Conf/11 held at Bangkok from 27 to 28 January 2003 as requested by the 39th DGCA Conference.

3.14.2 The meeting noted with interest some of the expected outcomes and benefits related to ATM of the AN-Conf/11 summarized below.

- the ATM operational concept would describe how an integrated global ATM system should operate and provide States and industry with clearer objectives for designing and implementing ATM ands supporting systems;

- the review and assessment of the operational concept would facilitate the

eventual acceptance and implementation of the concept into the planning framework of States and planning implementation regional groups. Recommendations on this subject would guide and encourage transition and implementation;

- discussions at the conference of the present air navigation planning processes would help to identify the most appropriate methods to meet the future implementation planning needs;

- the ATM operational concept and changes to the separation services require a clear understanding of the role of collision avoidance systems technologies in the future;

- a clearer understanding should be gained on the Global Aviation Safety Plan (GASP), of what the plan was intended to achieve, and the methods of accomplishing this Recommendation of the conference would facilitate an acceptance of GASP by the wider aviation community;

- the conference would offer an opportunity to address global efforts aimed at improved security of ATM systems and information;

- work on the required total system performance (RTSP) may underway and recommendations of the conference would facilitate the endorsement of RTSP; and

- a global approach to addressing capacity-enhancing measures should be developed, and discussions on related problems would facilitate an understanding as to the most appropriate methods to alleviate the situation and prepare for the future environment.

3.14.3 The meeting recognized that a number of issues arising from the Conference would have a direct impact on the regions, in particular on planning, implementation and safety matters. Also, the meeting noted that there was no direct role for regional representation at the AN-Conf/11, except by individual States. It was considered highly desirable that the regions have a significance role in the post Conference process on issues related to regional activities.

3.14.4 The meeting noted the outcome of the regional preparatory meeting and endorsed the positions taken.

Implementation of WGS 84 in the Asia/Pacific Region

3.14.5 The meeting recalled that APANPIRG/13 had reiterated that due to the importance in facilitating world-wide implementation of WGS-84, States should supply the necessary data in an official correspondence to the ICAO Regional Office so that an accurate up-to-date record of WGS-84 implementation was maintained. Further, under Task No. 11 the ATS/AIS/SAR/SG was required to facilitate and monitor the implementation of WGS-84 in the Asia/Pacific Region. The non-implementation of WGS-84 was included on the list of Air Navigation Deficiencies in the Asia/Pacific Region.

3.14.6 The meeting further recalled that at APANPIRG/13, twelve States were on the list of Air Navigation Deficiencies in the ATS/AIS/SAR Fields in the Asia/Pacific Region as not having completed WGS-84 surveys, eight States had partially implemented and were in the process of carrying out the necessary work, and four States had not implemented WGS-84. The Regional Office had sent a reminder to States concerned to provide information as requested by APANPIRG.

3.14.7 Since APANPIRG/13, the Regional Office received the following information from States: Brunei Darussalam advised that they had completed the WGS-84 requirement and had cross-checked accuracy, also, they would be coordinating with Malaysia in a meeting in July to ensure that common coordinates were used for airspace common boundaries; Hong Kong, China advised that they had implemented WGS-84 in April 1996; Malaysia provided details on progress to implement WGS-84 and the tables were updated; New Zealand advised that they had no significant o0utstanding issues regarding implementation; and Samoa advised that they had implemented WGS-84 with converted coordinates for their aeronautical information and details to update the tables would be provided.

3.14.8 New Zealand provided the meeting with information to amend the table in regard to the Cook Islands, Samoa, Tonga, Tuvalu and New Zealand.

3.14.9 The table of WGS-84 implementation status was updated as shown in the Appendix J to this agenda item

INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

ASIA/PACIFIC REGIONAL INTERFACE CONTROL DOCUMENT (ICD) FOR ATS INTERFACILITY DATA COMMUNICATIONS (AIDC)

DRAFT

Version 2.0
28 March 2003

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Chapter 0 **EXECUTIVE SUMMARY**

0.1 The Asia/Pacific Regional Interface Control Document (ICD) for ATS Interfacility Data Communications (AIDC) is based on the work undertaken by the North Atlantic Systems Planning Group (NAT SPG) to standardise the interfacility message exchanges (ground/ground data link) needed to support oceanic automation in the North Atlantic Region. The NAT SPG agreed that the ground/ground data interchange should be in accordance with the procedures specified in a common ICD but that the common ICD should identify and detail any regional differences considered necessary.

0.2 The purpose of the ICD is to ensure that data interchange between units equipped with automated ATS systems used for air traffic management (ATM) in the ASIA/PAC Region is harmonised to a common base standard, and that the evolutionary development is coordinated and implemented centrally through the APANPIRG. Therefore, the ICD for the ASIA/PAC Region was developed to address any regional differences but, at the same time, preserve the common base standard set out in the Automatic Dependent Surveillance (ADS) Panel Guidance Material.

0.3 As in the North Atlantic, the ASIA/PAC Region has a great need for a communications and data interchange infrastructure that will significantly reduce the need for verbal coordination between Oceanic Area Control Centres and/or Area Control Centres. ATS Interfacility Data Communications (AIDC) standards, as defined in this document, provide the means by which data interchange between ATS units providing air traffic service in, and adjacent to, the ASIA/PAC Region is harmonised during the notification, coordination, and transfer of control phases of operations.

0.4 The message sets and procedures described in the ICD have been designed for use with the existing Aeronautical Fixed Telecommunications Network (AFTN) and the future Aeronautical Telecommunication Network (ATN). In the interest of global standardisation, ICAO agreed methods and messages were used wherever possible. Where ICAO methods and messages do not meet requirements, new messages were identified using existing ICAO field definitions to the extent possible. Specifically, the ICD defines the following:

(a) Basic communications and support required to coordinate implementation of AIDC throughout the ASIA/PAC Region;

(b) Common boundary agreements between all the area/oceanic control centres concerned;

(c) Implementation guidance material; and

(d) Relationship to the ICAO OPLINKP (formerly the ADS Panel) AIDC message set.

0.5 The ICD also describes a configuration management process which will ensure stability in the design and implementation of the messages described herein. As agreed, this process is applicable and adopted by Asia Pacific Provider States along with the ICD guidance material

Chapter 1 FOREWORD

1.1 HISTORICAL

1.1.1 In 1971, States in the North Atlantic (NAT) Region initiated action to begin the automation of flight data exchanges between Oceanic Area Control Centres (OACs) using On-Line Data-Interchange (OLDI) techniques. These techniques were not standard nor indeed even compatible, and it was agreed that to get full benefits from the application of OLDI, regional standardisation must be achieved.

1.1.1.1 OLDI was defined as system to system interchange of data with controller notification and presentation when necessary. It was not seen as a means where by controllers could effectively send and receive electronic mail.

1.1.2 At its twenty-fifth meeting (Paris, September 1988), the North Atlantic Systems Planning Group (NAT SPG) established a Task Force to develop a future ATS system concept for the whole of the NAT Region (NAT SPG/25, Conclusion 25/11 refers).

1.1.1.2 Today there are two types of OLDI in use, one known as European OLDI and the other known as NAT OLDI. The message sets differ to some degree with the European OLDI being simpler and oriented toward minimal controller interaction. The NAT OLDI message set includes messages which require manual intervention.

1.1.3 At its twenty-seventh meeting (Paris, June 1991), the NAT SPG noted that the draft ICD was sufficiently mature to be used for planning purposes and therefore agreed that States should endeavour to replace agreements that existed at the time with the common ICD by the end of 1991. Subsequent work within the NAT SPG upgraded the ICD to better match automation and communications transition requirements.

1.1.4 On the basis of the above, the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG), at its fifth meeting in 1994, undertook the task of developing the inter-facility message exchanges needed to support automation in the regions.

1.1.5 The ICAO OPLINKP then adopted the AIDC message set and included it as guidance material.

1.1.6 At the thirteenth meeting of APANPIRG (Bangkok, September 2002) decision 13/9 was made to reconvene the AIDC Task Force to undertake the reviewing and updating of the ASIA/PAC AIDC Interface Control Document (ICD)

1.1.7 The AIDC Review Task Force met in Brisbane on the 27th and 28th of March 2003. Discussions within the Task Force revealed inconsistencies between existing AIDC ICDs containing the same version number. The Task Force decided to baseline a document based on the original printed ICAO document.

1.1.8 As a result of this meeting the ASIA/PAC Regional ICD for AIDC was updated to include:

- Additional clarification of certain message types;
- Improved consistency of the terminology used in the document;
- Incorporation of recent changes proposed changes to PANS-ATM Doc. 4444 and Doc. 9694, regarding additional optional sub-fields in ICAO Field 14; and
- Proposed additional message types, namely the Application Status Monitor (ASM), the FANS Application Notification (FAN) and the FANS Completion Notification (FCN).

1.1.9 A draft Version 2.0 of the ASIA/PAC ICD for AIDC was endorsed by APANPIRG ATS/AIS/SAR/SG/13.

Chapter 2 **THE DOCUMENT**

2.1 INTRODUCTION

2.1.1 The ASIA/PAC Interface Control Document (ICD) for ATS Interfacility Data Communications is divided into the following Parts:

2.2 PART I - PURPOSE, POLICY AND UNITS OF MEASUREMENT

2.2.1 This part provides an overall philosophical view of the ICD, general information concerning the units that are used and information on data that is applicable to all ATSUs (Air Traffic Services Units).

2.3 PART II - COMMUNICATIONS AND SUPPORT MECHANISMS

2.3.1 This part describes the technical and other requirements needed to support AIDC. It also indicates that a longer term strategy for the transition to the ATN needs to be developed.

2.4 APPENDICES

2.4.1 Appendices include, inter alia, implementation guidelines which are relevant for software engineers, and a cross-reference to the ICAO OPLINKP AIDC message set, descriptions of messages used to exchange ATS data between automated ATS Systems, a list of error messages, and a Glossary of Terms.

2.5 LIST OF ACRONYMS

ACC	Area Control Centre
ADS	Automatic Dependent Surveillance
AFTN	Aeronautical Fixed Telecommunications Network
AIDC	ATS Interfacility ASIA/PAC Data Communications
AOC	Airline Operational Control (also stands for Assumption of Control)
APANPIRG	Asia/Pacific Air Navigation Planning and Implementation Regional Group
ASIA/PAC	Asia/Pacific
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATN	Aeronautical Telecommunications Network
ATS	Air Traffic Services
ATSU	Air Traffic Service Unit
C-ATSU	Controlling ATSU
COMA	Communications and Automation
CRC	Cyclic Redundancy Check
D-ATSU	Downstream ATSU
FDPS	Flight Data Processing System
FIC	Flight Information Centre
FPPS	Flight Plan Processing System
IA-5	International Alphabet 5
ICD	Interface Control Document
MLF	Master List of Fixes
OAC	Oceanic Area Control Centre
ODF	Optional Data Field
OLDI	On-Line Data-Interchange
OPLINKP	Operational Data Link Panel
OSI	Open System Inter-connection
PANS-ATM	Procedures for Air Navigation Services - Air Traffic Management
R-ATSU	Receiving ATSU

UTC	Universal Coordinated Time
WGS-84	World Geodetic System 1984

PART I - PURPOSE, POLICY AND UNITS OF MEASUREMENT

1. PURPOSE

1.1 The purpose of the document is to ensure that data interchange between ATSUs providing air traffic service in, and adjacent to, the ASIA/PAC Region is harmonised to a common standard and to ensure that evolutionary development is encouraged and coordinated centrally. It also provides a description of the message types and methods of communication.

1.2 In the context of this document, the definition of AIDC is as follows:

The AIDC application supports information exchanges between ATC application processes within automated ATS systems located at different ATSUs. This application supports the Notification, Coordination, and the Transfer of Communications and Control functions between these ATSUs.

1.3 In the interest of global standardisation, ICAO agreed methods and messages are used wherever possible. Where ICAO methods and messages do not meet requirements, new messages were identified using existing ICAO field definitions to the extent possible.

2. SCOPE

2.1 This document specifies the facilities and messages to be used within the ASIA/PAC region for the exchange of notification, coordination, transfer and related data between automated ATS systems.

2.2 The messages defined in this document are used during the active phase of flight. Though outside the scope of the AIDC application, the Emergency, Flight Planning and Supplementary Message Categories as defined in ICAO Doc 4444 Appendix 3 will continue to be used to perform functions not provided by the AIDC application.

2.3 In particular, the Flight Planning function is required and will be required in the future to support operations within the ASIA/PAC Region. The ICAO messages FPL (Filed Flight Plan), CHG (Modification), DLA (Delay), DEP (Departure), ARR (Arrival), CNL (Cancel) and RQP (Request Flight Plan) will be used to support this function.

3. POLICY

3.1 Document amendment

3.1.1 Parts I and II of this ICD are under configuration control and are administered by the ICAO ASIA/PAC Regional Office in conjunction with APANPIRG. Changes to Parts I and II of the document shall only be made as a result of agreement by APANPIRG. Requested changes to the Appendices shall be relayed to the ICAO Regional Office in Bangkok, who will circulate requested proposed changes to all States in the Regions for comment and, subject to unanimous agreement, the Regional Office will amend such document accordingly.

3.2 System philosophy

3.2.1 The application of AIDC in the ASIA/PAC Region shall be based on a step-by-step data distribution scheme comprising three phases: NOTIFICATION, COORDINATION and TRANSFER OF CONTROL.

3.2.1.1 The capability to revert to manual coordination shall be retained.

3.2.2 In support of all the operational phases, application management messages are required to support application level dialogue between automated ATS systems.

3.2.3 Flight plans shall continue to be filed in accordance with existing procedures.

3.2.4 A functional address, which refers to a function within an OAC/ACC (e.g. an ATC watch supervisor), may be substituted in certain messages for the aircraft identification found in Field 7. Where such an address is used, it is preceded by an oblique stroke (/) to differentiate it from an aircraft identification.

4. UNITS OF MEASUREMENT

4.1 In general the AIDC ICD messages support different units of measurement. Bilateral agreements should determine the units to be transmitted.

4.2 Time and date

4.2.1 All times shall be expressed in UTC as four digits, with midnight expressed as 0000. Dates, when used, shall be in the form of YYMMDD.

4.3 Geographic position information

4.3.1 Geographic position information shall be in accordance with the provisions contained in the *Procedures for Air Navigation Services Air Traffic Management (PANS-ATM, Doc 4444)*.

4.4 Level and speed information

4.4.1 Level and speed information shall be specified in accordance with ICAO PANS-ATM Doc 4444 with the following exceptions applying to Field 14 only.

4.4.1.1 Block level information

4.4.1.1.1 In certain circumstances, a vertical range of levels may be transmitted. Where a vertical range of levels is used, it shall be specified as a lower level followed by the upper level.

Ex1. MINNY/2125F320F340 The aircraft is operating in a block of levels between F320 and F340 (inclusive).

4.4.1.1.2 When transmitting a level restriction, only a single level may be included within the restriction.

Ex2. ELMER/0244F310F350F290A The aircraft is cleared to operate in a block of levels between F310 and F350 and will cross ELMER at or above F290.

4.4.1.1.3 The coordination of a vertical range of levels by AIDC should only be made following bilateral agreement.

4.4.1.2 Mach Number Technique information

4.4.1.2.1 The boundary estimate may contain additional clearance information describing a Mach Number that has been assigned to an aircraft. This information shall contain:

- a single character providing advice as to whether an aircraft will be maintaining the notified Mach Number or less (L), the notified Mach Number or greater (G), or exactly the notified Mach Number (E); and
- the notified Mach Number.

Ex1. BUGGS/0349F350F370/GM085 The aircraft is operating in a block of levels between F350 and F370 (inclusive) maintaining M0.85 or greater.

Ex2. PLUTO/0215F310/EM076 The aircraft is maintaining M0.76

4.4.1.2.2 The absence of speed information in the boundary estimate data of an AIDC message indicates that the previously assigned speed has been cancelled.

Ex3. SPEDY/1237F310F330B/LM083 The aircraft is cleared to F310 and will cross SPEDY at or below F330, maintaining M0.83 or less;

subsequently followed by:

Ex4. SPEDY/1238F310 The aircraft will no longer be on descent at SPEDY, and has resumed normal speed (and one minute later than previously coordinated)

4.4.1.2.3 The format described for the notification and coordination of Mach Number in this section applies to Field 14 – boundary estimate data – only. It may be transmitted in any AIDC message containing Field 14.

4.4.1.2.4 The coordination of Mach Numbers by AIDC should only be made following bilateral agreement

4.5 **Offset and weather deviation information**

4.5.1 The boundary estimate may contain additional clearance information describing an offset or weather deviation that has been issued to an aircraft. This information shall contain:

- a single character providing advice as to whether the clearance is an offset (O) or a weather deviation (W); and
- an off track distance associated with this clearance; and
- a direction, indicating left (L), right (R) or either side of track (E)

Ex1. GOOFY/2330F310/GM084/O30R The aircraft is offsetting 30NM right of track, maintaining M0.84 or greater.

Ex2. DAFFY/0215F310F350/W25E The aircraft is operating in a block of levels between F310 and F350 (inclusive) deviating up to 25NM either side of track.

4.5.2 The absence of offset or weather deviation data in the boundary estimate data of an AIDC message indicates that the off track clearance no longer applies.

Ex3. MICKY/1519F330/W15R The aircraft is deviating up to 15NM right of track

subsequently followed by:

Ex4. MICKY/1520F330 The aircraft is back on track (and one minute later than previously coordinated)

4.5.3 The off-track clearance format described in this section applies to Field 14 – boundary estimate data – only. It may be transmitted in any AIDC message containing Field 14.

4.5.4 When an aircraft is offsetting or deviating, the coordination point shall be the coordination point based on the nominal route rather than the offset route.

4.5.5 When coordinating an Offset, the direction “E” (either side of track) shall not be used.

4.5.6 The coordination of offsets and weather deviations by AIDC should only be made following bilateral agreement.

5. RESTRICTION FORMATS

5.1 Level and speed restrictions

5.1.1 Use of restrictions is not mandatory. If they are used the following convention shall be used.

5.1.2 Route, speed and level information contained in the Route field (ICAO ATS Field 15) represents the current cleared profile. Where a clearance requires a speed/level change subsequent to a route point, then the ICAO convention of route point followed by an oblique stroke and the new speed/level will be used (Ex. 1). Where a clearance requires a speed/level change to be completed by a route point, then the items will be reversed (Ex. 2).

5.1.3 A combination of these two conventions will describe a clearance with a defined starting and completion point (Ex. 3).

Ex. 1 60N010W/M084F350

Ex. 2 M084F350/62N020W

Ex. 3 60N010W/M084F350/62N020W

5.2 Time restrictions

5.2.1 There are three types of time restrictions, describing when an aircraft should arrive at a fix:

a) AT;

b) AT OR BEFORE; or

c) AT OR LATER.

5.2.2 A suffix will be added to the four digit time to denote the restriction type, as follows:

a) AT: 'A', e.g. 1230A;

b) AT OR BEFORE: 'B', e.g., 1230B; or

c) AT OR LATER: 'L', e.g., 1230L.

5.2.3 The restriction itself will begin with a slash, i.e., '/', e.g., /1230B, and will appear after the fix with which it is associated. For example,

49N050W/1230L

signifies that the aircraft should arrive at 49 N 50 W at or later than 1230 pm.

5.2.4 A time restriction may be used in conjunction with speed/level restrictions as follows:

60N010W/M084F350/1230L
M084F350/62N020W/1230A
60N010W/M084F350/62N020W/1230B

5.2.5 Time restrictions may only appear in the Route field (Field 15).

5.2.6 The use of time restrictions shall be bilaterally agreed between ATS providers.

5.3 **Coordination and the further route of flight**

5.3.1 Field 15 shall include subfields 15a, 15b and 15c. It shall describe the cleared route, beginning with the last route point preceding the coordination point. It will contain all known cleared route information. As a minimum, it shall contain the first route point in the adjacent ATSUs airspace. If the cleared route of flight is not known completely to destination, the truncation indicator shall appear after the last know cleared route point.

5.4 **Field 3 Requirements**

5.4.1 All messages shall use field 3a only.

5.4.2 Fields 3b and 3c are not used since, for AIDC, these reference numbers are included in ODF, option 3. See Part 2, para 2.1.4.

PART II - COMMUNICATIONS AND SUPPORT MECHANISMS

1. INTRODUCTION

1.1 Coordination communications are divided into two areas; one addresses the need for voice communications between ATSUs whereas the other addresses the need for data communications. It is anticipated that the continuing implementation of automated data communications between ATSUs will result in a reduction in the utilisation of voice communications.

2. MESSAGE HEADERS, TIMERS AND ATSU INDICATORS

2.1 Message Headers

2.1.0 **General.** AFTN IA-5 Message Header, including the use of the Optional Data Field defined in Annex 10, Vol II and herein, will be employed for the exchange of all ATS data in the region. The AFTN priority indicator FF shall normally be used for all data exchanges.

2.1.1 **Optional Data Field**. The optional data field provides a flexible way to convey information on an end-to-end basis, undisturbed by the communication processes along the path. Since the information is optional it is necessary to specify a unique number and ending for each defined use. Option 1 has already been allocated for additional addressing use, and will be found in ICAO Annex 10, Vol II in due course. Option numbers 2 and 3 have been defined for computer applications to convey message/data unit identification and message/data unit reference information, respectively, and are adopted in this ICD. Other options can be defined and added as the need arises. The proposed encoding would have no impact on AFTN switching centers as they ignore this part of the origin line.

2.1.2 **Addressing** The Source and Destination addresses of the AFTN header convey the direction and logical identity of the application processes exchanging AIDC information (data). The application process must be aware of the AFTN addresses that are used for this function. The first four characters form the location, while the next three characters specify an office/agency or a processor at the given location. The eighth character of the address indicates the end system application and details of the naming assignment are contained in Appendix C. This approach allows up to 26 multiple applications to be co-hosted in the same processor, each having its own unique address. This implementation will make the addressing consistent with Open System Inter-connection (OSI) parameters and simplify the transition to the ATN.

2.1.3 **Message/Data Identification Number**. The message/data identification number is a six (6) digit number, taken from a single application pool of available numbers. The identification of the sending and receiving units would use the normal 8-character addresses of the AFTN header.

2.1.3.1 The message/data identification number is encoded and conveyed in the AFTN message header Optional Data Field (ODF), option 2. The AFTN implementation provides functionality consistent with the OSI primitive/parameter structure.

2.1.3.2 A message/data identification number will be assigned to each message/data unit requiring confirmation of receipt by the initiating processor. This number will be assigned on an application process basis in such a way as to guarantee a unique identification number for a period of time as specified in paragraph 2.1.6. For messages/data not requiring confirmation the message/data identification parameter shall not be used.

2.1.4 **Reference Information**. The message/data reference information is a way of linking a message/data unit to a previously sent message. This function is encoded and conveyed in the AFTN ODF, option 3. This implementation would make the linking information consistent with the abstract OSI protocol primitive/parameter structure. The reference information consists of the message/data identification number of the previously sent message/data unit being referenced. As the previous message being referenced could have been originated by either processor the location indicator of the message source shall be used as a prefix to the reference number.

2.1.5 **Time Stamp**. The time stamp is expressed as 12 digits in year, month, day, hours, minutes, and seconds (YYMMDDHHMMSS). The high precision (seconds) of the time stamp will support computation of transmission delays. This data item is conveyed as option 4 of the ODF.

2.1.6 **Cyclic Redundancy Check (CRC)**. The CRC is a four digit hexadecimal number that is used to ensure end-to-end message integrity. The CRC employed is the CRC-CCITT. The CRC is computed over the message text, from the beginning left parenthesis to the closing right parenthesis, inclusive. Non printable characters such as line feeds and carriage returns shall be excluded from the CRC calculation. This data item is conveyed as option 5 of the ODF.

2.2 **Timers**

2.2.1 In order to guarantee the uniqueness of the message/data identification number, and yet allow for the efficient reuse of the numbers in the pool, two timers are required for each message/data unit requiring confirmation: accountability and reuse.

2.2.2 **Accountability Timer**. The accountability timer determines the maximum period of time for the responding application to confirm receipt of a given message/data unit. The default value for this timer nominally shall be three minutes. If there is no valid response from the responding application the initiating processor shall retransmit the message/data unit (and reset the timer), or initiate local recovery procedures. When local procedures allow retransmission a maximum value, such as three, must be determined before local recovery procedures are initiated. The accountability timer shall be cancelled by the receipt of any message with the appropriate message/data reference identifier, which will typically be a LAM or LRM. Retransmissions use the same message/data identification number as the original message/data unit.

2.2.3 **Reuse Timer**. The reuse timer function employs two timers that determine the minimum period of time during which a message/data identification number is guaranteed to be unique. Reuse timer A shall be set for exchanges not involving dialogues between processors. The range for reuse timer A shall be from 1 to 30 minutes, in one minute increments. The default value for reuse timer A shall be 5 minutes, or as agreed for communicating applications by the concerned administrations. Reuse timer B shall be set for exchanges where a dialogue is involved in the exchange. The range for reuse timer B shall be 2 to 90 minutes, in one minute increments. The default value for reuse timer B shall be 10 minutes, or as agreed for communicating applications by the concerned administrations. A given message/data identification number can be reused when an ACP, AOC, or REJ response message is received or the reuse timer has expired.

2.2.4 **System Failure Timer Procedures**. In the event of system failure the accountability and reuse timers will be reset and resume timing upon completion of system recovery.

2.2.5 **Example**. The following examples depict two ASIA/PAC Core Messages encoded in accordance with the previous procedures. The second message is a reference to the first message. SOH, STX, message ending and ETX characters are omitted for clarity, as are the alignment functions.

FF NFFFZOZO
122145 KZOAZOZO 2.000033-4.940412214523-5.A34B-
(CPL-UAL714-IS-B747/H-S/C-KLAX-05S179W/2220F370-M082F370(route data)-YSSY-0)

Explanation: Sending an initial coordination message (number 000033 from Oakland (KZOAZOZO) to Nadi (NFFFZOZO) at time 940412 214523.

FF KZOAZOZO
122147 NFFFZOZO 2.000044-3.KZOA000033-4.940412214703-5.DE6A-
(ACP-UAL714-KLAX-YSSY)

Explanation: Fiji (NFFFZOZO) accepts the proposed coordination condition received from Oakland (KZOAZOZO) by sending message number 000044 from NFFFZOZO to KZOAZOZO at 940412214703. The message refers to message 000033 sent earlier by KZOAZOZO

2.3 **ATSU Location Indicators**

2.3.1 ICAO location indicators must be used by automated ATSUs in AIDC messages.

3. ENGINEERING CONSIDERATIONS

3.1 **Future Communications**

3.1.1 The future data communications infrastructure should be compatible with the ICAO ATN.

3.1.2 Until the ATN becomes available, the engineering details needed to implement the exchange of messages contained in Appendix A will need to be agreed to bilaterally and identified in Appendix D.

3.2 **ATN Transition Support**

3.2.1 The AFTN will provide the underlying communications network and services within the ASIA/PAC region in the near-term. Communication services provided by the ground element of the ATN will be eventually employed by the AIDC application.

3.2.2 The APANPIRG ATN Transition Task Force is currently developing AFTN-to-ATN transition mechanisms. It is important that a consistent AFTN addressing convention be employed to support this transition.

3.2.3 The ASIA/PAC region will comply with ATN SARPs. A summary of these SARPs specifically relevant to ASIA/PAC operations, including addressing conventions and encoding rules, will be included within the document.

3.3 **Performance Criteria**

3.3.1 If AIDC messages are not transmitted and received in a timely manner between automation systems, aircraft can potentially cross boundaries without coordination or transfer of control responsibility taking place. The benefits of AIDC are also severely reduced if link speeds and transit times are inadequate.

3.3.2 In order to effectively use the AIDC application for the interchange of ATC coordination data, performance requirements need to be specified. These specified performance requirements need to be agreed to by neighbouring states implementing AIDC. Recommended performance figures are specified in Appendix D.

3.4 **Recording of AIDC data**

3.4.1 The contents and time stamps of all AIDC messages shall be recorded in both end systems in accordance with the current requirements for ATS messages.

3.4.2 Facilities shall be available for the retrieval and display of the recorded data.

APPENDIX A - ATS COORDINATION MESSAGES

1. INTRODUCTION

1.1 The following sections describe those messages used by ASIA/PAC ATS systems for On-Line Data Interchange. These core messages are a selection from the AIDC message set developed by the ICAO OPLIKP panel. Unless otherwise indicated in this document, message fields will conform to ICAO field definitions (PANS-ATM doc 4444), and are referred to by field number. All ATS data shall be enclosed between parentheses. Only one ATS message shall be included within a transmission. An overview of all ASIA/PAC core messages and their composition can be found in Table 2.

2. MESSAGE GROUP

2.0 The core messages shown in the table below are to be supported by all ASIA/PAC ATS Providers using automated data interchange.

2.0.1 Optional messages maybe supported by ATS providers. Such messages will be detailed in bi-lateral agreements.

Table A-1. ASIA/PAC AIDC Messages

Core	Opt	Message Class	Message
X		Notification	ABI (Advance Boundary Information)
X		Coordination	CPL (Current Flight Plan)
X			EST (Coordination Estimate)
X			MAC (Coordination Cancellation)
	X		PAC (Preactivation)
X			CDN (Coordination)
X			ACP (Acceptance)
X			REJ (Rejection)
X		Transfer of Control	TOC (Transfer of Control)
X			AOC (Assumption of Control)
X		General Information	EMG (Emergency)
X			MIS (Miscellaneous)
	X		TDM (Track Definition Message)
X		Application Management	LAM (Logical Acknowledgement Message)
X			LRM (Logical Rejection Message)
	X		ASM (Application Status Monitor)
	X		FAN (FANS Application Message)
	X		FCN (FANS Completion Notification)
	X	Surveillance Data Transfer	TRU (Surveillance General)
	X		ADS (Surveillance ADS)

2.1 Notification messages

2.1.1 ABI (ADVANCE BOUNDARY INFORMATION)

2.1.1.1 *Purpose*

Used to give advance information on flights and shall be transmitted at a bilaterally agreed time or position (Variable System Parameter) before the common boundary. Changes to a previously transmitted ABI shall be communicated by means of another ABI. Changes to the cleared route of flight will result in the retransmission of an ABI.

2.1.1.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification
13	Departure aerodrome
14	Boundary estimate data
16	Destination aerodrome
22	Amendment

Field 22 shall contain as a minimum the following fields:

9	Number, type of aircraft and wake turbulence category
15	Route (see PART I paragraph 5.3.1)

Field 22 may also optionally include any or all of the following fields:

8	Flight rules
10	Equipment
18	Other information. Note that this field shall contain information as received by the sending centre or a subset thereof as agreed between the parties

2.1.1.3 *Example*

(ABI-THA179-EGLL-15N0090E/0700F330
-VTBD-8/IS-9/B747/H-10/S/C-15/14N093W 13N097W YAY T-18/0)

2.2 Coordination messages

2.2.1 CPL (CURRENT FLIGHT PLAN)

2.2.1.1 *Purpose*

Used to initiate initial coordination dialogue between automated ATS systems for a specific flight.

2.2.1.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification
8	Flight rules
9	Aircraft type
10	Navigation equipment
13	Departure aerodrome
14	Boundary estimate data
15	Route (see PART I paragraph 5.3.1)
16	Destination aerodrome
18	Other information

2.2.1.3 *Example*

(CPL-QFA811-IS-B767/H-S/C-WSSS-20N070E/1417F350-
M080F350 30N060E 40N090E YAY T-EGLL-0)

2.2.2 EST (COORDINATION ESTIMATE)

2.2.2.1 *Purpose*

Used to inform the receiving centre of the crossing conditions for a flight and to indicate that the conditions are in compliance with agreements between the two parties. An ACP message shall be transmitted to complete the coordination process.

2.2.2.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification
13	Departure aerodrome
14	Boundary estimate data
16	Destination aerodrome

2.2.2.3 *Example*

(EST-QFA811/A2277-WSSS-20N070E/1417F350-YAYT)

2.2.3 PAC (PREACTIVATION)

2.2.3.1 *Purpose*

Used to inform the receiving centre of the crossing conditions for a flight which has not yet departed and to indicate that the conditions are in compliance with agreements between the two parties. Normally it is used when the departure point is close to the FIR boundary and preflight coordination is required.

Whilst no receiving centre controller acceptance is required, an ACP message is required to be transmitted to complete the coordination process

2.2.3.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification
13	Departure aerodrome
14	Boundary estimate data
16	Destination aerodrome
22	Amendment (optional field)

Field 22 may optionally include any or all of the following fields

8	Flight rules
9	Number, type of aircraft and wake turbulence category
10	Equipment
15	Route (see PART I paragraph 5.3.1)
18	Other information. Note that this field shall contain information as received by the sending centre or a subset thereof as agreed between the parties

2.2.3.3 *Example*

(PAC-QFA811/A2277-WSSS-20N070E/1417F350-YAYT-10/S/C)

2.2.4 MAC (COORDINATION CANCELLATION)

2.2.4.1 *Purpose*

Used specifically to indicate to a receiving centre that all notification and/or coordination received for a flight is no longer relevant to that centre. This message is not to be considered as a CNL message.

