INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE FOURTEENTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/14)

BANGKOK, THAILAND - 4 – 8 AUGUST 2003

The views expressed in this Report should be taken as those of the APANPIRG and not of the Organization. This Report will be presented to the Air Navigation Commission/Council and any formal action taken will be published in due course as a supplement to the Report.

Approved by the Meeting
and published by the ICAO Asia and Pacific Office

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PART I - HISTORY OF THE MEETING

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1.1 Introduction

1.1.1 The Fourteenth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/14) was held in Bangkok, Thailand from 4 to 8 August 2003 at ICAO Asia and Pacific Office.

1.2 Attendance

1.2.1 The meeting was attended by 81 participants from 14 Member States, 7 other Contracting States of the ASIA/PAC Regions and 4 International Organizations.

1.2.2 A list of participants is given at Attachment 1 to the Report.

1.3 Opening of the meeting

1.3.1 The ICAO Regional Director, Mr. L.B. Shah, in welcoming the participants from the APANPIRG member States, non-member States and the International Organizations, expressed his gratitude to Mr.W.L. Wong, Director General of Civil Aviation Authority of Singapore, for his personal commitment and time despite his hectic schedule and demands and congratulated Singapore on being successfully elected to the ICAO Council.

1.3.2 Mr. Shah noted that international civil aviation was in a state of severe flux having to cope with rising security threats, dwindling resources, newly born public health hazards and the transitioning through the rapidly emerging conceptual changes in aviation technology that had placed very heavy demands on States as well as industries.

1.3.3 He stated that although APANPIRG had made significant achievements in a number of areas, it was now timely that APANPIRG took a fresh look at things in terms of enhancing its efficiency and productivity.

1.3.4 Mr. Shah underscored the very important issue of management of deficiencies, a subject that was given a lot of attention by ICAO Headquarters. He drew the attention of the participants to the lack of progress in resolving deficiencies and their almost perpetual recurrence that had drawn criticism. He hoped that this issue will be dealt with satisfactorily during the current APANIRG/14.

1.3.5 Mr Shah also took the opportunity to thank the Royal Thai Government for their generosity in providing the new Conference Building which will be ready before end of the year. He requested States to contribute items such as artworks, scientific material or souvenirs typically representative of the State.

1.3.6 The Chairperson, Mr. W.L. Wong in welcoming participants informed that the world was confronted with two major events in 2003 that, although not directly related to aviation but nonetheless had such an enormous negative impact on civil aviation, ie. the war on Iraq and the global outbreak of Severe Acute Respiratory Syndrome (SARS). SARS stood as a health phenomenon, virtually unparalleled in the recent history of civil aviation.

1.3.7 He pointed out that although States may be prepared for such eventualities by establishing reliable contingency plans, but it was only through quick actions and timely provision of remedial measures that had saved the day. In the case of SARS, he noted that the fear of the disease was worse than the disease itself. He observed that the onslaught of SARS had given rise to fresh impetus to APANPIRG to address concerns regarding increasing the efficiency and effectiveness of air transport, currently in an extremely fragile state, without causing undue burden on fellow aviation partners.

1.3.8 Mr. Wong thanked the ICAO Regional Office for the excellent arrangements made for the meeting.

1.4 **Officers and Secretariat**

1.4.1 Mr. W.L.Wong, DGCA, Singapore as Chairperson of the Group presided over the meeting. Mr. Lalit B. Shah, ICAO Regional Director, Asia and Pacific Office, was the Secretary of the meeting assisted by Mr. K. W. Cheong, Regional Officer/AGA from the ICAO Asia and Pacific Office.

1.4.2 The Chairman then invited the meeting for nominations to the positions of the 1st and 2nd Vice-Chairperson of the Group.

1.4.3 The designated member from Malaysia, Mr. Harizan Mohd. Yatim proposed Mr. Liu Ya Jun, Deputy Director General, Air Traffic Management Bureau, Civil Aviation Administration of China for the position of 1st Vice-Chairperson. In proposing , Mr. Harizan highlighted the experience, credentials and achievements of Mr. Liu who was a former alternate representative of China to the ICAO Council and Commissioner of the Air Navigation Commission. The proposal was seconded by the Director General of Civil Aviation, India, Mr. Satendra Singh. The meeting unanimously elected Mr. Liu as the 1st Vice Chairperson.

1.4.4 Ms. Elizabeth Erickson from United States proposed Mr. ‘Ahovaleamoemapa Faletau, Secretary for Civil Aviation, Tonga for the position of 2nd Vice Chairperson. In proposing, Ms Erickson noted that Mr. Faletau had, very ably, chaired the recent 5th ICAO Worldwide Air Transport Conference that was held in Montreal, Canada from 24 –28 March 2003. The proposal was seconded by Mr. Jim Shirley, Head of Airspace, Air Traffic and Aerodrome Standards, Civil Aviation Safety Authority, Australia. The meeting unanimously elected Mr. Faletau as the 2nd Vice-Chairperson of the Group.

1.4.5 The meeting was also assisted by Mr. Shaukat A. Ali, Deputy Regional Director, Mr. H.V. Sudarshan, Regional Affairs Officer, ICAO Headquarters, Mr. Dimitar Ivanov, Regional Officer/MET, Mr. J.E. Richardson and Mr. David Moores, Regional Officers/ATM, Mr. K.P. Rimal and Mr. Li Peng, Regional Officers/CNS, Dr. Paul Hooper, Regional Officer/AT and Ms. Sarangtip Sundarachampaka Regional Officer/Administration from the ICAO Asia and Pacific Office.

1.5 **Agenda of the meeting**

1.5.1 The meeting adopted the following agenda:

Agenda Item 1 Review of Council and ANC actions on APANPIRG/13 Report

Agenda Item 2 ASIA/PAC Air Navigation System and Related Activities

2.1 ATS/AIS/SAR Matters

2.2 CNS/MET Matters

2.3 ATS Co-ordination Groups' Activities

2.4 Other Air Navigation Matters

Agenda Item 3 CNS/ATM Implementation and Related Activities

Agenda Item 4 Deficiencies in the Air Navigation Field

Agenda Item 5 Review of Outstanding Conclusions and Decisions of APANPIRG

Agenda Item 6 Develop Future Work Programme

Agenda Item 7 Any other business

1.6 **Presentation on History of APANPIRG**

1.6.1 The Meeting was apprised that during discussions between the Council members and Chief of the Regional Affairs Office, ICAO Headquarters, a request was made to arrange a presentation on the African Planning and Implementation Regional Group (APIRG) dealing with such matters as its history, processes and achievements. It was felt that such a presentation would also be useful in revisiting some of the issues pertaining to APANPIRG.

1.6.2 With this objective in mind, Mr. Shah provided a power-point presentation on the “History of APANPIRG”. The meeting was apprised on, inter alia, the establishment of APANPIRG in 1991, members of the Group, frequency of meetings, Terms of Reference, the important role of Contributory Bodies and the achievements of APANPIRG.

1.6.3 The Meeting was briefed on entire review process commencing from the deliberations of APANPIRG as contained in the Report to the review by the Air Navigation Commission Working Group on Regional Plans (ANC WG-RPL) and its subsequent validation by the ANC and approval by the ICAO Council.

1.7 **Working Arrangements, Language and Documentation**

1.7.1 The Group met as a single body throughout the meeting. The working language of the meeting was English inclusive of all documentation and this Report. Information Papers (IPs) and Working Papers (WPs) presented at the meeting are listed in the Attachment 2 to this Report.

1.8 **Conclusions and Decisions - Definition**

1.8.1 The APANPIRG records its actions in the form of Conclusions and Decisions with the following significance:

1) Conclusions deal with matters which, in accordance with the Group’s Terms of Reference, require the attention of States or actions by ICAO in accordance with established procedures; and

2) Decisions deal with matters of concern only to the APANPIRG and its contributory bodies.

List of Conclusions and Decisions are given on pages i-5 to i-8.

1.9 **Terms of Reference of APANPIRG**

1.9.1 The revised Terms of Reference of APANPIRG approved by the Council of ICAO (4th Meeting of its 159th Session on 28 February 2000) are as follows

The objectives of the Group are to:

a) ensure the continuous and coherent development of the plans for ASIA/PAC Region and ensure harmonization with global plan and those of adjacent regions;

b) develop proposals for improvements in the implementation of the ASIA/PAC Air Navigation Plan on the basis of new technological developments;

c) identify specific problems in the air navigation field and propose in appropriate form, action aimed at solving these problems; and

d) develop, with due regard to the primacy of safety, business cases for various options taking into account the environmental benefits and the need to facilitate financing of preferred options in planning and implementation of air navigation facilities.

To meet these objectives the Group shall:

(a) keep under review, and propose when necessary target dates for implementation of facilities, services and procedures. This will ensure the co-ordinated development of the Air Navigation System in the ASIA/PAC Region;

(b) assist the ICAO Regional Office providing services in the ASIA/PAC Region in its assigned task of fostering implementation of the ASIA/PAC Regional Air Navigation Plan;

(c) monitor developments in the air navigation field and develop proposals for consequential improvements in air navigation in the ASIA/PAC Region;

(d) review any shortcomings in the Asia and Pacific Regional Air Navigation System and develop recommendations for remedial action;

(e) originate, as necessary, in co-ordination with affected State, amendments to the Plan for the ASIA/PAC Regions;

(f) keep under review the Statement of Basic Operational Requirements and Planning Criteria. Recommend to the Air Navigation Commission such changes to them as may be required in the light of developments mentioned in (c); and

(g) use an appropriate mechanism to prepare cost/benefit analysis and business cases inclusive of environmental assessments and provide related guidance material in support of "prototype" sets of planned facilities and services. The Group may utilize the services of financial institutions, as required, on a consultative basis.