2.2.4.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification
13	Departure aerodrome
16	Destination aerodrome
22*	Amendment (optional field)

*Field 22 may only contain the following fields:

14	Boundary Estimate Data
18	Other Information

Field 14 is transmitted containing the boundary estimate data previously transmitted. It may be used if required, to correctly identify the flight concerned by the MAC, when appropriate.

2.2.4.3 *Examples*

(a) (MAC-BCA789-RJAA-KLAX)
(b) (MAC-ICE234-RPMM-WSSS)

2.2.5 CDN (COORDINATION)

2.2.5.1 *Purpose*

Used to propose changes to the coordination conditions agreed to in a previously transmitted CPL, EST, PAC or CDN message. Only one CDN dialogue can be active per flight at any given time between the same two units (refer App D paragraph 3.2.5). The initial coordination dialogue is always terminated by an ACP message; otherwise a unit receiving a CDN can indicate that the coordination conditions should be left as previously agreed by transmitting an REJ message. CDN dialogues should be closed prior to the Transfer of Control occurring.

ATSUs should ensure that appropriate procedures are defined in bilateral Letters of Agreement for dealing with CDN messages containing a number of revisions (eg a revised estimate and level). There may be occasions when the receiving ATSU can accept one of the amendments but not the other.

2.2.5.2 *Message Format*

ATS fields	Description
3	Message type
7	Aircraft identification
13	Departure aerodrome
16	Destination aerodrome
22 *	Amendment

*Field 22 may only contain fields 14, 15 and 18.

2.2.5.3 *Example*

(CDN-NWA36-NFFN-RJTT-14/20N150E/0446F370)

2.2.6 ACP (ACCEPTANCE)

2.2.6.1 *Purpose*

Used to confirm that the contents of a received CPL, CDN, EST or PAC message are accepted. ACP messages may be generated automatically or manually.

2.2.6.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification
13	Departure aerodrome
16	Destination aerodrome

2.2.6.3 *Example*

(ACP-ACA860-NZAA-KSFO)

2.2.7 REJ (REJECTION)

2.2.7.1 *Purpose*

Used to reject a clearance proposed by a CDN to a previously coordinated flight and terminate the coordination dialogue. The clearance remains as was previously agreed.

2.2.7.2 *Message Format*

ATS Field	Description
3	Message Type
7	Aircraft Identification
13	Departure Aerodrome
16	Destination Aerodrome

2.2.7.3 *Example*

(REJ-AAL780-KSFO-RJAA)

2.3 **Transfer of control messages**

2.3.1 TOC (TRANSFER OF CONTROL)

2.3.1.1 *Purpose*

Used to offer the receiving centre executive control of a flight.

2.3.1.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification, SSR Mode and Code where applicable
13	Departure aerodrome
16	Destination aerodrome

2.3.1.3 *Example*

(TOC-TAP451/A2217-YMML-NZCH)

2.3.2 AOC (ASSUMPTION OF CONTROL)

2.3.2.1 *Purpose*

Sent in response to a TOC to indicate acceptance of executive control of a flight.

2.3.2.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification, SSR Mode and Code where applicable
13	Departure aerodrome
16	Destination aerodrome

2.3.2.3 *Example*

(AOC-TAP451/A2217-NFFF-PHNL)

2.4 General information messages

2.4.1 EMG (EMERGENCY)

2.4.1.1 *Purpose*

Used at the discretion of ATSUs when it is considered that the contents require immediate attention. Normally the information would be presented directly to the controller responsible for the flight or to the controller expecting to receive responsibility for the flight. When the message does not refer to a specific flight, a functional address shall be used and the information presented to the appropriate ATS position. Where such an address is used it is preceded by an oblique stroke (/) to differentiate it from an aircraft identification. The following are some examples of circumstances which could justify the use of an EMG message.

a) Reports of emergency calls or emergency locator transmission reports.

b) Messages concerning hi-jack or bomb warnings.

c) Messages concerning serious illness or disturbance among passengers.

d) Sudden alteration in flight profile due to technical or navigational failure.

e) Communications failure

2.4.1.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification or functional address
18	Free text

2.4.1.3 *Examples*

a) (EMG-UAL123-RMK/Free Text)

b) (EMG-/ASUP-RMK/Free Text)

2.4.2 MIS (MISCELLANEOUS)

2.4.2.1 *Purpose*

Used to transmit operational information which cannot be formatted to comply with any other message type and for plain language statements. Normally the information would be presented directly to the controller responsible for the flight or to the controller expecting to receive responsibility for the flight. When the message does not refer to a specific flight, a functional address shall be used and the information presented to the appropriate ATS position. Where such an address is used it is preceded by an oblique stroke (/) to differentiate it from an aircraft identification.

2.4.2.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft identification or functional address
18	Free text

2.4.2.3 *Examples*

a) (MIS-NWA456-RMK/Free Text)
b) (MIS-/ASUP-RMK/Free Text)

2.4.3 TDM (TRACK DEFINITION MESSAGE)

2.4.3.1 *Purpose*

Used to distribute track information to affected Area Control Centres (ACCs) and Aeronautical Operational Control Centres (AOCs) for flight planning. The message contains track definition and activity time periods.

2.4.3.2 *Message Format*

1. Message Identifier. The message begins with a "(TDM " and ends with ")". Fields within the message are separated by a space (i.e. " ").

2. Track Name. The track name consists of two fields. The first field is always TRK. The second field is the track identifier. The track identifier consists of 1 to 4 alphanumeric characters.

3. General Information. Contains:

(A) Date and time the track was generated and message number for that particular track in YYMMDDHHMMNN format where NN represents the message number. The initial TDM date/time message number group will look like: 941006134501. Message numbers 02 to 99 indicate TDM amendments or revisions. Note that zero padding may be required to provide the correct number of digits.

(B) Track status - Blank field for initial message or "AMDT" for amendment.

4. Activity Time Interval. This field consists of two date/time pairs, separated by a blank character, in the following format: YYMMDDHHMM YYMMDDHHMM

The first date/time pair represents the track activation, while the second is the track termination date/time.

Example: 9410070300 9410071500.

This example represents an activation date/time of October 7, 1994, at 0300 UTC and a termination date/time of October 7, 1994 at 1500 UTC.

5. Track Waypoints. This field contains the set of waypoints defining the track from the ingress fix to the egress fix. Waypoints are represented as latitude/longitude or named en route points. Waypoints are separated from each other by a blank space. Note that zero padding may be required. For example:

60N150W 60N160W, or NORML NUMMI, or FINGS 5405N13430W, etc.

6. Optional Fields

(A) Level: This optional field will not be used in the Pacific operations since levels are published in separate documents, eg. Pacific Ocean Supplements. However, the field will be retained for possible future use. If used in the future, track levels lists may be specified for the east and westbound directions of flight and a track levels list would contain the complete list of levels available on the track for the specified direction of flight. The levels would apply to all waypoints in the track waypoint list.

(B) Connecting routes (RTS): The RTS field is an optional field not normally used by automated ATS systems. When used, it is located after the waypoint list (before the remarks field) and begins with the keyword "RTS/" at the beginning of a line. Each line of the RTS field contains a single connecting route (to the ingress fix or from the egress fix).

7. Remarks. The Remarks subfield is a free text field that can contain additional comments. If there are no remarks a zero (0) is inserted as the only text. The remarks subfield begins with "RMK/".

2.4.3.3 *Examples*

2.4.3.3.1 The following TDM describes a route connecting Honolulu and Japan and would look similar to:

(TDM TRK A 940413124001
9404131900 9404140800
LILIA 27N170W 29N180E 31N170E 32N160E MASON
RTS/ PHNL KEOLA2 LILIA
MASON OTR15 SMOLT OTR16 SUNNS OTR20 LIBRA RJAA RMK/0)

2.4.3.3.2 The following TDM Revision describes a revision to the TDM shown in 2.4.3.3.1.

(TDM TRK A 940413131502 AMDT
9404131900 9404140800
LILIA 27N170W 29N180E 30N170E 32N160E MASON
RTS/ PHNL KEOLA2 LILIA
MASON OTR15 SMOLT OTR16 SUNNS OTR20 LIBRA RJAA RMK/0)

2.4.3.3.3 In the example given in 2.4.3.3.2 above, the message number (as delineated by the last two digits of the message generation date/time group) indicates it as the second ("2") message for the track. This is followed by "AMDT" to signify the previous message has been amended.

2.5 **Application Management Messages**

2.5.1 LAM (LOGICAL ACKNOWLEDGEMENT MESSAGE)

2.5.1.1 *Purpose*

Sent for each message (except for another LAM or LRM) that has been received, processed, found free of errors and, where relevant, is available for presentation to a control position. Non-receipt of an LAM may require local action. The message identifier and reference identifier are found in the message header, which is defined in Part II.

2.5.1.2 *Message Format*

ATS Field	Description
3	Message type

2.5.1.3 *Example*

(LAM)

2.5.2 LRM (LOGICAL REJECTION MESSAGE)

2.5.2.1 *Purpose*

Used to reject a message which contains invalid information. The message identifier and reference identifier are found in the message header, which is defined in Part II.

2.5.2.2 *Message Format*

ATS Field	Description
3	Message type
18	Other Information

Field 18 will only use the RMK/ sub-field. It will comprise an error code, supporting text and the ICAO field number where applicable. The following format is used to report errors:

<error code>/<field number>/<invalid text>

A catalogue of error codes and supporting text is contained in Appendix B.

2.5.2.3 *Example*

(LRM-RMK/27/15/130S165E)

This message denotes an invalid lat/long in Field 15.

2.5.3 ASM (APPLICATION STATUS MONITOR)

2.5.3.1 Purpose

Sent to an adjacent centre to confirm that the adjacent centre's ATC application system is online. It is transmitted when no other application messages have been received within an adaptable time.

The periodic interval between transmissions of this message should be determined based on the needs of the operational environment. Typical values may be between 5 and 30 minutes.

2.5.3.2 Message Format

ATS Field	Description
3	Message Type

2.5.3.3 Example

(ASM)

2.5.4 FAN (FANS APPLICATION MESSAGE)

2.5.4.1 *Purpose*

Transmitted by the controlling ATSU to provide the receiving ATSU with the required Context Management information necessary to establish CPDLC and/or ADS connections.

A free text field is used in this message to transfer the CPDLC and ADS application version numbers which are separated by a "/". If a transferring ATSU wishes to transmit a FAN message to permit a downstream ATSU to establish ADS contracts, the CPDLC application version number shall be transmitted as a zero.

2.5.4.2 *Message Format*

ATS fields	Description
3	Message type
7	Aircraft identification
13	Departure aerodrome
16	Destination aerodrome
Text	Application and address data (to be determined but will include ICAO 24 bit code)

2.5.4.3 *Example*

(FAN-QFA43-YSSY-NZAA-Application and address data)

ATSUs should ensure that at least two of the ACID, REG, or CODE fields are used to ensure that the Context Management information is associated with the correct flight data record.

2.5.5 FCN (FANS COMPLETION NOTIFICATION)

2.5.5.1 *Purpose*

Transmitted by the receiving ATSU to the transferring ATSU as an operational response to a FAN message. The free text "Connection Flag field" is set to zero if the receiving ATSU was unable to establish a CPDLC connection with the aircraft, otherwise it is set to one. It is used to provide assurance to the transferring unit that a successful CPDLC transfer should occur.

2.5.5.2 *Message Format*

ATS fields	Description
3	Message type
7	Aircraft identification
Text	Free text

2.5.5.3 *Example*

(FCN-QFA43-RMK/0)

(FCN-ANZ15-RMK/1)

2.6 Surveillance Data Transfer Service Messages

2.6.1 TRU (SURVEILLANCE GENERAL)

2.6.1.1 *Purpose*

Used to transfer track data (a flight's position, ground speed and track angle) to an adjacent ATSU.

2.6.1.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft Identification
13	Departure Aerodrome
16	Destination Aerodrome
Text	Track Data (to be determined)

2.6.1.3 *Example*

(TRU-UAL73-NTAA-KLAX-TRACKDATA)

2.6.2 ADS (SURVEILLANCE ADS)

2.6.2.1 *Purpose*

Used to transfer ADS data over ground-to-ground links.

2.6.2.2 *Message Format*

ATS Field	Description
3	Message type
7	Aircraft Identification
13	Departure Aerodrome
16	Destination Aerodrome
Text	ADS Data (to be determined)

2.6.2.3 *Example*

(ADS-UAL73-NTAA-KLAX-ADS Data)

Table A-2. ASIA/PAC AIDC Messages and their Field Composition

CORE	OPT	MESSAGE	MESSAGE ACRONYM	ICAO FIELDS											NON-ICAO FIELD
				3	7	8	9	10	13	14	15	16	18	22	
X		Advance Boundary Information	ABI	X	X				X	X		X		X 8,9,10,15,18	
X		Current Flight Plan	CPL	X	X	X	X	X	X	X	X	X	X		
X		Coordination Estimate	EST	X	X				X	X		X			
X		Coordination Cancellation	MAC	X	X				X			X		X 14, 18	
	X	PreActivation	PAC	X	X				X	X		X		X 8,9,10,15,18	
X		Coordination	CDN	X	X				X			X		X 14,15,18	
X		Acceptance	ACP	X	X				X			X			
X		Rejection	REJ	X	X				X			X			
X		Transfer of Control	TOC	X	X				X			X			
X		Assumption of Control	AOC	X	X				X			X			
X		Emergency	EMG	X	X								X		
X		Miscellaneous	MIS	X	X								X		
	X	Track Definition Message	TDM	X											X
X		Logical Acknowledgement Message	LAM	X											
X		Logical Rejection Message	LRM	X									X		
	X	Application Status Monitor	ASM	X											

	X	Fans Application Message	FAN	X	X				X			X			X
	X	Fans Completion Notification	FCN	X	X										X
	X	Surveillance General	TRU	X	X				X			X			X
	X	Surveillance ADS	ADS	X	X				X			X			X

APPENDIX B - ERROR CODES

1. INTRODUCTION

1.1 A set of error codes has been developed for those messages contained in the ASIA/PAC Core message set. A list of the codes and error text is contained in the table below.

1.2 Error codes for incorrect message sequences, such as attempting a change in coordination conditions (CDN) while a transfer of control is in progress (TOC) have not yet been developed.

Table B-1. Error Codes

Error Code	Field Number	Error Text
1	Header	INVALID SENDING UNIT (e.g., AFTN Address)
2	Header	INVALID RECEIVING UNIT (e.g., AFTN Address)
3	Header	INVALID TIME STAMP
4	Header	INVALID MESSAGE ID
5	Header	INVALID REFERENCE ID
6	7	INVALID ACID
7	7	DUPLICATE ACID
8	7	UNKNOWN FUNCTIONAL ADDRESS
9	7	INVALID SSR MODE
10	7	INVALID SSR CODE
11	8	INVALID FLIGHT RULES
12	8	INVALID FLIGHT TYPE
13	9	INVALID AIRCRAFT MODEL
14	9	INVALID WAKE TURBULENCE CATEGORY
15	10	INVALID CNA EQUIPMENT DESIGNATOR
16	10	INVALID SSR EQUIPMENT DESIGNATOR
17	13, 16, 17	INVALID AERODROME DESIGNATOR
18	13	INVALID DEPARTURE AERODROME
19	16	INVALID DESTINATION AERODROME
20	17	INVALID ARRIVAL AERODROME
21	13, 16, 17	EXPECTED TIME DESIGNATOR NOT FOUND
22	13, 16. 17	TIME DESIGNATOR PRESENT WHEN NOT EXPECTED
23	13, 14, 16, 17	INVALID TIME DESIGNATOR
24	13, 14, 16, 17	MISSING TIME DESIGNATOR

25	14	INVALID BOUNDARY POINT DESIGNATOR
26	14, 15	INVALID ENROUTE POINT
27	14, 15	INVALID LAT/LON DESIGNATOR
28	14, 15	INVALID NAVAID FIX
29	14, 15	INVALID LEVEL DESIGNATOR
30	14, 15	MISSING LEVEL DESIGNATOR
31	14	INVALID SUPPLEMENTARY CROSSING DATA
32	14	INVALID SUPPLEMENTARY CROSSING LEVEL
33	14	MISSING SUPPLEMENTARY CROSSING LEVEL
34	14	INVALID CROSSING CONDITION
35	14	MISSING CROSSING CONDITION
36	15	INVALID SPEED/LEVEL DESIGNATOR
37	15	MISSING SPEED/LEVEL DESIGNATOR
38	15	INVALID SPEED DESIGNATOR
39	15	MISSING SPEED DESIGNATOR
40	15	INVALID ROUTE ELEMENT DESIGNATOR
41	15	INVALID ATS ROUTE/SIGNIFICANT POINT DESIGNATOR
42	15	INVALID ATS ROUTE DESIGNATOR
43	15	INVALID SIGNIFICANT POINT DESIGNATOR
44	15	FLIGHT RULES INDICATOR DOES NOT FOLLOW SIGNIFICANT POINT
45	15	ADDITIONAL DATA FOLLOWS TRUNCATION INDICATOR
46	15	INCORRECT CRUISE CLIMB FORMAT
47	15	CONFLICTING DIRECTION
48	18	INVALID OTHER INFORMATION ELEMENT
49	19	INVALID SUPPLEMENTARY INFORMATION ELEMENT
50	22	INVALID AMENDMENT FIELD DATA
51		MISSING FIELD nn
52		MORE THAN ONE FIELD MISSING
53		MESSAGE LOGICALLY TOO LONG
54		SYNTAX ERROR IN FIELD nn
55		INVALID MESSAGE LENGTH
56		NAT ERRORS

57		INVALID MESSAGE
58		MISSING PARENTHESIS
59		MESSAGE NOT APPLICABLE TO zzzz OAC
60	3	INVALID MESSAGE MNEMONIC (i.e., 3 LETTER IDENTIFIER)
61	Header	INVALID CRC
62		UNDEFINED ERROR
63		MSG SEQUENCE ERROR: ABI IGNORED
64		MSG SEQUENCE ERROR: INITIAL COORDINATION NOT PERFORMED
65		MSG SEQUENCE ERROR: EXPECTING MSG XXX; RECEIVED MSG YYY
66-256		RESERVED FOR FUTURE USE

APPENDIX C - ATM APPLICATION NAMING CONVENTIONS

1. Eight character AFTN addresses will be used by the ASIA/PAC AIDC application to identify automated ATS end-systems. The first four characters identify the ATS unit location, while the last four characters identify an organization, end-system, or application process at the given location.

2. The table below describes a proposed naming convention, developed by the ATN Panel, for identifying ATM end-systems and applications. The last (eighth) character of the end-system's or application's AFTN address should be selected in accordance with the table.

8th	ATM ground system application process
A	Air space management
B	Unassigned
C	Unassigned
D	Dynamic track generation
E	Unassigned
F	Flight data processing (processor routes to appropriate control sector based on internal configuration information.)
G	Reserved for State use
H	Reserved for State use
I	Reserved for State use
J	Reserved for State use
K	Reserved for State use
L	Reserved for State use
M	OPMET data bank
N	AIS data bank
O	Oceanic data processing
P	Unassigned
Q	Unassigned
R	Radar data processing (processor routes to appropriate control sector based on internal configuration information.)
S	System management
T	Air traffic flow management
U	Unassigned
V	Unassigned
W	Unassigned
X	Default value
Y	Service function
Z	Unassigned

APPENDIX D - IMPLEMENTATION GUIDANCE MATERIAL

1. INTRODUCTION

1.1 The AIDC Message set described in Appendix A of the ASIA/PAC Regional Interface Control Document (ICD) for ATS Interfacility Data Communications supports six ATS-related functions:

1. Notification;
2. Coordination;
3. Transfer of Control;
4. General (Text) Information Interchange;
5. Surveillance Data Transfer; and
6. Application Management.

1.2 This appendix contains Implementation Guidance Material (IGM) of an explanatory nature. Information on how the message set as a whole is intended to be used is provided, with particular emphasis on the first three functions. The objective is to provide useful information and guidance to software engineers responsible for implementing the ASIA/PAC Message set within an automated ATS system.

1.3 Although outside the scope of the ICD, Flight Planning messages play an important role within the region, and will continue to do so in the future.

2. PRELIMINARIES

2.1 Assumptions

2.1.1 The following assumptions have been made:

a) The IGM applies only to those portions of a flight operating within the ASIA/PAC Regions;

b) The material described below applies only to data transfers between two automated ATS systems. Though most of it also applies to the general case of Notification and Coordination between more than two automated ATS systems, certain multi-ATSU Coordination problems have not yet been solved;

c) It must be possible to revert to manual intervention of the Notification, Coordination, and Transfer of Control processes at any time;

d) Exceptional conditions, such as loss of communications between two ATSUs, are not addressed and are subject to local procedures; and

e) An ATSU's Area of Common Interest (ACI) is defined as the airspace for which the ATSU is responsible, i.e., an FIR, and surrounding border regions just outside the FIR. These surrounding border regions are usually determined by the required separation minima.

2.2 AFTN Message Header

2.2.1 Every message transmitted shall contain an AFTN header, as specified in Part II of the ASIA/PAC ICD. This header shall contain the optional AFTN data fields described in Part II of the ASIA/PAC ICD.

2.2.2 Message identifier numbers (AFTN optional data field 2) shall be sequential. Receipt of an out of sequence message shall result in a warning being issued.

2.2.3 A check for duplicate message identifier numbers shall be made. In general, since 1,000,000 numbers are available, no duplicates should be present.

2.2.4 Message identifier numbers shall begin at 0, proceed through 999,999, and then rollover to 0. The same sequence shall be repeated when necessary.

2.2.5 Each unique ATSU-to-ATSU interface shall select message identifier numbers from its own pool of numbers. Each pool shall encompass the entire possible range, i.e., include all numbers from 0 to 999,999.

2.3 Response Messages

2.3.1 Application Response

2.3.1.1 Every ASIA/PAC AIDC message received by an ATSU, except an LAM or LRM, shall be responded to by an LAM or LRM message. Such a response is termed an Application Response, and is generated automatically by the automation system. A LAM shall be transmitted when the receiving automation system found the received message to be syntactically correct and the message data was accepted for further processing or presentation. Otherwise, an LRM message shall be transmitted.

2.3.1.2 The timeout value T_{alarm} associated with an application response shall be 180 seconds, corresponding to the nominal value associated with the accountability timer described in Part II, Section 2.2.2.

2.3.1.3 Failure to receive an expected application response (ie an LAM or LRM) within T_r seconds ($\leq T_{alarm}$) shall result in a re-transmission (up to a maximum number N) of the original message, using the same information contained in optional data fields 2 and 3 found in the original message header. The timeout timer T_r shall be reset upon re-transmission. Failure to receive an application response within T_{alarm} seconds from the original transmission of the message shall result in a warning being issued.

2.3.1.4 The transmission of an LAM or LRM shall be triggered by the ATC application process, not the communications process. This is because an application response indicates that the received message was examined by the ATC application process(s), not just the communications functions. Note the distinction between an ATC application process, which implements a critical ATC function such as Coordination or Transfer of Control, and a communications process, which is responsible for the reliable delivery of data, but not data interpretation. This approach conforms to the OSI Reference Model.

2.3.1.5 Receipt of an LRM shall cause the receiving ATSU to take a corrective action before re-transmitting the message. This action may be automatic, as in a CRC error being indicated, or manual, as in an incorrect route element format. Once this action has been taken, the message shall be re-transmitted with a new message identifier number.

2.3.2. Operational Response

2.3.2.1 Several ASIA/PAC AIDC messages require a response, in addition to the normal application response, by another AIDC message. Such a response is termed an Operational Response. Table D-2.1 below indicates the required response to a received message. ASIA/PAC AIDC messages not listed in Table D-2.1 have no operational response.

Received Message	Required Operational Response
CPL	ACP or CDN
EST	ACP
PAC	ACP
CDN	ACP, CDN, or REJ[1]
TOC	AOC

[1]An REJ is not available in an Initial Coordination Dialogue

2.3.2.2 Failure to receive a response within an adapted operational response timeout period T_{op} shall result in a warning being issued.

2.3.2.3 The value of T_{op} is dependent on whether manual processing is required to generate the operational response. In general, T_{op} should be less than 600 seconds when a manual action is required to trigger the operational response.

2.3.2.4 An operational response shall employ the AFTN header optional data field 3 to reference the original message being responded to. A dialogue, which is initiated by one message and contains a sequence of message exchanges, shall always reference the original message which triggered the dialogue. For example, one ATSU may initiate a coordination dialogue by transmitting a CPL message to an adjacent ATSU. A sequence of CDN messages may ensue, terminated by an ACP message. The CDN and ACP messages would all reference the original CPL message.

2.4 Application Management

2.4.1 The ASM message is used to confirm that the ATC application on the other end is on-line. This message is sent by ATSU A to (adjacent) ATSU B if, after a mutually agreed time, no communication has been received from ATSU B. ATSU B responds, if the ATC application is active and functioning, by sending a LAM to ATSU A. If ATSU A does not receive a response LAM from ATSU B within a specified time, local contingency procedures should be executed. This message would normally be sent automatically, but may be sent manually for testing purposes.

2.4.2 The FAN message may be used to transfer a data link aircraft's logon information from one ATSU to another. Implementation of this message obviates the need to utilise the five step "Address Forwarding" process that was developed for the initial implementation of FANS. The message contains all the information that is required to establish ADS and/or CPDLC connections with the aircraft. In the event that only an ADS connection will be required, the transferring ATSU should include ADS information only. If a FAN message is transmitted containing ADS information only, there should be no expectation of receiving an FCN (see below) response. If a FAN message is received containing ADS information only, there should be no attempt to establish a CPDLC connection.

2.4.3 The FCN message, where used, provides advice to the transferring ATSU that the receiving ATSU has established an (inactive) CPDLC connection with an aircraft. The FCN is transmitted by the receiving ATSU in response to a FAN after the Connection Confirm has been received from the aircraft being transferred.

3. PHASES OF FLIGHT

3.0.1 From an ATSU's perspective, a flight is considered to progress through several phases. The IGM is principally concerned with three phases: Notification, Coordination, and Transfer of Control.

3.1 **Notification Phase**

3.1.1 An ATSU receives information during the Notification phase on a flight which will at some future time enter its ACI.

3.1.2 **Notification Dialogue**. ABI messages shall be used to transfer notification information. The sending ATSU transmits an ABI to the downstream ATSUs (D-ATSUs) (including the next Receiving ATSU - the R-ATSU) with which it must coordinate the flight. The sending ATSU is responsible for determining which D-ATSUs must be notified.

3.1.3 **Re-Route Notification**. All D-ATSUs to the destination aerodrome shall be notified when a re-route has been made. Re-route dissemination shall be performed as a minimum capability on a stepwise (i.e., from one D-ATSU to the next D-ATSU) basis. In stepwise dissemination, an ATSU receiving an ABI is responsible for passing it on to any other affected D-ATSUs at the appropriate time.

3.1.4 **Route to Destination**. The above procedure requires the C-ATSU to acquire the complete route to destination. Initially, this information is found in the route field of the Filed Flight Plan (FPL). As re-routes occur, the filed route must be updated by the C-ATSU, and transmitted to D-ATSUs. In cases where this is not possible, the route field shall be terminated after the last known point or ATS route with the ICAO truncation indicator, which is the letter "T".

3.1.5 **Notification Cancellation**. A notification can be cancelled using a MAC message. Receipt of a MAC by an ATSU means that any notification data previously received for that flight is no longer relevant. Filed flight plan information (and any modifications) shall continue to be held, in accordance with local ATSU procedures.

3.2 **Coordination Phase**

3.2.1 Coordination between adjacent ATSUs occurs when the flight approaches a shared FIR boundary. An initial coordination dialogue can be automatically initiated a parameter time or distance from the boundary, as documented within a bi-lateral agreement, or it can also be manually initiated. There are several types of coordination dialogues which may occur, depending on where the aircraft is and what previous dialogues have occurred.

3.2.2 **Initial Coordination Dialogue**. This coordination dialogue (or an Abbreviated Initial Coordination dialogue) is always required to be successfully completed before later coordination dialogues are initiated. The C-ATSU transmits a CPL to the R-ATSU. The R-ATSU then responds with either an ACP, which signifies acceptance of the coordination conditions contained within the CPL, or a CDN which proposes a modification to the conditions contained in the CPL. If a CDN is the R-ATSU's response to the CPL, a sequence of CDNs may be exchanged between the two ATSUs. This dialogue is eventually terminated by the ATSU which last received a CDN transmitting an ACP to the other ATSU. Transmission of an ACP indicates that coordination conditions are mutually acceptable, and an initial coordination has been achieved.

3.2.3 **Abbreviated Initial Coordination Dialogue**. An Abbreviated Initial Coordination dialogue may be used in place of an Initial Coordination Dialogue when it is known apriori (e.g., by letters of agreement) that a flight's coordination data is mutually acceptable to both the C-ATSU and R-ATSU, accurate route information is available at the R-ATSU (e.g., from either an ABI or FPL message), and both ATSUs have agreed to permit the use of this dialogue. The C-ATSU transmits an EST or PAC to the R-ATSU. The R-ATSU then responds with an ACP, which signifies acceptance of the coordination conditions (i.e., boundary crossing data) contained within the EST or PAC. Either this dialogue or a full (i.e., CPL-based) Initial Coordination dialogue shall be successfully completed before any later coordination dialogues are initiated. Note that negotiation via CDNs is not permitted within this dialogue.

PAC is only used when coordination is required before departure. This normally only occurs when the FIR boundary is close to the departure airport. PAC signals to the R-ATSU that the departure is imminent as well as initiating coordination.

3.2.4 **Re-Negotiation Dialogue**. This is an optional dialogue used to propose new coordination conditions after the initial dialogue has been completed. Either ATSU may initiate this dialogue by transmitting a CDN (in contrast

to a CPL in the Initial Coordination Dialogue) to the other ATSU. The dialogue then proceeds with an exchange of additional CDNs as necessary. Either ATSU may terminate the dialogue in one of two ways: (1) with an ACP, indicating that the coordination proposal contained in the latest CDN is acceptable; or (2) with an REJ, indicating that the previously agreed upon coordination conditions remain in effect.

3.2.5 **Active CDN**. For a given flight, only one CDN may be active between any pair of ATSUs. Note, however, that coordination between more than two ATSUs (for the same flight) may have a total number of active CDNs greater than one, though each pair of ATSUs is still restricted to a maximum of one active CDN per flight. In the exceptional (rare) case where a C-ATSU and D-ATSU both simultaneously transmit CDNs, the C-ATSU shall transmit an REJ to the D-ATSU, cancelling the D-ATSU's CDN.

3.2.6 **CDNs Are Proposals**. Note that CDNs are only proposals; no changes are made in a flight's profile until an ACP is sent and acknowledged.

3.2.7 **Cleared Flight Profile Update**. The cleared flight profile (which is used for control purposes) shall only be updated after successful completion of a coordination dialogue, i.e., an ACP has been sent and acknowledged. This will require temporarily storing a proposed flight profile undergoing coordination separate from the cleared flight profile. The cleared flight profile shall then be updated using the newly coordinated profile upon successful completion of the coordination dialogue.

3.2.8 **Coordination Cancellation**. Coordination can be cancelled using a MAC message. Receipt of a MAC by an ATSU means that any coordination (or notification) data previously received for that flight is no longer relevant. Filed flight plan information (and any modifications) shall continue to be held, in accordance with local ATSU procedures.

3.2.9 **Coordination and the ACI**. ATSU A may need to coordinate with or provide information to ATSU B on all aircraft that enter ACI B, even if they do not enter FIR B. Consider the case of aircraft A in FIR A and aircraft B in FIR B, both flying near the FIR A - FIR B boundary but never penetrating the other FIR's airspace. The maintenance of adequate separation between these two aircraft may require coordination between or the provision of information to adjoining ATSUs.

3.3 **Transfer of Control Phase**

3.3.1 **Transfer Dialogue**. This phase occurs when the C-ATSU is ready to relinquish control of the flight to the R-ATSU, normally just before the FIR boundary crossing. The C-ATSU transfers a TOC message to the R-ATSU, which responds with an AOC message. The R-ATSU then becomes the C-ATSU once an application response for the AOC has been received.

3.3.2 **Transfer of Control and the ACI**. Note that the Transfer of Control process will not occur for all flights. Some flights fly near an FIR boundary, and may require coordination or the provision of other information, but do not actually enter the FIR.

4. FLIGHT STATE TRANSITIONS

4.1 **Notifying States**. Consider an aircraft that is currently within an ASIA/PAC FIR - FIR A - controlled by ATSU A (i.e., the C-ATSU) progressing towards the next FIR, FIR B (i.e., the R-ATSU). The aircraft is several hours from the boundary between the two FIRs. The flight is initially in a Pre-Notifying state from ATSU B's perspective. ATSU B usually will have previously received a Filed Flight Plan (an FPL message), possibly with later amendments (as contained in CHG messages). ATSU A will employ a Notification dialogue to transfer information to ATSU B. (This transfer occurs either a system parameter time (e.g., 60 minutes) or distance prior to the flight crossing the FIR A - FIR B boundary.) This places the flight in a Notifying state from ATSU B's perspective. Additional Notification dialogues may be invoked by ATSU A as needed to inform ATSU B of flight changes. If the aircraft for some reason, such as a change in route, is no longer expected to penetrate ACI B, ATSU A sends a MAC message to ATSU B, causing the flight to be placed back in a Pre-Notifying state from ATSU B's perspective.

4.2 **Initial Coordination States**. An Initial Coordination Dialogue is employed to effect the initial coordination. ATSU A transmits a CPL to ATSU B when the aircraft is at a mutually agreed upon predetermined time (e.g., thirty minutes) or distance from the FIR A - FIR B boundary. The flight is now in a Negotiating state from both ATSU A's and ATSU B's perspectives. ATSU B can accept the conditions specified in the CPL "as is" by transmitting an ACP message to ATSU A, or it can propose modifications using the CDN message. Negotiations between the two ATSUs are carried out using the CDN until a mutually acceptable flight profile is achieved. This acceptance is signalled by one ATSU sending an ACP, as before, to the other ATSU. This establishes the initial coordination conditions. The flight is now in a Coordinated state, from both ATSUs' perspective.

4.2.1 For an Abbreviated Initial Coordination, ATSU A transmits an EST to ATSU B when the aircraft is at a mutually agreed upon predetermined time (e.g., thirty minutes) or distance from FIR A - FIR B boundary. The flight is now in a Coordinating state. ATSU B responds with an ACP, which places the flight in a Coordinated state. This sequence of messages corresponds to an Abbreviated Initial Coordination Dialogue.

4.3 **Re-Negotiation States**. The initial coordination is typically the final coordination. However, in certain situations, it may be desirable, or necessary, to re-open the coordination dialogue after initial coordination has been completed. A Re-Negotiation dialogue is employed to effect profile changes. The dialogue is re-opened when one ATSU (either A or B) transmits a CDN to the other ATSU, causing the flight to be in a Re-Negotiating state. The dialogue proceeds as above using CDN messages until either an ACP or REJ is sent. Either ATSU can close the dialogue by issuing an ACP or REJ. An ACP closes the dialogue with a new, mutually agreed upon flight profile. An REJ, however, immediately terminates the dialogue with the previously accepted coordination conditions in effect. Any proposed changes are null and void. Transmission of an ACP or REJ places the flight back into the Coordinated state.

4.4 **Transfer States**. Transfer of control is supported by the Transfer dialogue. ATSU A sends a TOC to ATSU B when the aircraft is about to cross the boundary. Alternatively, ATSU A can send a TOC when it is ready to relinquish control, even if the aircraft will remain in FIR A airspace several minutes before entering FIR B. The flight is now in a Transferring state from both ATSU A's and ATSU B's perspectives. ATSU B responds by transmitting an AOC to ATSU A, signalling acceptance of control responsibility. The flight is now in a Transferred state from ATSU A's perspective.

4.5 **Backward Re-Negotiating State**. A flight's profile may occasionally require changes after Transfer of Control has been completed, but the aircraft is still within ATSU A's ACI. A Re-Negotiating dialogue is employed to effect profile changes after transfer has been completed. This places the flight in a Backward Re-Negotiating State, from both ATSUs' perspectives. Completion of this dialogue returns the aircraft to the Transferred state.

4.6 Several flight states are identified in the above discussion. These states are listed in Table D-1.

4.7 A flight state transition diagram is shown in Figure D-1. This diagram depicts graphically how the flight transitions from one state to the next. It is seen that the ASIA/PAC AIDC messages act as triggers, forcing the necessary state transitions. A description of the allowable flight state transitions, along with the message event that triggers the transition, is given in Table D-2.

Table D-1. Flight States

Flight State	Description
Pre-Notifying	Flight plan information may have been received. Any previously received notification and coordination information for the given flight cancelled by a MAC is no longer relevant.
Notifying	The aircraft's progress is being monitored by one or more non-controlling ATSUs, in addition to the controlling ATSU.
Negotiating	Coordination data is being exchange between the controlling ATSU and the receiving ATSU as part of the initial coordination dialogue.
Coordinating	Abbreviated coordination data has been sent to the receiving ATSU.
Coordinated	Coordination of the boundary crossing conditions is completed.
Re-Negotiating	Coordination data is being exchange between the controlling ATSU and the receiving ATSU as part of a later coordination dialogue.
Transferring	Air traffic control responsibility for the aircraft is in the process of being transferred to the receiving ATSU.
Transferred	Air traffic control responsibility for the aircraft has been transferred to the receiving ATSU.
Backward- Re-Negotiating	The aircraft is now under the control of the receiving ATSU, but still near the boundary. Changes are being proposed to the coordination conditions while the aircraft is still in the vicinity of the boundary.

5. MESSAGE SEQUENCING

5.1 The preceding section identified the flight states and showed how the aircraft transitions from one state to the next, based on the receipt of ASIA/PAC AIDC messages by ATSU B. In this section, a table of two-message sequences is constructed, as shown in Table 3. These sequences identify the allowable messages (the next message column) that may correctly follow a given, just received message (the first column). Application Management messages (LAM and LRM) are not shown, but must be sent in response to any received Notification, Coordination, or Transfer of Control messages.

Figure D –1
Flight State Transitions Diagram

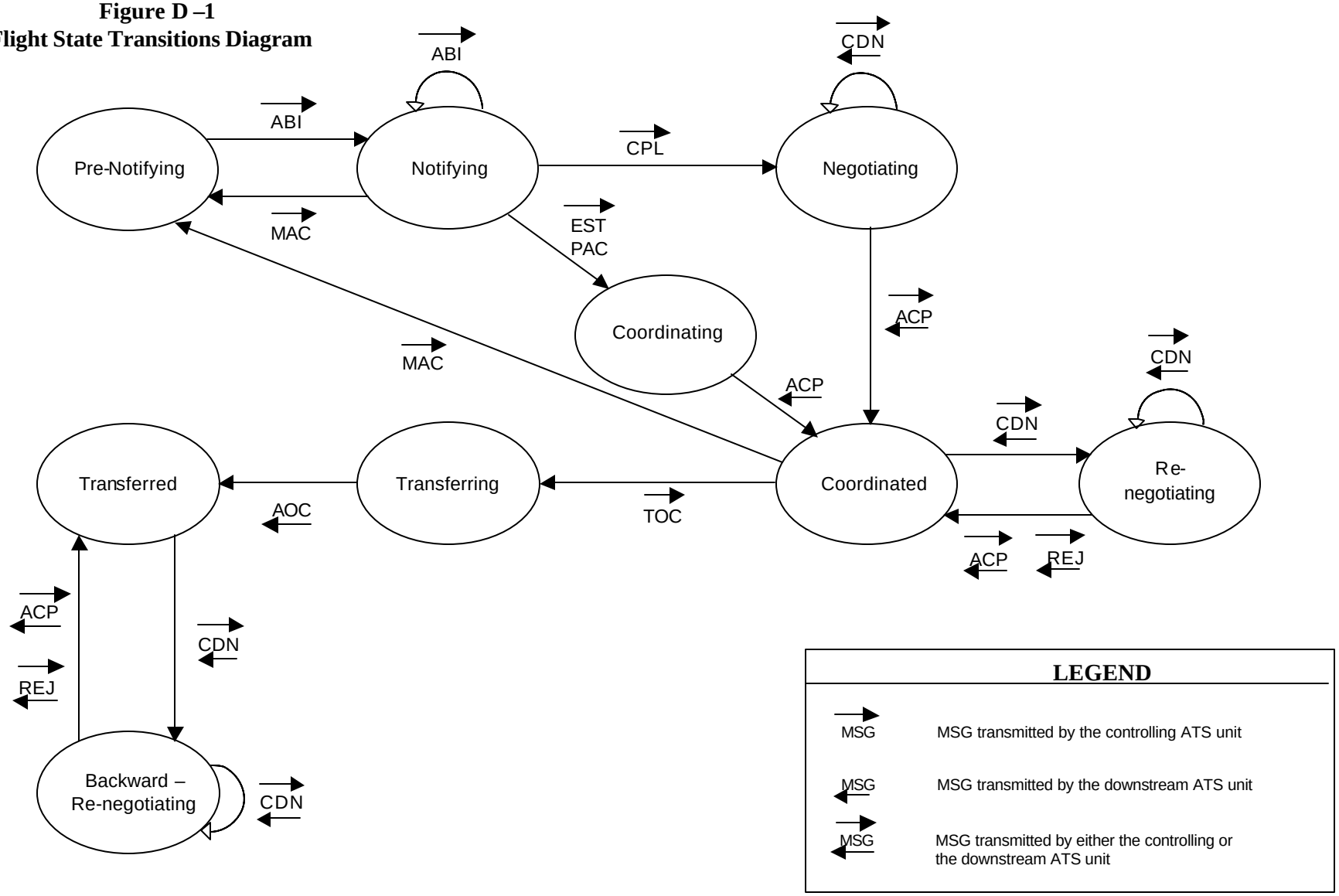

Table D-2. Flight State Transitions

State Transition	Message Trigger	Description
Pre-Notifying/ Notifying	ABI	An initial ABI begins the Notification phase.
Notifying/ Notifying	ABI	An ABI updates the information a downstream ATSU maintains on a flight that is expected to enter its ACI at some future time. This data can be sent hours in advance of the actual entry.
Notifying/ Pre-Notifying	MAC	A flight that was expected to enter a downstream ATSU's ACI will no longer do so.
Notifying/ Negotiating	CPL	A CPL is used to initiate the Coordination process for an aircraft that will enter the downstream ATSU's ACI. A CPL contains the current clearance to destination.
Notifying/ Coordinating	EST	An EST is used to initiate an Abbreviated Coordination process for an aircraft that will enter the downstream ATSU's ACI.
Notifying/ Coordinating	PAC	A PAC is used to initiate an Abbreviated Coordination process for an aircraft, not yet airborne, that will enter the downstream ATSU's ACI.
Negotiating/ Negotiating	CDN	If the downstream ATSU does not like the current clearance (and boundary crossing conditions), a Negotiation process is carried out using CDNs.
Negotiating/ Coordinated	ACP	The negotiation process is terminated when one ATSU signals its acceptance of the coordination conditions using an ACP.
Coordinating/ Coordinated	ACP	The Abbreviated Coordination dialogue is terminated by the receiving ATSU transmitting an ACP.
Coordinated/ Re-Negotiating	CDN	The coordination dialogue can be re-opened at any time after the initial coordination and before the initiation of the transfer of control procedure.
Re-Negotiating/ Re-Negotiating	CDN	Either ATSU may attempt to change the previously agreed upon coordination conditions any time after the initial coordination dialogue has been completed.
Re-Negotiating/ Coordinated	ACP REJ	An ACP terminates a re-negotiation dialogue, with a new mutually agreed upon profile in effect. An REJ immediately terminates the dialogue, with the coordination conditions remaining as previously agreed (which is usually, but not necessarily, the initial coordination conditions).
Coordinated/ Transferring	TOC	A TOC is sent after Coordination occurs but (usually just) before the boundary is crossed to the accepting ATSU. The TOC informs the accepting ATSU that it know has control authority for the aircraft.
Coordinated/ Pre-Notifying	MAC	A flight that was expected to enter a downstream ATSU's ACI will no longer do so.
Transferring/ Transferred	AOC	The formerly downstream ATSU is now the controlling ATSU.
Transferred/ Backward-Re-Negotiating	CDN	An attempt is made (by either the previous or new controlling ATSU) to change the coordination conditions while the aircraft is near the common boundary.
Backward-Re-Negotiating/ Backward-Re-Negotiating	CDN	Either ATSU may attempt to change the previously agreed upon coordination conditions any time after transfer of control has been completed, but while the aircraft remains in the common boundary region.

Backward-Re-Negotiating/ Transferred	ACP REJ	Similar to a Re-Negotiation/Coordinated state transition. An ACP terminates a backward coordination dialogue, with a new mutually agreed upon profile in effect. An REJ immediately terminates the dialogue, with the coordination conditions remaining as previously agreed (which is usually, but not necessarily, the initial coordination conditions).

Table D-3. Message Sequences

Received Message	Next Valid Message	Comments
Notification Sequences		
ABI	ABI	Update the flight information.
	MAC	Indicates that the flight is no longer expected to enter the downstream ATSU's ACI.
	CPL	Receipt of the ABI signals the beginning of the Notification phase for a particular flight. Coordination will take place when the aircraft is within a parameter distance/time of the boundary.
	EST	Receipt of the ABI signals the beginning of the Notification phase for a particular flight. Coordination will take place when the aircraft is within a parameter distance/time of the boundary.
Coordination Sequences		
CPL	ACP	The aircraft's current clearance is acceptable.
	CDN	The aircraft's current clearance is not acceptable to the receiving airspace and must be modified.
EST	ACP	The boundary crossing conditions are in accordance with the agreement that exists between the two ATSUs.
PAC	ACP	The boundary crossing conditions are in accordance with the agreement that exists between the two ATSUs.
CDN	ACP	The negotiated clearance is acceptable to both ATSUs.
	CDN	The proposed clearance modification is not acceptable to one of the airspaces and a new proposal is submitted.
	REJ	The last clearance agreed to by both airspaces must be honoured.
ACP	CDN	A request for modification of a previously accepted clearance is submitted.
	TOC	The aircraft is at or near the boundary.
	MAC	Indicates that the flight is no longer expected to enter the downstream ATSU's ACI.
Transfer of Control Sequences		
TOC	AOC	The aircraft is at or near the boundary.
AOC	CDN	A request for modification of a previously accepted clearance is submitted.

5.2 Table D-4 lists the messages which are valid for each state. The ATSU which can transmit the message is also identified.

Table D-4. Valid Messages by ATSU

Flight State	Message	Sent by
Notifying	ABI	Controlling ATSU
Notifying	MAC	Controlling ATSU
Notifying	CPL	Controlling ATSU
Notifying	EST	Controlling ATSU
Notifying	PAC	Controlling ATSU
Negotiating	CDN	Either ATSU
Negotiating	ACP	Either ATSU
Coordinating	ACP	Receiving ATSU
Coordinated	CDN	Either ATSU
Coordinated	TOC	Controlling ATSU
Coordinated	MAC	Controlling ATSU
Re-Negotiating	CDN	Either ATSU
Re-Negotiating	ACP	Either ATSU
Re-Negotiating	REJ	Either ATSU
Transferring	AOC	Receiving ATSU
Transferred	CDN	Either ATSU
Backward-Re-Negotiating	CDN	Either ATSU
Backward-Re-Negotiating	ACP	Either ATSU
Backward-Re-Negotiating	REJ	Either ATSU

6. OTHER MESSAGES

6.0 The previous sections have discussed the use of Notification, Coordination, Transfer of Control, and Application Management messages. There are two remaining message subgroups in the ASIA/PAC AIDC Messages: (1) General Information messages; and (2) Surveillance Data Transfer messages. All messages within these two subgroups require an application response; no operational response is defined.

6.1 General Information Messages.

6.1.1 **EMG and MIS Messages**. These messages support the exchange of text information between ATSUs. A communicator (usually a person, but a computer or application process is also permitted) in one ATSU can send a free text message to a functional address at another ATSU. Typical functional addresses could be an area supervisor or an ATC sector. If further EMG or MIS messages are transmitted in response to a previously received EMG or MIS, the later messages shall include the original message identifier within field 3 of the AFTN header. The EMG shall have an AFTN emergency priority (SS).

6.1.2 **Track Definition Message**. The TDM is generated and disseminated to all affected ATSUs. It is also sent to Airline Operational Control (AOC) Centers, where it is used for flight planning purposes. This message contains, in a structured text format, the track definition and the time when it is active.

6.2 **Surveillance Data Transfer Messages**. The TRU and ADS messages support the transfer of general surveillance and ADS data, respectively, between ATSUs. The TRU message is used to transfer track data (a flight's position, ground speed and track angle) to an ATSU. The ADS message is used to transfer ADS data, including optional data blocks, to an ATSU.

7. **EXAMPLES**

7.1 **Standard Coordination**

7.1.1 Brisbane transmits a notification message (ABI) to Auckland forty five minutes prior to the time that QFA108 is expected to cross the FIR boundary (1209). The destination of the flight is Christchurch.

7.1.2 The abbreviated coordination message (EST) is transmitted by Brisbane thirty minutes prior to the boundary estimate (which is now 1213). Auckland accepts the proposed coordination conditions by responding with an ACP.

7.1.3 Brisbane transfers ATC responsibility approaching the FIR boundary by transmitting a TOC. Auckland accepts ATC responsibility by responding with an AOC.

Note. The timing of the transmission of these messages is defined in bilateral agreements between the two units.

Example 1. Standard coordination

Brisbane	***Auckland***
(ABI-QFA108-YBBN-33S163E/1209F350 -NZCH-8/IS-9/B744/H-10/SDHIWRJ -15/M084F350 35S164E 36S165E ...)	
(EST-QFA108-YBBN-33S163E/1213F350-NZCH)	
	(ACP-QFA108-YBBN-NZCH)
(TOC-QFA108-YBBN-NZCH)	
	(AOC-QFA108-YBBN-NZCH)

7.2 **Negotiation of coordination conditions**

7.2.1 Brisbane transmits a notification message (ABI) to Auckland forty five minutes prior to the time that QFA56 is expected to cross the FIR boundary (1209). The destination of the flight is Christchurch.

7.2.2 The coordination message (CPL) is transmitted by Brisbane thirty minutes prior to the boundary estimate (which is now 1213).

7.2.3 Auckland responds with a negotiation message (CDN) requesting a change in the boundary crossing altitude to F390. Brisbane responds with an ACP, indicating that the revised altitude is acceptable.

7.2.4 Brisbane transfers ATC responsibility approaching the FIR boundary by transmitting a TOC. Auckland accepts ATC responsibility by responding with an AOC.

Note. The timing of the transmission of these messages is defined in bilateral agreements between the two units.

Example 2. Negotiation of Coordination Conditions

Brisbane	***Auckland***
(ABI-QFA56-YBBN-33S163E/1209F350 -NZCH-8/IS-9/B744/H-10/SDHIWRJ -15/M084F350 35S164E 36S165E ...)	
(CPL-QFA56-IS-B744/H-SDHIWRJ-YBBN -33S163E/1213F350-M084F350 35S164E 36S165E NZCH -0..)	
	(CDN-QFA56-YBBN-NZCH -14/33S163E/1213F390)
(ACP-QFA56-YBBN-NZCH)	
(TOC-QFA56-YBBN-NZCH)	
	(AOC-QFA56-YBBN-NZCH)

7.3 **Re-negotiation rejected**

7.3.1 Brisbane transmits a notification message (ABI) to Auckland forty five minutes prior to the time that QFA108 is expected to cross the FIR boundary (1209). The destination of the flight is Christchurch.

7.3.2 The coordination message (CPL) is transmitted by Brisbane thirty minutes prior to the boundary estimate (which is now 1213). Auckland accepts the proposed coordination conditions without modification by responding with an ACP.

7.3.3 Some time after the initial coordination process has been completed, but before the start of the Transfer of Control process, Auckland requests an amendment to the boundary crossing altitude by transmitting a negotiation message (CDN). Brisbane cannot accept the proposed change due to conflicting traffic in its FIR, and therefore rejects the request (REJ).

7.3.4 Brisbane transfers ATC responsibility approaching the FIR boundary by transmitting a TOC. Auckland accepts ATC responsibility by responding with an AOC.

Note. The timing of the transmission of these messages is defined in bilateral agreements between the two units.

Example 3. Rejection of Renegotiated Coordination

Brisbane	***Auckland***
(ABI-QFA108-YBBN-33S163E/1209F350 -NZCH-8/IS-9/B744/H-10/SDHIWRJ -15/M084F350 35S164E 36S165E ...)	
(CPL-QFA108-IS-B744/H-SDHIWRJ-YBBN -33S163E/1213F350-M084F350 35S164E 36S165E NZCH-0 ...)	
	(ACP-QFA108-YBBN-NZCH)
	(CDN-QFA108-YBBN-NZCH -14/33S163E/1213F390)
(REJ-QFA108-YBBN-NZCH)	
(TOC-QFA108-YBBN-NZCH)	
	(AOC-QFA108-YBBN-NZCH)

7.4 Abbreviated coordination

7.4.1 Several minutes before AAA842's departure time (eg at taxi time), coordination between Bali and Brisbane is effected by Bali transmitting a coordination message (PAC). This message alerts Brisbane that the flight is pending, and indicates a boundary estimate of 1213 at F290. Brisbane accepts the coordination conditions without modification by responding with an ACP.

7.4.2 On departure, the aircraft's actual estimate differs from that coordinated by more than the value specified in bilateral agreements. The new estimate is coordinated to Brisbane by Bali transmitting a CDN message to Brisbane. Brisbane accepts this revised estimate by responding with an ACP message.

7.4.3 Bali transfers ATC responsibility approaching the FIR boundary by transmitting a TOC. Brisbane accepts ATC responsibility by responding with an AOC.

Note. The timing of the transmission of these messages is defined in bilateral agreements between the two units.

Example 4. Abbreviated coordination

Bali	***Brisbane***
(PAC-AAA842/A4534-IS-B737/M-WRRR--OGAMI/1213F290-YPPH ...)	
	(ACP-AAA842/A4534-WRRR-YPPH)
(CDN-AAA842/A4534-WRRR-YPPH-14/OGAMI/1219F290)	
	(ACP-AAA842/A4534-WRRR-YPPH)
(TOC-AAA842/A4534-WRRR-YPPH)	
	(AOC-AAA842/A4534-WRRR-YPPH)

7.5 **Multiple notifications + AIDC cancellation**

7.5.1 Brisbane transmits a notification message (ABI) to Auckland forty five minutes prior to the time that QFA11 is expected to cross the FIR boundary (1105). The destination of the flight is Los Angeles.

7.5.2 Prior to transmitting the coordination message, a modification to the cleared flight level is made resulting in the transmission of another notification message. This ABI contains the latest boundary information on the aircraft, showing that the current boundary estimate is now 1107.

7.5.3 The abbreviated coordination message (EST) is transmitted by Brisbane thirty minutes prior to the boundary estimate (which is now 1108). Auckland accepts the proposed coordination conditions by responding with an ACP

7.5.4 Due to weather QFA11 requests, and is issued, an amended route clearance that will now no longer affect Auckland. To advise of the cancellation of any previously transmitted AIDC messages, a MAC message is transmitted to Auckland.

Note. The timing of the transmission of these messages is defined in bilateral agreements between the two units.

Example 5. Multiple notifications + AIDC cancellation

Brisbane	***Auckland***
(ABI-QFA11-YSSY-31S163E/1105F290 -KLAX-8/IS-9/B744/H-10/SDHIWRJ -15/M085F290 33S158E 30S168E ...)	
(ABI-QFA11-YSSY-31S163E/1107F310 -KLAX-8/IS-9/B744/H-10/SDHIWRJ -15/M084F290 33S158E 30S168E ...)	
(EST-QFA11-YSSY-31S163E/1108F310-KLAX)	
	(ACP-QFA11-YSSY-KLAX)
(MAC-QFA11-YSSY-KLAX)	

7.6 **Multiple negotiations**

7.6.1 Brisbane transmits a notification message (ABI) to Auckland forty five minutes prior to the time that QFA108 is expected to cross the FIR boundary (1209). The destination of the flight is Christchurch.

7.6.2 The abbreviated coordination message (EST) is transmitted by Brisbane thirty minutes prior to the boundary estimate (which is now 1213). Auckland accepts the proposed coordination conditions by responding with an ACP

7.6.3 QFA108 requests F370. The bilateral Letter of Agreement between Brisbane and Auckland requires that prior coordination is required before issuing a change of level after initial coordination. Brisbane transmits a negotiation message (CDN) proposing a change of level to F370. This level is not available in Auckland's airspace but an alternative level is available. Auckland therefore responds with a negotiation message proposing F360. Brisbane responds with an ACP, indicating that this level is acceptable to Brisbane (and to QFA108).

7.6.4 Brisbane transfers ATC responsibility approaching the FIR boundary by transmitting a TOC. Auckland accepts ATC responsibility by responding with an AOC.

Note1. The timing of the transmission of these messages is defined in bilateral agreements between the two units.

Note2. Complex re-negotiations may be more easily solved by voice communication

Example 6. Multiple negotiations

Brisbane	***Auckland***
(ABI-QFA108-YBBN-33S163E/1209F350 -NZCH-8/IS-9/B744/H-10/SDHIWRJ -15/M084F350 35S164E 36S165E ...)	
(EST-QFA108-YBBN-33S163E/1213F350-NZCH)	
	(ACP-QFA108-YBBN-NZCH)
(CDN-QFA108-YBBN-NZCH -14/33S163E/1213F370)	*(CDN-QFA108-YBBN-NZCH -14/33S163E/1213F360)*
(ACP-QFA108-YBBN-NZCH)	
(TOC-QFA108-YBBN-NZCH)	
	(AOC-QFA108-YBBN-NZCH)

8. NOTES

8.1 The IGM concerns communications between two foreign ATSUs within the ASIA/PAC Regions. Inter-center communications within one country, and communications with ATSUs outside the ASIA/PAC regions, though important to an ATC system's design and implementation, are not part of the scope of this material.

APPENDIX E - RELATIONSHIP TO ICAO AIDC MESSAGES

1. The AIDC message set can be tailored to satisfy regional requirements. The OPLINKP documentation defining the AIDC data link application provides three means for achieving regional adaptation of the AIDC messages:

a) Regions select an AIDC subset that will support their regional operational procedures;

b) The selected messages are tailored by mandating the usage of optional components into one of three classes:

(1) the optional component that must always be used;
(2) the optional component that must never be used;
(3) the optional component is truly optional;

c) For interim, pre-ATN implementations, encoding rules may be specified by a region. The most frequently used encoding rules today employ ICAO ATS fields and messages. The default encoding rules are the ISO Packed Encoding rules.

2. Using the regional tailoring procedures stated above, the ASIA/PAC Core messages are related to a subset of the AIDC messages and are shown in Table E-1.

3. The encoding rules employed within the ASIA/PAC will remain for the foreseeable future as the ICAO ATS field and message-based, character-oriented rules currently defined in the ASIA/PAC AIDC Interface Control Document (ICD) (and ICAO PANS-ATM Doc 4444).

Table E –1 ASIA/PAC AIDC/OPLINKP AIDC Relationship

OPLINKP AIDC Message	ASIA/PAC Message	Status	OPLINKP AIDC Mandatory Data Field	AIDC Optional Data Field	AIDC Optional Data Field Usage
Notify	ABI	Core	Flight ID Aircraft Departure Aerodrome Destination Aerodrome Estimate	Flight Rules	Optional
				Equipment	Optional
				Route	Optional
				Other Information	Optional
Coordinate Initial	CPL	Core	Flight ID Aircraft Departure Aerodrome Destination Aerodrome Estimate	Flight Rules	Always Used
				Equipment	Always Used
				Route	Always Used
				Other Information	Optional
Coordinate Initial	EST	Core	Flight ID Aircraft (NOT USED) Departure Aerodrome Destination Aerodrome Estimate	Flight Rules	Never Used
				Equipment	Never Used
				Route	Never Used
				Other Information	Never Used
Coordinate Initial	PAC	Option	Flight ID Aircraft (NOT USED) Departure Aerodrome Destination Aerodrome Estimate	Flight Rules	Optional
				Equipment	Optional
				Route	Optional

OPLINKP AIDC Message	ASIA/PAC Message	Status	OPLINKP AIDC Mandatory Data Field	AIDC Optional Data Field	AIDC Optional Data Field Usage
				Other Information	Optional
Coordinate Negotiate	CDN	Core	Flight ID Departure Aerodrome Destination Aerodrome Estimate	Route	Optional
				Other Information	Optional
Coordinate Accept	ACP	Core	Flight ID	Departure	Always Used
				Destination	Always Used
				Frequency	Never Used
Coordinate Reject	REJ	Core	Flight ID	Departure	Always Used
				Destination	Always Used
Coordinate Cancel	MAC	Core	Flight ID Departure Aerodrome Destination Aerodrome	Estimate Other Information	Never Used Never Used
Transfer Control Proposal	TOC	Core	Flight ID	Departure	Always Used
				Destination	Always Used
				Exec Data	Never Used
Transfer Control Assume	AOC	Core	Flight ID	Departure	Always Used
				Destination	Always Used
Dynamic Track	TDM	Option	ASIA/PAC Track Name	Generation Time	Optional
				Start Time	Always Used
				Stop Time	Always Used
				Other Information	Optional
Free text Emergency	EMG	Core	Flight ID or Functional Address Other Information	Nil	

OPLINKP AIDC Message	ASIA/PAC Message	Status	OPLINKP AIDC Mandatory Data Field	AIDC Optional Data Field	AIDC Optional Data Field Usage
Free text General	MIS	Core	Flight ID or Functional Address Other Information	Nil	
App Accept	LAM	Core	N/A	Nil	
App Error	LRM	Core	Message Type (NOT USED) Component Type Error Code	Error Data	Optional
Surveillance Report	TRU	Option	Flight ID Departure Destination Track Data	Nil	
Surveillance ADS	ADS	Option	Flight ID Departure Destination ADS Data	Nil	

APPENDIX F - INTERIM OPERATIONAL SUPPORT

1. INTRODUCTION

1.1 This ICD describes the end-state messages to be used within the ASIA/PAC region to ensure interoperability between automated ATS systems. However, during the transition to this end state architecture, current operations must be documented and supported. This appendix is the repository of messages not found in other ICD sections which will be used to support current operations during the interim transition period.

1.2 Each interim message will be described in a separate paragraph. Those ATS Providers employing an interim message contained in this appendix shall document this usage in the appropriate bilateral agreements.

2. INTERIM MESSAGES

2.1 Estimate (EST) Message

2.1.1 The Estimate message is contained within the Core Message set. However, its use has been constrained to those situations in which a flight will cross an FIR boundary in accordance with existing letters of agreement.

2.1.2 An EST message may be used in any situation in which a CPL is permitted. The EST is in actuality an abbreviated CPL, contingent upon prior receipt of route and ancillary information. This information could be provided by an FPL or ABI message.

2.1.3 Those ATS Provider States employing an EST in the more general manner during the interim transition period shall document this usage in the appropriate bi-lateral agreements.

2.1.4 The EST message format shall be as described in the Core Message set.

APPENDIX G – GLOSSARY OF TERMS

ASIA/PAC …….	Asia Pacific Region

TERMS OF REFERENCE FOR ATS ROUTE NETWORK REVIEW TASK FORCE (ARNR/TF)

The Task Force shall:

a) review the ATS route network of the ASIA/PAC Regions as described in Doc 9673 (1st Edition of the Basic Air Navigation Plan dated 2001) and subsequent changes;

b) determine the required ATS route network;

c) revise Doc 9673 to the extent necessary after considering whether the requirements for routes still exists or if the requirements need to be modified in order to ensure that an up-to-date basis is provided for taking into account;

   i) an orderly flow of air traffic and the need for a well balanced cost/benefit relationship for both users and providers of services;

   ii) an ATS route system based on area navigation (RNAV) and CNS/ATM, providing for optimal routing where possible and offering possibilities to aircraft to operate on routes not provided with station reference aids;

   iii) the current pattern of aircraft operations and the need for fuel conservation and economy of operations;

   iv) the opportunity for long haul flights to operate along, or as near as possible to preferred routes from the point of departure to destination in accordance with the principles contained in the Global CNS/ATM Plan and further developed by the ATM Concepts Panel (ATMCP). Particular emphasis should be focussed on a flexible use of airspace approach wherever possible.

The Task Force will report to ATS/AIS/SAR/SG/14.