List of Conclusions

List of Conclusions (Cont'd)

Conclusions 14/24	-	**Preparation for World Radio Communication Conference 2007 (WRC-2007)**
Conclusions 14/25	-	**Implementation of the SADIS second-generation system (SADIS 2G)**
Conclusions 14/26	-	**Discontinuation of the current first-generation SADIS two-way VSAT programme**
Conclusions 14/27	-	**SADIS strategic assessment tables**
Conclusions 14/28	-	**Use of the SADIS Internet Back-up Service by ISCS User States**
Conclusions 14/29	-	**Cost Recovery for the utilization of WAFS by the States**
Conclusions 14/30	-	**States' Actions for the Migration to the Operational Use of GRIB and BUFR coded WAFS Products**
Conclusions 14/31	-	**Automatic Production of SIGWX Charts from BUFR Coded WAFS Products**
Conclusions 14/32	-	**GRIB/BUFR Training**
Conclusions 14/33	-	**Amendment of regional procedures related to WAFS in the ASIA/PAC Basic ANP and FASID**
Conclusions 14/34	-	**Notification for significant changes in the WAFS operation**
Conclusions 14/35	-	**Inclusion of 9-hour TAF in the ROBEX exchange**
Conclusions 14/36	-	**ASIA/PAC Regional SIGMET Guide**
Conclusions 14/37	-	**Amendments to the SIGMET format**
Conclusions 14/39	-	**Harmonization of the format of volcanic ash and tropical cyclone advisories**
Conclusions 14/40	-	**Amendment to FASID Table MET 1B in regard to the service provided by the meteorological watch office Wellington**
Conclusions 14/41	-	**Implementation of the requirement for TC advisories by TCAC New Delhi**
Conclusions 14/42	-	**Further development of the ICAO provisions for the tropical cyclone advisories and SIGMETs**

List of Conclusions (Cont'd)

List of Decisions

PART II - REPORT ON AGENDA ITEMS

AGENDA ITEM 1: REVIEW OF ACTIONS TAKEN BY ANC AND THE COUNCIL ON THE REPORT OF APANPIRG/13 MEETING

Agenda Item 1: Review of Action taken by ANC and the Council on the Report of APANPIRG/13 Meeting

1.1 The meeting was presented with actions taken by the Air Navigation Commission and the Council during their review and approval of the Report of the Thirteenth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) held in Bangkok from 9 to 13 September 2002. The meeting noted the specific actions taken by the ANC and the Council as well as the follow-up actions by the States and Secretariat on Conclusions and Decisions of the meeting as contained in **Appendices A and B** to the Report on Agenda Item 1.

1.2 With regard to Conclusion 13/1 regarding inclusion of phraseologies related to RVSM operations in the *Regional Supplementary Procedures* (Doc 7030), the meeting noted that to meet global requirements, the Secretariat, had already commenced the work on an amendment to the PANS-ATM to incorporate applicable RVSM phraseologies to support RVSM implementation worldwide.

1.3 In relation to Conclusion 13/2 concerning development of procedures relating to NOTAM checks and multi-part NOTAM, the meeting was informed that Amendment 32 to Annex 15 — Aeronautical Information Services, which has been already adopted has addressed the issue of NOTAM check list and that, the Secretariat had published the sixth edition of the Aeronautical Information Service Manual (Doc 8126) with the guidance material covering the subject. In respect of the multi-part NOTAM, once the current consultation with States is completed, appropriate amendment to Annex 15 will be prepared for adoption in 2004 and Doc 8126 will be updated accordingly.

1.4 In response to Conclusion 13/3 concerning the use of Internet, the meeting noted that Commission had established a study group 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).

1.5 Sharing the concern expressed by APANPIRG in Conclusion 13/32, the meeting noted that the Council supported the proposal to hold a joint seminar between ICAO and the World Meteorological Organization (WMO) to provide training on the quality assurance in the provision of meteorological services to aviation in the ASIA/PAC Region during 2003

1.6 The meeting thanked the Council and Air Navigation Commission for their valuable guidance on various activities of the APANPIRG and decided that it would be taken into account in the development of ongoing action plan of the region.

Conclusions/Decisions of APANPIRG/13 in ATS/AIS/SAR Fields

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~~	~~ANC~~	~~**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.~~ ~~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.~~	~~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~~
C 13/2	ANC	**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). Noted the conclusion and requested the Secretary General to take this into account when updating 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
~~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 being circulated to States and international organizations.	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. Noted the conclusion and requested the Secretary General to take appropriate action.	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
~~C 13/8~~	~~ANC~~	~~**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.~~ ~~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.~~	~~ICAO Headquarters to amend Annexes 11 and 15 – intended applicability date 27 November 2003~~	~~Completed~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
D 13/9		**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.	Task Force suspensed ~~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 completed its work and presented the result to the ATS/AIS/SAR/SG, CNS/MET/SG and to the APANPIRG/14 meetings 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.	Ongoing
~~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~~	~~Closed~~
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.~~	~~.The revised Plan has been circulated to 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 has been 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 recommended the establishment of a RASMA SG to APANPIRG/14.~~	~~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. 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.	The Deficiencies Task Force has been established and the first meeting was held on 21 July 2003 A second meeting of the Task Force to be held in the 1st quarter of 2004.	Ongoing Ongoing Ongoing
	ANC			

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.		
	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.	a) A meeting of the BBACG and FAT-BOB is scheduled on 8-12 September 2003. b) A meeting of the SEACG and FAT-SEA is scheduled on 8-12 December 2003.	Ongoing Ongoing

Appendix B to the Report on Agenda Item 1

CONCLUSIONS/DECISIONS OF APANPIRG/13 IN THE AOP/AT/CNS/MET FIELD

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
~~C13/11~~		~~**Amendment to the Table CNS 1A - AFTN Plan**~~ ~~That, the Table CNS 1A contained in ASIA/PAC FASID be replaced with an updated Table CNS 1A provided in Appendix A to the Report on Agenda Item 2.2 in accordance with established procedure.~~	~~Amendment proposal APAC 02/7 COM was processed to replace the existing Table CNS 1A contained in Part IV of the ASIA/PAC FASID. Comments provided by States in response to the amendment proposal were incorporated in the Table. States were notified of the approval of the proposal in December 2002.~~	~~Completed~~
C 13/12		**Need to monitor AFTN circuit performance** That, States concerned closely monitor performance of the following AFTN circuits and coordinate upgrading the circuits capacity, in accordance with the AFTN plan. 1. Colombo/Male 2. Colombo/Singapore 3. Mumbai/Colombo 4. Mumbai/Nairobi 5. Kuala Lumpur/Chennai 6. Tokyo/Singapore 7. Tokyo/Moscow	States concerned were requested to monitor loading condition and upgrade circuit capacity as specified in Table CNS-1A AFTN Plan. Consequently, - Colombo/Male – upgrading planned for 12/03 - Colombo/Singapore – upgraded to 9600bps 12May03 - Mumbai/Colombo – upgraded to 64 kbps 19Mar.03 -Mumbai/Nairobi – India is ready to upgrade. International coordination is being under taken. - Kuala Lumpur/Chennai – upgraded to 9600 bps in April 03. - Tokyo/Singapore – upgraded to 9600bps 15Jan03; - Tokyo/Moscow – States closely monitoring circuit loading. Coordination being carried out between States concerned for upgrading the circuit.	Ongoing
~~C13/13~~		~~**Conclusion 13/13 - Use of VSAT Technology for AFS**~~ ~~That, States in the Bay of Bengal area, implement AFS circuits using VSAT technology as a matter of high priority to enhance safety and efficiency of aircraft operations and to meet AFS communication requirements for data/voice communications.~~	~~The Conclusion was presented to States concerned at COM Coordination meeting for Bay of Bengal area. VSAT technology is being used by several States and between States concerned. Regulatory restriction is still a problem for a State to use VSAT to provide AFS communications.~~	~~Completed~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/14		**Conclusion: 13/14 - ATN Documentation Tree** That, the ATN Planning Document be published in a loose-leaf form to include future amendments to the Document; and the ATN Documentation Tree provided in Appendix B to the report on Agenda Item 2.2 be adopted and included in the ATN Planning Document.	Documentation tree was further updated by the Fifth ATN Transition Task Force meeting held in June 2003. It will be included in the ATN Planning Document in accordance with Conclusion XX of APANPIRG/14	To be completed in 2003
~~C 13/15~~		~~**ASIA/PAC Interface Control Document (ICD) for ATS Message Handling System (AMHS)**~~ ~~That, the ASIA/PAC ICD for AMHS be adopted and published as Issue 1.~~	~~AMHS ICD has been published.~~	~~Completed~~
~~C 13/16~~		~~**Checklist for Implementation of Ground to Ground ATN Infrastructure**~~ ~~That, the Checklist provided in Appendix C to the report on Agenda Item 2.2 be adopted and circulated to States to assist in implementation of the Ground-to-Ground ATN infrastructure.~~	~~The Checklist was circulated to States.~~	~~Completed~~
~~D 13/17~~		~~**Revision of the Subject/Tasks List of the ATN Transition Task Force**~~ ~~That, the updated Subject/Tasks List of the ATN Transition Task Force provided in the Appendix D to the report on Agenda Item 2.2 be adopted.~~	~~The updated Subject/Tasks List was presented to ATNTTF/5 which was held 9-13 June 03.~~	~~Completed~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
~~C 13/18~~		~~**Revision of the Strategy for Precision Approach and Landing Guidance Systems and the Strategy for the Implementation of GNSS Navigation Capability in the Asia/Pacific Region**~~ ~~That, the updated Strategy for Precision Approach and Landing Guidance Systems and the Strategy for the Implementation of GNSS Navigation Capability in the ASIA/PAC region provided in Appendices E and F respectively, to the report on Agenda Item 2.2 be adopted and provided to States.~~	~~The updated Strategies were provided to the States as part of the APANPIRG report. No substantial changes were made to the Strategies which was adopted by APANPIRG/12.~~	~~Completed~~
~~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 Task Force meeting was held in Brisbane, Australia 24-26 March 2003. The result of the meeting was represented to the ATS/AIS/SAR SG/13 held in Bangkok 23-27 June 03 as well as CNS/MET SG/7 and CNS/ATM IC SG/10 meetings.~~ ~~The result of the study is presented to APANPIRG/14 through the report of CNS/MET/SG/7 and CNS/ATM/IC SG/10.~~	~~Completed~~
~~C 13/20~~		~~**24 bit aircraft address**~~ ~~That,~~ ~~a) the ICAO issue a State Letter reminding States of the requirement to maintain aircraft address allocations in accordance with provisions laid down in Annex 10, Volume III and provide 24bit address allocation procedure;~~ ~~b) Japan be encouraged to undertake additional monitoring in the twelve-month period after the issue of State letter to observe changes in the level of compliance; and~~	~~State Letter AP-CNS0105 was issued on 8 May 2003.~~ ~~Procedures to be followed for allocation of 24 bit address were provided to States.~~ ~~Japan continued to monitor the use of 24 bit address and reported findings to the CNS/MET SG/7 and CNS/ATM/IC SG/10 meeting.~~ ~~A working paper outlining detailed procedure was presented to the 39th DGCA Conference. Follow up action was tAn action item was agreed by 39th DGCA Conference.~~	~~Completed~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
		c) the need to enforce the procedure a working paper be presented to the 39th DGCA Conference.		
C 13/21		**Preparation for World Radiocommunication Conference – 2003 (WRC 2003)** That States, a) assign high priority to the aeronautical spectrum management; b) participate in the development of States' position for WRCs at the national level to ensure support to ICAO position; c) ensure, to the extent possible, aviation representatives are included in States delegation to the Asia Pacific Telecommunity (APT) Conference Preparatory Group meetings and at WRC 2003; and d) ICAO convene a meeting of designated contact persons before the end of 2002 or early 2003 to review the result of the fourth APT Preparatory Group meeting and to finalize input to the fifth and the last APT Preparatory Group meeting for WRC 2003. e) publish the list of contact persons at the ICAO APAC webpage.	a) States have assigned high priority to the spectrum management; b) Aviation administrations actively participated in the development of States's position; c) Many aviation administrations included their representatives in their national delegations at the APT APG meetings and at WRC2003. d) The Second Regional Preparatory Group Meeting for ITU World Radiocommunication Conference – 2003 (WRC 2003) was held in Bangkok, Thailand from 8 – 10 January 2003. e) A list of designated contact persons in each administration is posted in at the ICAO APAC webpage.	Completed
C 13/22		**ATN related procedures for Basic ANP and FASID** That, the amendments proposed to the regional procedures contained in the Part IV CNS of the ASIA/PAC Basic ANP and FASID relating to ATN materials provided in Appendix H and Appendix I, respectively to be report on Agenda Item 2.2 be adopted and incorporated in the respective documents in accordance with the established procedure.	The amendment proposal APAC 03/8 CNS was processed in June 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~~		~~**Process of review and Notification of difference**~~ ~~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.~~	~~A possibility of conducting a special implementation programme (SIP) is being explored.~~	~~Ongoing~~
~~C 13/24~~		~~**SADIS strategic assessment tables**~~ ~~That,~~ ~~a) the ASIA/PAC SADIS strategic assessment tables, as given in Appendix K to the report, be adopted and forwarded to the SADISOPSG for planning the future SADIS bandwidth requirements; and~~ ~~b) the SADISOPSG be invited to consider amendment to the format of the SADIS Strategic Assessment Tables so as to include explicitly the requirements for the Volcanic Ash (FV) and Tropical Cyclone (FK) advisory messages.~~	~~The subject matter was discussed by the SADISOPSG/8 meeting, July 2003.~~	~~Completed~~
~~C 13/25~~		~~**Regional survey on the States' plans for transition to GRIB and BUFR coded WAFS products**~~ ~~That, ICAO carry out a regional survey to assess the plans of the SADIS and ISCS user States in the ASIA/PAC Regions to upgrade/replace their workstations and software used for handling WAFS data, and the dates the new equipment and the software capability to decode and display GRIB and BUFR data is expected to be operational.~~	~~Regional Survey was carried out and report presented at CNS/MET SG/7.~~	~~Completed~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
~~C 13/26~~		~~**Amended ASIA/PAC WAFS Transition Plan and Procedures**~~ ~~That, the ASIA/PAC WAFS Transition Plan and Procedures be amended as shown in Appendix L to the report to reflect the changes in the plans and schedules of the two WAFCs in transition to the final phase of WAFS.~~	~~The WAFS Transition Plan and Procedures document has been amended.~~	~~Completed~~
~~D13/27~~		~~**TORs of ASIA/PAC WAFS Transition Task Force**~~ ~~That, the TORs and Work Programme for the ASIA/PAC WAFS Transition Task Force be agreed as given in Appendix M to this report.~~	~~The TORs of the WAFS/T TF have been amended.~~	~~Completed~~
~~D 13/28~~		~~**ASIA/PAC OPMET Exchange Task Force (OPMET/E TF)**~~ ~~That, an OPMET Exchange Task Force (OPMET/E TF) be established with the terms of reference, work programme and composition as given in the Appendix N to the Report.~~	~~The OPMET/E TF has been established and held its first meeting in February 2003.~~	~~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.~~ ~~**ANC:** *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.*~~	~~The follow-up action has been taken by the HQs, since the subject of the conclusion was of concern of all ICAO regions.~~	~~Closed~~ ~~*Note: Action overtaken by HQs.*~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/30		**Regional survey on the current status and future plans of States to process the MET component of ADS Reports** That, ICAO carry out a regional survey to assess the current status and future plans of the States in the ASIA/PAC Regions to process the MET component of the ADS message and forward the data to the WAFCs and to assess if the data is quality controlled.	The Survey is to be carried out by the end of 2003.	On-going
~~D 13/31~~		~~**ASIA/PAC Volcanic ash Task Force (VA TF)**~~ ~~That, a Volcanic ash Task Force (VA TF) be established with terms of reference and work programme as given in the Appendix O to the Report.~~	~~The Volcanic Ash TF has been established and provided a report to CNS/MET SG/7.~~	~~Completed~~
C 13/32	C	**QA MET seminar for ASIA/PAC Region** That, ICAO, in coordination with WMO, organizes a seminar on the quality assurance in the provision of meteorological services to aviation in the ASIA/PAC Region during 2003. **Council:** *Noted the conclusion and recognizing that in accordance with the Working Arrangements between the International Civil Aviation Organization and the World Meteorological Organization (WMO) (Doc 7475) this conclusion should be addressed to WMO, requesting the Secretary General of WMO to arrange, in coordination with ICAO, training on quality assurance for provision of meteorological services to aviation in the ASIA/PAC Region after 2003.*	Action taken by the HQs. WMO has been invited to organize the seminar in coordination with ICAO. Hong Kong, China, proposed to host the seminar, subject to confirmation by WMO.	On-going
~~D 13/33~~		~~**Amendments to the Terms of Reference and the Subject/Tasks List of the CNS/MET Sub-Group**~~ ~~That, the Term of Reference and Subject/Tasks List of the CNS/MET Sub-Group presented in Appendix P to the report on Agenda Item 2.2 be adopted.~~	~~The TOR and Task List was brought to the attention of the CNS/MET SG/7.~~	~~Completed~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 13/35	ANC	**Amendment to the Statement of BORPC** That, ICAO is invited to consider amendment to the MET part of the Statement of BORPC, as shown in Appendix A to the Report on Agenda Item 2.4.	The task of revising the BORPC will be initiated immediately after the 11th Air Navigation Conference in October 2003 during which the ATM operational concept will be considered.	On-going
~~C 13/36~~	~~ANC~~	~~**Aerodrome Certification**~~ ~~That, States:~~ ~~i) are urged to take appropriate steps to establish the necessary legislation and regulatory procedures needed for certification of aerodromes;~~ ~~ii) where safety management system in aerodromes has been introduced, to share its experience and provide assistance through hosting of conferences, seminars and workshops.~~	~~A workshop was conducted in Brisbane in collaboration with Civil Aviation Safety Authority Australia in August 2002 attended by 45 participants from 15 States and 1 International Organization. The objectives of the workshop were to assist States to effectively implement the critical elements of Aerodrome Certification by means of creating awareness among the States in the regions on aerodrome safety regulatory system, highlighting ICAO Safety Objectives and States' commitment to safety, providing clarification on the guidance materials contained in ICAO Doc 9774 "Certification of Aerodromes" and sharing Australia's experience in Aerodrome Certification and Safety Management System with other States in the region to assist States in establishing regulatory arrangements to comply with the new requirements of Annex 14.~~	~~Completed~~
C 13/37	C	**Need for Adequate Resources for Traffic Forecasting Groups** States provide adequate resources for the APA TFG, which should include the designation of suitable experts to participate in the development of forecasts and regularly attend TFG meetings along with the provision of data and other information required for the development of forecasts.	Canada and Singapore attended the 11th Meeting of the APA-TFG in Bangkok, 30 September to 4 October 2002. Australia continues to provide data, but is unable to make a commitment about sending a representative to future meetings. Thailand has nominated officers to assist in the provision of technical inputs of FIR data.	On-going

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~~	~~Included in agenda items of the Subgroup and addressed~~	~~Completed~~
C 13/40		**Selection of GPS receiver standard for GNSS implementation** That States, a) should give consideration for future GNSS operational approvals and associated operational implementation based on the TSO C145/146 receiver standard; and b) use of TSO C129 remains a valid standard but should not be considered as the basis for future implementation of GNSS.	The Conclusion was brought to the attention of States.	On-going
~~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 included in the List of Key Priorities.~~	~~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	ANC	**Decision 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 1st meeting of the DRTF was conducted from 22-23 July 2003. A total of 10 participants from 6 States and 3 International Organizations attended the meeting. The TF developed a supplement to the Uniform Methodology to be distributed to all concerned for comments; a 2nd meeting is proposed during early 2004 to finalize the procedures and develop further guidelines taking into account comments received from States and Organizations concerned.	On-going

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

AGENDA ITEM 2.1: ATS/AIS/SAR MATTERS

Agenda Item 2: ASIA/PAC Air Navigation System and Related Activities

2.1 **ATS/AIS/SAR Matters**

2.1.1 The meeting reviewed the report of the Thirteenth Meeting of the APANPIRG Air Traffic Services/Aeronautical Information Services/Search and Rescue Sub-Group (ATS/AIS/SAR/SG/13) which was held at the ICAO Asia and Pacific Regional Office, Bangkok, Thailand from 23 to 27 June 2003, as well as working/information papers covering various ATS/AIS/SAR issues. The meeting expressed its appreciation for the work progressed by the Sub-Group.