CONTRIBUTORY BODIES OF APANPIRG and ASSOCIATED GROUPS

Title	SG Responsible	Decision	ToR	Report Date
ADS-B Study and Implementation Task Force	APANPIRG	CNSMET DC6/9	Appendix K	
AFS Management Task Force	CNS/MET			Dissolved
AIDC Review Task Force	APANPIRG	D5/1	To be reconvened by CNSMET DD6/24	ATS/AIS/SAR SG/13
AIS Automation TF	ATS/AIS/SAR SG	D12/x	Suspended until when needed for further work	Suspended
ANP/FASID Review Working Group	CNSMET 5	D5/24 D6/23		CNSMET 6 dissolved
AOP Study/Sub Group??	ICAO	DGCA R3.17.6		
APANPIRG 7 Training Task Force	APANPIRG 7			
ASIA/PAC OPMET Exchange Task Force (OPMET/E TF)	CNSMET	DD6/17	Appendix R	
ASIA/PAC Volcanic Ash Task Force (VA TF)	CNSMET	DD6/20	Appendix S	
ASIA/PAC WAFS Transition Task Force	CNSMET5	D5/16 DD6/16	Appendix Q	
ASIA/PACIFIC Area Traffic Forecasting Group ATA TFG	?			
Asia/Pacific Safety Management TF (Asia Pacific Regional System Performance Monitoring Organisation TF)	APANPIRG 12	D12/44	APANPIRG 12 Appendix 3B	APANPIRG 13
ATN Transition Task Force	CNSMET		CNSMET 5 Appendix K CNSMET 6 Appendix H	
Bay of Bengal Task Force	ATS/AIS/SAR SG	D7/10	Report 4.1.2 (D7/11)	
Business Case TF	APANPIRG 12		Report 3.82	

CONTRIBUTORY BODIES OF APANPIRG and ASSOCIATED GROUPS

Title	SG Responsible	Decision	ToR	Report Date
Chairmen's Meeting			Last meeting was December 2001	
CNS/ATM Guidance Material TF	ATS/AIS/SAR	APANPIRG D7/1	Report 2.1.3.5	APANPIRG/8 (1997)
CNS/ATM Implementation Team			APANPIRG 12	
CNS/ATM Training and Human Resource Development Task Force	APANPIRG 9	D9/39	Report	
Cooperative Development of Operational Safety and Continuing Airworthiness Programme – South East Asia (COSCAP)				
Cooperative Development of Operational Safety and Continuing Airworthiness Programme – South Pacific (COSCAP)				
Cooperative Development of Operational Safety and Continuing Airworthiness Programme – North East Asia (COSCAP)				
EMARSSH TF	ATS/AIS/SAR	APANPIRG C11/10		APANPIRG/13 (2002)
Environmental Issues Task Force	APANPIRG		ALLPIRG/4 IC SG to action	
Forum of Aviation Officials				
GNSS Task Force	CNSMET			Completed
Informal Trans-Asia/Trans-Siberia/Cross-Polar Routes High level Steering Group (ITASPS)				
IPACG				
ISPACG				
LTMP WG Long Term Monitoring	ATS/AIS/SAR SG	3.1.32		

CONTRIBUTORY BODIES OF APANPIRG and ASSOCIATED GROUPS

Title	SG Responsible	Decision	ToR	Report Date
Performance Working Group	RVSM TF			
MET Working Group on the CNS/ATM	CNSMET5	D5/29		Dissolved
METATM Task Force on CNS/ATM Plan	CNSMET5	D5/30	CNSMET 5 p40 and Appendix 1G	CNSMET6
NAV/SUR TF	CNS/MET			Finished
Operations Manual				Dissolved APANPIRG 8??
OPMET Working Group	CNS/MET	?	See ASIA/PAC OPMET Exchange Task Force (OPMET/E TF)	overtaken
Pacific Aviation Safety Office (PASC)				
RACGAT				
RVSM Implementation Task Force	ATS/AIS/SAR SG	APANPIRG/9 D9/4	Report 2.1.31	On-going
Safety Regulation and Oversight Office				
SCS Task Force	ATS/AIS/SAR SG	ATS/AIS/SG/5 D5/5	Report 5.5.15	APANPIRG/12 (2001) Work transferred to SEACG
Shortcomings and Deficiencies TF or Sub-Group	ICAO	DGCA R3.18.2		
SSR Code Assignment Working Group	ATS/AIS/SAR			
SSR Code Management TF	ATS/AIS/SAR	D11/3		Suspended
Working Group on Volcanic Ash	CNS/MET			

ISSUES

Airports

- Surface movement and runway incursions
- RESA Runway end safety areas

CNS/MET
CNS/ATM IC

- APEC GNSS Implementation Team
- Asia Pacific SBAS test-bed

Environment

- Chapter 3 noise
- Emissions

Accident Rates

- COSCAPs functions
- CFIT and ALAR (approach landing accident reduction)

SAR

- biennial SAR meeting in place of continuation in the ATS/AIS/SAR SG

Technical Panels and Study Group

- update and feedback to be presented at each subgroup

ASIA/PACIFIC Groups

- established consolidated list of task forces and working groups
- list to include establishment , Terms of Reference, membership, meeting schedules and reporting arrangements

ATS/AIS/SAR

- review of RVSM guidance material phraseology particularly Chapter 6

2nd Survey on Carriage and Operation of ACAS and Pressure-Altitude Reporting Transponders

(AP-ATM0551 dated 17 August 2000)

Editorial note: Changes are arranged to show "deleted text" using strikeout (~~text to be deleted~~), and "new text" in bold Italics (***new text to be inserted***).

Pressure-Altitude Reporting Transponders

State/Territory	Effective date (dd/mm/yy)	Applicable airspace	Applicable to			Aeronautical Publication
			aeroplanes engaged in international air transport operations	aeroplanes engaged in international general aviation operations	helicopters engaged in international commercial air transport or international general aviation operations	
Australia	Early 1990's	Controlled airspace inside radar coverage	YES	YES	YES	AIP
Bangladesh						
Bhutan						
Brunei Darussalam	1-Jul-01	Brunei terminal control area	YES	YES	YES	
			* State aircraft as well			
Cambodia	1-Jan-03	All airspace within FIR				
China	1-Jan-02	All airspace within FIR	YES	YES	YES	Published ***as AIC 05/2001***
Hong Kong,China	1980	Controlled airspace within Hong Kong FIR	YES	YES	YES	AIP Hong Kong GEN 1.5-2
Macau, China	2-Jan-97	Controlled airspace within Macau ATZ	All aircraft flying within Macau ATZ			AIP Macau GEN 1.5-1 dated 2 Jan 1997
Cook Islands						
DPR Korea						
Fiji						
France (French Polynesia)	23-Jan-03	All airspace within FIR	YES	YES (All aircraft in general aviation)	YES	AIP
(New Caledonia)						
India	07-Sep-99	All airspace within FIRs	YES	YES	YES	Civil Aviation Requirements Section2, Series "R", PART IV
Indonesia						
Japan	10-Oct-75	Airspace defined by Minister of Transportation	YES	YES	YES	AIP dated 1 Oct 1975

2nd Survey on Carriage and Operation of ACAS and Pressure-Altitude Reporting Transponders

(AP-ATM0551 dated 17 August 2000)

Pressure-Altitude Reporting Transponders

State/Territory	Effective date (dd/mm/yy)	Applicable airspace	Applicable to			Aeronautical Publication
			aeroplanes engaged in international air transport operations	aeroplanes engaged in international general aviation operations	helicopters engaged in international commercial air transport or international general aviation operations	
Kiribati						
Lao PDR						
Malaysia	1-Jan-03	All airspace within FIRs	YES	YES	YES	AIC 6/2000 dated 10 Mar 2000
Maldives	2002	Defined portion	YES	YES	YES	
Marshal Islands						
Micronesia, Federated States of						
Mongolia	1-Jan-02	International routes	YES	NO	NO	To be published in Dec 2001
Myanmar	1-Jan-00	All airspace within FIR	YES	YES	YES	Notice to owner T/41 dated 20 Jan 1999
Nauru						
Nepal	Not specified	Not specified	YES	YES	YES	Flight Operations Requirements, Amendment Number 2 dated 18 Feb 2000
New Zealand	1-Apr-97	Transponder Mandatory Airspace prescribed in NZ Air Navigation Register				Civil Aviation Rules Part 91
Pakistan	1-Jul-01	All airspace within FIR	YES			AIP
Palau						
Papua New Guinea						
Philippines	31-Jan-01	Airspace defined by Air Transport Office (ATO)	20%			
	31-Jan-02		50%			
	31-Jan-04		ALL			
Republic of Korea	30-Nov-94	All airspace within FIR	YES	YES	NO	Aviation Law

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Pressure-Altitude Reporting Transponders

State/Territory	Effective date (dd/mm/yy)	Applicable airspace	Applicable to			Aeronautical Publication
			aeroplanes engaged in international air transport operations	aeroplanes engaged in international general aviation operations	helicopters engaged in international commercial air transport or international general aviation operations	
Samoa	2000	All airspace within FIR	YES	NO	NO	NOTAM will be issued on 30 Sep 2000
Singapore	Jul-81	All airspace within FIR	YES	YES	YES	AIP in 1981
Solomon Islands						
Sri Lanka	**1-Jan-03**	**All airspace within Colombo FIR**	**YES**	**YES**	**YES**	**Aviation Safety Notice issued. AIC will be issued**
Thailand	26-Feb-99	*All airspace within FIR:all comercial transport aeroplanes and international operation helicopters *Defined portion:all general aviation and helicopters	YES	YES	YES	
Tonga						
U.S.A.		Defined portion	The requirements are based on the location of aircraft operation, not the weight, engine configuration or type of operation of aircraft			FAR, Part 91
Vanuatu	1-Jan-00	All airspace within FIR	YES	N/A	N/A	
Viet Nam						

Note: Blank indicates that no information has been provided.

2nd Survey on Carriage and Operation of ACAS and Pressure-Altitude Reporting Transponders

(AP-ATM0551 dated 17 August 2000)

Editorial note: Changes are arranged to show "deleted text" using strikeout (~~text to be deleted~~), and "new text" in bold Italics (***new text to be inserted***).

Airborne Collision Avoidance System (ACAS)

State/Territory	Effective date (dd/mm/yy)	Required TCAS types	Applicable airspace	Applicable to		Aeronautical Publication
				turbine-engined aeroplanes of a maximum certified take-off mass in excess of 15000kg or authorized to carry more than 30 passengers engaged in international air transport operations	turbine-engined aeroplanes of a maximum certified take-off mass in excess of 5 700kg or authorized to carry more than 19 passengers engaged in international air transport operations	
Australia	1-Jan-00	Version 6.04 or greater until 1 Jan 2003, thereafter Version 7	All airspace within FIRs	YES	No plan	Civil Aviation Regulation and AIP
Bangladesh	1-Jan-03	Version 7				AIP will be published 09/2003
Bhutan						
Brunei Darussalam	1-Jul-01	Version 7	Brunei terminal control area	YES		
Cambodia	1-Jan-03	Version 7	All airspace within FIR	YES		AIP will be published
China	11-Jul-02	Version 7	At the specified 10 airports, and along ATS routes A461, A593 and A599	YES	YES (On 31 Dec 2003)	AIC 06/2001 and AIC 08/2001
	1-Jan-03	Version 7	All airspace within FIR	YES	YES (On 31 Dec 2003)	To be published

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Airborne Collision Avoidance System (ACAS)

State/Territory	Effective date (dd/mm/yy)	Required TCAS types	Applicable airspace	Applicable to		Aeronautical Publication
				turbine-engined aeroplanes of a maximum certified take-off mass in excess of 15000kg or authorized to carry more than 30 passengers engaged in international air transport operations	turbine-engined aeroplanes of a maximum certified take-off mass in excess of 5 700kg or authorized to carry more than 19 passengers engaged in international air transport operations	
Hong Kong,China	1-Jan-00	Version 6.04 until 1 Jan 2003	All airspace within FIR	YES		AIP Hong Kong GEN 1.5-2
	1-Jan-03	Version 7	All airspace within FIR	YES	YES (on 1 Jan 2005)	AIC 02/01 dated 1 Feb 2001
Macau, China	1-Jan-00	Version 7	Controlled airspace within Macau ATZ	All fixed wing aircraft registered in Macau greater than 5700 kg or certified for more than 9 passengers seats.		AIC 07/99 dated 1 Dec 1999
Cook Islands						
DPR Korea						
Fiji						
France (French Polynesia)	23-Jan-03	Version 7	All airspace within FIR	YES	YES (on 1 Jan 2005)	AIP & AIC 010/00 dated 3 Aug 2000
(New Caledonia)	23-Jan-03	Version 7	All airspace within FIR	YES	YES (on 1 Jan 2005)	AIP & AIC 010/00 dated 3 Aug 2000
India	31-Dec-98	Any Version	All airspace within FIRs	Aeroplane having a maximum certified passenger seating configuration of more than 30 or maximum payload capacity of more than 3 tonnes		
	1-Jan-03	Version 7	All airspace within FIRs	Aeroplane having a maximum certified passenger seating configuration of more than 30 or maximum payload capacity of more than 3 tonnes	YES (on 1 Jan 2005)	Civil Aviation Requuirements, Section2, Series 'I', PART VIII, Revision2 dated 4 Dec 2000

2nd Survey on Carriage and Operation of ACAS and Pressure-Altitude Reporting Transponders

(AP-ATM0551 dated 17 August 2000)

Airborne Collision Avoidance System (ACAS)

State/Territory	Effective date (dd/mm/yy)	Required TCAS types	Applicable airspace	Applicable to		Aeronautical Publication
				turbine-engined aeroplanes of a maximum certified take-off mass in excess of 15000kg or authorized to carry more than 30 passengers engaged in international air transport operations	turbine-engined aeroplanes of a maximum certified take-off mass in excess of 5 700kg or authorized to carry more than 19 passengers engaged in international air transport operations	
Indonesia						
Japan	4-Jan-01	Version 6.04 or greater *upgrading to Version 7 before 2003 is under consideration	Domestic airspace	YES	YES (on 1 Jan 2005)	AIP dated 4 Jan 1996
Kiribati						
Lao PDR						
Malaysia	1-Jan-03	Version 7	All airspace within FIRs	YES	YES	AIC 6/2000 dated 10 Mar 2000
Maldives	Jan-00	Version 7	All airspace within FIR	YES	YES (in Jan 2005)	Published on 14 Sep 1997
Marshal Islands						
Micronesia, Federated States of						
Mongolia	1-Jan-02		International routes	YES	No	To be issued in Dec 2000
Myanmar	1-Jan-03	Version 7	International routes	YES	No	Notice to owner T/42 dated 1 Sep 2000
Nauru						
Nepal	1-Jan-03	Version 7	Not specified	YES	YES (on 1 Jan 2005)	Flight Operations Requirements, Amendment Number 2 dated 18 Feb 2000

2nd Survey on Carriage and Operation of ACAS and Pressure-Altitude Reporting Transponders

(AP-ATM0551 dated 17 August 2000)

Airborne Collision Avoidance System (ACAS)

State/Territory	Effective date (dd/mm/yy)	Required TCAS types	Applicable airspace	Applicable to		Aeronautical Publication
				turbine-engined aeroplanes of a maximum certified take-off mass in excess of 15000kg or authorized to carry more than 30 passengers engaged in international air transport operations	turbine-engined aeroplanes of a maximum certified take-off mass in excess of 5 700kg or authorized to carry more than 19 passengers engaged in international air transport operations	
New Zealand						Civil Aviation Rules regulating the carriage of ACAS in FIRs will be included in Civil Aviaiton Rules Programme for the fiscal year 2000/2001.
Pakistan	1-Jul-01	Version 6.04 or greater	All airspace within FIR	YES		AIP
Palau						
Papua New Guinea						
Philippines	31-Jan-01	Airspace defined by Air Transport Office (ATO)	20%			
	31-Jan-02		50%			
	31-Jan-04		ALL			
Republic of Korea	1-Jan-00	Version 6.04 or greater & Version 7 after Jan 2003	All airspace within FIR	YES	N/A	Aviation Law
Samoa	2000	Version 6.04 or greater & Version 7 for new installation after Jan 2002	All airspace within FIR	YES	YES (on 1 Jan 2005)	NOTAM will be issued
Singapore	1-Jan-02	Version 7	All airspace within FIR	YES	YES (on 1 Jan 2005)	AIC will be issued
Solomon Islands						
Sri Lanka	**1-Jan-02**	**Version 7**	**All airspace within Colombo FIR**	**YES**		**Aviation Safety Notice issued 2002. AIC will be issued**
Thailand	1-Jan-03	Version 7	All airspace within FIR	YES	YES (on 1 Jan 2005)	

2nd Survey on Carriage and Operation of ACAS and Pressure-Altitude Reporting Transponders

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Airborne Collision Avoidance System (ACAS)

State/Territory	Effective date (dd/mm/yy)	Required TCAS types	Applicable airspace	Applicable to		Aeronautical Publication
				turbine-engined aeroplanes of a maximum certified take-off mass in excess of 15000kg or authorized to carry more than 30 passengers engaged in international air transport operations	turbine-engined aeroplanes of a maximum certified take-off mass in excess of 5 700kg or authorized to carry more than 19 passengers engaged in international air transport operations	
Tonga						
U.S.A.	31-Dec-95	Version 6.04 or greater	Within the territorial limit of 12 miles from the US coast	A passenger or combination cargo/passenger (combi) airplane that has a passenger seat configuration, excluding any pilot seat, of more than 10 seats		FAR, Part 121
Vanuatu	1-Jan-00	Version 6.04 or greater	All airspace within FIR	YES	N/A	Australia CAA Act 1998, Sbusection 9 (1)
Viet Nam						

Note: Blank indicates that no information has been provided.

TERMS OF REFERENCE FOR THE AIS IMPLEMENTATION TASK FORCE

Terms of Reference of the AIS Implementation Task Force (AITF)

The objectives of the Task Force are to:

a) study means of aeronautical data management by civil aviation authorities and/or ATS providers in other regions including the aeronautical information exchange model (AIXM) and the electronic AIP (eAIP), and consider the feasibility in making use of these methods/models in the Asia/Pacific Region;

b) examine the means of aeronautical data exchange used in other regions and application in the Asia/Pacific Region;

c) based on 1), develop guidance material for operation of data management systems;

d) assist States to implement Quality Systems for aeronautical information in an expeditious manner;

e) develop training material and conduct workshops on the *Guidance Manual for AIS in the Asia/Pacific Region;*

a) develop guidance material for Static Data Procedures and the AIS Automation Plan

f) review and update the Guidance Manual taking into account amendments to ICAO SARPs, guidance material; and

g) monitor and review technical and operating developments in the AIS field especially in the area of automation and database management.

To achieve the above objectives, the Task Force shall consider:

a) results of the ICAO Aeronautical Data Model Study Group (ADMSG);

b) results of the AIS/MAP Study Group;

c) amendments to Annex 4, Annex 5, the AIS Manual (Doc 8126), and the Aeronautical Chart Manual (Doc 8697);

d) revisions to the EUROCONTROL *Operating Procedures for AIS Dynamic Data* (OPADD);

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

	Training	Alerting	Legislative	SAR committee	Agreements	Relationships	Communications	Quality Control	Civil/Military	Resources	SAREX	Library	Computerisation	SAR programme	Supply dropping	Special equipment	SAR aircraft	Navigation	ELTs	LUT
Australia	E	E	E	E	E	C	E	E	E	E	E	E	E	E	E	E	E	E	C	E
Bangladesh	B	C	D	A	A	C	C	A	D	A	A	C	A	A	C	C	D	A	D	C
Bhutan																				
Brunei	E	E	E	E	**E**	E	E	E	E	E	E	**E**	**E**	E	D	D	E	E	E	A
Cambodia	B	B	B	B	B	B	C	A	B	B	A	C	A	A	A	A	B	A	A	A
China	E	E	E	E	E	E	D	D	E	D	D	C	B	A	E	E	E	E	E	A
Cook Islands	A	B	B	A	A	C	C	C	B	A	B	A	A	A	A	B	B	A	E	A
DPR Korea	B	D	B	D	A	B	D	D	D	C	B	A	A	A	B	A	C	C	A	A
Fiji	B	C	C	C	C	C	C	B	D	C	D	C	A	C	B	A	C	C	C	A
French Polynesia	C	D	D	D	C	D	E	A	E	C	C	B	A	A	E	D	E	E	E	E
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 29 June 2001

Categorisations:

A = Not implemented

B = Initial implementation

C = Meets Annex 12 requirements in some areas

D = Meets Annex 12 requirements in most areas

E = Fully meets Annex 12 requirements

Blank = No response

STATE SAR AGREEMENTS

ID No.	Date	States	Remark
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	
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		New Zealand/Australia	
13		New Zealand/Cook Islands/ Fiji/Samoa/Tonga/French Polynesia	Under development

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SAR ITEMS REQUIRING URGENT ADDRESSING IN ASIA/PACIFIC REGION

a) Training of sufficient qualified staff to provide adequate RCC coverage and efficient, urgent response;

b) Education of the public and training of key personnel in SAR alerting responsibilities;

c) Drafting of legislative and regulatory provisions for more certain and responsive SAR;

d) Establishment of national SAR committees and the development of national and regional SAR plans and manuals;

e) Development of SAR agreements between agencies and international authorities;

f) Development of closer working relationships with marine authorities, international organizations and the aviation industry;

g) Integration of communication networks;

h) Development of checking procedures and work quality control;

i) Development of closer working relationships between civil and military authorities;

j) Compilation of extensive national and regional databases of resources and organizations;

k) Conduct of exercises and exchange of information between States;

l) Establishment of a central technical library;

m) Computerization of RCCs throughout the region;

n) Development and installation of appropriate SAR planning computer programmes;

o) Analysis of supply dropping needs and development of appropriate delivery systems;

p) Analysis of specialized equipment needs of SAR aircraft and recommendations for fitting;

q) Analysis of suitable aircraft for use as SAR units, their readiness and proficiency, and arrangements for appropriate pilot training programmes;

r) Analysis of navigation needs for SAR aircraft and recommendations for additional aids;

s) Study of legislation for carriage of ELTs and recommendations for closer compliance with international standards; and

t) International discusson of comprehensive COSPAS-SARSAT LUT coverage for the South Pacific: siting, funding, operation and maintenance.

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STATUS OF WGS-84 IMPLEMENTATION

EXPLANATION OF THE TABLE

Column

1 Name of the State, territory or aerodrome for which WGS-84 coordinates are required with the designation of the aerodrome use:

RS - international scheduled air transport, regular use
RNS - international non-scheduled air transport, regular use
RG - international general aviation, regular use
AS - international scheduled air transport, alternate use

2 Runway designation numbers

3 Type of each of the runways to be provided. The types of runways, as defined in Annex 14, Volume I, Chapter 1, are:

NINST - non-instrument runway;
NPA - non-precision approach runway;
PA1 - precision approach runway, Category I;
PA2 - precision approach runway, Category II;
PA3 - precision approach runway, Category III.

4 Requirement for the WGS-84 coordinates for FIR, indicated by the expected date of implementation or an "X" if already implemented.

5 Requirement for the WGS-84 coordinates for Enroute points, indicated by the expected date of implementation or an "X" if already implemented.

6 Requirement for the WGS-84 coordinates for the Terminal Area, indicated by the expected date of implementation or an "X" if already implemented.

7 Requirement for the WGS-84 coordinates for the Approach points, indicated by the expected date of implementation or an "X" if already implemented.

8 Requirement for the WGS-84 coordinates for runways, indicated by the expected date of implementation or an "X" if already implemented.

9 Requirement for the WGS-84 coordinates for Aerodrome/Heliport points (e.g. aerodrome/heliport reference point, taxiway, parking position, etc.), indicated by the expected date of implementation or an "X" if already implemented.

10 Requirement for geoid undulation indicated by the expected date of implementation or an "X" if already implemented.

11 Requirement for the WGS-84 Quality System, indicated by the expected date of implementation or an "X" if already implemented.

12 Requirement for publication of WGS-84 coordinates in the AIP indicated by the expected date of publication or an "X" if already published.

13 Remarks

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STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
AUSTRALIA			X	X						X	X	
YPAD ADELAIDE/												
Adelaide	05	NPA			X	X	X	X				
RS	23	PA1				X	X	X				
	12	NPA				X	X	X				
	30	NPA				X	X	X				
YBBN BRISBANE/					X			X				
Brisbane	1	PA1				X	X					
RS	19	PA1				X	X					
	14	NPA				X	X					
	32	NPA				X	X					
YBCS CAIRNS/					X			X				
Cairns	12	NPA				X	X					
RS	30	NPA				X	X					
	15	PA1				X	X					
	33	NPA				X	X					
YPDN DARWIN/					X			X				
Darwin	11	NPA				X	X					
RS	29	PA1				X	X					
	18	NINST				X	X					
	36	NPA				X	X					
YMML MELBOURNE/					X			X				
Melbourne	09	NPA				X	X					
RS	27	PA1				X	X					
	16	PA1				X	X					
	34	NPA				X	X					
YPPH PERTH/					X			X				
Perth Intl	03	NPA				X	X					
RS	21	PA1				X	X					
	06	NPA				X	X					
	24	PA1				X	X					
	11	NPA				X	X					
	29	NPA				X	X					
YSSY SIDNEY/					X			X				
Kingsford Smith Intl	07	PA1				X	X					
RS	25	NPA				X	X					
	16L	PA1				X	X					
	34R	PA1				X	X					
	16R	PA1				X	X					
	34L	PA1				X	X					
YMAV AVALON/					X			X				
Avalon	18	PA1				X	X					
AS	36	NPA				X	X					
YBRM BROOME/					X			X				
Broome	10	NPA				X	X					
RS	28	NPA				X	X					

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
YSCB CANBERRA/					X			X				
Canberra	12	NPA				X	X					
AS	30	NPA				X	X					
	17	NPA				X	X					
	35	PA1				X	X					
YSCH COFFS HARBOUR/					X			X				
Coffs Harbour	03	NPA				X	X					
AS	21	NPA				X	X					
	10	NPA				X	X					
	28	NPA				X	X					
YBCG COOLANGATTA/					X			X				
Coolangatta	14	NPA				X	X					
AS	32	NPA				X	X					
	17	NPA				X	X					
	35	NPA				X	X					
YMHB HOBART/					X			X				
Hobart	12	PA1				X	X					
RS	30	NPA				X	X					
					X			X				
Learmonth	18	NPA				X	X					
AS	36	NPA				X	X					
YLHI LORD HOWE ISLAND/					X			X				
Lord Howe Island	10	NPA				X	X					
RS	28	NPA				X	X					
YPPD PORT HEDLAND					X			X				
Port Hedland	14	NPA				X	X					
AS	32	NPA				X	X					
	18	NPA				X	X					
	36	NPA				X	X					
YBTL TOWNSVILLE/					X			X				
Townsville	01	PA1				X	X					
AS	19	NPA				X	X					
	07	NPA				X	X					
	25	NPA				X	X					
YBAS ALICE SPRINGS/					X			X				
Alice Springs	06	NPA				X	X					
AS	24	NPA				X	X					
	12	PA1				X	X					
	30	NPA				X	X					
	17	NPA				X	X					
	35	NPA				X	X					
YSDU DUBBO/					X			X				
Dubbo	05	NPA				X	X					
AS	23	NPA				X	X					
	11	NPA				X	X					
	29	NPA				X	X					

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
YPKG KALGOOLIE/					X			X				
Kalgoorlie	11	NPA				X	X					
AS	29	NPA				X	X					
	18	NPA				X	X					
	36	NPA				X	X					
YMLT LAUNCETON/					X			X				
Launceston	14L	ninst				X	X					
AS	32R	ninst				X	X					
	14R	NPA				X	X					
	32L	PA1				X	X					
	18	ninst				X	X					
	36	ninst				X	X					
YBRK ROCKHAMPTON/					X			X				
Rockhampton	04	NPA				X	X					
AS	22	NPA				X	X					
	15	NPA				X	X					
	33	NPA				X	X					
YPTN TINDAL/					X			X				
Katherine	14	NPA				X	X					
AS	32	NPA				X	X					
YHID HORN ISLAND/					X			X				
Horn Island	08	NPA				X	X					
RGS	26	NPA				X	X					
	14	NPA				X	X					
	32	NPA				X	X					
YSNF NORFOLK ISLAND/					X			X				NZZO FIR
Norfolk Island	04	PA1				X	X					
RS	22	NPA				X	X					
	11	PA1				X	X					
	29	PA1				X	X					
YPXM CHRISTMAS ISLAND/					X			X				
Christmas Island	18	NPA				X	X					
RS	36	NPA				X	X					
YPCC KEELING/					X			X				
Cocos Island Intl	15	NPA				X	X					
RS	33	NPA				X	X					
BANGLADESH			X	X						X	X	
VGZR DHAKA/					X			X				
Zia Int'l	14	PAI				X	X		*			* Not yet decided
RS	32	NPA				X	X					
VGEG CHITTAGONG/					X			X				
M.A. Hannan Intl	05	NPA				X			*			* Not yet decided
RS	23	PA1				X	X					
VGSY SYLHET/					X			X				
Osmani Intl	11	PA1				X	X		*			* Not yet decided
RS	29	NPA				X	X					

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
BHUTAN												
BRUNEI DARUSSALAM												WBFC FIR
WBSB BRUNEI/					X			X			X	
Brunei Intl	03	PA1				X	X					
	21	PA1				X	X					
CAMBODIA												
CHINA			X	X								Sanya AOR only
HONG KONG, China			X	X						X	X	
VHHH HONG KONG/					X			X	X			
Hong Kong Intl	07L	PA2				X	X		X			
RS	07R	PA2				X	X		X			
	25L	PA2				X	X		X			
	25R	PA3				X	X		X			
MACAO, China												VHHK FIR
VMMC MACAU/					X			X			X	
Macau Intl	16	NPA				X	X		X			
	34	PA2				X	X		X			
COOK ISLANDS												NZZO FIR
DPR KOREA												
FIJI			X	X						X	X	
NFFN NADI/					X			X				
Nadi Intl	02	PA1				X	X		X			
RS	20	PA1				X	X		X			
	09	NINST				X	X		X			
	27	NINST				X	X		X			
NFSU SUVA/					X			X				
Nausori Intl	10	NPA				X	X		X			
RS	28	NPA				X	X		X			
FRENCH POLYNESIA (FRANCE)			2003	2003						2003	2003	
NTAA TAHITI/								X				

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
Faaa	04	PA1				2003	X		X			
RS	22	NPA				2003	X	X	X			
NTTB BORA BORA/												
Moto-Mute	11	NPA				2003	X	2003	X			
	29	NPA				2003	X	2003	X			
NTTR RAIATEA												
Utoroa	07	NPA				2003	X	2003				
	25	NPA				2003	X	2003				
NTTG RANGIGORA												
Rangigora	09	NPA				2003	X	2003				
AS	27	NPA				2003	X	2003				
NEW CALEDONIA (FRANCE)			X	X						2001	X	NFFF FIR
NWWW Noumea/					X			X				
La Tontouta	11	PA1				X	X		X			
RS	29	NINST				X	X		X			
WALLIS ISLANDS (FRANCE)												NFFF FIR
NLWW Wallis/												
Hihifo										2001	X	
RS	08	NPA				X	X					
	26	NPA				X	X					
INDIA			X	X							X	
VIDP DELHI/					X			X				
Indian Gandhi Intl	09	NPA				X	X					
RS	27	PA1				X	X					
	10	PA1				X	X					
	28	PA2				X	X					
VABB MUMBAI/					X			X				
ChhatrapatiShivaji Intl	09	PA1				X	X					
RS	27	PA1				X	X					
	14	PA1				X	X					
	32	NPA				X	X					
VOMM CHENNAI/					X			X				
Madras	07	PA1				X	X					
RS	25	NPA				X	X					
	12	NPA				X	X					
	30	NPA				X	X					
VECC KOLKATA/					X			X				
Netaji Subash	19L	PA1				X	X					
Chandra Bose Intl	01R	PA1				X	X					
RS	19R	NPA				X	X					
	01L	NPA				X	X					
VAAH AHMEDABAD/					X			X				
Sardar VallabhBhai	05	NPA				X	X					
Patel Intl	23	PA1				X	X					
RS												
VIAR AMRITSAR/					X			X				

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
Amritsar	16	NPA				X	X					
RS	34	PA1				X	X					
VOBG BANGALORE/					X			X				
Bangalore	09	NPA				X	X					
RS	27	PA1				X	X					
VOCI COCHIN/					X			X				
Cochin Intl	09	NPA				X	X					
RS	27	PA1				X	X					
VAGO GOA/					X							
Goa	08	NPA				X	X					
RS	26	NPA				X	X					
VEGT GUWAHATI/					X			X				
Lokapriya Gopinath	02	PA1				X	X					
Bardoloi Intl	20	NPA				X	X					
RS												
VOHY HYDERABAD/					X			X				
Rajiv Gandhi Intl	09	NPA				X	X					
RS	27	PA1				X	X					
VOTV TRIVANDRUM/					X			X				
Thiruvananthapuram	14	NPA				X	X					
Intl	32	PA1				X	X					
RS												
	Note: Transformation into WGS-84 has been done by mathematical means using MADRAN software developed by NIMA (National Imaginary and Mapping Agency), USA											
INDONESIA			2002	X					X	2001		
WAPP AMBON/					2002			X				
Pattimura	04	NPA				X	X					
RNS	22	PA1				X	X					
WRLL BALIKPAPAN/					2002			X				
Sepinggan	07	NPA				X	X					
RS	25	PA1				X	X					
WRBB BANJARMASIN/					2002			X				
Syamsudin Noor	10	PA1				X	X					
AS	28	NPA				X	X					
WIKB BATAM/					2002			X				
Hang Nadim	04	PA1				X	X					
RS	22	NPA				X	X					
WABB BIAK/					2002			X				
Frans Kaisiepo	11	PA1					X					
RS	29	NPA					X					
WRRR DENPASAR/					2002			X				
Ngurah Rai	09	NPA				X	X					
RS	27	PA1				X	X					
WIII JAKARTA/					2002			X				
HalimPerdanakusuma	06	NPA					X					
RNS	24	PA1					X					