RVSM Implementation

2.1.2 The meeting reviewed the work of the RVSM Task Force since the ATS/AIS/SAR/SG/12 Meeting (June 2002).

2.1.3 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

Western Pacific/South China Sea Implementation

2.1.4 The meeting recalled that 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

2.1.5 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.

2.1.6 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

2.1.7 The percentage of operations conducted by RVSM-approved operators and aircraft in the Western Pacific/South China Sea area was 91 percent.

Safety Assessments

2.1.8 The meeting recalled that 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

2.1.9 The AIP Supplements were published in October 2001 and July 2002 for Phase I and Phase II implementation respectively.

RVSM Website

2.1.10 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 the Main issues arising from RVSM Task Force/18

2.1.11 The RVSM TF/18 meeting provided a one year review of Phase I, implemented on 21 February 2002, and a 90 day review of Phase II, implemented on 31 October 2002, in the West Pacific and South China Sea areas.

Review of implementation in (WPAC/SCS)

2.1.12 Reports on RVSM operations in the WPAC/SCS areas following Phase I and Phase II implementation were provided. The meeting noted that RVSM was implemented smoothly and no

major problems had arisen. Overall, RVSM had enhanced efficiency of operations and flight safety. The use of the modified single alternate Flight Level Orientation Scheme (FLOS) provided a highly satisfactory arrangement for the South China Sea ATS route structure, in particular for the six parallel routes and crossing routes.

Harmonization of FLOS between WPAC/SCS and Bay of Bengal areas

2.1.13 The meeting was advised that harmonizing the FLOS between the WPAC/SCS and Bay of Bengal areas was a major concern. In this regard, the modified single alternate FLOS operating on the SCS routes, and the single alternate FLOS to be introduced in the Bay of Bengal and Beyond area and operating in adjacent FIRs, would need to be the subject of a thorough study and review before a decision could be made to change from the modified single alternate to the single alternate FLOS for the SCS area. It was noted that the single alternate FLOS was the system used in all other areas of the Asia/Pacific Region, and under the present mixed FLOS arrangement, transition procedures were required for aircraft operating from one FLOS area to the other.

2.1.14 The meeting noted the concern of States who conduct transition procedures in the FIRs involved. However, until the study and review was completed, the meeting agreed that no change should take place to the present FLOS arrangement in the SCS area, and disruption to operations at this stage should be avoided. However, transition procedures would need to be in place and training completed before implementation of RVSM in the Bay of Bengal on 27 November 2003. Special attention would need to be given by States concerned to transition issues. In this regard, a special ATS coordination meeting on transition matters had been arranged for 3-5 September in Bangkok hosted by AEROTHAI.

2.1.15 The meeting noted that IATA expressed satisfaction with the implementation of the modified single alternate FLOS over the SCS routes. There had been a dramatic drop in the number of ATC related delays to aircraft and more optimal flight levels were now available to both aircraft operating on the parallel routes as well as crossing routes. However, IATA did not object to a change in the FLOS if States so desire, provided that at least the same level of efficiency and safety can be maintained. IATA urged that a comprehensive study be conducted before a decision was made.

2.1.16 IFALPA expressed satisfaction with the SCS RVSM operation and the operational benefits derived. Further, IFALPA supported fully the continuation of the current RVSM operations over the SCS using the modified single alternate FLOS unless a better system could be found.

Reports on Large Height Deviations

2.1.17 The meeting was advised that reporting of large height deviations (LHDs) was an essential safety matter and States were required to submit monthly reports including ‘NIL reports to the Regional Monitoring Agency (RMA), APARMO (MAAR). The meeting noted with concern that some States had not submitted reports, and strongly urged States concerned to submit the reports as soon as possible but not later than 31 July 2003.

2.1.18 The Task Force noted an increase in LHDs due to operational errors (e.g. ATC transfer of control coordination) in a few FIRs. Although the TLS had not been infringed, it was agreed that the States concerned should review current ATC operations and put measures in place to reduce such operational errors.

2.1.19 The meeting noted that IATA had expressed concern on the lack of complete data on LHDs and that some States had not submitted reports for a considerable time. As this was safety related, States should be urged to submit their reports on time. IFALPA agreed with IATA and

requested that ICAO follow-up to advise States of their responsibilities on this matter. The meeting was advised that ICAO had taken the appropriate action.

Updated safety assessment for RVSM implementation in WPAC/SCS area

2.1.20 The traffic sample data (TSD) between 15 November and 15 December 2001, and the LHD reports received from the related FIRs in the WPAC/SCS airspace were used to produce the risk estimates considered in the review. All of the estimates calculated satisfied the agreed TLS value.

Monitoring programme for height-keeping performance

2.1.21 There had been no information received by States on reports from operators on LHDs due to aircraft system failures or pilot error in the WPAC/SCS areas since the implementation of RVSM in February 2002. Also there were no LHDs reported due to adverse weather or typhoon effects on RVSM operations.

Review of Main Issues arising from RVSM/TF/19 (Bay of Bengal & Beyond)

2.1.22 The RVSM TF/19 meeting continued implementation planning for the Bay of Bengal and Beyond area and involved the following FIRs: Chennai, Colombo, Delhi, Dhaka, Jakarta, Karachi, Kathmandu, Kolkata, Kuala Lumpur, Lahore, Male, Mumbai, Singapore and Yangon. Also, the implementation plan calls for coordination with the Middle East Task Force for joint implementation of RVSM in the Asia and Middle East Regions on 27 November 2003.

Review of Implementation Plan

2.1.23 India, Indonesia, Malaysia, Maldives, Nepal, Pakistan, Sri Lanka, and Thailand provided updates on their implementation planning. The meeting updated the implementation status report as shown in **Appendix A** to Agenda Item 2.1.

Coordination with Myanmar

2.1.24 The meeting noted the concern expressed by the Task Force that Myanmar, who was expected to attend the Task Force meeting, was unable to do so, and up-to-date information on their readiness was not available. In this regard, the Task Force recognized that this could lead to serious consequences for the successful implementation of RVSM in the Bay of Bengal and Beyond. Therefore, the Regional Office was requested, as a matter of urgency, to arrange for an ICAO Special ATS Coordination Meeting with Myanmar, neighbouring States concerned and IATA in Yangon, Myanmar, provisionally on 28-29 July 2002 to brief Myanmar on the status of the RVSM Implementation Plan, assess their readiness, and seek ways to provide assistance to implement the RVSM plan as appropriate.

Flight level orientation scheme for the Bay of Bengal and India

2.1.25 The meeting noted that India had provided details of the flight level orientation scheme proposed for their FIRs. This took into account the requirements of international and domestic traffic flows over the Bay of Bengal and India. The FLOS for the RVSM band FL 290-410 inclusive was designed with in-built separation of crossing tracks, and for weather deviations over the Bay of Bengal, which were significant during cyclonic activity in the monsoon season. The meeting reviewed the FLOS and IATA proposed some changes. The meeting was advised that this matter would be the subject of a Special ATS Coordination Meeting to be held Kuala Lumpur hosted by the Civil Aviation Authority Malaysia on 11-13 August 2003.

Publication of AIP Supplement

2.1.26 The Task Force recognized that some States would not be able to publish the AIP Supplement for RVSM implementation until the FLOS for Indian RVSM airspace was agreed. The meeting agreed that the AIP Supplement should be published as soon as possible after the Special RVSM meeting in Kuala Lumpur mentioned above, but not later than 30 September 2003.

Issues Relating to Airworthiness and Operation of Aircraft

2.1.27 The meeting noted that more than 80 percent of international fleets were RVSM-approved. Some domestic and regional airlines were in the process of obtaining RVSM approval. The meeting was advised that this number was expected to increase to the required 90 percent of aircraft prior to the scheduled implementation date of 27 November 2003.

Continuous Airworthiness Programme and Monitoring

2.1.28 The meeting noted that the Task Force had agreed that the continuous airworthiness programme and monitoring should be included in State Authority Procedures and Airline Operations Manual, in order to assess that aircraft RVSM primary means were reliable and complied with the limits of RVSM system tolerances.

Future OPS/AIR Work Programme

2.1.29 The Task Force reviewed the RVSM phraseologies for Controller-Pilot Data Link Communication and agreed these should be standard application for all regions. The meeting requested ICAO to liaise with the FANS Interoperability Teams, with a view to include the phraseologies in the PANS-ATM (Doc. 4444).

Transition Plan for the transfer of RVSM monitoring duties and responsibilities to the Monitoring Agency for the Asia Region (MAAR)

2.1.30 The meeting noted that Thailand had all the infrastructure in place and arrangements completed for MAAR to assume full Regional Monitoring Agency (RMA) responsibilities for the Asia Region. The proposed Transition Plan included the MAAR duties and responsibilities, MAAR geographical area, adoption of the agency's name, date of transfer, and coordination principles with the APARMO before and after the proposed transition date.

2.1.31 The meeting was advised that the Task Force had reviewed and endorsed the Transition Plan and supported the transfer of duties and responsibilities from the APARMO to MAAR.

Review of safety assessment for the implementation of RVSM in Bay of Bengal

2.1.32 The Task Force reviewed the summary of the traffic sample data (TSD) and LHD reports associated with the implementation of RVSM, focusing on the airspace in the Bay of Bengal area. There was concern that some States had not submitted the reports on LHD. As the incomplete data could have an impact on the estimation of operational risk and subsequent comparison to the TLS, the Task Force strongly urged the States involved to submit the missing TSD and LHD reports to the APARMO through MAAR as soon as possible, but not later than 31 July 2003.

2.1.33 The Task Force also reminded all States to continue to provide the APARMO through MAAR with monthly reports on LHDs, including a 'NIL' occurrence report (where applicable).

2.1.34 The Task Force reviewed the preliminary assessment of the readiness of operators and aircraft types for RVSM implementation in the Bay of Bengal and Beyond, based on traffic samples collected between 15 December 2002 and 15 February 2003. In this period, 84.23 percent of operations in the Bay of Bengal area had been conducted by State-approved operators and aircraft. Also, a comprehensive profile of operators and aircraft types expected to operate in the Bay of Bengal airspace where RVSM would be applied was being developed.

2.1.35 MAAR presented a preliminary report of the safety assessment for the implementation of RVSM in the Bay of Bengal and Beyond. However, the report was not conclusive because the traffic sample data and LHD reports were incomplete. As these reports would have a significant impact on the safety assessment for RVSM operations in Bay of Bengal area, States concerned were reminded to provide the information and reports as indicated above. The APARMO and MAAR would provide an update on the safety assessment at the RVSM/TF/20 Meeting.

Harmonization of RVSM Operations with the Middle East Region

2.1.36 The meeting noted that the Task Force had reviewed the plans to harmonize RVSM operations with the Middle East Region. To this end, a second Joint Coordination Meeting with the Middle East RVSM Task Force would be held from 27-28 August 2003 in Abu Dhabi, United Arab Emirates to finalize ATC coordination procedures and Letters of Agreement.

ICAO ASIA/PAC Regional Office Mission to Myanmar

2.1.37 In follow-up to the Task Force's request (paragraph 2.1.24 above refers) for a meeting to be arranged by the Regional Office with Myanmar, a meeting was scheduled at Yangon, Myanmar, on 28 -29 July 2003 hosted by the Department of Civil Aviation (DCA), Myanmar. Unfortunately, at short notice at Myanmar's request, the meeting was cancelled.

2.1.38 Recognizing the importance to obtain up-to-date information on Myanmar's readiness to implement RVSM and to brief them on the status of the Implementation Plan, the Regional Office carried out an ICAO mission to Myanmar on 28-29 July.

2.1.39 The meeting was advised that the ICAO mission met with the Director General and ATS personnel who welcomed the mission and the opportunity to review the ICAO RVSM Implementation plan and their readiness to implement RVSM on schedule. The DGCA confirmed Myanmar's full support for the ICAO RVSM programme, and they would meet all requirements to implement RVSM on 27 November 2003. They had reservations concerning their preparations, primarily for training of ATS personnel and improvements to VHF communication facilities in the Yangon FIR.

2.1.40 An AIC A06/02 had been issued by the Myanmar on 15 June 2002 notifying their intent to operate RVSM in the Yangon FIR on 27 November 2003 and this was still valid. They also included in A06/02 and A03/02, notification with effect from 1 January 2003 that ICAO provisions on ACAS II would apply to the Yangon FIR. Further, Myanmar was prepared to issue the AIP supplement on the detailed RVSM requirements and procedures, and would do so in coordination with the RVSM/TF. The proposed FLOS by India for the Bay of Bengal, met Myanmar's requirements, and subsequent revisions arising from the Kuala Lumpur meeting would be reviewed.

2.1.41 In regard to updating LOAs, this could be progressed with the ATS authorities in coordination with ICAO. Information on large height deviation reports and traffic sample date would be made available as required by the Task Force.

2.1.42 The ICAO mission reported that Myanmar was fully aware of the RVSM requirements and should be in a position to implement and operate RVSM in accordance with the RVSM Task Force Implementation Plan. However, there was a need for priority to be given to training of ATC personnel and this would need to be carried out in a timely manner prior to implementation on 27 November 2003. Also, priority needed to given to improving VHF radio communications for the Yangon FIR. Myanmar had developed transition procedures for the Yangon/Kunming FIRs for ATS route A599 and these would be published and made available to the Task Force in due course.

2.1.43 The meeting was advised that the Civil Aviation Authority of Singapore was prepared to assist Myanmar with training for RVSM implementation, by arranging a specialized RVSM course in Singapore or Yangon, Myanmar, depending on the wishes of DGCA Myanmar. The meeting thanked Singapore for their kind gesture and ICAO advised that they would coordinate these arrangements with Myanmar.

Longitudinal Separation

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

2.1.44 The meeting was advised 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.

2.1.45 The meeting noted that 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. This requirement had now been amended whereby both aircraft entering from Taipei and proceeding beyond the Tokyo FIR can be separated by 10 minutes at the same level, or alternatively, 25NM separation can be applied if both aircraft are proceeding beyond the Tokyo FIR and diverge onto separate routes prior to entering the Pacific oceanic airspace. However Hong Kong departures are still required to be 15 minutes apart at the same level for flights proceeding to North American destinations. Notwithstanding the relaxing on this 15 minute requirement for Taipei departures, these restrictions relating to Hong Kong have been in place and remained unchanged for 20 years. During this time the following improvements have taken place:

a) the number of air routes across the North Pacific had increased;

b) procedures have been developed for the general use of a 10-minute longitudinal separation standard;

c) RVSM had been implemented; and

d) radar coverage extends uninterrupted from Hong Kong all the way to approximately 200 NM east of Tokyo.

2.1.46 IATA considered it appropriate to re-examine the need for 15 minutes spacing for departures from Hong Kong, 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.

2.1.47 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.

RNP flight planning requirements

2.1.48 The meeting noted 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.

2.1.49 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.

2.1.50 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.

2.1.51 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 continue its operations into 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.

2.1.52 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 Conclusion:

Conclusion 14/1 – 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 type 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

2.1.53 Australia provided a brief overview of the current status of the development of an RNP 4 operational approval process for oceanic and remote airspace operations in support of 30 NM lateral and longitudinal separation minima. 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).

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

2.1.54 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).

2.1.55 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 task.

2.1.56 The meeting noted 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.

2.1.57 As a result of the detailed review of the Guidance Material provided by ICAO at the request of the Air Navigation Commission (ANC), it would be appropriate to harmonize the POM and the Guidance material.

2.1.58 The meeting further noted that ICAO had recognized 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.

2.1.59 In light of the foregoing, the meeting agreed that the Guidance Material should be revised in line with the ICAO review as mentioned above. The United States advised the meeting that this work could be carried by a Task Force and they would be willing to consider hosting the Task Force meeting in Honolulu, Hawaii to coincide with the joint meeting of IPACG and ISPACG their respective FANS Inoperability Teams to be held in October 2003. The meeting noted that experts in FANS 1/A and ADS and CPDLC operations, and who had been involved with the development of the ICAO Guidance material would be attending these meeting.

2.1.60 The meeting appreciated the offer made by the U.S. and agreed that this would be an appropriate path to follow. Also, the Task Force would be able to coordinate with the States responsible for the POM at the IPACG/ISPACG joint meeting, and this would ensure that this facilitate achieving a common approach to operating ADS/CPDLC procedures throughout the Region.

The meeting recognized a need for a global approach to operating procedures for data link applications using FANS 1/A, and suggested that the Asia/Pacific Guidance Material would provide a basis for developing operational procedures in other regions for implementing and operating ADS and CPDLC services.

2.1.61 In view of the above, the meeting formulated the following Conclusion:

Conclusion 14/2 – Revision of the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region*

That, as a matter of priority, and in line with the review by ICAO at the request of the Air Navigation Commission, a Task Force be established to revise the *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region*, in coordination with States responsible for the Pacific Operations Manual (POM) with the intent of harmonizing both documents.

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

2.1.62 The meeting was advised that, 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.

2.1.63 The AIDC/R Task Force meeting, hosted by Airservices Australia, was held in Brisbane from 27 to 28 March 2003. The revised ICD for AIDC Version 2.0 was noted by the meeting, taking into consideration the experience gained and the lessons learned in the implementation of the AIDC by the States concerned.

2.1.64 Subsequently, the meeting endorsed the following Conclusion.

Conclusion 14/3 – ASIA/PAC Interface Control Document (ICD) for ATS Interfacility Data Communications (AIDC)

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

2.1.65 The meeting was advised 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.

2.1.66 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.

Inclusion of SIGMET in VOLMET broadcasts

2.1.67 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.

2.1.68 At APANPIRG/10 (September 1999) the meeting noted that Annex 3, Section 11 recommended 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.

2.1.69 The meeting recalled that at APANPIRG/11 (October 2000), it was 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.

2.1.70 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.

2.1.71 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.

2.1.72 Apart from the technical limitations of the voice-VOLMET, it had been observed 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.

2.1.73 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.

2.1.74 The meeting therefore formulated the following Conclusion:

Conclusion 14/4 – 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.

Implementation of ATS routes

2.1.75 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 had not been established by regional air navigation agreement.

2.1.76 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.

2.1.77 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.

2.1.78 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, and accordingly developed the following Conclusion:

Conclusion 14/5 – 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 2.1.

2.1.79 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. It was expected that the first series of meeting would take place in the 1st quarter of 2004.

APANPIRG Contributory Bodies, Associated Groups and related issues

2.1.80 The meeting recalled 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.

2.1.81 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.

2.1.82 The meeting reviewed and updated the Table of APANPIRG contributing bodies as appropriate on ATS/AIS/SAR matters, which is contained in **Appendix C** to the Report on Agenda Item 2.1.

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

2.1.83 The meeting recalled 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 and reviewed and updated as shown in **Appendix D** to the Report on Agenda Item 2.1.

2.1.84 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”.

2.1.85 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

2.1.86 Advice was given to the meeting 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.

2.1.87 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).

2.1.88 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.

2.1.89 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 Conclusion:

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

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

2.1.90 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.

2.1.91 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.

2.1.92 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.

2.1.93 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 would become applicable on 27 November 2003.

2.1.94 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.

EMARSSH Update

2.1.95 The meeting recalled that 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.

2.1.96 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.

2.1.97 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.

2.1.98 Notwithstanding that substantial benefits had been realized since implementation, further improvements and enhancements in procedures and route design are required to gain the maximum benefits from the EMARSSH project. There had been several teething problems identified in the operational procedures used by States and the international airlines concerned. This had led to an eroding of the expected efficiencies, which were expected to be achieved by both the airlines and the ATS providers alike.

2.1.99 The meeting noted that several special meetings have been held since implementation 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 EMARSSH 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.

2.1.100 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.

2.1.101 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.

2.1.102 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.

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

2.1.103 The meeting was advised that 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.

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

2.1.105 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. 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.