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
WIIH JAKARTA/					2002			X				
Soekarno-Hatta	07L	PA1				X	X					
RS	25L	PA1				X	X					
	07R	PA1				X	X					
	25R	PA1				X	X					
WAJJ JAYAPURA/					2002			X				
Sentani	12	NPA				X	X					
RS	30	PA1				X	X					
WRKK KUPANG/					2002			X				
El Tari	07	NPA					X					
RS	25	PA1					X					
WAAA MAKASSAR/					2002			X				
Hasanuddin	13	PA1				X	X					
RNS	31	NPA				X	X					
WAMM MANADO/					2002			X				
Sam Ratulangi	18	PA1				X	X					
RS	36	NPA				X	X					
WIMM MEDAN/					2002			X				
Polonia	05	PA1				X	X					
RS	23	NPA				X	X					
WAKK MERAUKE/					2002			X				
Mopah	16	NPA				X	X					
RNS	34	NINST				X	X					
WIMG PADANG/					2002			X				
Tabing	16	NINST				X	X					
RS	34	NINST				X	X					
WIPP PALEMBANG/					2002			X				
SM Badaruddin II	11	NPA				X	X					
RNS	29	PA1				X	X					
WIBB PEKANBARU/					2002			X				
SultanSyarifKasim II	18	NPA				X	X					
RNS	34	PA1				X	X					
WIOO PONTIANAK/					2002			X				
Supadio	15	PA1				X	X					
RS	33	NPA				X	X					
WRSJ SURABAYA/					2002			X				
Juanda	10	PA1				X	X					
RS	28	NPA				X	X					
WIKN TANJUNG PINANG/					2002			X				
Kiang	04	NPA				X	X					
RNS	22	NINST				X	X					
WRLR TARAKAN/					2002			X				
Juwata	06	NPA				X	X					
RS	24	NINST				X	X					
WABP TIMIKA/					2002			X				
Tembaga Pura	12	NPA					X					

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
RS	30	NPA					X					
WIJJ YOGYAKARTA/					2002			X				
Adi Sucipto	09	NPA					X					
RNS	27						X					
	* The WGS-84 was implemented in almost all International Airport in Indonesia including the NPA with overlay ** The Ground Undulation (Diference between Mean Sea Leval and Elipsoit) will be started in the Year 2002											
JAPAN			X	X							X	
RJFF FUKUOKA/					X			X				
Fukuoka	16	PA1				X	X					
RS	34	NPA				X	X					
RJCH HAKODATE/					X			X				
Hakodate	12	PA1				X	X					
RS	30	NPA				X	X					
RJFK KAGOSHIMA/					X			X				
Kagoshima	16	NPA				X	X					
RS	34	PA1				X	X					
RJBB OSAKA/					X			X				
Kansai Intl	06	PA2				X	X					
RS	24	NPA				X	X					
RJFT KUMAMOTO/					X			X				
Kumamoto	07	PA3				X	X					
RS	25	NPA				X	X					
RJFU NAGASAKI/					X			X				
Nagasaki	14	NPA				X	X					
RS	32	PA1				X	X					
	18	NPA				X	X					
	36	NPA				X	X					
RJNN NAGOYA/					X			X				
Nagoya	16	NPA				X	X					
RS	34	PA1				X	X					
ROAH NAHA/					X			X				
Naha	18	NPA				X	X					
RS	36	PA1				X	X					
RJCC SAPPORO/					X			X				
New Chitose	01L	PA1				X	X					
RS	19R	NPA				X	X					
	01R	PA1				X	X					
	19L	NPA				X	X					
RJAA NARITA/					X			X				
New Tokyo Intl	16	PA3				X	X					
RS	34	NPA				X	X					
RJSN NIIGATA					X			X				
Niigata	04	NPA				X	X					
RS	22	NPA				X	X					
	10	NPA				X	X					
	28	PA1				X	X					

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
RJOO OSAKA/					X			X				
Osaka Intl	14R	NPA				X	X					
RS	32L	PA1				X	X					
	14L	NPA				X	X					
	32R	NPA				X	X					
RJSS SENDAI/					X			X				
Sendai	09	NPA				X	X					
RS	27	PA1				X	X					
	12	NPA				X	X					
	30	NPA				X	X					
RJTT TOKYO/					X			X				
Tokyo Intl	16L	NPA				X	X					
RS	34R	PA2				X	X					
	16R	NPA				X	X					
	34L	PA1				X	X					
	04	NPA				X	X					
	22	PA1				X	X					
KIRIBATI												NFFF FIR
LAO PDR												
MALAYSIA			X	X							X	
WMKA ALOR SETAR/					X	X		X	X			
Sultan Abdul Halim	04	NPA					X					
RS	22	NINST					X					
WMKB BUTTERWORTH/					X			X				
Butterworth	18	NPA					X					
RS	36	NPA					X					
WMKC KOTA BHARU/					X	X		X	X			
Sultan Ismail Petra	10	NPA					X					
RS	28	NPA					X					
WMKD KUANTAN/					X			X				
Kuantan	18	NPA					X					
RS	36	PA1					X					
WMKE KERTEH/					X	X		X	X			
Kerteh	16	NPA					X					
RS	34	NPA					X					
WMKF KUALA LUMPUR/					X			X				
Simpang	04	NINST					X					
RS	22	NINST					X					

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
WMKI IPOH/					X			X	X			
Sultan Azlan Shah	04	PA1					X					
RS	22	NINST					X					
WMKJ JOHOR BAHRU/					X	X		X	X			
Sultan Ismail	16	PA1					X					
RS	34	NPA					X					
WMKK SEPANG/					X	X		X	X			
K.L. Intl	14R	PA1					X					
RS	32L	PA1					X					
	14L	PA1					X					
	32R	PA1					X					
WMKL LANGKAWI/					X			X	X			
Langkawi Intl	03	PA1					X					
RS	21						X					
WMKM MALACCA/					X			X	X			
Malacca	03	NPA					X					
RS	21	NPA					X					
WMKN KUALA TERENGGANU/					X			X	X			
Sultan Mahmud Shah	04	NPA					X					
RS	22	NPA					X					
WMKP PENANG/					X			X	X			
Penang Intl	04	PA1					X					
RS	22	NPA					X					
WMSA SUBANG/					X			X	X			
SultanAbdulAzizShah	15	PA1					X					
RS	33	PA1					X					
WMBT PULAU TIOMAN/								X				
Pulau Tioman	02						X					
RS	20	NINST					X					
WMPA PULAU PANGKOR/								X				
Pulau Pangkor	04						X					
RS	22	NINST					X					
WMAP KLUANG/								X				
Kluang	05	NINST										
RS	23	NINST										
KOTA KINABALU			X	X				X			X	
WBGB BINTULU/					X	X		X	X			
Bintulu	12	NPA					X					
RS	30	NINST					X					
WBGG KUCHING/					X	X		X	X			
Kuching Intl	07	NPA					X					
RS	25	PA1					X					
WBGR MIRI/					X	X		X	X			
Miri	02	PA1					X					
RS	20	NPA					X					

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STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
WBGS SIBU/					X			X	X			
Sibu	13	PA1					X					
RS	31	NPA					X					
WBKD LAHAD DATU/					X			X	X			
Lahad Datu	11	NINST					X					
RS	29	NPA					X					
WBKK KOTA KINABALU/					X			X	X			
Kota Kinabalu Intl	02	PA1					X					
RS	20	NPA					X					
WBKL LABUAN/					X	X		X	X			
Labuan	14	NPA					X					
RS	32	NPA					X					
WBKS SANDAKAN/					X			X	X			
Sandakan	08	PA1					X					
RS	26	NPA					X					
WBKW TAWAU/					X	X		X	X			
Tawau	17	NINST					X					
RS	35	NPA					X					
MALDIVES			X	X						X		
VRMM MALE/					X			X				
Male Intl	18	PA1				X	X		X			
RS	36	NPA					X					
MARSHALL IS.												KZOK FIR
MICRONESIA, FS												KZOK FIR
MONGOLIA			X	X						2002	X	
ZMUB ULAN BATOR/					X			X				
Byant-Ukkaa	14	NPA				X	X					
	32	NPA				X	X					
RS												
MYANMAR												
NAURU												

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
NEPAL				X						X	X	
VNKT KATHMANDU					X			X				
Tribhuvan Intl	02	NPA				X	X					
RS	20	NINST					X					
NEW ZEALAND			X	X						X	X	
NZAA AUCKLAND/					X			X				
Auckland Intl	05	PA1				X	X		X			
RS	23	PA1			X	X	X		X			
NZWN WELLINGTON/					X			X				
Wellington	16	PA1				X	X		X			
RS	34	PA1				X	X		X			
NZCH CHRISTCHURCH/					X			X				
Christchurch	02	PA1				X	X		X			
RS	20	PA1				X	X		X			
NZNS NELSON/					X			X				
Nelson	02	NPA				X	X		X			
RNS	20	NPA				X	X		X			
NZDN DUNEDIN/					X			X				
Dunedin	03	PA1				X	X		X			
RS	21	PA1				X	X		X			
NZPM PALMERSTON/					X			X				
Palmerston North	07	NPA				X	X		X			
RS	25	NPA				X	X		X			
NZHN HAMILTON/					X			X				
Hamilton	18	NPA				X	X		X			
RS	36	NPA				X	X		X			
NZQN QUEENSTOWN/					X			X				
Queenstown	05	NPA				X	X		X			
RS	23	NPA				X	X		X			
NZWP WHENUAPAI/					X			X				
Whenuapai (Mil)	03	PA1				X	X		X			
RNS	21	PA1				X	X		X			
NZOH OHAKEA					X			X				
Ohakea (Mil)	09	PA1				X	X		X			
AS	27	PA1				X	X		X			
NIUE ISLAND (New Zealand)												NZZO FIR
NIUE ALOF/												
Niue Intl												
RS												
PAKISTAN			X	X						X	X	
OPFA FAISALABAD/					X			X				
Faisalabad	03	PA1				X	X		X			
RS	21	NPA										
OPGD GWADAR/					X			X				
Gwadar	06	NINST				X	X		X			

STATUS OF WGS-84 IMPLEMENTATION

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CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
RS	24	NPA										
OPRN ISLAMABAD/					X			X				
Chaklala	12	NINST				X	X		X			
RS	30	PA1										
OPKC KARACHI/					X			X				
Quaid-e-Azam Intl	07	NINST				X	X		X			
RS	25	PA1										
OPLA LAHORE/					X			X				
Lahore	18	NPA				X	X		X			
RS	36	PA2										
OPMT MULTAN/					X			X				
Multan	18	NPA				X	X		X			
RS	36	PA1										
OPNH NAWABSHAH/					X			X				
Nawabshah	02	NPA				X	X		X			
AS	20	NPA										
OPPS PESHAWAR/					X			X				
Peshawar	17	NPA				X	X		X			
RS	35	NPA										
OPTU TURBAT/					X			X				
Turbat	08	NPA				X	X		X			
RS	26	NPA										
PALAU												KZOK FIR
PAPUA NEW GUINEA												
	Note: All Navaids coordinates using WGS-84 datum FLT SUP COM 2-1 to 2-7											
PHILIPPINES			X	X							X	Calculated
RPLL MANILA/					X	X					X	Calculated
Ninoy Aquino Intl	06	PA1					X	X	07/2002		X	ATO-NIMA survey
RS	24	PA1					X	X	07/2002		X	
	13	NINST					X	X	07/2002		X	
	31	NINST					X	X	07/2002		X	
RPLB SUBIC BAY/					X	X					X	Calculated
Subic Bay Intl	07R	NPA					X	X	07/2002		X	ATO-NIMA survey
RS	25L	(S Cat1)					X	X	07/2002		X	
	07L	NINST					X	X	07/2002		X	
	25R	NINST					X	X	07/2002		X	
RPMD DAVAO/					X	X					X	Calculated
Francisco Bangol Intl	05	NPA					X	X	07/2002		X	** Old co-ordinates converted
AS	23	NPA					X	X	07/2002		X	
RPLI LAOAG/					X	X					X	Calculated
Laoag Intl	01	NPA					X	X	07/2002		X	* Old co-ordinates converted
AS	19	NPA					X	X	07/2002		X	

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CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
RPVM LAPU-LAPU/					X	X					X	ATO-NIMA survey
Mactan Cebu Intl	04	PA1					X	X	07/2002		X	
RS	22	PA1					X	X	07/2002		X	
RPLC PAMPANGA/					X	X					X	Calculated
Clark Intl	02R	PA1					X	X	07/2002		X	ATO-NIMA survey
RS	20L	PA1					X	X	07/2002		X	
	02L	NINST					X	X	07/2002		X	
	20R	NINST					X	X	07/2002		X	
RPMZ ZAMBOANGA/					X	X					X	Calculated
Zamboanga Intl	09	PA1					X	X	07/2002		X	* Old co-ordinates converted
AS	27	PA1					X	X	07/2002		X	
Note: * ATO-NIMA survey final report to be incorporated in the AIP Amendment #2 dated 11 July 2002												
** ATO-NIMA survey final report to be incorporated in the AIP Amendment #3												
REP OF KOREA			X	X						X	X	
RKSI INCHEON/					X			X				
Incheon Intl	15R	PA3				X	X		X			
RS	15L	PA3				X	X		X			
	33R	PA3				X	X		X			
	33L	PA3				X	X		X			
RKSS GIMPO/					X			X				
Gimpo Intl	14R	PA2				X	X		X			
RS	32L	NPA				X	X		X			
	14L	PA1				X	X		X			
	32R	PA1				X	X		X			
RKPK BUSAN/					X			X				
Gimhae Intl	18L	NPA				X	X		X			
RS	36R	PA1				X	X		X			
	18R	NPA				X	X		X			
	36L	PA1				X	X		X			
RKPC JEJU/					X			X				
Jeju Intl	6	PA1				X	X		X			
RS	24	PA1				X	X		X			
	31	NINST				X	X		X			
	13	NINST				X	X		X			
RKTU CHEONG/					X			X				
Cheongju	06L	PA1				X	X		X			
RNS/AS	24R	PA1				X	X		X			
	06R	NINST				X	X		X			
	24L	NINST				X	X		X			
RKJJ GWANGJU/					X			X				
Gwangju	4	PA1				X	X		X			
RNS/AS	22	NPA				X	X		X			
RKTN DAEGU/					X			X				
Daegu	31	PA1				X	X		X			
RNS/AS	13	NPA				X	X		X			
RKNN GANGNEUNG/					X			X				

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
Gangneung	26	NPA				X	X		X			
RNS/AS	8	NINST				X	X		X			
RKTH POHANG/					X			X				
Pohang	10	NPA				X	X		X			
AS	28	NPA				X	X		X			
RKTY YECHEON/					X			X				
Yecheon	28	PA1				X	X		X			
AS	10	NPA				X	X		X			
SAMOA											X	NFFO FIR
NSFA FALEOLO/					X			X				
Faleolo Intl	08	PA1				X	X			X	X	
RS	26	NPA				X	X			X	X	
NSFI FAGALII/												
Fagalii	10											
RG	28	NINST										
NSMA MAOTA/												
Maota	08											
RG	26	NINST										
NSAU ASAU/												
Asau	08											
RG	26	NINST										
SINGAPORE			X	X						X	X	
WSSS SINGAPORE/					X			X				
Changi Intl	02L	PA2				X	X		X			
RS	20R	PA1				X	X		X			
	02R	PA1				X	X		X			
	20L	PA2				X	X		X			
WSSL SINGAPORE/					X			X			X	
Seletar	03	NINST					X		X			
RG	21	NINST					X		X			
WSAP SINGAPORE/					X			X			X	
Paya Lebar	02	NPA				X	X					
AS	20	NPA				X	X					
SOLOMON ISLANDS												
SRI LANKA			X	X							X	
COLOMBO/												
Bandaranaike Intl	22	PA1			X	X	X			X	X	AIP Supplement
RNS	04	PA1				X					X	
THAILAND			2001	2001							2002	
VTSE CHUMPHON/					2001			X				
Chumphon												
RG	06	NPA					X		X			

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CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
	24	NPA					X		X			
VTPH PRACHUAP KHIRI KHAN/								X				
Hua Hin												
RG	16	NPA					X		X			
	34	NINST					X		X			
VTUK KHON KAEN/								X				
Khon Kaen	03	NPA					X		X			
RNS	21	NPA					X		X			
VTSG KRABI/								X				
RNS	14	NPA					X		X			
	32	NPA					X		X			
VTUQ NAKHON RATCHASIMA/								X				
Nakhon Ratchasima												
RG	06	NPA					X		X			
	24	NPA					X		X			
VTCN NAN/								X				
Nan												
RNS	02	NPA					X		X			
	20	NPA					X		X			
VTSC NARATHIWAT/								X				
Narathiwat												
RG	02	PA1					X		X			
	20	NPA					X		X			
VTSK PATTANI/								X				
Pattani												
RG	08	NPA					X		X			
	26						X		X			
VTPP PHITSANULOK/								X				
Phitsanulok	14	NPA					X		X			
RS	32	PA1					X		X			
VTSR RANONG/								X				
Ranong												
RG	02	PA1					X		X			
	20						X		X			
VTSB SURAT THANI/								X				
Surat Thani	04	NPA					X		X			
RNS	22	PA1					X		X			
VTST TRANG/								X				
Trang												
RG	08	NPA					X		X			
	26						X		X			
VTUU UBON RATCHATHANI/								X				
Ubon Ratchathani	05	NPA					X		X			
RS	23	PA1					X		X			
VTUD UDONTHANI/								X				
Udon Thani												

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CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
RNS	12	NPA					X		X			
	30	PA1					X		X			
VTSM SURATHANI/					X			X				
Samui												
RS	17	NPA				X	X		X		X	
	35	NPA				X	X					
VTPO SUKHOTHAI/					X			X				
Sukhothai												
RS	18	NPA				X	X		X		X	
	36	NPA				X	X					
VTCC CHIANG MAI/												
Chiang Mai Intl	18	NPA			2001	X	X	X				
RS	36	PA1										
VTSS SONG KHLA/												
Hat Yai Intl	08	NPA			2001	X	X	X				
RS	26	PA1										
VTSP PHUKET/	09	NPA			2001	X	X	X				
Phuket												
RS	27	PA1										
VTCT CHIANG RAI/												
Chiangrai Intl	03	PA1			2001	X	X	X				
RS	21	NPA										
VTBU RAYONG/												
Ban U-Taphao	18	PA1			2001	X	X	X				
AS	36	NPA										
VTBD BANGKOK/					2001			X				
Bangkok Intl	03R	NPA				X	X					
RS	03L	PA1				X	X					
	21R	NPA					X		X			
	21L	PA1					X		X			
TONGA			X	X						X	X	NFFO FIR
NFTF FUA'AMOTU/					X			X				
Fua'amotu Intl	11	NPA				X	X		X			
RS	29	NPA				X	X		X			
	17	NINST				X	X		X			
	35	NINST				X	X		X			
TUVALU												NZZF FIR
UNITED STATES			X	X						X	X	
PANC ANCHORAGE/					X			X				
Anchorage Intl	14	PA1				X	X		X			
RS	32	NINST				X	X		X			
	6L	PA1				X	X		X			
	24R	NINST				X	X		X			
	6R	PA3				X	X		X			
	24L	NINST					X		X			
PAED ANCHORAGE/					X			X				

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
Elmendorf AFB	5	PA1				X	X		X	X	X	
AS	23	NINST										
	15	NINST										
	33	NINST										
PACD COLD BAY/					X			X				
Coldbay	14	PA1				X	X		X			
AS	32	NPA				X	X		X			
	26	NINST										
KPAE EVERETT/					X			X				
Paine Field	34L	NPA				X	X		X			
AS	16R	PA1				X	X		X			
	11	NINST										
	29	NINST										
	34R	NINST										
	16L	NINST										
PAEI FAIRBANKS/					X			X				
Eielson AFB	13	PA1				X	X		X			
AS	31	PA1				X	X		X			
PAFA FAIRBANKS/					X			X				
Fairbanks Intl	19R	PA1				X	X		X			
RS	01L	PA3				X	X		X			
	19L	NINST										
	01R	NINST										
KFAT FRESNO/					X			X				
Yosemite Intl	29R	PA3				X	X		X			
AS	11L	NPA										
	29L	NINST										
	11R	NINST										
PHTO HILO/					X			X				
General Lyman Field	03	NINST				X	X		X			
AS	21	NINST										
	26	PA1				X	X		X			
	08	NINST										
PHNA HONOLULU/												
Barbers Point	04R	NPA										No WGS-84
AS	22L	NINST										data available

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
PHNL HONOLULU/					X			X				
Honolulu Intl	8L	PA1				X	X		X			
INTL	26R	NINST					X					
RS	04L	NINST					X					
	22R	NINST					X					
	04R	PA1					X					
	22L	NINST					X					
	26L	PA1				X	X		X			
	8R	NINST					X					
PHOG KAHULUI/					X			X				
Kahului	32	NINST										
AS	02	PA1				X	X		X			
	05	NINST					X					
	20	NPA				X	X		X			
KLAX LOS ANGELES/					X			X				
Los Angeles Intl	06L	PA1				X	X		X			
RS	24R	PA3				X	X		X			
	6R	PA1				X	X		X			
	24L	PA1				X	X		X			
	07L	PA1				X	X		X			
	25R	PA1				X	X		X			
	07R	PA1				X	X		X			
	25L	PA3				X	X		X			
KOAK OAKLAND/					X			X				
Oakland Metropolitan	11	PA1				X	X		X			
AS	29	PA3				X	X		X			
	09R	NPA										
	27L	NPA										
	09L	NPA										
	27R	PA1				X	X		X			
KONT ONTARIO/					X			X				
Ontario Intl	26R	PA1				X	X		X			
AS	08L	PA1				X	X		X			
	26L	PA3				X	X		X			
	08R	NPA				X	X		X			
KPMD PALMDALE/					X			X				
Palmdale	22	NPA				X	X		X			
AS	25	PA1				X	X		X			
	07	NPA				X	X		X			
KPDX PORTLAND/					X			X				
Portland Intl	03	NINST				X	X		X			
AS	21	NPA				X	X		X			
	10R	PA3				X	X		X			
	28L	PA1				X	X		X			
	10L	PA1				X	X		X			
	28R	PA1				X	X		X			

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
KSMF SACRAMENTO/					X			X				
Metropolitan	16R	PA3				X	X		X			
AS	34L	PA1				X	X		X			
	16L	PA1				X	X		X			
	34R	NPA				X	X		X			
KSFO SANFRANCISCO/					X			X	X			
San Francisco Intl	10L	NINST										
RS	28R	PA3				X	X		X			
	10R	NINST					X					
	28L	PA1				X	X		X			
	01L	NINST					X					
	19R	NINST					X					
	01R	NINST					X					
	19L	PA1				X	X					
KSJC SAN JOSE/					X			X				
San Jose Intl	12R	PA1				X	X		X			
RS	30L	PA1				X	X		X			
	12L	NPA				X	X		X			
	30R	NPA				X	X		X			
	11	NINST					X					
	29	NINST					X					
KBFI SEATTLE/					X			X				
Tacoma Intl	13R	PA1				X	X		X			
RS	31L	PA1				X	X		X			
	13L	NINST				X	X		X			
	31R	NINST										
KGEG SPOKANE/					X			X			X	
Spokane Intl	25	NPA				X	X		X		X	
AS	07	NINST				X	X					
	21	PA2				X	X					
	03	PA3				X	X					
KSCK STOCKTON/					X			X				
Metropolitan	11L	PA1				X	X		X			
AS	29R	NINST				X	X		X			
AMERICAN SAMOA (United States)												NFFF FIR
NSTU PAGO PAGO/					X			X				
Pago Pago Intl	05	PA1				X	X					
RS	23	NINST				X	X					
GUAM ISLAND (United States)												KZOK FIR
PGUM GUAM/					X			X				
Agana	06L	PA1				X	X					
RS	24R	NPA				X	X					
	06R	NINST				X	X					
	24L	NINST				X	X					
PGUA GUAM ISLAND/					X			X				
Andersen	06L	NPA				X	X					

STATUS OF WGS-84 IMPLEMENTATION

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 IMPLEMENTATION									REMARKS
CITY/AERODROME	RWY No	RWY TYPE	FIR	ENR	TMA/ CTA/ CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
AS	24R	NPA				X	X					
	06R	PA1				X	X					
	24L	NPA				X	X					
JOHNSTON ISLAND (United States)												KZOK FIR
PJON JOHNSTON ISLAND/					X			X				
Johnston Atoll	05	NPA				X	X					
RS	23	NPA				X	X					
NORTHERN MARIANA ISLANDS (United States)												KZOK FIR
PGSN SAIPAN/					X			X				
Saipan Intl	07	PA1				X	X					
RS	25	NPA				X	X					
VANUATU												NFFF FIR
VIET NAM			X	X							X	
VVNB HANOI/					X							
Noi Bai Intl	11	PA1				X	X		X			
RS	29	NPA				X	X		X			
VVDN DANANG/					X							
Da Nang Intl	17L	NPA				X	X		X			
RS	35R	PA1				X	X		X			
	35L	NPA				X	X		X			
	17R	NPA				X	X		X			
VVTS HO CHI MINH/					X							
Tan Son Nhat Intl	07R	NPA				X	X		X			
RS	07L	NPA				X	X		X			
	25R	PA1				X	X		X			
	25L	NPA				X	X		X			

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

4.1 **Review ATS Co-Ordination Groups Activities**

4.1.1 The meeting was reminded that several ATS Co-ordination Groups had been established by ICAO in the Asia/Pacific Region for two main purposes; firstly, to foster the implementation of regional air navigation agreements; and secondly, to provide opportunities for airspace providers and users having common geographically related ATS interests, to meet and develop solutions to problems that limit the capacity and efficiency of the airspace structure. The Groups also exchange information necessary to ensure a coordinated approach to the introduction of the new CNS/ATM systems.

4.1.2 In addition to these ATS Co-ordination Group meetings, Special ATS Co-ordination meetings are convened from time to time, to consider matters that may require urgent attention, or which relate to areas that are outside the parameters established for the regular Sub-Regional ATS Coordination Group meetings. In this regard, in 2002 two Special ATS Co-ordination meetings were convened in relation to Afghanistan, and one review meeting in follow-up to the implementation of the Revised ATS route structure, Asia to Europe and the Middle East, South of the Himalayas (EMARSSH) concerning problems with ATC operating procedures. In 2003 a special meeting was convened on contingency arrangements in the event of avoidance or closure of airspace in the Middle East due to military action in Iraq.

4.1.3 In addition to the ICAO ATS Co-ordination Groups, other groups had been established by States at a sub-regional level under bi-lateral or multi-lateral arrangements. The following Sub-Regional ATS Coordination Groups are currently established in the Asia/Pacific Region:

ICAO

- Bay of Bengal ATS Coordination Group (BBACG)
- South East Asia ATS Coordination Group (SEACG)
- China, Mongolia, Russian Federation, IATA (CMRI)

State

- Informal South Pacific ATS Coordination Group (ISPACG)
- Informal Pacific ATS Coordinating Group (IPACG)
- Russian-American Co-ordination Group for Air Traffic Control (RACGAT)

4.1.4 The meeting recalled that not all of these Sub-Regional ATS Coordination Groups were convened during 2002/2003. The meeting schedule of some of these groups was disrupted due to the outbreak of SARS in the Asia Region. Also, due to resource constraints, the ICAO Asia/Pacific Regional Office, Bangkok was not able to participate at ISPACG/17 from 12 to 14 March 2003, at Auckland, New Zealand and IPACG/19 and FANS Interoperability Team/7 meetings scheduled from 21 to 25 April 2003 at Tokyo, Japan (this meeting was postponed due to SARS). ICAO Bangkok reassured these forums that they fully supported and recognized the importance of their work programmes, and they would continue to participate when budgetary conditions permitted.

4.1.5 The following information is provided on the Coordination Groups' activities:

Bay of Bengal ATS Coordination Group (BBACG) and the FANS Action Team

4.1.6 The BBACG/12 meeting was held on 5 -9 June 2000. The issues normally dealt with by this group were in the main taken into account by the Task Force and special coordination meetings of EMARSSH. The ATS/AIS/SAR/SG/12 meeting had reviewed the key priorities for CNS/ATM implementation in the Asia/Pacific Region (paragraphs 4.7.6 to 4.7.12 to the Report on Agenda Item 4 refers) and under Draft Conclusion 12/5, ICAO was requested, *inter alia*, to re-convene the FANS Action Team for the Bay of Bengal (FAT-BOB). In light of the foregoing and the EMARSSH project being implemented on 28 November 2002, the BBACG/13 meeting is being planned for 8 - 12 September 2003 and will include activation of the FAT-BOB.

South East Asia ATS Coordination Group (SEACG)

4.1.7 The SEACG/11 was scheduled to be held at Singapore from 14 - 18 April 2003. The meeting was postponed due to SARS and related travel constraints. The meeting is being rescheduled to December 2003. Recognizing that important operational issues need to be addressed, the ATS/AIS/SAR/SG/13 agenda was expanded to include the main issues to be addressed by SEACG/11. Action Agreed items from SEACG/10 were discussed by the meeting and the results of those discussions is reported in Agenda Item 8 of this report.

17th Meeting of the Informal South Pacific ATS Coordinating Group (ISPACG/17)

4.1.8 The ISPACG/17 meeting was hosted by Airways Corporation of New Zealand Ltd. and held at Auckland, New Zealand, from 12 – 14 March 2003. The tenth meeting of the FIT, which was held at the same venue from 10 – 11 March 2003, preceded this meeting.

4.1.9 ISPACG noted that the ICAO Asia and Pacific Regional Office was unable to send a representative to this meeting. In recalling the assistance that ISPACG provides to the Regional Office in addressing relevant ATM matters for the major traffic flow between North America and the South Pacific, the meeting expressed the hope that an ICAO representative would be available to participate in future ISPACG meetings.

4.1.10 Accomplishments of ISPACG/17:

a) agreed to a DARP trial Auckland - Los Angeles – Auckland;
b) adopted the Pacific Operations Manual (POM);
c) agreed to loss of communications procedures;
d) agreed to seek ways to implement the "Rule of 11" in oceanic airspace;
e) continued to progress air ATM contingency plans between ATS providers and agreed that review of ATM contingency plans be a standing open action item;
f) updated the Capacity Enhancements Table;
g) agreed that the current weather deviation procedures were acceptable in the 30/30 environment; and
h) agreed to data configuration management procedures and included these in the POM.

4.1.11 In consideration of future work programmes, ISPACG considered a working paper on covert and overt unlawful interference operational communication protocols. This paper was developed as a result of heightened security awareness within the operating environment and called for a review of procedures relating to the use of CPDLC and ADS outside of a radar environment.

4.1.12 ISPACG was advised that there appeared to be several different means to indicate unlawful interference used by States and that currently there is no CPDLC procedure to indicate unlawful interference.

4.1.13 As a result of these discussions, the meeting agreed to take the following action:

a) develop draft CPDLC procedures to indicate unlawful interference; and

b) collate and distribute current means to indicate and ATC confirmation of unlawful interference.

19th Meeting of the Informal Pacific ATS Coordinating Group (IPACG/19)

4.1.14 The IPACG/19 meeting scheduled to be held from 22-25 April 2003 in Tokyo, Japan was postponed due to SARS and will be rescheduled in due course.

Twelfth Meeting of the Russian-American Co-ordination Group for Air Traffic Control (RACGAT/12)

4.1.15 The RACGAT/12 meeting was held in Las Vegas, Nevada, USA, on 21-24 October 2002.

4.1.16 The meeting was attended by representatives of the SCAA of Russia, the United States FAA, the Civil Aviation Bureau of Japan (JCAB), Civil Aviation Authority of China (CAAC), Republic of Korea, NAV CANADA, ICAO, IATA, Russia Main Air Traffic Flow Management Center MATFMC), Russian State ATM Corporation, Russian ATC Enterprises from North West, North East, Chukotka, Kamchatka, Northern Siberian and Far East Regions of the Russian Federation, Rosgidromet, Jeppesen, FAA Alaskan Region, Air Canada, Cathay Pacific Airways, Japan Airlines, Singapore Airlines, All Nippon Airways, Korean Air, U.S. Airlines (American, Continental, Delta, FEDEX, United, Northwest).

4.1.17 NAV CANADA, reported on the implementation of RVSM, Automatic Waypoint Reporting (WPR), CPDLC, Northern Radars and National Flow Management Centre.

4.1.18 JCAB advised that Kamchatka Four has been confirmed as the route passing Onecotan and Memanbetsu VOR DME; and a transfer-of-control has been agreed upon between Japan and Russia. JCAB also advised that they will revise the FIR boundary between Sapporo and Yuzhno-Sakhalinsk on 31 October 2002.

4.1.19 The Russian Federation advised that the LOA between the Nome Flight Service Station (FSS) and Lavrentiya FSS (Anadyr FIR) became effective 30 July 2002. The second general aviation demonstration flight on VFR route from Nome, Alaska, to Lavrentiya FSS via Provideniya Bay (Chukotka) was successfully performed. A new amendment regarding the use of additional flight level 9600m on the air routes A-218 and B-337 was published in AIP and became effective. English training of air traffic controllers to work on the air route A-218 is in progress. The programme of modernizing radar sites in the airports of Keperveem, Omolon and Pevek on the air routes Chukotka 1 and 2 has been implemented. The first stage of reconstructing the airport at Anadyr is close to completion; construction of the international terminal is underway; and the aerodrome has been equipped with modern navigation aids and radar.