Review the route description of L333 to include FL280

2.1.106 It was noted by the meeting 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. The Indian authorities were 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 during the rush period at night. 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)

2.1.107 The meeting was advised that the opening of the EMARSSH route linking ASOPO with RK would alleviate the critical bottleneck of routes that converge over Delhi 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.

2.1.108 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

2.1.109 The meeting was advised that ICAO Headquarters had held meetings with high-level US military authorities on this issue, but no practical progress had been forthcoming to date. The U.S. advised the meeting that they would take up this issue with the U.S. Department of Defense as a matter of priority.

2.1.110 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 at night.

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

2.1.111 The meeting noted 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.

2.1.112 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

2.1.113 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 reduced.

Follow-up implementation of BB17 and BB18 with States concerned

2.1.114 The meeting noted that these two routes were designed to assist aircraft flight planning over Afghanistan and proceeding through the Katmandu FIR however, due to constraints imposed by some States affected by these new ATS routes, there was nothing to report on this item. The issue would again be raised at the next BBACG meeting.

2.1.115 Due to the significant amount of work, which was given to this important project, The meeting strongly encouraged all parties concerned to overcome the issues presented which would 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.

Implementation of lateral offsets

SASP developments on lateral offsets

2.1.116 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).

2.1.117 The United States provided an update on the Strategic Lateral Offset procedures that were being developed by SASP. In light of developments, SASP was considering revising the Phade 1 guidelines to allow offsets of up to 2 NM for all aircraft that have automatic offset tracking capability.

2.1.118 Taking 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.

2.1.119 The SASP Lateral Offset Project Team 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.

2.1.120 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.

Revised ICAO Guidelines on use of lateral offsets

2.1.121 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.

2.1.122 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.

2.1.123 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.

2.1.124 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 had been little information available on State planning.

2.1.125 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.

2.1.126 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.

2.1.127 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.

2.1.128 In light of the work of the SASP on a 2 NM offset described above 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 Conclusion:

Conclusion 14/7 – Implementation of a 2 NM lateral offset procedure

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

U.S. Safety Management System Development

2.1.129 The meeting noted that the United States had 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 had 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.

Guidance Manual for AIS in the Asia/Pacific Region

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

2.1.130 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.

2.1.131 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.

2.1.132 The Air Navigation 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. There was a question as to 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 meeting was advised 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.

2.1.133 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

2.1.134 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 which 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

2.1.135 The meeting noted that, in considering the future of the AIS Automation Task Force, it had been agreed that it should be reactivated and renamed the AIS Implementation Task Force (AITF) to ensure that AIS matters were continued to be progressed. However 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 ICAO 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 have reached a critical level with a considerable number of outstanding AIS issues not being progressed consequent with rapid changes in ATS technology and practices.

2.1.136 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 to strengthen the AIS expertise in the Regional Office. The meeting developed draft Terms of Reference for the Task Force as shown at **Appendix E** to the Report on Agenda Item 2.1 and formed the following Decision.

Decision 14/8 – 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 E** to the report on Agenda Item 2.1.

AIS Seminar 2002

2.1.137 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

2.1.138 The meeting recalled that APANPIRG/12 placed a special emphadis 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.

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

2.1.140 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.

2.1.141 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.

2.1.142 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.

2.1.143 The meeting noted that 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.

Importance of timely and accurate AIS data

2.1.144 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. The meeting recalled that November 2001 marked the implementation of the revised South China Sea ATS route structure. Associated with that implementation were several critical AIS related deficiencies due to incomplete and inaccurate data being provided by some States. In hindsight, it is the opinion of IATA that the implementation should have been postponed as not all involved States met their AIS obligations in accordance with the Annex 15 SARPS.

2.1.145 Unfortunately, recent experience had shown that several States are still not complying with the AIRAC provisions and IATA had lodged a significant number of complaints during the year 2003. Implementation of major changes on dates other than the published AIRAC cycles and with insufficient lead-time to implement a change is a significant safety problem. The extent of such non-compliance is quite alarming, with a few States routinely not carrying out their obligations under Annex 15. The meeting was advised by IATA that they were of the strong opinion that:

a) Unless the need is absolutely critical, implementation should always be on an AIRAC date;

b) The general rule of thumb should be to promulgate AIS data two AIRAC cycles prior to implementation. This is especially important if the procedure is mandatory and replaces an existing procedure;

c) If a new airway or procedure is not mandatory and does not replace a procedure that is already in use, then promulgation of AIS data one AIRAC cycle prior to implementation is acceptable.

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

Conclusion 14/9 – AIRAC provisions

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

South China Sea (SCS) ATS Route Structure Implementation Task Force – Post Implementation Update

2.1.147 The meeting was advised that the South China Sea ATS Route Structure Implementation Task Force/8, held in Bangkok from 2 to 3 December 2002 reviewed the past year's experience since implementation including areas for improvement, in particular to realign routes and to improve the efficiency of air traffic and flight operations.

China

2.1.148 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 facility in Sanya AOR was underway, which included a new 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.

Lao PDR

2.1.149 On the 1 November 2001 when ATS route 202 was implemented, the Vientiane Area Control Centre was successfully established. 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.

2.1.150 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.

Malaysia

2.1.151 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. Revised ATS coordination procedures incorporate provisions for Mach Number Technique and No Pre Departure Coordination. Requested flight levels were more readily available. These revised procedures had significantly reduced the need for coordination with adjacent ACCs, and reduced controller workload and ground delays.

Singapore

2.1.152 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.

2.1.153 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

2.1.154 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. It was noted that flight times between cities pairs decreased significantly, except on a few routes where it slightly increased. Flight safety had been considerably enhanced. Co-ordination procedures between relevant ACCs proved to be satisfactory, and relations between the ATS providers of adjacent States improved. ATC units are providing a more effective air traffic services to meet the requirements of the operators, eliminate ground delays and reduce controller workload.

Proposed changes to the SCS route structure and associated procedures

2.1.155 The meeting noted that weather deviation procedures introduced by Hong Kong, that were designed for the SCS route structure where large weather deviations are routinely encountered had proved to be effective. It was decided to monitor these procedures and if necessary further enhancements could be made if deemed necessary.

Hong Kong to Jakarta city pair

2.1.156 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. These deficiencies are being further discussed and a solution is pending.

Re-alignment of N892 and L625

2.1.157 The meeting was advised that a proposal had been put forward to allow the straightening of both N892 and L625. There had been ongoing concern at previous meetings regarding the management of large scale weather deviations on the closely spaced parallel tracks. By moving both these routes eastwards, this would allow more flexibility between the parallel routes when these weather conditions occurred.

Routing between Danang and Hong Kong on ATS routes A1 and P901 in relationship to China's Danger Areas

2.1.158 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.

2.1.159 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.

2.1.160 China noted the problem and was working with other Chinese administrations to come to a favorable solution.

Bangkok - A202 - Hong Kong

2.1.161 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.

2.1.162 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.

2.1.163 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.

Contingency Routing Scheme for Asia/Middle East/Europe-2003 (CRAME-03, Version II)

2.1.164 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.

2.1.165 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.

2.1.166 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.

2.1.167 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. 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.

2.1.168 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.

Management of Waypoint Name Allocation

2.1.169 The meeting was advised that Australia had provided information on the issue of waypoint allocation, in particular waypoint duplication and suggested courses of action in order to rectify the problem.

2.1.170 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.

Altitude Reservations

2.1.171 The United States presented information to the meeting 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.

2.1.172 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.

Lost Communications Procedures

2.1.173 The United States presented information to the meeting on a proposed amendment to the ICAO Pacific Regional Supplementary Procedure (Doc 7030) for region-specific lost communication procedures (**Appendix F** to the report on Agenda Item 2.1 refers).

2.1.174 The meeting was advised that in view of the congestion of flights operating in today's Pacific route systems, along with the availability of multiple methods for communications using CPDLC, satellite communication (SATCOM), HF and VHF air-to-air radio communications, etc., the current ICAO lost communication procedures were no longer considered to be appropriate for the current Pacific operating environment. In this regard, the meeting noted that existing ICAO lost communication procedures do not ensure that ATC would be able to provide standard separation from surrounding flights in the event of a loss of communications with an aircraft. 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, e.g. due to HF propagation, data link/SATCOM outages or any combinations thereto.

2.1.175 The meeting recognized that the proposed amendment provided the following benefits:

a) flights could 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 would ensure surrounding flights were provided information regarding the possible execution of the procedure;

c) on the occasion when a flight's filed flight plan altitude was 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 was required, then follow the offset contingency procedure; and

d) provided lost communication alerts for ADS equipped aircraft.

2.1.176 In addition to the proposed amendment to the PAC SUPPs, the meeting agreed that all of the current contingency procedures (e.g., wake turbulence offset, weather deviation, emergency offset for climb/descent, etc.) should be re-evaluated and updated as necessary. This would ensure that the procedures were still appropriate for today's oceanic environment and allow for possible changes to provide consistency in the actions required by each procedure. In this regard, the meeting was advised that ICAO recognized the need to harmonize regional procedures and would be reviewing the SUPPs, taking into account the need to revise the PANS-ATM to include regional procedures that had global application.

2.1.177 The meeting agreed to the proposed amendment as shown in Appendix xx to the Report on Agenda Item 2.1, and requested the Regional Office to progress the proposal in accordance with standard practice for the amendment of the SUPPs. Further, ICAO was requested to review the special procedures for in-flight procedures to ensure they met the current operating environment and were harmonized with other regions. The meeting also considered that where regional procedures

were common to all regions, then ICAO should include such procedures in the PANS-ATM for global application.

Contingency Planning

2.1.178 The FAA presented information to the meeting 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.

2.1.179 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.

2.1.180 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.

2.1.181 The meeting noted the information and progress to revise the contingency procedures.

Advanced Technologies and Operational Procedures (ATOP)

2.1.182 The FAA presented information on the current status of the FAAs Advanced Technologies and Operational Procedures (ATOP) programme. 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. 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.

2.1.183 The meeting noted that the 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.

2.1.184 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.