4.1.20 The Russian Federation also informed the meeting that Route G806 Chokhurdakh - ODORA with assigned flight levels 8600-13100m has been published in AIP effective 3 October

2002. Additional FL9600m for Route A218 has been published in AIP effective date 3 October 2002. It was further stated that in August 2002 negotiations for coordination procedures were carried out between Magadan ACC and Anchorage ARTCC. The LOA containing established procedures to be used for RVSM altitude transitions between feet and meters became effective 15 October 2002. Temporary 10-minute separation was established in Magadan ACC. Together with ARINC, a possibility of using ACARS for communication with flight crews via CPDLC along the cross-polar routes was studied. Every controller working place at the Magadan ACC is equipped with terminals of the digital integral system of switching voice reports with SELCAL function. This function is broadly applied in air traffic control on the cross-polar routes. In the context of the project of development and modernization of regional satellite communication network, the State Unitary Subsidiary Enterprise "North-East Air Navigation" prepared proposals on technical equipment for existing and projected satellite communication stations.

4.1.21 A presentation on the Improvement of Flight Provision for ATC Along Cross-Polar and Trans East Routes in State Unitary Subsidiary Enterprise (SUSE) "Far East Aeronavigatsia" area of responsibility was presented to the meeting. In 2001 the LOA between Yuzhno-Sakhalinsk and Sapporo ACCs was signed. This LOA established 10 minute-in-trail separation standard between Yuzhno-Sakhaliknsk and Sapporo ACC. This created increased capacity on international air routes G583, B337 and A204. On 12 June 2002, a new LOA on interaction and transfer coordination procedures between Khabarovsk and Harbin ACCs along route G212 at ARGUK was signed. The present agreement provides 10-minute separation, which allows a flight level number increase. Route capacity as well as flight safety has been improved one and a half times. The Russian Federation is about to put into operation radar "Svetlaya" to increase capacity of Trans-Siberian and Trans East Routes, to provide flight safety at route intersection crossing points on R22, R211, B223, and B469. On 20 June 2001, an LOA on interaction and transfer coordination procedures between Blagoveschensk and Harbin ACCs was signed. On 26 March 2002 a demonstration flight via Magdagachi FIR and via SIMLI in Blagoveschensk ACC by United Airlines from Chicago to Hong Kong along Polar 4 was performed. Scheduled flight UAL 851A, Chicago-Beijing, has been operating along Polar 4 since 29 August 2002.

4.1.22 Several other Russian ACCs, particularly in the east and northeast of the Russian Federation, advised of initiatives in enhanced route design and level assignment within their areas of responsibility.

4.1.23 ICAO, presented an update to RACGAT on various important ATM events in the Asia/Pacific Region. These included:

a) the revised ATS route structure under the EMARSSH project;

b) RVSM in the Western Pacific/South China Sea area, in the Bay of Bengal and westwards joining with the MID Region;

c) Afghanistan issues; and

d) contingency planning in Asia, Middle East, and Europe (CRAME) due to military operations.

4.1.24 ICAO advised the RACGAT meeting that they were confident that the EMARSSH implementation date of 28 November 2002 would be met. The implementation of RVSM in the Western Pacific/South China Sea area took place in February 2002, except for two areas, Sanya Area of Responsibility (AOR) and Indonesia. It was expected that both China and Indonesia would join the rest of the South China Sea States and implement RVSM for these areas on 31 October 2002.

4.1.25 The target date for implementation of RVSM in the Bay of Bengal and westwards is 27 November 2003. The meeting further noted that military operations within and adjacent to Afghanistan since October 2001 have had serious operational and economical implications to international airlines, and the importance of airspace reserved for international transiting civil aircraft through the Kabul FIR be protected against military intervention.

4.1.26 The American Co-Chair for the meeting discussed the future work plan of RACGAT. He noted that at the present there were standard working groups and issues were tracked in an action item list. The intent was to shift emphasis from an action item list to a route catalog centered on city pairs that routes serve. Another important piece of the report was the traffic analysis, which was in the process of being designed. The air traffic flow management centers in the US, Russia, Canada, and Japan would work together to develop analysis with input from the airlines and provide the meeting with hard data on forecasted growth. The idea was to take traffic analysis, decision-making process, and forecast demand and compare with the infrastructure already in place in the route catalog.

4.1.27 There was general support regarding the future work plan initiative presented. From an airline perspective, all operators were interested in any improvements that support the infrastructure of cross-polar routes. Progress has been made on route development in the last couple of years and some of the routes outlined in the route catalog have extreme benefits to operators.

4.1.28 ICAO reported to the RACGAT meeting on experiences gained on route creation and development in the EMARSSH project. The meeting was advised on the creation of core teams consisting of select representatives from States involved, ICAO, and IATA. This core team focus was on route alignment and route development. In addition, the core team worked with military representatives from the States involved. This methodology allowed for a concentrated effort for route alignment and creation and it was considered that this process may be suitable in the Russian Far East and Cross Polar improvements.

4.1.29 IATA and the airlines would assist RACGAT in its efforts to develop a route system that allowed for increased usage of the airspace by the airlines. IATA further stated that RACGAT's initiative for developing a route catalog was a very good one. They would provide a briefing to MR/7 on airline decision-making factors to include economic, technical issues, and ATS limitations. The briefing would include selection factors for deciding whether to use the PACOTS, NOPAC, Trans East, or Cross-Polar route systems.

4.1.30 The meeting noted that the 7th Meeting of Mini-RACGAT which was scheduled to take place in Honolulu in March 2003, was postponed until a date to be decided.

China, Mongolia, Russian Federation, IATA (CMRI)

4.1.31 The Fourth Special ATS Co-ordination Meeting between China, Mongolia, the Russian Federation and IATA (CMRI/4) to study possibilities for further improvements in the alignment and use of cross-polar routes at their south ends was held in Shenzhen, China, on 4 – 6 March 2003. China, Mongolia, the Russian Federation, ICAO and IATA attended the meeting.

ATS Routes and New Entry/Exit points into China

4.1.32 China advised that the segment Harbin (HRB)-Heihe (QD)-SIMLI was implemented on 21 March 2002. In addition, an ADS workstation in Harbin ACC was established and all aircraft flying along this route were requested to logon to the Harbin ADS workstation. This procedure was now in place and working successfully.

4.1.33 China and Mongolia had reached agreement on the new entry/exit point at their borders named POLHO. China had finalized the establishment of two routes; POLHO – Fengning

(GM), ATS route designator B339, and POLHO-Tumurtai (TMR), ATS route designator G218. Mongolia confirmed that they would also establish two routes, POLHO-Ulaanbaatar and POLHO-Choibalsan. The establishment of those four routes would greatly assist traffic operating to/from Europe as well as the Cross Polar Route (CPR) network.

4.1.34 The entry/exit point of INTIK (between Mongolia and China) was relocated in June 2002, and as a consequence, the alignment of the route from Sainshand to Eren was shorter and more efficient. China has also established a SSR and VHF station in this area, to improve the surveillance and communication capability.

4.1.35 After the opening of the POLHO entry/exit point, there would be a total of 7 entry/exit points into/out of China. These are GOPTO, TELOK, SIMLI and ARGUK (between Russia and China), and MORIT, INTIK and POLHO (between Mongolia and China.

4.1.36 Regarding the new transition route joining Polar route 4 and Shanghai Pudong airport, China is evaluating the use of a current domestic route for use by international aircraft. The necessary coordination to establish a new transition route to Shanghai Pudong is continuing.

4.1.37 IATA presented the CMRI/4 meeting with a number of airline requests. Major items included:

a) that the Polar 4 route be made more available for northbound use as at many times this would be the preferred routing to North America. It should be noted that this is also an English speaking Russian ATC issue;

b) Polar 4 north of SIMLI required further straightening as it had hard turns between SIMLI and Magdagachi;

c) that B480 between LETBI and Razdolye was unreliable for flight planning as on two occasions when this route was flight planned, a penalizing reroute was given by ATC to fly from Razdolye A91 - SERNA A575 - Ulaanbaatar B480 – Bulgan; and

d) IATA also advised that the required instrument procedures in the Pearl River Delta were over-penalising and costly to airline operations and in pressing need of revision.

Flight Plan Approval Management by China

4.1.38 China fully recognized the importance of flexible use of cross polar routes in the flight plan approval process and have had continuous coordination with other Chinese administrations in coming to a suitable solution to satisfy the requirements of the international airlines.

4.1.39 In accordance with the ICAO interim compromise position which was suggested at CMRI/3 meeting last year, China now has agreement, whereby, cross polar traffic into/out of China airspace can flight plan on either one of three entry/exit points with the notification of choice being transmitted to China at least one hour prior to the estimated departure time of the aircraft. This flexible choice procedure would be initially limited to the entry/exit points of ARGUK, SIMLI and POLHO. China is continuing to coordinate with other local authorities to extend this arrangement to other entry/exit points.

4.1.40 IATA advised the meeting that the China proposal was a positive step forward for aircraft using Polar 3 and Polar 4 but the additional 47 track miles to flights operating via Polar 1 or 2 was unacceptable, especially to Hong Kong as these flights were already operating beyond their

maximum passenger payload range. However, if a SERNA direct POLHO routing in Mongolia were available then the proposal would be acceptable, as it would provide a savings over the current routing over INTIK.

4.1.41 The CMRI/4 meeting agreed to the following:

a) as an interim solution, China would permit aircraft using cross polar routes to flight plan using a choice of three entry/exit points into/out of China, namely, ARGUK, SIMLI and POLHO with a target date for implementation of AIRAC date 15 May 2003;

b) notification to China of flight plan details would be required at least one hour prior to the estimated time of departure (ETD);

c) Cross Polar aircraft wishing to use other than the three mentioned entry/exit points above would be required to follow the present procedure of one entry approval into China airspace;

d) the entry/exit point of POLHO between Mongolia and China will be finalised by bi-lateral coordination between China and Mongolia with a target date for implementation of AIRAC date 15 May 2003;

e) new ATS route G218 SULOK – Choybalsan – POLHO – Tumurtai (TMR) will be finalised by bi-lateral coordination between China and Mongolia with a target date for implementation of AIRAC date 15 May 2003;

f) new ATS route B339 Ulaanbaatar – POLHO – Fengning (GM) will be finalised by bi-lateral coordination between China and Mongolia with a target date for implementation of AIRAC date 15 May 2003; and

g) new FANS 1/A route M520 SERNA – POLHO will be finalised by bi-lateral coordination between China and Mongolia with a target date for implementation of AIRAC date 15 May 2003. This route segment would be limited to FANS 1/A aircraft using ADS/CPDLC equipment on board.

4.1.42 In order to achieve the necessary coordination between States concerned and to give sufficient notice to the aviation industry, the target date for these enhancements was postponed till AIRAC Date of 15 June 2003.

4.1.43 The meeting was advised that considerable progress has been made to the Cross Polar Route system due to these CMRI meetings. All States involved were further urged to continue the work required to finalize other outstanding issues which would in turn gain additional benefits to both the users and providers of the Cross Polar Route system.

4.2 South China Sea (SCS) ATS Route Structure Implementation Task Force – Post Implementation Update

4.2.1 The Eighth Meeting of the South China Sea ATS Route Structure Implementation Task Force was held in Bangkok from 2 to 3 December 2002 at the ICAO Asia and Pacific Office. The meeting was attended by 40 participants from Brunei Darussalam, Cambodia, China, Hong Kong China, Indonesia, Lao PDR, Malaysia, Philippines, Singapore, Thailand, Viet Nam, IATA and IFALPA.

4.2.2 The meeting reviewed the past year's experience including areas for improvement, in particular to realign routes and to improve the efficiency of air traffic and flight operations. Significant items included:

China

4.2.3 The meeting noted that, in order to accommodate increasing air traffic, further facility construction and staff training had been undertaken in Sanya. A plan for construction of a new ACC in Sanya AOR was underway, which included a new ACC building, relevant ATC automation, communication and meteorological facilities. In addition, two new radars were being installed in the Sanya AOR to provide continuous and stable radar coverage for the whole area. Also, plans were in hand to transfer Zhanjiang's radar signal to Sanya ACC. With the radar signals of Guangzhou, Shenzhen, Zhuhai and Haikou, which had already been transferred to Sanya ACC, ATS route A202 route would be covered by more reliable radar signals and with necessary redundancy. On completion of these improvements, controllers would be able to monitor the whole traffic situation in Sanya AOR. An update on these initiatives was mentioned in paragraph. 4.13 of this Report.

Lao PDR

4.2.4 No serious problems were observed in the operational and technical aspects of ATS route A202 relating to the provision of air traffic services.

4.2.5 On the 1 November 2001 when ATS route 202 was implemented, the Vientiane Area Control Centre was successfully established. A step by step approach had been taken to upgrade the level of ATS within Vientiane FIR. In regard to RVSM, which was implemented in the Vientiane FIR on 31 October 2002, some constraints were being experienced due to the use of the Modified Single Alternate Flight Level Orientation Scheme. It was stated that greater benefits could be achieved through harmonization with the Bay of Bengal (RVSM planned implementation on 27 November 2003), South China Sea and Western Pacific.

4.2.6 The provision of radar/procedural control to air traffic operating within Vientiane FIR had reached a satisfactory level due to improvements and upgrade of ATC personnel and communication equipment/facilities.

4.2.7 Planning was underway to increase the reliability of ground/air communications within the entire FIR especially for the Southern part by installing back-up link via VSAT, as well as increasing the number of ATC personnel. This would enable handover of responsibility from AEROTHAI for A1, B202 and B329. Lao PDR expressed its gratitude to AEROTHAI for the services they provided for the Vientiane FIR on their behalf over many years.

Malaysia

4.2.8 Since implementation, the traffic flow was more organized and there were less ATC delays. Also, the route capacity had improved thus accommodating more traffic at any given time. However, there was a congestion problem at position "PK" NDB where four parallel RNAV routes and two ATS routes converge. Further, there were two RNAV routes, M761 from "VKG" VOR and M751 from "VMR" VOR, which also pass over "PK".

4.2.9 Revised ATS coordination procedures incorporate provisions for Mach Number Technique and No Pre Departure Coordination. Requested flight levels were more readily available except for ATS route G334 where flights were restricted to not above FL280 due to an upper limit of FL285. These revised procedures had significantly reduced the need for coordination with adjacent ATSUs, and reduced controller workload and ground delays.

Singapore

4.2.10 In general, aircraft routing on the revised route structure were able to operate at optimum or close to optimum flight levels. ATC coordination with adjacent ACCs was minimized resulting in the reduction of controller's workload as well as ground delay to aircraft.

4.2.11 The meeting expressed its appreciation to the Civil Aviation Authority of Singapore (CAAS) for undertaking the monitoring of navigation errors by aircraft operating over the South China Sea area. Also, it was encouraging to note the good navigation performance being achieved by airline operators.

Viet Nam

4.2.12 The meeting was advised that the Civil Aviation Administration of Viet Nam (CAAV) had developed an action plan for implementation of a trial "package" for a period of three years including implementation of A202 in Ha Noi FIR and the revised ATS route structure within Ho Chi Minh FIR. CAAV has closely co-operated with other Civil Aviation Authorities in the area to ensure the smooth and effective transition to the revised ATS route structure.

4.2.13 The opening of ATS route A202 and the transition to the new ATS route structure within Ha Noi and Ho Chi Minh FIRs had been implemented smoothly and safely. Also, the transfer of ATS responsibility for the upper airspace portion in the South-West of Ho Chi Minh FIR from Bangkok ACC to Ho Chi Minh ACC was accomplished.

4.2.14 After one-year implementation of the trial package, some main advantages and shortcomings were identified as follows:

Advantages

a) around 95 percent of the aircraft operating within the Ha Noi and Ho Chi Minh FIRs meet the RNP 10 requirements and fly between FL310 to FL410;

b) flight time between the cities pairs concerned decreased significantly, except on a few routes where it increased. Flight safety has been considerably enhanced;

c) co-ordination procedures between relevant ACCs proved to be satisfactory, and relations between the ATS providers of adjacent States improved;

d) ATC units are providing a more effective air traffic services to meet the requirements of the operators, eliminate ground delays and reduce controller workload; and

e) ATS-DS communications are quite good, except the circuit between Ho Chi Minh and Kuala Lumpur ACCs, which should be upgraded to cope with operational requirements.

Difficulties and shortcomings

a) the distance between reporting points DALBA on RNAV route M771 and DAMEL on RNAV routes M771/L628 is short, making it difficult for Ho Chi Minh ACC to control traffic, particularly when aircraft deviate due to bad weather or when flight levels are changed by transfer of control and/or for other operational reasons;

b) the distances on RNAV routes A1 and P901 under Ho Chi Minh ACC's responsibility are relatively short and due to Danger Areas affecting these routes within the Sanya AOR, ATC experience some difficulties, especially in regard to level changes or deviations from track due to weather or when thunderstorms or turbulence affect the application of RVSM; and

c) in the initial stages, some operators were not fully aware of the revised ATS routes structure and as a consequence, flight plans were incorrectly submitted. In addition, some FPL messages were not transmitted to all required addresses and Ho Chi Minh ACC assisted by retransmitting messages to Sanya ACC.

Proposed changes to the SCS route structure and associated procedures

4.2.15 The weather deviation procedures introduced by Hong Kong had proved to be effective and were designed for the SCS route structure where large weather deviations are routinely encountered. It was decided to monitor these procedures and if necessary further enhancements could be made if deemed necessary.

Hong Kong to Jakarta city pair

4.2.16 The meeting noted that the Hong Kong to Jakarta city pair had suffered significantly with one airline alone stating an additional 4.6 million USD annual increase to their one flight a day operation. The Brunei routings to the Middle East (or the taking away of efficient routings between Kota Kinabalu/Brunei and Phuket) also carried a significant post implementation penalty to these operations.

4.2.17 CAAS agreed to the route segment KIKOR (at the Jakarta/Singapore FIR boundary) G220 LUSMO direct MELAS (at the Singapore/Ho Chi Minh FIR boundary). Indonesia later agreed to use G220 bi-directional to LUSMO. The meeting was subsequently advised that Indonesia would straighten the route G220 from Jakarta direct to LUSMO.

4.2.18 With regard to the Jakarta – Hong Kong routings, three proposals were put forward:

a) LUSMO – MELAS (Singapore/Ho Chi Minh FIR Boundary) – DAMVO (crossing M771) – EKIMA (on L642);

b) LUSMO – MELAS – L628/L642 intersection; and

c) LUSMO – DUDIS – CONSON (L642/M765/L643 intersection).

4.2.19 Proposal a) was favoured by Singapore and IATA as first choice, as this new routing has lesser confliction with existing routes within the Singapore FIR and also saved the most mileage to/from Hong Kong. The route b) proposal was next favoured with the proposed route via DUDIS - CONSON being the least favoured by both Singapore and IATA.

4.2.20 Viet Nam advised their intention to open a route from Ho Chi Minh to Jakarta and that the CONSON – DUDIS - LUSMO route would satisfy this requirement as well as for aircraft operating from/to Jakarta and Hong Kong. Taking this into account together with this proposal having less confliction with existing crossing routes in the South China Sea, this was their preferred options.

4.2.21 It was finally decided to accept option c) above without discounting the possibility of further improvements to the Jakarta – Hong Kong – Jakarta route at a later time. As it was the first time that option c) was proposed, Singapore requested more time to study the impact and viability of the route before reverting to ICAO by 15 January 2003. The meeting agreed to Singapore's request.

Re-alignment of N892 and L625

4.2.22 The meeting noted that there has been ongoing concern at previous meetings regarding the management of large scale weather deviations on the closely spaced parallel tracks. In particular the concern was for weather deviations on ATS routes N892 and M771. At the SEACG/10 meeting, a proposal was put forward to allow the straightening of both N892 and L625 so that they would become more direct tracks between MABLI and Hengchun on N892 and between LUSMO MEVIN on L625. For example, a MELAS direct to a point approximately 40 NM west of Hengchun on G581 and a routing of AKMON direct MEVIN would significantly allow greater weather deviations off M771 to the south without impacting traffic on N892. A slight variation to this proposal was also put forward by the Philippines to the meeting, which kept the northern point at KABAM. This would then require no changes or coordination across the Manila/Taibei FIR boundary.

4.2.23 There was general consensus for the proposal although some States required further consideration on the matter as changes would introduce additional use of HF air/ground communications.

Routing between Danang and Hong Kong on ATS routes A1 and P901 in relationship to China's Danger Areas

4.2.24 The meeting was advised that, due to four Danger Areas located close to Hainan Island, there was a significant impact on services by non-RNP10 compliant international airlines on the route system between Danang in Viet Nam and Hong Kong compared to pre 1 November 2001 implementation of the revised SCS route structure.

4.2.25 A possible solution was to re-align both routes so that P901 would pass between the Danger Areas with A1 on the same routing with an upper level of FL 280. Additional solutions would be to realign the Danger Areas or changing their times of activation so that all aircraft could fly from Danang to Hong Kong H24.

4.2.26 China noted the problem and was working with other Chinese administrations to come to a favorable solution.

Bangkok - A202 - Hong Kong

4.2.27 The meeting noted that the introduction of ATS route A202 had promoted a new level of efficiency for aircraft operating between Bangkok and Hong Kong.

4.2.28 With regard to aircraft wishing to use this route for flights beyond Hong Kong such as to Taipei, Japanese airports and the Pearl River Delta destinations, both China and Hong Kong China were continuing to study this matter and would report to the next meeting of SEACG.

4.2.29 Noting that A202 was presently a conventional route with no RVSM procedures, the efficiency of operations would be further enhanced with the introduction of radar separation rather than the time separation standard of 10 minutes. China advised that they were working towards this change to radar separation and would report there work to the next meeting of SEACG.

4.2.30 The meeting noted that the SCS TF had completed its primary task to implement and review post implementation of the SCS route structure. Therefore, it was considered appropriate to terminate the Task Force and for any other outstanding matters to be undertaken by the SEACG meetings.

Agreed Actions of SCS TF/8 to be undertaken by SEACG

4.2.31 The meeting looked at the Agreed Actions which were developed and gave the following comments:

a) noted that the SEACG will continue to monitor and review the weather deviation procedures for the South China Sea area;

b) noted that Viet Nam and adjacent States will review and coordinate with ICAO on the airspace arrangements for ATS routes and transfer of control points to improve the efficiency in air traffic services in the Ha Noi and Ho Chi Minh FIRs;

c) noted that with regard to the proposed introduction of a more efficient routes for flights Hong Kong/Jakarta/Hong Kong, ITAT should continue to work with States concerned to arrive at an agreeable solution;

d) noted that the proposed realignment of RNP 10 routes N892 and L625 allow more efficiency in weather deviation situations as well as shortening the routes to Taipei and destinations in Japan. However, it would mean that VHF and radar coverage would not be available on the realigned L625 within Ho Chi Minh FIR. Further discussions are required at the next SEACG meeting;

e) noted that China and Hong Kong China will continue the work to allow A202 to be used for other than Bangkok/Hong Kong/Bangkok flights. In addition China will continued to study the metric cruising level system to facilitate flights with ceiling limitations;

f) noted that States concerned will continue to work together to expedite the implementation of radar separation on A202 in a staged approach; and

g) noted that the problem with flight plan messages not being received by Sanya ACC has been investigated and resolved.

4.3 **Contingency Routing Scheme for Asia/Middle East/Europe-2003 (CRAME-03, Version II)**

4.3.1 The meeting was advised that, as a result of heightened tensions in the Middle East, it was decided by ICAO Headquarters, in collaboration with ICAO Regional Offices concerned, to develop a Contingency Routing Scheme for Asia/Middle East/Europe.

4.3.2 The Contingency Routing Scheme for Asia/Middle East/Europe – 2003 (CRAME-03) had the objectives of ensuring continued safety of air navigation within FIRs affected by airspace closures and minimizing effects on international civil air transportation in the event of military action occurring in the Middle East area.

4.3.3 The meeting noted that it was not possible to predict with certainty what airspace would remain open or closed to civil aviation and for what period of time. Experience from operating similar contingency plans under similar conditions showed that a flexible approach to airspace management was required. Frequent changes in military objectives and concentrations of military activities would affect the airspace available for civil operations. In this regard, the contingency routing scheme took into account that States may need to modify the extent to which they can support the contingency arrangements. Accordingly, this contingency scheme was designed to contain a variety of options, which could be used for varying scenarios.

4.3.4 It was recognized that operators may incur economic penalties during application of the contingency scenarios. Therefore, if necessary, air traffic flow control measures were to be implemented as required.

4.3.5 It was pleasing to note that, due to experience gained from previous military actions in and around this area including the previous Gulf War and the military operations in Afghanistan, the military planners took the needs of the international civil aviation users and providers into consideration, which resulted in minimum disruptions to the civil operations who were required to transit close to the war zone.

4.3.6 The meeting would recall that the coordinated efforts of States concerned as well as ICAO and IATA together with their member airlines, ensured that, from an overall perspective, civil aircraft were able to continue to operate. Nevertheless, the Contingency Scheme covered all scenarios from least case to worst case and extensive coordination with States concerned established a mechanism which would keep aircraft operating, albeit in some cases, greatly increasing their flight time from departure to destination.

4.4 **Management of Waypoint Name Allocation**

4.4.1 Australia provided information on the issue of waypoint allocation, in particular waypoint duplication and suggested courses of action in order to rectify the problem:

a) centralised management of waypoint name allocation;

b) ICAO ASIA/PAC office to take necessary actions to develop a suitable system and procedures for states to adopt;

c) use of the Airservices Australia website from which international waypoints codes could be allocated; and

d) review of the naming convention in light of the requirement of additional waypoints.

4.4.2 The meeting was informed by ICAO that action had been taken by the Bangkok Regional Office to address the problem of automated waypoint allocation of five-letter name-codes. A global database had been developed by the ICAO Paris Office in cooperation with EUROCONTROL, and had been used in Europe successfully for several years. The Bangkok Office was coordinating with the Paris Office with the intention of adopting their system. However, due to the lack of a consolidated database for the Asia/pacific Region, and the need for substantial updating of the five-letter name-code allocation, it would be necessary to complete this work prior to being able to use the Paris Office system. Due to lack of expertise and resources at the Bangkok Office, assistance would be required from outside sources to undertake this work and this was under consideration. In regard to the naming convention, language experts had been consulted in the construction of the five-letter name-codes using letter combination of vowels and consonants and this had been in use since the 1970's and had proved to be an effective means of controlling the naming of the five-letter name-codes. The need for additional names was kept under review, and some ICAO regions still had a considerable number of name-codes not used.

4.4.3 The meeting expressed its appreciation to Australia for highlighting this problem and offer to use their database. However, the meeting recognized that ICAO was aware of the problem and taking appropriate action to rectify the situation.

4.5 Automatic Dependent Surveillance Broadcast (ADS-B) for Air to Ground Surveillance

4.5.1 Australia presented information on the deployment of ADS-B for air to ground surveillance, and is proposing and discussing synergy of combining ADS-B fitment with European and FAA mandates. The meeting noted the following:

a) Australian ADS-B pilot deployment;

b) deployment of ADS-B across Australia;

c) the recommendation of the APANPIRG ADS-B Task Force to deploy ADS-B commencing January 2006; and

d) encourage the fitment of "ADS-B out" capabilities in line with the European and FAA mandates of March 2005.

4.6 **Automatic Dependence Surveillance-Broadcast (ADS-B) Study and Implementation Task Force (ADS-B SITF/1) Meeting, Brisbane Australia, 24 -26 March 2003**

4.6.1 The meeting reviewed the work accomplished by the ADS-B SITF/1 meeting, which was held in Brisbane, Australia from 24 to 26 March 2003. The ADS-B SITF/1 meeting was attended by fifty-three experts from Australia, China, Hong Kong China, Fiji, India, Japan, New Zealand, Pakistan, Singapore, Thailand, United States, IATA, IFALPA and SITA. The meeting was also attended by representatives from Industries including Airbus, Boeing, Thales ATM, Honeywell and Sensis. The Task Force had formulated 1 Draft Decision and 3 Draft Conclusions.

4.6.2 The meeting noted the ADS-B related activities conducted by States, Industries and ICAO Panels. The meeting recognized the need for separation standards based on ADS-B surveillance and the need for positional source data integrity requirements to be included in the appropriate standards. Therefore, the meeting endorsed the following Draft Conclusion of ADS-B SITF/1:

Draft Conclusion 1/2 - Needs for development of ICAO SARPs for ADS-B

That, in view of the progress by States with operational trials for the implementation of ADS-B, ICAO is urged to give priority to:

a) the inclusion of positional source data accuracy and integrity requirements for ADS-B services in the appropriate standards; and

b) development of separation standards for ADS-B surveillance.

4.6.3 The meeting noted the following potential ADS-B applications in the Asia Pacific region identified by the Task Force:

a) ground based radar-like services in areas not covered by radar:

- separation
- Directed Traffic Information (DTI)
- safety alerts
- FIR boundary safety

b) support surface movement surveillance:

- improved surveillance (detection and identification) of aircraft and vehicle
- runway incursion monitoring

c) operational control for operators:

- surveillance data to airlines

d) improve military-civil coordination based on common surveillance:

- airspace management and control
- implementation of Air Defence Identification Zone procedures

e) SAR support

f) provide enhanced pilot situational awareness

4.6.4 The meeting noted that the Mode S Extended Squitter (1090 ES) was unanimously recommended by the Task Force as the data link for ADS-B radar like services in the Asia/Pacific Region for air transport category aircraft in the near term.

4.6.5 The meeting noted the following near term benefits identified by the Task Force:

a) move from procedural to radar-like service:

- reduced path length/time through reduction in separation requirements and, therefore, number of conflicts
- increased access to optimum route through separation reduction
- increased access to optimum altitude through separation reduction
- predictable fuel burn reduction allows increased payload
- predictable reduction in flight plan time leads to reduction in block time
- predictable reduction in flight plan time leads to increase in aircraft utilization

b) reduction in the cost of the provision of air traffic services through operational efficiencies:

- optimization of sectorization
- increased controller capacity and efficiency
- reduced air-ground communication traffic (minimum R/T procedures)
- reduced ground-ground coordination
- reduced incident investigation

c) enabling a seamless “gate-to-gate” surveillance service, not only to international civil aviation but should include general aviation and military operations;

d) increased safety and efficiency through the use of aircraft-derived data in a variety of systems, e.g. ground-based conflict alert, minimum safe altitude warning, danger area proximity warning, automated support tools, surveillance data processing and distribution, as well as enabling access by the controller to state vector parameters, (sometimes described as controller access parameters, CAP);

e) increasing airport safety and capacity, especially under low visibility conditions, by providing airport surface surveillance and, at the same time protecting against runway incursions. ADS-B will enable the identification and monitoring of relevant airport vehicles as well as aircraft;

f) changes to airspace sectorization and route structure resulting from improved surveillance should provide more efficient routing;

g) reduced infrastructure costs. Especially, in airspace in which all aircraft are ADS-B equipped, it may be possible to decommission some radar equipment. Where multiple surveillance coverage is presently required, optimisation of the surveillance infrastructure should be achieved by the implementation of the most efficient mix of radar sensors and ADS-B. Consequently, ADS-B coverage could reduce the required number of radar sensors;

h) cost savings achieved from the implementation of an ADS-B based surveillance system rather than the lifecycle expenses associated with installing, maintaining, and extending existing radar-based surveillance systems;

i) possibility of overall savings if associated with relevant navigation changes;

j) improved SAR efficiency;

k) reduced impact on the environment; and

l) for those aircraft equipped with "ADS-B in" airborne surveillance capability that can improve flight crew situational awareness:

- reduced flight length/time through reduction in procedural avoidance
- reduced flight length/time through avoidance of runway clearance manoeuvres
- optimized flight time through ability to arrive in busy airspace with knowledge of traffic situation
- reduced collision risk and reduced need for collision avoidance manoeuvres

4.6.6 The meeting agreed with the recommendation made by the Task Force for implementation of "ADS-B out" for ground-based surveillance services in Asia/Pacific region commencing January 2006. Accordingly, the meeting endorsed the following Draft Conclusion of the Task Force:

Draft Conclusion 1/4 - Target date of Implementation

That States, where necessary to do so, be encouraged to implement "ADS-B out" for ground-based surveillance services in Asia/Pacific region on a sub-region by sub-regional basis with a target date of January 2006.

4.6.7 The meeting noted the new Terms of Reference (TOR) of the ADS-B SITF as proposed in Draft Decision 1/1 of the Task Force meeting. The meeting recognized the need for ongoing work of the ADS-B Task Force to develop an implementation plan for near term ADS-B application in the Asia/Pacific Region taking into account the readiness of airspace user and ATS providers. The meeting agreed that the revised TORs did not require further amendment.

4.7 **Notification of Annex Differences**

4.7.1 Australia provided information on the processes that were used in coordinating the review of compliance with ICAO annexes. The meeting noted that Australia had reviewed its compliance with ICAO Annexes and had filed the relevant differences with ICAO, and published them in their AIP. Australia suggested that ICAO should review the methodology of issuing amendments to the Annexes, so that amendment changes to the SARPs were more easily identifiable; and provide electronic versions of the Annexes that enable text copying. The meeting noted the

suggestions and these would be considered in due course when more information was available on the subject.

4.8 **Aeronautical Information Intellectual Property Strategy**

4.8.1 Australia provided details of their move to commercial licensing arrangements for the redistribution of AIS data. The meeting noted Australia's successfully strategy to implement its AIS policy, which was aimed at promoting safety, the introduction of competition and reduced pricing to airlines for AIS data information including FMS data cards.

4.9 **Altitude Reservations**

4.9.1 The United States presented information on the Department of Defense and the U.S. Air Force responsibilities pertaining to Military operations that need coordination as described in the PANS-ATM (Doc 4444). In line with this responsibility, due to increased civil operations in the oceanic and international areas, the Department of Defense would like to put into place agreements and communications with States and ATS Providers to allow movements of groups of aircraft and with altitude reservations when necessary. This would help to increase safety in the en-route operations.

4.9.2 The contact for States is the Pacific Military Altitude Reservation Function (PACMARF). States are encouraged to take into consideration the development of a Memorandum of Understanding (MOU) as a formal process to receive, approve and operate Altitude Reservations ALTRVs within their appropriate FIRs. Contact details of the offices concerned with coordination are contained in Appendix A to the Report on Agenda Item 4.

4.10 **Lost Communications Procedures**

4.10.1 The United States presented information on a proposed amendment to the ICAO Pacific Regional Supplementary Procedure (Doc 7030) for region-specific lost communication procedures.

4.10.2 The meeting was informed that at the IPACG/18 meeting, the FAA presented a proposal to amend Doc 7030 and add regional procedures for lost communications. The proposal was reviewed by IPACG/18 which agreed in principle with the FAA proposal, and this would be coordinated with ISPACG and progressed as soon as possible. The procedure was subsequently updated and would be further reviewed at IPACG/19 scheduled in April 2003 for final coordination and approval by all participants. However, IPACG/19 was postponed until July 2003, and the amended proposal was coordinated with ISPACG and IPACG participants by e-mail. Both groups agreed that this common Pacific lost communication procedure was a priority issue, and that, if adopted by APANPIRG, it should be implemented without delay.

4.10.3 In developing the proposal the FAA considered that the current ICAO lost communication procedures need to be reviewed and updated to account for the current Pacific operating environment and the following questions require clarification:

a) what is considered to be a "total loss of communications?"

b) with the implementation of RVSM and reduced horizontal separation (50/50, and shortly 30/30), do the current procedures provide enough time for controllers to determine a flight is in a "lost communication" situation and adequately provide a controlled and safe environment for flights to carry out the loss of communications procedure?

c) do the current procedures provide a safe means of separation not only for single aircraft contingencies, but multiple aircraft losses of communication along congested routes (sun-spot activity, satellite failure, etc)?

d) do the current procedures provide direction to pilots as to what means are available for alternate communications over the Pacific (i.e. specific air-to-air VHF frequency or others)?

e) do the current procedures provide a means to provide adequate separation to flights operating on routings other than their filed flight plan? Step climbs to be assumed? Coordination between ATC facilities? and

f) ultimately, what are the responsibilities for ATC and flight crews when exercising a Lost Communication contingency procedure?

4.10.4 The meeting was advised that in the NAT Region procedures had been adopted which began to answer the above questions. In the NAT, flights that experience a loss of communications do the following:

The pilot shall proceed in accordance with the last received and acknowledged oceanic clearance, including level and speed, to the last specified oceanic route point, normally landfall, then continue on the filed flight plan route. The pilot shall maintain the last assigned oceanic level and speed to landfall and, after passing the last specified oceanic route point; the pilot shall conform with the relevant State procedures/regulations.

4.10.5 It was considered that the NAT procedures may not be sufficient for the Pacific Region and especially for the "long-haul" flights that routinely transit the Pacific Ocean. They did, however, provide organization and a sense of control for flights that operate along congested routes (such as the NAT Organized Track System).

4.10.6 The existing ICAO lost communication procedures did not ensure that ATC would be able to provide standard separation from surrounding flights. While ATC may be able to monitor the actions expected from flights in a "lost communication" situation and attempt to resolve conflicts, ATC may not be able to contact surrounding flights in order to move them out of the way depending on the type of communications failure (HF propagation, data link/SATCOM outages or any combinations thereto).

4.10.7 The FAA developed a new procedure that provides the following benefits:

a) flights can, and may opt to remain within their last assigned ATC clearance and be provided separation from surrounding flights;

b) long-haul flights that must proceed in accordance with their flight plan profile may do so and ATC will ensure surrounding flights are provided information regarding the possible execution of the procedure;

c) as this is a contingency procedure, on the occasion when a flight's filed flight plan altitude is lower than that currently assigned, the flight would not be required to, or expected to descend and may stay on course and at altitude until a higher altitude is required, then follow the offset contingency procedure; and

d) provides lost communication alerts for ADS aircraft.

4.10.8 In addition to this proposal, the FAA would like to request that all of the current contingency-type procedures (e.g. wake turbulence offset, weather deviation, emergency offset for climb/descent, etc.) be re-evaluated and updated as necessary. This would ensure that the procedures are still appropriate for today's oceanic environment and allow for possible changes to provide consistency in the actions required by each procedure.

4.10.9 The meeting noted that the proposal would improve the management of a loss of communications by ATC in an oceanic environment. The proposal would require further detailed examination and participants were invited to review the proposal at the earliest opportunity following this meeting and provide feedback to the FAA. The FAA was advised that when they complete their coordination with those concerned, it should be submitted to the Regional Office for processing in accordance with standard procedures. This proposal would be given a high priority as it concerns to safety. Also, the meeting was advised that ICAO intends to review all the regional SUPPs and harmonize common procedures used in various regions.

4.11 **Contingency Planning**

4.11.1 The FAA presented information on a proposed amendment of procedures for consideration in the event of a partial or complete shutdown of the United States National Airspace System (NAS), which includes international airspace delegated to the United States for the Provision of air traffic services.

4.11.2 The events of 11 September 2001 closed the entire NAS, including international airspace delegated to the United States for the provision of air traffic services. This prompted concerns from the IATA at ATS/AIS/SAR/SG/12 as to the importance of accessible oceanic airspace over the high seas and the appropriateness of the contingency procedures to ensure this access.

4.11.3 Subsequently, the United States had proposed a revision to their contingency checklist that would consider the restrictions to transit of U.S. controlled international airspace outside the 12 NM territorial limit and ensure to the greatest extent possible the continuous access to airspace for international civil flights over the high seas.

4.11.4 The meeting noted the information and progress to revise the contingency procedures.

4.12 **Advanced Technologies and Operational Procedures (ATOP)**

4.12.1 The FAA presented information on the current status of the FAAs Advanced Technologies and Operational Procedures (ATOP) programme.

4.12.2 ATOP would be deployed at New York, Oakland and Anchorage Air Route Traffic Control Centers (ARTCCs). This system would increase airspace capacity, reduce delays and reduce restrictions by allowing controllers to move away from manual air traffic management techniques and by taking advantage of both the latest satellite-based communications and surveillance technology and the FANS-1/A avionics capabilities.

4.12.3 Lockheed Martin ATM was awarded the contract on 18 June 2001. System hardware had been installed at the FAA Technical Center and Oakland ARTCC. Installation of the hardware at New York ARTCC was nearing completion and preparation had begun at Anchorage ARTCC.

4.12.4 FAA requirements had been stable since contract award, however significant amounts of unanticipated new software development and modification were discovered which resulted in a longer than anticipated time to complete software integration and Factory Acceptance Test activities. Once these problems were resolved, the FAA would conduct a series of system tests for all personnel. Upon completion of these tests, Site Acceptance Testing, government acceptance and field familiarization/shakedown activities would be conducted at Oakland ARTCC.

4.12.5 Based on the remaining test activities, the FAA was optimistically projecting Initial Operational Capability (IOC) at Oakland ARTCC by the 4th quarter of 2003 with recognition that IOC at Oakland ARTCC may not occur until early 2004 depending on how quickly the remaining test activities could be executed.

4.13 **Sanya AOR and other significant issues**

4.13.1 China updated the meeting on progress since the successful implementation of the revised South China Sea ATS route structure and advised that the operation of Sanya ACC had been very stable. Additional enhancements were planned in the form of two new VHF stations and one new radar, which would be installed during the year 2003. China was also pleased to advise that Sanya ACC was unaffected by the recent SARS situation.

4.13.2 China advised that in view of their upgraded facilities they were confident that they could upgrade the Sanya AOR to the Sanya FIR. The Secretariat advised that after the operational trial period a review of the arrangements in place would be necessary with all parties concerned.

4.13.3 Viet Nam advised that information provided by China regarding the upgrade of Sanya AOR to Sanya FIR should be considered very carefully by all States and parties concerned to ensure safety of all civil aviation activities and other related matters in the South China Sea area.

4.13.4 China also advised the meeting that in co-ordination with ICAO, China had actively participated in the contingency arrangements associated with the outbreak of war in Iraq and had made preparations for additional flights to operate within the airspace of China including arrangements for expeditious handling of flight plan approval requests. More than 100 additional scheduled flights had taken advantage of the opportunity to fly routes within the territory of China, with the majority concentrated on two routes, namely:

a) SAGAG - A581 - Kunming - G212 - Jintang - B330 - Yabrai - B215 - Fukang - A368 - SARIN; and

b) Hong Kong - Guangzhou - B330 - Yabrai - B215 - Fukang - B206 – GOPTO.

4.13.5 Regarding operations along the Polar routes, China advised the meeting that Provisional Management Rules of Polar Route Operations have been published by China. These provisions state the extent of flexible choice of entry/exit points in Chinese airspace and the associated procedures to be used by operators. Additionally, data has been published on the newly established entry/exit point of POLHO together with two new route segments linking POLHO, with an effective date of 0001 UTC on 30 June 2003.

4.13.6 IATA thanked China for their work in supporting Polar route operations, particularly with respect to the implementation of flexible entry/exit points. IATA understood that China would be continuing work on this issue with a view to expanding its application as soon as possible.

4.14 **Large-scale weather deviations**

4.14.1 The successful implementation of the ATM contingency procedure would be facilitated if the ACCs receive prior warning or advice from a meteorological (MET) office regarding the expected occurrence of weather conditions that lead to large-scale weather deviations (LSWD). This would allow the smooth transition from normal to contingency procedures avoiding peak workload and stress, which were typical for cases when the adverse weather conditions occur suddenly without any warning.

4.14.2 The meeting was advised of the possible MET products that could be supplied to the ATS units to support their decision-making in planning and implementing LSWD contingency procedures. At present, the MWOs were responsible for provision of SIGMET information to their associated ATS units, but it had been recognized that the SIGMET service had yet to be improved. In addition to SIGMET, the MET offices could provide other meteorological products of operational value for the air traffic management before and during the adverse weather situations. Such products were the volcanic ash and tropical cyclone advisories issued by the specialized Volcanic Ash Advisory Centres (VAAC) and Tropical Cyclone Advisory Centres (TCAC). In the future, graphical SIGMET and advisories, and other tailor-made graphical products based on the forecasts provided by the World Area Forecast System (WAFS) could be supplied to the ATS units.

4.14.3 The meeting agreed that MET products aimed at supporting ATM decisions, could be very useful for the ATS units. It was felt in this regard that the Annex 3 provisions concerning the MET information to be provided to the ATS units should be reviewed and amended to include additional MET products and services, related to the information provided for weather phenomena that cause significant changes in the ATC procedures, such as LSWD contingency procedures. Based on the above discussion, the meeting formulated the following draft conclusion:

Draft Conclusion 13/11 – MET support to ATM large-scale weather deviations contingency procedures

That,

a) States should strengthen the coordination between the ATS units and their associated MWOs in regard to the provision of SIGMET information, in particular for weather phenomena that cause significant changes in the ATC procedures, such as LSWD contingency procedures; and

b) ICAO is invited to develop provisions for additional meteorological service to the ATS units in regard to the weather phenomena that cause significant changes in the ATC procedures, such as LSWD contingency procedures; this service should include, as a minimum, supply of the ATS units with volcanic ash and tropical cyclone advisories.

4.15 Satellite Voice Communication in ATS: The need for a Global Policy

4.15.1 Australia presented information on a review of ICAO policy in relation to the use of satellite voice communications and recommends that its use be frozen other than for emergency use or trials until the global policy is further developed. The current ICAO Policy, as expressed in the *Global Air Navigation Plan for CNS/ATM Systems* (ICAO Doc 9750, Sect. 5.5-5.6) was that, once digital data interchange (data link) becomes generally available, data should be favoured over voice for routine communications and the opposite should be true for non-routine and emergency situations.

4.15.2 Australia considered that there was a lack of guidance on the use of satellite voice, both aeronautical and public access satellite and how it combined with HF voice with and without data-link capability.

4.15.3 In the view of Australia, States and regional groups should not use SATCOM for any non-emergency or trial use of current satellite voice technology outside ‘data-link’ environments. A study of this matter was required to develop a globally coherent policy.

4.15.4 The meeting noted the view of Australia and recognized that there were a number of issues associated with the technical operation of SATCOM that needed to be resolved in order to use the medium for air traffic control purposes. However, in view of most long haul aircraft being equipped with SATCOM which for public use, functions satisfactorily, as a last means of communication, pilots would attempt to contact the ATC unit responsible for the flight. In this regard, in consideration of safety issues, in particular in an oceanic HF radio environment where CPDLC was not available, it would be desirable for procedures to be established for two-way SATCOM between pilots and controllers. This matter required further consideration by the parties concerned.

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Agenda Item 5: Review progress of the Asia/Pacific Airspace Safety Monitoring Task Force (APASM TF)

5.1 **Report of the Asia/Pacific Airspace Safety Monitoring Task Force (APASM/TF)**

5.1.1 The meeting was updated on the progress of the Asia Pacific Airspace Safety Monitoring Task Force (APASM/TF) to establish a regional airspace safety monitoring organization and funding arrangements.

5.1.2 The Task Force met four times since its activities were reported to ATS/ASI/SAR/SG/12:

TF/3 22 – 24 July 2002, Bangkok, Thailand

TF/4 9 – 12 December 2002, Bangkok, Thailand

TF/5 24 – 26 February 2003, Bangkok, Thailand

TF/6 5 – 7 May 2003, Honolulu, Hawaii, U.S.A.

5.1.3 APANPIRG/13 had reviewed progress by the APASM/TF and agreed to continue the work of the Task Force, with its final report and recommendations to be presented to APANPIRG/14 in August 2003.

Organizational arrangements

5.1.4 The Task Force initially developed a plan to establish a Regional Airspace Safety Monitoring Agency (RASMA), which would operate as a business entity fully funded by user charges, and under the authority of States, who would enter into multi-national agreements to make use of RASMA services.

5.1.5 During the course of its work, the Task Force considered that the institutional difficulties to form the RASMA as a business entity were too complex, and a number of States, for legal reasons, would have difficulty in making use of RASMA services. Further, existing airspace safety monitoring arrangements put in place by States in support of airspace implementation planning were operating satisfactorily, and there was no need to incorporate these activities in RASMA. However, there was a need to coordinate and harmonize airspace safety monitoring activities on a regional and inter-regional basis, as well as to provide a common means of funding. Accordingly, establishing a permanent body of experts to periodically review and evaluate the results of airspace safety monitoring would significantly enhance the airspace safety monitoring process.

5.1.6 The Task Force considered that a change was needed in the structure of the body from a business entity to a Sub-Group of APANPIRG. As a Sub-Group operating within the ICAO system, this would facilitate State participation and contribute to improving the SARPs, PANS and ICAO guidance material on operational safety matters. It was further considered that it was highly desirable to have expertise readily available to States to assist them meet their Annex 11 safety obligations. This body would be structured as an APANPIRG Sub-Group in accordance with the *APANPIRG Procedural Handbook*, and named the Regional Airspace Safety Monitoring Advisory Sub-Group (RASMA/SG).

5.1.7 The establishment of the RASMA Sub/Group should ensure that a group of multi-disciplinary experts would be permanently available to advise APANPIRG and States on airspace safety matters. The provision of funding arrangements was expected to meet the APANPIRG requirements, and for the foreseeable future would ensure that the Asia Pacific Region had in place a robust and cost effective means to meet the ICAO airspace safety monitoring requirements.

Existing monitoring services

5.1.8 Within the Asia Pacific Region action had been taken under various ICAO Task Forces to oversee airspace operations and safety where monitoring services were required, such as RVSM, reduced horizontal separation and ATC data link services. With respect to the implementation of reduced horizontal and vertical separation minima, the monitoring requirements were been carried out by several different organizations. The United States FAA currently performs the functions of the APARMO established for RVSM implementation in the Pacific Region. In addition, the FAA has provided airspace safety assessments and oversight for the implementation of both vertical and lateral separation minima in various parts of the Asia/Pacific Region, including support for RVSM implementation in the Asia Region. Airservices Australia in addition to providing safety services for its FIRs, provides safety assessment services to States and ATS providers in support of airspace changes in the South China Sea and the Bay of Bengal areas. The Civil Aviation Authority of Singapore provides monitoring services for RNP operations on the South China Sea ATS route structure. AEROTHAI of Thailand had established the Monitoring Agency for the Asia Region (MAAR) as agreed by APANPIRG, and expected to take over responsibility of RVSM monitoring in the Asia Region from the APARMO subject to APANPIRG/14 approval. Other States, such as India and Japan were establishing national monitoring programmes and indicated their willingness to provide regional or sub-regional airspace safety monitoring services.

5.1.9 Additionally, considerable experience had been gained in the system performance monitoring and enhancement of ATS data link equipment and procedures used to provide communications for air traffic control services and aircraft operators. The States that were signatories to ISPACG and IPACG had carried out this function co-operatively by their respective central reporting agencies (CRAs) and FANS Interoperability Teams (FITs). In addition, the FANS Action Team – Bay of Bengal (FAT-BOB), had been established by ICAO for the Bay of Bengal area, and a similar arrangement was under consideration for the South China Sea area under the SEACG.

5.1.10 Provision for the establishment of ATS safety management programmes is mandated by ICAO Annex 11. It is the responsibility of States to ensure that established safety levels were being met on a continuing basis in accordance with ICAO provisions. The Task Force proposed that the RASMA Sub-Group could assist States in achieving this objective. Because the safety assessment methodology would be applied to separation reduction implementations, CNS/ATM applications and other programmes that had global application, it was necessary to use an established method to assess risk in a manner consistent with other ICAO regions.

5.1.11 It was envisaged that in order to provide an effective role, the membership to the RASMA Sub-Group would be for a fixed term from those States that had extensive experience in conducting airspace safety monitoring and safety analysis.

Funding arrangements

5.1.12 In regard to funding, the region had, on a collective basis, already been successful in establishing aircraft height-keeping performance monitoring services on a “user pays” basis. In addition, airspace data collection, analysis and safety risk assessments had been carried out for the region using human and technical resources provided by some States and organizations at no cost to the user. These donated resources would continue to be used to the extent that they were available.

5.1.13 It was intended that operating charges to airlines would be based on each aircraft movement originating from/within the APAC Region. Liaison would also be necessary with those States outside the APAC Region where flights terminate to avoid multiple charging, particularly for long-haul flights. The provision of safety monitoring services would need to be cost effective to the industry as a whole.

Funding resources

5.1.14 It was recognized that the cost of many of these safety monitoring and assessment services would need to be recovered either directly or indirectly from the users of the airspace in accordance with ICAO provisions. The necessary resources to fund State safety monitoring obligations may be provided in the following ways:

a) Direct payment: Funds from State civil aviation authorities, air navigation service providers, air transport operators, air-to-ground communications service providers, aircraft manufacturers; and

b) Indirect payment: Provision of technical services and human resources provided in-kind by any entity.

5.1.15 Where funds were provided by direct payment, the preferred collection mechanism would be through a direct levy on the airlines to be collected by IATA.

Stakeholder considerations

5.1.16 Stakeholders comprise a cross section of the aviation community from the air traffic service providers and airspace users through to the communications service providers. Their needs were diverse but all had a safety obligation to meet international standards and recommended practices. The establishment of a dedicated permanent regional airspace safety oversight body centralizes these activities.

5.1.17 The stakeholders had a common interest in the output of the airspace safety monitoring process in terms of safety assurance. The stakeholders are:

a) States of the APAC Region;

b) Aircraft operators;

c) International organizations representing their aircraft operators, flight crews and public safety, and

d) Other service providers within the airspace, such as communications service providers and other service industry related companies, who would also be beneficiaries of the APASAG.

5.1.18 The stakeholders require airspace safety monitoring and safety assessment services to continue the development and improvement of the regional airspace, while providing a safe and efficient environment for aircraft operators. It was essential that the Asia Pacific Region had in place a transparent airspace safety oversight capability to which all States contribute and participate. These were best achieved for international airspace through ICAO and its contributing bodies.

RASMA/SG Terms of Reference

5.1.19 The TF/6 meeting developed draft TORs, an organizational structure and work flow chart for the RASMA Sub-Group to be presented to APANPIRG/14. A plan for the operation of RASMA/SG would be completed by correspondence and presented to APANPIRG/14.

Future work

5.1.20 At the TF/6 meeting it was agreed that in view of the progress made to complete its work programme to develop an airspace safety system performance monitoring structure for the Asia

Pacific Region, it was in a position to recommend to APANPIRG/14 that the RASMA Sub-Group be established.

5.1.21 In light of the above, APASM TF/6 developed a Draft Decision to APANPIRG/14 as follows:

Draft Decision 6/1 – Establishment of the Regional Airspace Safety Monitoring Advisory Sub Group of APANPIRG

That, a Regional Airspace Safety Monitoring Advisory Sub-Group (RASMA/SG) be established to report to APANPIRG. The Terms of Reference of the Sub Group are as shown in Appendix […] to the Report on Agenda Item x. The establishment and the work of the Sub-Group shall be governed by the considerations contained in the APANPIRG Procedural Handbook.

5.1.22 In view of the APASM/TF being completed, the TF/6 meeting developed a draft Decision to APANPIRG/14 as follows:

Draft Decision 6/2 – To dissolve the Asia/Pacific Airspace Safety Monitoring Task Force

That, the Asia/Pacific Airspace Safety Monitoring Task Force having completed its work programme, the Task Force be dissolved.

5.1.23 The meeting noted the report of the APASM/TF and its proposed recommendation to APANPIRG/14 for the establishment of the RASMA Sub-Group, which would strengthen airspace safety management in the Asia/Pacific Region.

Agenda Item 6: Deficiencies in the Air Navigation field

List of air navigation deficiencies

6.1 The meeting recalled that under the terms of reference of APANPIRG, one of the objectives of the Sub-Group was to identify specific problems in the air navigation field and to propose in appropriate form, action aimed at solving these problems. To meet these objectives, APANPIRG shall review deficiencies, *inter alia*, in the fields of ATS/AIS/SAR in the Asia and Pacific Regions and develop recommendations for remedial actions. The ICAO Council, at the 164th Session on 30 November 2001 approved the definition of a deficiency as follows:

> "A *deficiency* is a situation where a facility, service, or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation".

6.2 The meeting noted that APANPIRG/13 Decision 13/46 established a Task Force on Deficiencies in the Air Navigation Field and the first meeting would be held from 21 to 25 July 2003. The Task Force would develop detailed regional procedures for identification, assessment, reporting and monitoring of the status of air navigation deficiencies as a supplement to the uniform methodology. The report of this meeting would be referred to the Task Force.

ATS Routes

6.3 In regard to ATS routes, Japan advised the meeting that a working group had been established to begin restructuring of the domestic ATS routes, and information was provided on the three route deficiencies listed, i.e. A202, A223 and B212. Information had been provided by China, Hong Kong, China, Thailand and New Zealand to the Regional Office by letter on route deficiencies and the list was updated.

WGS-84

6.4 The meeting reviewed the list of deficiencies in respect to WGS-84 and noted that considerable progress had been made by States in the Asia/Pacific Region to meet the Annex 15 requirement to publish geographical coordinates indicating latitude and longitude expressed in terms of WGS-84 geodetic reference datum. Those States who had not fully implemented WGS-84 were urged to complete WGS-84 surveys and publish the information as soon as practicable. Further, those States that had not implemented WGS-84 should be reminded that they were required to notify ICAO of differences in their national regulations and practices in respect to WGS-84, and the corresponding International Standards and Recommended Practices in accordance with Article 38 of the Convention on International Civil Aviation and the Council of ICAO's resolution of 21 November 1950. The Secretariat noted the information and the States concerned would be further reminded of their obligations to implement WGS-84 or notify differences to the SARPs.

Type of ATS

6.5 India informed the meeting that the existing HF radio was being modernized and new HF radio with data link capability was being installed at the ATC Centres in Mumbai, Delhi, Kolkata, Chennai and Trivandrum. The work was scheduled to be completed by December 2003, however, it was expected that the work would be completed well ahead of schedule. In addition, ADS/CPDLC would be installed at Mumbai and Delhi ATC Centres by the end of 2004. Also, area control service would be provided subsequently on the existing advisory ATS routes in the Mumbai FIR. India provided information to update the deficiency list.

6.6 Sri Lanka advised the meeting that advisory service on some ATS route segments had been upgraded to ATC service with the improvement to communications.

Airspace classification

6.7 Tonga advised that they would be reporting to the Regional Office of changes to airspace classification that would take effect later this year

AIP Format

6.8 New Zealand had informed the Regional Office by letter that work was continuing on a revised version of the New Zealand AIP and Visual Charts which would bring the content and format of the Planning Manual, Instrument Flight Guide and Visual Flight Guide in line with ICAO standards. The meeting was also advised that the Pacific AIP being used by some Pacific Island States was presently being revised in line with the ICAO format.

SAR capability

6.9 New Zealand informed the Regional Office by letter that a SAR agreement with the Cook Islands was presently being developed.

Update of the list of deficiencies

6.9 The meeting reviewed and updated the list of deficiencies based on information provided by States using the revised uniform methodology for the identification, assessment and reporting of such deficiencies. States were reminded that they should provide formal notification to the Asia/Pacific Regional Office by 30 April each year that a deficiency had been rectified, to enable the list of air navigation deficiencies to be updated and maintained as an accurate record within APANPIRG. The updated list is shown at the Appendix to this Agenda Item.

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
Requirements								
A202	Hong Kong, China/Japan	Partially implemented	24/11/93	Hong Kong-Bangkok segment was implemented on 1 November 2001. ~~Japan has proposed the deletion of the requirement for Chitose-Hong Kong segment in consultation with Hong Kong, China~~. Japan considering implementation as a conditional route	Japan co-ordinate Hong Kong, China	Hong Kong, China/ Japan	HongKong-Bangkok segment 1/11/2001; Hong Kong-Chitose segment TBD	B
A203	China/Hong Kong, China	Not implemented	24/11/93	China advises no international flight requirements.	China - ~~consider implementation~~ requested deletion and amendment to ANP	China/Hong Kong, China	Subject to ANP amendment	B
A211	Indonesia	Partially implemented	24/11/93	ICAO has requested Malaysia to co-ordinate the early implementation of A211 with States concerned. Malaysia has advised at SEACG/10 of the implementation of the route within Malaysia on 29 November 2001.	Indonesia - implement the missing segement ICAO- coordinate the implementation with Indonesia	Indonesia ICAO	29/11/2001 (by Malaysia) TBD by Indoensia	B

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
A218	China/Russian Federation	Partially implemented	24/11/93	ICAO has taken action to co-ordinate with China/Russian Federation for implementation of Harbin-Ekimchan segment and to amend ANP. APAC 99/1-ATS was approved on 26/1/00. CAAC subsequently advises (14 Apr 03) that current route G212 meets the requirements and the proposed A218 is no longer required.	~~China/Russian Federation - consider implementation~~ China requested deletion and amendment to ANP	China/Russian Federation ICAO	Subject to ANP amendment	B
A223	Japan	Not implemented	24/11/93	Japan has advised that a domestic route network covers the route; ~~thus will propose the deletion of the requirement~~.	~~Japan- co-ordinate the deletion with IATA~~ Japan considering implementation as a conditional route	Japan	TBD	B
A335	China/Mongolia/Russian Federation	Not implemented	24/11/93	China and Mongolia advised that this segment is covered by other ATS routes properly; thus will ***has*** proposed its deletion from ANP.	China, Mongolia - propose ANP amendment	China/Mongolia	Deletion of A335 notified 9 Oct 01 Subject to ANP amendment	B
A341	Indonesia/Malaysia	Partially implemented	24/11/93	ICAO has requested Indonesia to co-ordinate implementation with Malaysia. Malaysia has advised that the existing route B584 fulfils sufficiently the requirement and would propose the deletion of the requirement for Syrabaya-Kota Kinabalu segment.	Indonesia/Malaysia - consider full implementation	Indonesia/Malaysia	12/2001	B

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
A450	Indonesia/United States	Partially implemented	24/6/94	ICAO has requested Indonesia to co-ordinate implementation with United States. United States has agreed to the implementation, and a response from Indonesia is being awaited.	Indonesia/United States - consider full implementation	Indonesia/United States	TBD	B
A469	Viet Nam	Implemented as W9 before. As of 1 Nov 2001 implemented as L643.	19/8/94	ICAO has requested Viet Nam to implement as A469. Viet Nam advised that W9 was replaced with L643 on 1 November 2001.	Viet Nam - propose deletion of the requirement as A469 ICAO process ANP amendment	Viet Nam ICAO	Subject to ANP amendment	B
A473	India/Nepal	Not implemented	16/3/99	India and Nepah have advised that realignment is being co-ordinated and the route is to be implemented.	India/Nepal- implement the route	India/Nepal	Sep 2003	B
A581	Thailand	Partially implemented	17/2/97	China, Lao PDR and Thailand proposed an amendment to ANP. ICAO processed APAC99/11 in co-ordination with China/Myanmar/Thailand. APAC99/1 was approved on 15 December 2000.	Thailand - implement accordingly.	Thailand	11/2002	B
A584	United States	Partially implemented	24/6/94	ICAO has requested United States to implement the missing segment. United States has proposed deletion of the missing segment, and the proposal is under preparation.	ICAO - process an amendment in co-ordiantion with United States	United States ICAO	Subject to ANP amendment	B

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
B201	Fiji/New Zealand	Not implemented	24/11/93	Fiji/New Zealand have advised that they agreed to delete the requirement. ICAO will process ANP amendment as this was covered by routes B575, G457 and R327.	Fiji/New Zealand - propose an amendment to delete the requirement in ANP	Fiji/New Zealand ICAO	Subject to ANP amendment	B
B204	Maldives	The requirements for this route are not detailed in ANP	24/1/96		Maldives - propose an amendment to ANP to add the route	Maldives ICAO	Subject to ANP amendment	B
B212	Japan/Rep of Korea	Not implemented	24/11/93	Japan is considering implementation as a conditional route and will coordinate with Rep of Korea	Japan/Rep of Korea - consider implementation	Japan/Rep of Korea	12/2005	B
B213	China	Not implemented	24/11/93	CAAC advises no international flight requirements - route H12 is available.	~~China - consider implementation~~ China - propose deletion and amendment to ANP	China ICAO	Subject to ANP amendment	B
B456	Papua New Guinea	Partially implemented	24/11/93	Papua New Guinea has advised that they will formally propose ANP amendment for deletion of the missing segment.	Papua New Guinea - propose an amendment to ANP. ICAO-process ANP amendment.	Papua New Guinea ICAO	Subject to ANP amendment	B
B591	China	Partially implemented	22/7/97	Co-ordination is in progress among States and ICAO	ICAO - continue on-going implementation co-ordination related to the Revised South China Sea route structure with States	China	TBD	B

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
G211	Malaysia	Not implemented	24/11/93	ICAO has requested Malaysia to implement G221. Malaysia has advised that G211 would be replaced with EMARSSH routes; thus would propose the deletion of the requirement when an ANP amendment relating to EMARSSH is prepared.	Malaysia - propose deletion ICAO- process ANP amendment~~t~~	Malaysia ICAO	28/11/2002 Subject to ANP amendment	B
G461	Indonesia	Implemented with different route specification	24/11/93	ICAO co-ordinated with Indonesia to amend ANP requirement. APAC00/1-ATS was approved on 15 January 2001.	Indonesia-implement the requirement accordingly.	Indonesia	TBD	B
G473	Cambodia /Philippines Thailand/Viet Nam	Partially implemented	24/11/93	Co-ordination is in progress among States and ICAO	ICAO - continue ongoing implementation co-ordination related to the Revised South China Sea route structure with States	Cambodia /Philippines Thailand/Viet Nam	TBD	B
G589	DPR Korea/ Rep of Korea	Not implemented	24/11/93		B467 established instead of G589 April 1998	DPR Korea/ Rep of Korea	April 1998 Completed	B
R216	China/Kazakhstan	Not implemented	24/11/93	CAAC advises current routes B215, Kuqa, A460 REVKI to Alma Ata meets the requirements for traffic from Urumqi to Alma Ata and requests deletion of R216 from ANP (14 Apr 03)	~~ICAO - co-ordinate with States for implementation and report the outcome to EAAR~~ CAAC proposes deletion	China/Kazakhstan ICAO	Subject to ANP amendment	B