Sanya AOR and other significant issues

2.1.185 China advised the meeting that in view of their upgraded facilities they were confident that they could upgrade the Sanya AOR to the Sanya FIR. ICAO remarked that after the operational trial period for the Sanya AOR, a review of the arrangements in place would be necessary with all parties concerned.

2.1.186 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.

2.1.187 China further 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.

2.1.188 Regarding operations along the Polar routes, China stated 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 had 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.

2.1.189 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.

Large-scale weather deviations

2.1.190 The meeting was advised that the successful implementation of ATM contingency procedure due to large-scale weather deviations (LSWD) could be better facilitated if ACCs concerned receive prior warning or advice from a meteorological (MET) office regarding the expected occurrence of weather conditions that lead to LSWD. This would allow the smooth transition from normal to contingency arrangements avoiding peak workload and stress, which were typical for cases when the adverse weather conditions occur suddenly without any warning.

2.1.191 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 Meteorological Weather Offices (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 MWOs 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.

2.1.192 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 Conclusion:

Conclusion 14/10 – 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.

Revision of the Title of the ATS/AIS/SAR Sub-Group

2.1.193 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. In this regard, 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 data link 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.

2.1.194 It was recalled that as defined in Annex 11, ATS was 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 were 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.

2.1.195 In regard to AIS, the major objective of AIS was 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 was 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.

2.1.196 In regard to SAR, this was 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 was 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.

2.1.197 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 Decision:

Decision 14/11 – 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.

Japan/Russian Federation Interface Issues

2.1.198 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 phade as Kamchatka Four, and the associated transfer-of-control point had been agreed by Japan and the Russian Federation.

2.1.199 An ICAO route identifier (B932) had been allocated to the route and demonstration flights are scheduled to take place during the period 7 August - 27 November 2003. The purpose of the demonstration flights was to assess communications capabilities and verify operational procedures.

2.1.200 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.

2.1.201 Additionally, Japan advised the meeting that the alignment of the FIR boundary between Sapporo and Yuzhno-Sakhalinsk was revised on 31 October 2002.

2.1.202 IATA expressed appreciation to both Japan and the Russian Federation for their efforts in bringing this difficult issue to a successful conclusion.

Navigation Error Monitoring for the South China Sea

2.1.203 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. Of the 46,323 movements across the area analysed, there were no reported navigational errors.

2.1.204 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.

Search and Rescue Matters

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

2.1.205 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 2.1.

Provision of SAR and SAR Agreements

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

2.1.207 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.

2.1.208 The meeting reviewed and updated the list of SAR agreements as shown in **Appendix H** to the Report on Agenda Item 2.1.

SAR Exercises

2.1.209 The meeting noted that the ICAO SAREX and Seminar planned to be carried out for the Bay of Bengal area under the ICAO Special Implementation Project (SIP) approved by the Council of ICAO following APANPIRG/12 Conclusion 12/10, was deferred to 2004 due to constraints of the Regional Office. This was exacerbated by the outbreak of SARS in late March 2003 which led to a disruption to the Regional Office meeting schedule.

2.1.210 The Regional Office in consultation with the Civil Aviation Department of Hong Kong, China arranged for a two-day ICAO Seminar to be held in conjunction with the Hong Kong annual SAREX scheduled in late November 2003.

2.1.211 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.

2.1.212 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.

2.1.213 Viet Nam informed the meeting that it had a plan to conduct SAREX-2003 in a mountainous area in the Viet Namese Highlands in November 2003 and details would be made available shortly.

2.1.214 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.

2.1.215 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.

Update the list of ATS/AIS/SAR Subject/Tasks together with priorities

2.1.216 The meeting reviewed and updated the List of Tasks allocated to the Sub-Group by APANPIRG/13. A copy of this list is contained in **Appendix I** to the Report on Agenda Item 2.1.

ASIA/PACIFIC REGION RVSM IMPLEMENTATION PLANS STATUS REPORT

Note: Star indicates RVSM implementation complete

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
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	
Kolkata	27 Nov 2003	
Kota Kinabalu	21 Feb 2002	
Kuala Lumpur	21 Feb 2002	Phased Implementation – Bay of Bengal - 27 Nov 2003

FIR/AOR	RVSM Implementation Date	Comments
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
*Nauru	24 Feb 2000	
*New Zealand	13 July 2000	Non-exclusive
*Oakland Oceanic	24 Feb 2000	
*Phnom Penh	21 Feb 2002	
*Port Moresby	13 Apr 2000	
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	

— END —

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

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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	
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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(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	
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	**1994**	All airspace within FIR	**YES**	**YES**	**N/A**	**Included in AIP**

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)

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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	
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

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	
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	**1-Jan-03**	**ACAS II**	**All airspace within FIRs**	**YES**		**Notice to owner/operator No. 0401/DCA dated 15 May 2002**
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

(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	
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	**Jun-03**	**Version 7**	**All airspace within FIR**	**YES**	**YES**	**NOTAM to be issued September 2003**

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);

……

Proposal for Amendment of
Regional Supplementary Procedures - Doc 7030/4
MID/ASIA/PAC RAC/1

a) **Regional Supplementary Procedures, Doc 7030/4:**	PAC/RAC
b) **Proposing State(s):**	United States
c) **Proposed Amendment:**	On page PAC/RAC-9, dated 17/9/96, *Add* the following additional paragraphs and re-number the subsequent paragraphs.

4.0 COMMON PROCEDURES FOR RADIO COMMUNICATIONS FAILURE OF AIRCRAFT OPERATING IN OR INTENDING TO OPERATE IN THE PAC REGION

4.1 In the event of total loss of communication, an aircraft shall:

a) Try to re-establish communication with by all other means.

b) If all attempts to re-establish communication with ATC are unsuccessful:

1. Squawk 7600.

2. Broadcast in the blind at suitable intervals: flight identification, flight level, aircraft position (including the ATS route designator or the track code) and intentions on the frequency in use, as well as on frequency 121.5 MHz (or, as a back-up, the VHF inter-pilot air-to-air frequency 123.45).

3. Watch for conflicting traffic both visually and by reference to airborne collision avoidance systems or traffic displays (if equipped), and

4. Turn on all aircraft exterior lights (commensurate with appropriate operating limitations), and

5. Offset *10NM right* of last assigned track.

Note: if the flight is using ADS for position reporting the offset would trigger an out-of-conformance situation to ATC. ATC would then attempt to contact the flight, which should be unsuccessful, thereby alerting them to the situation.

6. If aircraft performance allows, maintain the last assigned speed and level.

7. If a change in level is required, after a period of *60 minutes* following either the failure to report over a compulsory reporting point (non-ADS), or from the time the aircraft was established on the offset (ADS), adjust speed and altitude in accordance with the filed flight plan, and

   i) Continue the *10NM* offset until communications are re-established and a new clearance is received.

   ii) *If cleared on other than filed flight plan route:* adjust speed and altitude (utilizing the abeam points where altitude changes were noted) in accordance with the filed flight plan.

8. Upon exiting oceanic airspace, the pilot shall conform to the relevant State procedures and regulations.

4.4.2 In the event of lost communication, ATC shall:

a) Continue to protect the aircraft's last assigned route and level, and

b) Issue essential traffic information as prescribed in ICAO Doc 4444, section 5-10 to all flights that could be affected by an aircraft executing this procedure based on flight plan information.

d) **Proposer's' reasons for amendment:**

a) With the congestion of flights operating in today's Pacific route systems, along with the availability of multiple methods for communication using controller-pilot data link communication (CPDLC), satellite communication (SATCOM), high frequency (HF), very high frequency (VHF) air-to-air, etc., the current ICAO lost communication procedures need to be updated to account for the current Pacific operating environment. The existing ICAO lost communication procedures do not ensure that ATC will be able to provide standard separation from surrounding flights. While ATC may be able to monitor the actions expected from flights in a "lost comm." 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).

b) This draft amendment proposal provides the following benefits

1. Flights can and may opt to remain within their last assigned ATC clearance and be provided separation from surrounding flights
2. 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. However, as this is a contingency procedure, the assumptions in paragraph a) above remain.

c) 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. .
e) **Proposed implementation date of the amendment:**	Upon approval of the Council
f) **Proposal circulated to the following Sates and International Organizations:**	
g) **Secretariat comments:**	

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	D = Meets Annex 12 requirements in most areas
B = Initial implementation	E = Fully meets Annex 12 requirements
C = Meets Annex 12 requirements in some areas	Blank = No response

STATE SAR AGREEMENTS

ID No.	Date	States	Remark
1	June 1982	Indonesia / Singapore	
2	August 1984	Malaysia / Singapore	
3	November 1990	Australia / Indonesia	
4	July 1996	Viet Nam / Singapore	
5	July 1996	Singapore / Thailand	
6	July 1996	Philippines / Singapore	
7	1998	Lao PDR / Viet Nam	
8	1998	Brunei Darussalam / Malaysia	
9	February 1999	Cambodia / Viet Nam	
10	December 2000	Malaysia / Singapore Malaysia / Philippines Malaysia / Thailand Malaysia / Indonesia Malaysia / Brunei Darussalam	
11	February 2001	Australia / Papua New Guinea	
12	September 2002	New Caledonia / New Zealand	
13	November 2002	United States / Republic of Palau	
14		New Zealand/Australia	
15		New Zealand/Cook Islands/ Fiji/Samoa/Tonga/French Polynesia	Under development

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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~~	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~~ b) ~~Sub-Group to~~ monitor progress	ATS/AIS/SAR/SG ~~ICAO~~ ~~ICAO~~	On-going ~~Completed~~ ~~Completed~~
2	APANPIRG C 3/22	Subject: Traffic congestion within the region Task: Suggest ways of reducing this congestion by means of appropriate traffic management ~~d) Develop revised ATS Route Structure – Southeast Asia to/from Europe/Middle East, South of the Himalayas~~	A ~~EMARSSH/TF established - commenced work~~		 ~~EMARSSH/TF~~	 Onging ~~11/02~~
3	RAN/3 C 13/14 APANPIRG D 2/35	Subject: AIS Automation Task: Develop a Regional AIS Automation Plan	B	a) Develop AIS automation plan and introduction of AIS quality systems and AIS databases ~~ANP amendment proposal following AIS/MAP Divisional Meeting, April 1998 introduction of quality systems and AIS databases~~ ~~b) Develop AIS Guidance Material for static data procedure~~	AA/TF ATS/AIS/SAR/SG ATS/AIS/SAR/SG	On-going ~~Completed~~