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
R221	Russian Federation	R221 was implemented on 19 April 2001 in Malaysia in accordance with the requirement in ASIA/PAC ANP. The same route designator in use in Russian Federation	24/11/93	ICAO has requested Russian Federation to delete R221 and promulgate the route as R466 in AIP. Input from Russia is being awaited.	ICAO - co-ordinate with Russian Federation to redesignate the route as R466 as already assigned as a matter of priority	Russian Federation	TBD	A
R333	China	Not implemented	24/11/93	China is considering future implementation	China co-ordinating with Hong Kong CAA	China	TBD	B
R335	China/Hong Kong, China	Not implemented	24/11/93	CAAC advises no international flight requirementsand requests deletion from ANP (14 Apr 03)	China - ~~consider implementation~~ propose delteion and amendment to ANP	China/Hong Kong, China ICAO	Subject to ANP amendment	B
R345	Cambodia/Lao PDR/Thailand	Not implemented	24/11/93	Cambodia has advised that the requirement is no longer valid and will propose the deletion of requirement in consultation with Lao PDR and Thailand.	ICAO - continue ongoing implementation co-ordination related to the Revised South China Sea route structure with States Camodia- coordinate the deletion with IATA as well as Lao PDR and Thailand	Cambodia/Lao PDR/ Thailand	TBD	B
R455	Indonesia	Partially implemented	24/11/93	ICAO has requested Malaysia to co-ordinate the implementation of R455 with States concerned. Malaysia has advised that R455 was implemented within Malaysia on 29 November 2001.	Indoensia - implement the requirement	Indonesia	29/11/2001 (by Malaysia) TBD by Indoensia	B

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
R459	Indonesia	Implemented as W51 and W36	24/11/93	ICAO has requested Indonesia to implement as R459	Indonesia - consider promulgation of the route with designator R459 in AIP	Indonesia	TBD	B
R466	Russian Federation	Implemented as R221 in Russian Federation. Route requirement is listed in EUR/NAT ANP	24/11/93	ICAO has requested Russian Federation to delete R221 and promulgate the route as R466 in AIP, and awaits input from Russia.	ICAO - co-ordinate with Russian Federation to redesignate the route as R466 as already assigned as a matter of priority	Russian Federation ICAO	TBD	A
R579	Indonesia/Malaysia	Not implemented	24/11/93	ICAO has requested Malaysia to co-ordinate with Indonesia for implementation. Malaysia considered there was no longer requirement due to a low traffic movement; thus will propose the deletion.	Indonesia/Malaysia - consider implementation	Indonesia/Malaysia	12/2001	B
R593	India/Oman	Not implemented	24/11/93	India has advised that the implemetation of R593 is being considered in conjunction with the implementation of RVSM in November 2003.	India coordinated with Oman India - propose deletion and amendment to ANP	India/Oman (SWACG) ICAO	Subject to ANP amendment	B
WGS-84								
WGS-84	Bhutan	Not implemented	2/7/1999	Data conversion completed, but not published		Bhutan	TBD	A

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
WGS-84	Cambodia		28/6/2001	Cambodia has previously informed ICAO that their WGS-84 conversion had been completed. Cambodia has now informed ICAO of flaws in their conversion and their intention to start all over again.		Cambodia	TBD	A
WGS-84	China	Not implemented * implemented in the Sanya AOR as of 1 Nov 2001	2/7/1999	Differences to Annex 15 - *Aeronautical Information Services* are notified		China		A
WGS-84	DPR Korea	Not implemented				DPR Korea	TBD	A
WGS-84	French Polynesia	Implemented at main airports		in progress		French Polynesia	2003	A
WGS-84	Kiribati	Not implemented				Kiribati	TBD	A
WGS-84	Lao PDR	Partially implemented				Lao PDR	TBD	A
WGS-84	Malaysia	Partially implemented		In progress. Updated information received. Confirmation of completion date required.		Malaysia	December 2002	A
WGS-84	Nauru	Not implemented		Conferring with consultant		Nauru	TBD	A
WGS-84	Philippines	Implemented at main airports		on-going		Philippines	2003	A
WGS-84	Solomon Islands	Not implemented				Solomon Islands	1999	A
WGS-84	Vanuatu	Implemented at main airports	2/7/1999			Vanuatu	1999	A

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
Type of ATS								
Area Control Services	India	Some ATS route segments in part of Mumbai FIR are subject to Advisory Services	24/11/93	Co-ordination in progress through BBACG. HF radio being modernized and datalink being installed by December 2003.	India - implement Area Control Services	India	end of 2004	A
Area Control Services	Sri Lanka	Several ATS route segments are subject to Advisory Services	24/11/93	Co-ordination in progress through BBACG	Sri Lanka - implement Area Control Services	Sri Lanka	Completed	A
Airspace Classification								
Airspace Classification	China	Not implemented	7/7/99		Difference to Annex 11 is published in AIP, China.	China		A
Airspace Classification	Cook Islands	Not implemented	7/7/99			Cook Islands	TBD	A
Airspace Classification	DPR Korea	Not implemented	7/7/99			DPR Korea	TBD	A
Airspace Classification	Japan	Not implemented	7/7/99		Implementation in progress	Japan	2003 Official confirmation pending	A
Airspace Classification	Kiribati	Not implemented	7/7/99			Kiribati	TBD	A
Airspace Classification	Lao PDR	Not implemented	7/7/99		Area, Approach and Tower control services est. 1 Nov	Lao PDR	Completed	A
Airspace Classification	Nauru	Not implemented	7/7/99			Nauru	TBD	A
Airspace Classification	Papua New Guinea	Not implemented	7/7/99			Papua New Guinea	mid 2001 Offical confirmation pending	A
Airspace Classification	Republic of Korea	Not implemented	7/7/99		Implemented since 1 July 2001	Republic of Korea	~~1 July 2001~~ Completed	A

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
Airspace Classification	Samoa	Not implemented	7/7/99		CTR C and D Samoa Sector Class G	Samoa	Completed	A
Airspace Classification	Solomon Islands	Not implemented	7/7/99			Solomon Islands	TBD	A
Airspace Classification	Sri Lanka	Not implemented	7/7/99			Sri Lanka	Completed 2003	~~A~~
Airspace Classification	Tonga	Not implemented	7/7/99			Tonga	Completed, information to be provided.	~~A~~
Airspace Classification	Viet Nam	Not implemented	7/7/99			Viet Nam	2003/2004	A
AIP Format								
AIP Format	China	Not implemented	7/7/99	Implementation in progress	New AIP published 1 Oct 2002 with effective date 23 Jan 2003	China	Completed	A
AIP Format	Cook Islands	Not implemented	7/7/99			Cook Islands	TBD	A
AIP Format	Fiji	Not implemented	7/7/99			Fiji	Sep 2002 (to be confirmed)	A
AIP Format	Kiribati	Not implemented	7/7/99			Kiribati	TBD	A
AIP Format	Lao PDR	Not implemented	7/7/99			Lao PDR	TBD	A
AIP Format	Myanmar	Not implemented	7/7/99			Myanmar	TBD	A
AIP Format	Nauru	Not implemented	7/7/99			Nauru	TBD	A
AIP Format	New Zealand	Not implemented	7/7/99	Differences to Annex 15 - Aeronautical Information Services are notified		New Zealand	Revised format being prepared in line with ICAO requirements effective 4-Sep-03	A
AIP Format	Papua New Guinea	Not implemented	7/7/99	under development		Papua New Guinea	TBA	A

AIR NAVIGATION DEFICIENCIES IN THE ATS/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
AIP Format	Samoa	Not implemented	7/7/99			Samoa	5/15/2003 (to be confirmed)	A
AIP Format	Sri Lanka	Not implemented	7/7/99			Sri Lanka	Completed - to be published end of 2003	A
AIP Format	Tonga	Not implemented	7/7/99		Under preparation	Tonga	2004	A
SAR capability								
SARPs in Annex 12	Cambodia	Annex 12 requirements not implemented. No agreements with adjacent States.	20/2/97		Cambodia - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Cambodia	TBD	U
SARPs in Annex 12	Cook Islands	Annex 12 requirements not implemented. No agreements with adjacent States.	31/1/95		Cook Islands - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Cook Islands	TBD	U
SARPs in Annex 12	Maldives	Annex 12 requirements not implemented. No agreements with adjacent States.	24/4/1997		Maldives - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Maldives	TBD	U

Agenda Item 7: Update the list of ATS/AIS/SAR Subject/Tasks together with priorities

7.1 APANPIRG/13 reviewed the updated draft Task List provided by the eleventh meeting of the ATS/AIS/SAR Sub-Group. APANPIRG/12 decided that this Task List would constitute the work programme for the Sub-Group and formulated Decision 13/10:

That, the ATS/AIS/SAR Subject/Task List as contained in Appendix L to the Report on Agenda Item 2.1 be adopted as the current work programme for the ATS/AIS/SAR Sub-Group replacing the current subject/task list as assigned by APANPIRG/12.

7.2 The meeting reviewed and updated the List of Tasks as per Appendix A to the Report on Agenda Item 7 and formulated the following Draft Decision:

Draft Decision 13/12 – ATS/AIS/SAR Subject/Task List

That, the ATS/AIS/SAR Subject/Task List as contained in the Appendix to the Report on Agenda Item 7 be adopted as the current work programme for the ATS/AIS/SAR Sub-Group.

SUBJECT/TASKS IN THE ATS/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 Task: Implement RNP into the Asia Pacific Region ~~b) Develop further SUPPS material by ISPACG for RNP4, 30NM longitudinal and lateral separation minima~~ ~~c) Review table of navigation aids in conjunction with States~~	A	a) ~~Sub-Group to~~ Identify routes and areas where RNP implementation is required; and ~~i) SUPPS amendment required to extend area of applicability of RNP10 (50NM longitudinal and lateral separation minima) beyond Pacific~~ ~~ii) Review & update RNP Guidance Material. Incorporate ISPACG Operations Manual outlining requirements for RNP10 operational approval of aircraft and operators~~ b) ~~Sub-Group to~~ monitor progress c) ~~Table of required navigation aids to be reviewed~~	ATS/AIS/SAR/SG ~~ICAO~~ ~~CNS/ATM/GM/TF~~ ICAO ~~ATS/AIS/SAR/SG/9~~	On-going ~~On-going~~ ~~Completed~~ On-going ~~Completed~~
2	~~APANPIRG~~ ~~C 2/8~~ ~~D 3/20~~ ~~C 4/6~~ ~~C 4/7~~ ~~D 4/8~~ ~~C 4/9~~ ~~C 4/10~~ ~~C 9/5~~	~~Subject: The SSR Code Assignment System for the Asia Region as specified in the Mid/ASIA ANP may not be as efficient as it could be~~ Task: ~~a) Define and document a Regional SSR Code Management Plan and review MID/ASIA Table 3~~ ~~b) Prepare Regional SSR Code Management Plan for Asia Pacific FASID~~ ~~c) Monitor and modify as required the Regional SSR Code Management Plan for the Asia Pacific Region~~	B	~~a) Sub-group to monitor progress~~ ~~SSR Code Assignment Working Group to convene and establish an SSR Code Management Plan and review MID/ASIA Table 3~~ ~~b) Progress in conjunction with SSR Code Assignment Working Group~~ ~~c) SSR Code Management Task Force to meet as required by Sub-group~~	~~ATS/AIS/SAR/SG/9~~ ~~SSRCA/WG~~ ~~SSRCA/WG~~ ~~ATS/AIS/SAR/SG~~	~~Completed~~ ~~Completed~~ ~~Completed~~ ~~Completed~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
3	~~RAN/3 R 14/20~~ ~~APANPIRG C 3/6~~	~~Subject: Insufficient co-ordination in the provision and implementation of radar facilities within the region~~ ~~Task: a) Identify why there is insufficient co-ordination and develop proposals to ensure sufficient co-ordination exists in the future~~	A	~~a) ICAO to survey States on current and proposed radar facilities~~ ~~b) Radar Facilities Table in the ANP to be reviewed based on the survey results~~ ~~c) Develop proposal to enhance co-ordination in the exchange of radar information~~	~~ICAO~~ ~~ATS/AIS/SAR/SG/9~~ ~~ATS/AIS/SAR/SG/10~~	~~Completed~~ ~~Completed~~ ~~Completed~~
4	APANPIRG C 3/22	Subject: Traffic congestion within the region Task: Suggest ways of reducing this congestion by means of appropriate traffic management ~~a) Review South China Sea ATS routes~~ ~~b) In-Trail Climb using ACAS distance based information in OCA / remote airspace~~ ~~c) Review Bay of Bengal ATS route structure~~ ~~d) Develop revised ATS Route Structure – Southeast Asia to/from Europe/Middle East, South of the Himalayas~~	A	~~a) Review complete~~ ~~b) Monitor work undertaken in the United States. The United States to inform the Sub-group on progress of work~~ ~~c) Bay of Bengal Task Force (BB/TF) established. Report to ATS/AIS/SAR/SG/10~~ ~~d) Establish a Project Team to develop a plan for a revised ATS route structure taking into consideration aircraft capabilities and the new CNS/ATM enhancements.~~ ~~EMARSSH/TF established - commenced work~~	~~SCS/TF~~ ~~United States~~ ~~BB/TF~~ ~~EMARSSH/TF~~ ~~EMARSSH/TF~~	~~Completed~~ ~~Completed~~ ~~Completed~~ ~~11/02~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
5	RAN/3 C 13/14 APANPIRG D 2/35	Subject: AIS Automation Task: Develop a Regional AIS Automation Plan	B	~~a) Information on AIS automation to be collected and reviewed~~ ~~b) Survey questionnaire concerning details of automated AIS systems developed by ATS/AIS/SG/4 to be distributed to States~~ ~~c) Review of survey results~~ 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~~ b) Develop AIS Guidance Material for static data procedure	~~ICAO~~ ~~ICAO~~ ~~AA/TF~~ AA/TF ATS/AIS/SAR/SG ~~A~~ ATS/AIS/SAR/SG	~~Completed~~ ~~Completed~~ ~~Completed~~ On-going ~~Completed~~ ongoing
6	APANPIRG C 2/31	Subject: Provision of AIS within the Region Task: Examine and comment on the provision of AIS and develop a programme to improve the provision of AIS within the region	B	a) Increase AIS support from the ICAO APAC Office ~~b) Update Part 6 of Doc 8700 and 8755 (ANPs for the Asia pacific Region)~~ b) Regional AIS seminars to be conducted periodically c) Review the use of Internet for aeronautical information taking into account results of the ICAO AUPI Study Group and update Chapter 4 to the AIS Guidance Manual	APANPIRG ICAO ~~ICAO~~ ICAO ~~**AATF**~~ ATS/AIS/SAR/SG	On-going ~~Completed~~ **ongoing** ~~Dec. 2002~~
~~7~~	~~APANPIRG D 4/40~~	~~Subject: Lack of inclusion of CNS/ATM requirements in regional plans~~ ~~Task: a) Ensure regional plans include CNS/ATM requirements for the provision of ATS~~ ~~b) Develop "Concept of Operations" for application in an initial ADS environment~~	~~A~~	~~a) Monitor implementation of new CNS/ATM in the ATS/AIS field~~ ~~b) Australia to present Working Paper to ATS/AIS/SAR/SG/8~~	~~ATS/AIS/SAR/SG~~ ~~Australia~~	~~Completed~~ ~~Completed~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
8	~~RAN/3 C 6/5~~	~~Subject: Lack of procedures and guidelines for the introduction of reduced vertical separation minima (RVSM) above FL290 in the region~~ ~~Task: Develop appropriate procedures, guidelines and implementation plans for the introduction of RVSM and evaluate benefits~~	A	~~a) Progress of IPACG / ISPACG work on RVSM being monitored~~ ~~b) United States to provide update on RVSM plan for Central and North Pacific to ATS/AIS/SAR/SG/8~~	~~ATS/AIS/SAR/SG~~ ~~United States~~	~~Completed~~ ~~Completed~~
	APANPIRG C 3/24 C 9/3 D 9/4	Subject: Implementation of RVSM in the Asia Pacific Region Task: Plan for and facilitate implementation of RVSM, as appropriate, in the Asia Pacific Region		~~a) Form Asia Pacific RVSM Implementation Task Force~~ a) Plan schedule and facilitate implementation of RVSM in the Asia Pacific Region	~~ATS/AIS/SAR/SG~~ RVSM/TF	~~Completed~~ On-going ~~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
~~9~~	~~RAN/3 R 14/3~~	~~Subject: Inappropriate structure of regional Air Navigation Plan and untimely amendment process~~ ~~Task: Develop detailed contents for the Asia Pacific FASID~~	~~A~~	~~a) Develop detailed content for the Facilities and Services Implementation Document (FASID) as a matter of priority~~ ~~b) Prepare draft outline for the Asia pacific FASID~~	~~ATS/AIS/SAR/SG~~ ~~ATS/AIS/SAR/SG~~	~~Completed~~ ~~Completed~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
10	APANPIRG D 3/12 D 3/2 C 4/2	Subject: Inappropriate provision of SAR facilities, services and procedures within the Asia Pacific Region Task: a) Review SAR facilities, services and procedures in the region b) Assist States without SAR services to provide SAR coverage	A	~~a) Review the SAR system of States in the Asia Region and advise ATS/AIS/SG~~ ~~b) Analyze and review the results collected~~ c) ~~Monitor the implementation of the PAC SAR SIP recommendations~~ a) Encourage States to delegate or negotiate SAR services b) Identify deficiencies	~~States~~ ~~ICAO~~ ~~ATS/AIS/SAR/SG~~ ~~ATS/AIS/SAR/SG~~ ICAO ATS/AIS/SAR/SG	~~Completed~~ ~~Completed~~ ~~Completed~~ On-going On-going
11	APANPIRG D 3/21 C 9/2	Subject: Transition to WGS-84 in the Asia Pacific Region ~~Task: Develop a plan and assist with the transition to WGS-84~~ Task: Monitor and facilitate the transition to WGS-84	A	~~a) Information for planning to be provided by States~~ ~~b) Information to be collated for presentation to ATS/AIS/SG~~ ~~c) Transition plan and assistance to States to be considered~~ 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	~~States~~ ~~ICAO~~ ~~ICAO~~ ATS/AIS/SAR/SG States ICAO ATS/AIS/SAR/SG ATS/AIS/SAR/SG	~~Completed~~ ~~Completed~~ ~~Completed~~ On-going On-going On-going
12	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.		~~a)~~ ATS routes identified as not implemented ~~are considered by ATS/AIS/SAR/SG~~ b) ~~ATS/AIS/SAR/SG~~ Monitor progress c) Identify deficiencies	ATS/AIS/SAR/SG ATS/AIS/SAR/SG ATS/AIS/SAR/SG	2004 On-going On-going
~~13~~	~~APANPIRG C 2/33 C 6/19~~	~~Subject: Access to Japan Area "G"~~	~~A~~	~~Secretariat to follow-up and report progress. No further action possible by ATS/AIS/SAR/SG~~	~~ICAO~~	~~On-going~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
14	~~APANPIRG C 2/33~~ ~~C 7/7~~	~~Subject: NOTAM System of GPS RAIM outages~~ ~~Task: Develop a position for dealing with notification~~	B	~~a) Develop a position at ATS/AIS/SAR/SG/6~~ ~~b) Develop implementation plan~~ ~~(overtaken by technology enhancements)~~	~~ATS/AIS/SAR/SG/6~~ ~~ATS/AIS/SAR/SG~~	~~Completed~~ ~~Completed~~
15	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.		a) The SAR Matrix is reviewed by States at all ATS/AIS/SAR/SG Meetings b) States to update the Matrix by providing information to ICAO by 30 April each year	ATS/ASI/SAR/SG States ICAO	On-going On-going
16	RAN/3 R 7/18 APANPIRG C 8/9	Subject: SAR training and exercises Task: Facilitate SAR training and exercises	B	~~a) Follow-up action on RAN/3 Recommendation 7/18~~ a) Co-ordinate SAR training available in the region b) Facilitate international participation in SAR exercises ~~c) Australia to organize an international SAREX~~	~~ICAO~~ ICAO States ~~Australia~~	~~Completed~~ On-going 2003 ~~Completed~~
17	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 ATS/AIS/SAR/SG ICAO	On-going On-going On-going
~~18~~		~~Subject: Need for development of standardized ATS Letters of Agreement (LOA)~~ ~~Task: Develop a suitable LOA for Asia Pacific Region wide use~~	~~A~~	~~a) Review draft LOAs as contained in Part II, Chapter 2 of the ATS Planning Manual (Doc 9426) and WP/22 presented to ATS/AIS/SAR/SG/5~~ ~~b) Provide comments to the Regional Office before the next meeting~~ ~~c) Guidance material promulgated by ICAO for use by States~~	~~ATS/AIS/SAR/SG~~ ~~States~~ ~~ICAO~~	~~Completed~~ ~~Completed~~ ~~Completed~~

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

Agenda Item 8: SEACG/11 issues

a) Review action taken since SEACG/10 Meeting; and

b) Review current operations across South-East Asia and identify problem area

8.1 **Status of Action Items arising from SEACG/10**

8.1.1 The meeting recalled that the 11th Meeting of the South East Asia ATS Coordination Group (SEACG/11) was postponed due to the SARS affecting many Southeast Asian States.

8.1.2 The opportunity was taken by the meeting to review the Action Agreed Items of SEACG/10 as follows:

a) with respect to the implementation of RNP 10, 50NM lateral separation in the South China Sea area, the meeting noted that the safety requirements have already been met. States concerned are encouraged to coordinate with their adjacent neighbors, include the 50NM lateral in their Letters of Agreements and advise ICAO when completed. Once all States have done so, ICAO will advise a uniform date for implementation of 50NM lateral separation in the South China Sea airspace;

b) with regard to radar monitoring in the area adjoining the Jakarta/Singapore FIRs, Singapore will discuss this issue with Indonesia and report progress to ICAO;

c) with regard to the previous request from Brunei/Darussalam for a shorter ATS route from Brunei to Middle East States, the meeting was advised that this request is suspended following further advice from Royal Brunei Airways;

d) the meeting was advised that Malaysia has established ATS route Y331 between TAXUL and PIBOS on 31 October 2002;

e) Malaysia and Brunei/Darussalam have deleted that portion of G580 between Brunei and VJN and retained that portion of the route as B348;

f) reference the establishment of RNAV route to replace B584 between Kota Kinabalu and VINIK, Malaysia has taken action and upgraded theat portion to RNAV with the designator of M522; and,

g) the meeting was advised that the VSAT link between Ho Chi Minh and Kuala Lumpur which supports the ATS Direct Speech Circuit between both ACCs, has been upgraded and is working satisfactorily.

Agenda Item 9: Any other business

9.1 **Revision of the Title of the ATS/AIS/SAR Sub-Group**

9.1.1 This meeting considered a proposal by the Secretariat to change the title of the ATS/AIS/SAR Sub-Group to the ATM/AIS/SAR Sub-Group.

9.1.2 The meeting recalled that the ATS/AIS Sub-Group was established by the first meeting of APANPIRG in April 1992 with the following Terms of Reference:

a) Review and identify any shortcomings or deficiencies that impede the implementation or provision of efficient air traffic services and/or aeronautical information services in the ASIA/PAC Regions; and

b) On the basis of a) above, make specific recommendations aimed at improving air traffic services and aeronautical information services through the use of existing procedures and facilities or, through modernization programmes and evolutionary introduction of new technologies and procedures.

9.1.3 The Sub-Group work programme included consideration of any problems and to make specific recommendations concerning the provision of Search and Rescue Services in the regions concerned.

9.1.4 The APANPIRG/6 meeting (1995) under Decision 6/16 revised the title of the ATS/AIS Sub-Group to include SAR, which was done to correctly reflect the activities of the group.

9.1.5 The meeting noted that the work of the ATS/AIS/SAR/SG had expanded to address airspace management (ASM), air traffic flow management (ATFM) issues, ATM enhancement measures including datalink systems such as ADS and CPDLC. Also, airspace safety management systems were an important consideration especially since this was included in Amendment 41 to Annex 11 effective on 28 November 2002.

9.1.6 It was recalled that as defined in Annex 11, ATS is a generic term meaning variously, flight information service, alerting service, air traffic advisory service, and air traffic control service (area control service, approach control service and aerodrome control services). All of these functions along with ASM and ATFM are elements within the ATM system as described in the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750) and the ATM Operational Concept Document. In this regard, it would be appropriate to use the term ATM as the title for the Sub-Group.

9.1.7 In regard to AIS, the major objective of AIS is to ensure the flow of information necessary for the safety, regularity and efficiency of international civil aviation. It provides essential support to the ATM system, which is dependent upon AIS to function. In view of the important role of AIS and its impact on the safety of the ATM system and flight operations, the meeting agreed that AIS should be retained as a separate entity.

9.1.8 In regard to SAR, this is not included as an element of ATM in the Global Plan or the ATM Concept Document, therefore, should be kept separate from ATM, although it is closely related to ATM activities. Accordingly, the meeting agreed that it was appropriate to continue to use SAR in the title of the Sub-Group and address SAR matters in the ATM/AIS/SAR Sub-Group.

9.1.9 In light of the foregoing, the meeting considered it was appropriate and timely to revise the title of the ATS/AIS/SAR Sub-Group to the ATM/AIS/SAR Sub-Group. In doing so, the meeting stressed that it was important to highlight the importance of AIS to the ATM system and States should not lose sight of the need to address AIS issues with equal priority as other ATM matters, and to provide appropriate experts at ATM/AIS/SAR Sub-Group meetings. The meeting

formulated the following Draft Decision:

Draft Conclusion 13/13 – Revision to the Title of ATS/AIS/SAR Sub-Group

That, the title of the ATS/AIS/SAR Sub-Group is changed to the ATM/AIS/SAR Sub-Group to more adequately reflect the activities of the group.

9.2 **Japan/Russian Federation Interface Issues**

9.2.1 Japan advised the meeting of the successful conclusion of a long-standing issue relating to the implementation of a new route from the Russian Far East into the airspace of Japan. The alignment of this route, known during the planning phase as Kamchatka Four, and the associated transfer-of-control point had been agreed by Japan and the Russian Federation.

9.2.2 An ICAO route identifier (B932) had been allocated to the route and demonstration flights would be conducted during the period 7 August - 27 November 2003. The purpose of the demonstration flights was to assess communications capabilities and verify operational procedures.

9.2.3 Both Japan and the Russian Federation had published an AIC, dated 12 June 2003, containing full details regarding the alignment of B932, timeframe for operation, altitude assignments, lost communication procedures and points of contact for users wishing to participate in the demonstration programme.

9.2.4 Additionally, Japan advised the meeting that the alignment of the FIR boundary between Sapporo and Yuzhno-Sakhalinsk was revised on 31 October 2002.

9.2.5 IATA expressed appreciation to both Japan and the Russian Federation for their efforts in bringing this difficult issue to a successful conclusion.

9.3 **Navigation Error Monitoring for the South China Sea**

9.3.1 Singapore advised the meeting of the results of their analysis of 12-months of navigation error monitoring reports received for designated areas of the revised South China Sea ATS Route structure. Reports had been supplied on a monthly basis by Hong Kong, Philippines and Singapore, with Singapore undertaking the analysis of the data and comparison to the Target Level of Safety for the airspace concerned.

ATS Route	Between	Reported By	# of Movements	Reporting Period	# of Reported Navigation Errors
M771	DULOP/DUMOL	Hong Kong	13,430	Jun02-May03	Nil
L625	AKOTA/AVMUP	Philippines	13,384	Apr02-Mar03	Nil
N884	LULBU/LEGED	Philippines	5,442	Apr02-Mar03	Nil
N892	MELAS/MABLI	Singapore	9,418	Jun02-May03	Nil
Cumulative Total			**46,323**		**NIL**

9.3.2 The meeting noted with satisfaction the demonstrated high standard of navigation accuracy on the revised South China Sea ATS route structure and the consequent positive impact with respect to the regionally agreed Target Level of Safety. Additionally the meeting expressed its appreciation to Singapore for accepting this important analytical task on an on-going basis.

Agenda Item 10: Date and venue for next meeting

10.1 The venue and date for the next ATS/AIS/SAR Sub-Group meeting will be advised after consideration by APANPIRG/14.

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LIST OF WORKING PAPERS (WPs) and INFORMATION PAPERS (IPs)

WORKING PAPERS

WP No.	Agenda Items	Presented by	Subject
1	1	Secretariat	Provisional Agenda
2	4	Secretariat	Review ATS Co-ordination Meetings
3	3	Secretariat	Implementation of ATS Routes
4	3 & 6	Secretariat	Monitor and Facilitate the Transition to WGS-84
5	4	Secretariat	Revised South China Sea ATS Route Structure – Post Implementation Update
6	3	Secretariat	Search and Rescue Matters
7	3	Secretariat	Update on EMARSSH
8	3	Secretariat	Inclusion of SIGMET in VOLMET Broadcasts
9	6	Secretariat	List of Air Navigation Deficiencies
10	7	Secretariat	ATS/AIS/SAR Task List
11	3	Secretariat	Carriage and Operation of Pressure-Altitude Transponders and Airborne Collision Avoidance Systems II (ACAS II)
12	3	Secretariat	Review of Outstanding Conclusions and Decisions of APANPIRG
13	3	Secretariat	Implementation of Lateral Offsets
14	2	Secretariat	APANPIRG/13 Report and ANC/Council Actions
15	3	Secretariat	Meteorological Support to ATM Large-Scale Weather Deviations Contingency Procedures
16	4	Secretariat	FANS Action Team for the Bay of Bengal (FAT-BOB) and for the Western Pacific/South China Sea
17	3	Chairman RVSM/TF	Implementation of Reduced Vertical Separation Minimum (RVSM) in the Asia Pacific Region
18	4	Rapporteur	ADS-B Study and Implementation Task Force Meeting
19	3	Secretariat	Revision of Guidance Materials on CNS/ATM
20	4	Rapporteur	AIDC Review Task Force Meeting
21	3	Secretariat	APANPIRG Contributory Bodies, Associated Groups and Related Issues
22	4	Secretariat	Contingency Routing Scheme for Asia/Middle East/Europe – 2003 (CRAME-03, Version II)
23	4	Secretariat	Regional Preparatory Meeting for the Eleventh Air Navigation Conference

WP No.	Agenda Items	Presented by	Subject
24	3	Secretariat	Proposed Amendment to the Guidance Material on the implementation of a 300m (1000ft) Vertical Separation Minimum (VSM) for Application in the Airspace of the Asia and Pacific
25	8 a)	Secretariat	Status of Action Items arising from SEACG/10
26	2	Secretariat	Key Priorities for CNS/ATM Implementation in the Asia/Pacific Region
27	4	IATA	Enhancement of Airspace Capacity between Hong Kong, Tokyo and beyond to North America
28	4	Australia, New Zealand, China, Republic of Korea & Japan	AIS Implementation Task Force
29	4	United States	Altitude Reservations
30	4	United States	Lost Communication Procedures
31	4	United States	Annex 12 – Search and Rescue
32	4	Australia	Covert and Overt Unlawful Interference Operational Communication Protocols
33	4	Australia	Management of Waypoint Name Allocation
34	9	Australia	Satellite Voice Communication in ATS: The need for a Global Policy
35	4	China	Progress on Facility Construction in the Sanya AOR and other significant situations
36	4	Australia	Automatic Dependent Surveillance Broadcast (ADS-B) for Air to Ground Surveillance
37	8 b)	IATA	Airline Requirements for the South China Sea Route Structure
38	4	IATA	IATA Proposals to the Bay of Bengal States
39	9	Secretariat	Change the name of ATS/AIS/SAR Sub-Group to ATM/SAR Sub-Group
40	4	IATA	RNP Flight Planning Requirement in Australia

FLIMSY

Flimsy No.	Agenda Items	Presented by	Subject
1	3	Secretariat	Draft Terms of Reference for ATS Route Network Review Task Force (ARNR/TF)

INFORMATION PAPERS

IP No.	Agenda Items	Presented by	Subject
1	-	Secretariat	List of Working Papers (WPs) and Information Papers (IPs)
2	3	Secretariat	AIS Seminar 2002
3	8	United States	Summaries of Meetings of IPACG and ISPACG
4	3	Secretariat	Report of APASM TF/6
5	4	Secretariat	European AIS Database (EAD) – Addressing Requirements
6	4	United States	Search and Rescue Agreements
7	4	United States	Search and Rescue Exercises
8	8	United States	Transfer of Responsibility for Search and Rescue Services within the United States
9	9	United States	U.S. Safety Management System Development
10	4	United States	Internet Communications of Aviation Weather and NOTAMs
11	9	United States	Strategic Lateral Offset
12	4	United States	Contingency Planning
13	4	Australia	Notification of Annex Differences
14	4	Australia	Australian Search and Rescue (AusSAR) Update
15	9	Australia	Pacific Island Region Aviation Accident Preparedness Workshop, Nadi, Fiji, 21-24 October 2002
16	3	Australia	Development of an RNP-4 Approval Process for Oceanic and Remote Airspace Operations in support of 30/30 NM Separation Minima
17	4	Australia	Aeronautical Information Intellectual Property Strategy
18	4	United States	Advanced Technologies and Operational Procedural (ATOP) Update