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
4	APANPIRG C 2/31	Subject: Provision of AIS within the Region 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) Regional AIS seminars to be conducted periodically c) Review the use of Internet for aeronautical information taking into account results of the ICAO AUPI Study Group and update Chapter 4 to the AIS Guidance Manual	APANPIRG ICAO ICAO ~~AATF~~ ATS/AIS/SAR/SG	On-going On-going ~~Dec. 2002~~
5	APANPIRG C 3/24 C 9/3 D 9/4	Subject: Implementation of RVSM in the Asia Pacific Region Task: Plan for and facilitate implementation of RVSM, as appropriate, in the Asia Pacific Region	A	a) Plan schedule and facilitate implementation of RVSM in the Asia Pacific Region	RVSM/TF	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
6	APANPIRG D 3/12 D 3/2 C 4/2	Subject: Inappropriate provision of SAR facilities, services and procedures within the Asia Pacific Region Task: a) Review SAR facilities, services and procedures in the region b) Assist States without SAR services to provide SAR coverage	A	a) Encourage States to delegate or negotiate SAR services b) Identify deficiencies	ICAO ATS/AIS/SAR/SG	On-going On-going

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
7	APANPIRG D 3/21 C 9/2	Subject: Transition to WGS-84 in the Asia Pacific Region Task: Monitor and facilitate the transition to WGS-84	A	a) Maintain status report of WGS-84 implementation within the Asia Pacific Region b) Identify States requiring assistance and where possible assist those States c) Identify deficiencies	ATS/AIS/SAR/SG States ICAO ATS/AIS/SAR/SG ATS/AIS/SAR/SG	On-going On-going On-going
8	RAN/3 R 14/13 APANPIRG C 5/12 D 6/21 C 9/8	Subject: Implementation of ATS route requirements Task: a) Identify ATS routes in the ANP which have not been implemented; and b) Propose guidelines for the establishment of ATS routes using RNP and/or with ADS functions.		~~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
9	C 11/8	**SAR Capability Matrix** That, a) the "SAR Capability Matrix" be distributed to States for information and action as appropriate; and b) States provide information to ICAO by 30 April ~~2001~~ each year to permit the periodic update of the Matrix.		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
10	RAN/3 R 7/18 APANPIRG C 8/9	Subject: SAR training and exercises Task: Facilitate SAR training and exercises	B	a) Co-ordinate SAR training available in the region b) Facilitate international participation in SAR exercises	ICAO States	On-going 2003
11	APANPIRG C 6/13	Subject: Appropriate SAR legislation, National SAR Plans and Amendments Task: Establish appropriate documentation and National SAR Committee	A	a) Implement appropriate legislation, establish National SAR Committees and Plans to support SAR operations b) Monitor developments of SAR Agreements between SAR organizations c) Establish and maintain a Register of SAR Agreements	States ATS/AIS/SAR/SG ICAO	On-going On-going On-going

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
12	APANPIRG C 9/9	Subject: Lack of consideration of Human Factors in the provision of ATS 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
13	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 coordinate with States responsible for the 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~~	2003 ~~Completed~~
14	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
15	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
16	APANPIRG/13 C12/6	Subject: Regional Contingency Planning Survey Task: That, ICAO survey States in the Asia/Pacific Region to determine the status of contingency planning and the extent to which contingency plans are exchanged between neighboring States.		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 2.2: CNS/MET MATTERS

2.2 CNS/MET Matters

2.2.1 The meeting reviewed the report of the Seventh Meeting of the CNS/MET Sub-Group (CNS/MET SG/7) which was held jointly with the Tenth Meeting of the CNS/ATM Implementation Co-ordination Sub-Group (CNS/ATM/IC SG/10) in Bangkok from 15 to 21 July 2003. The contents of the report of the Sub-Group were noted with appreciation. The meeting also noted with satisfaction, actions taken on all Decisions and Conclusions of APANPIRG/13 in the CNS and MET fields. The meeting took the following actions on the report of the CNS/MET SG/7 meeting.

ATN transition issues

2.2.2 The meeting reviewed the work accomplished by the Fifth Meeting of the ATN Transition Task Force which was held in Phuket, Thailand from 9 to 13 June 2003.

2.2.3 The meeting noted that the Sub-Group had conducted a review of the draft ASIA/PAC Regional Interface Control Document (ICD) for ATN ground-to-ground Router finalized by the Fifth ATN Transition Task Force meeting, contained in the report of the Sub-Group. In view of the above the meeting endorsed the Conclusion as follows:

Conclusion 14/12 - ASIA/PAC Interface Control Document (ICD) for ATN Router

That, the ASIA/PAC regional ICD for ATN Router be adopted and published.

2.2.4 The meeting agreed to adopt the ATN Documentation Tree provided in the report of the Sub-Group, which provided an index and hierarchy on available ATN related documents. The meeting recommended that the document be included in the Second Edition of the ATN Planning and Technical Document. In view of the foregoing the meeting endorsed the following Conclusion.

Conclusion 14/13 - ATN Documentation Tree

That, the updated ATN Documentation Tree be included in the Second Edition of the ATN Planning and Technical Document and forwarded to States.

2.2.5 The meeting noted that the detailed policy requirements and recommendations specified in the ASIA/PAC ATN Inter Domain Routing Policy (IDRP) presented in the report of the Sub-Group was derived from the general routing policy goal of providing global shortest path connectivity with a minimal exchange of routing information. The Routing Policy had explicit requirements for backbone routers as well as a number of recommendations for non-backbone routers intended to meet the above policy goal. It was considered as first release of routing policy for the ground/ground element of ATN.

2.2.6 It was further noted that the ASIA/PAC ATN IDRP document would allow States/Organizations to have additional local routing policies. Such policies may include various local preferences or Quality of Service based routing, for example, routing based on line error rates, delay, capacity, and priority. In view of the above, the meeting endorsed the IDRP document and adopted the following Conclusion.

Conclusion 14/14 - ASIA/PAC ATN Inter Domain Routing Policy (IDRP)

That, the ASIA/PAC ATN Inter Domain Routing Policy (IDRP) be adopted and distributed to States.

2.2.7 It was also recommended that if administrations within the ASIA/PAC region wish to pursue the implementation of the TCP/IP subnet as part of the ATN, they should be able to do so through bilateral agreements on the understanding that they may be required to make changes to their subnets if and when the TCP/IP subnet is developed as part of the ATN SARPs.

2.2.8 The meeting endorsed the proposal made by the Sub-Group to designate Nadi as BBIS - Backbone Boundary Intermediate System. It was agreed that changes would be made to the Table accordingly, in accordance with the established procedure.

Development of guidance material for the use of the Public Internet Technology to support AFTN

2.2.9 The meeting reviewed the guidance material developed by the Task Force for the use of the public Internet technology to support low speed AFTN. It was identified that various issues need to be addressed before implementing a system that uses the Internet as a delivery mechanism for AFTN. These issues include conducting a safety case analysis that identifies risks and mitigation plans, ensuring that security measures are implemented in order to protect the integrity of the AFTN from external unauthorized users. The use of appropriate logging and audit reporting required ensuring conformity and integrity of the service. The guidance material had also identified the need for appropriate contract agreements to be put in place with end users to ensure that they would not abuse or allow the system to be misused.

2.2.10 It was also recognized that before considering the development and implementation of a system that utilizes the Public Internet for delivery of AFTN, a Safety Hazard Analysis must be conducted. The Safety Hazard Analysis should identify hazards and risks. Once the risks were identified they must be mitigated.

2.2.11 The Secretariat informed the meeting that the Aviation Use of the Public Internet Study Group (AUPISG) being established by ICAO to assist ICAO Secretariat in conducting a study for aviation use of public Internet and to develop guidelines and other relevant provisions.

2.2.12 The meeting appreciated the efforts made by the Task Force in completing this task in time. The meeting noted the guidance material provided in the report of the Sub-Group and agreed to adopt it as an interim arrangement, pending the outcome of the result of the ICAO study conducted by AUPISG. In view of the above, the meeting endorsed the Conclusion as follows:

Conclusion 14/15 - Use of Public Internet to support AFTN

That, the Guidance Material for the use of Public Internet to support low speed AFTN circuits be adopted and circulated to States for use as an interim means pending, outcome of the result of Aviation Use of Public Internet Study Group.

2.2.13 It was suggested that all States and/or administrations, especially those who are nominated as Back Bone Intermediate System (BBIS) sites in the ASIA/PAC Region to implement systems according to the schedule listed in ATN Router plan and AMHS plan. States were also advised to establish their implementation schedule in a realistic and practical manner.

ATN Ground-Ground Trials and Implementation

2.2.14 To comply with the Regional ATN Transition Plan, close liaison had been initiated by States concerned with relevant ATS authorities to conduct AMHS trials the status of which was as follows:

- Beijing, China – to continue further ATN technical trials with Hong Kong, China from July 2003 with router developed by Beijing;

- Hochiminh, Viet Nam – to carry out AMHS technical trial with Hong Kong, China as from early 2004;

- Tokyo, Japan –to implement ATN and AMHS with Hong Kong, China in September 2004, with pre-operational trials starting from end 2003;

- Manila, Philippines – to carry out ATN/AMHS joint trials with Hong Kong, China in the 3rd quarter of 2004; and

- Taibei – to commence ATN/AMHS trials with Hong Kong, China in 2004.

2.2.15 Subject to thorough operational trials, Hong Kong, China is planning to launch the new 64 Kbps ATN link for operational use with Bangkok, Thailand in late 2003.

AMHS trials in Singapore

2.2.16 The AMHS trial was carried out between Singapore and Hong Kong, China during the period end of April to end of June 2003. Singapore is planning to start similar trials with Thailand during the first quarter of 2004.

FAA/JCAB ATN/AMHS implementation activities

2.2.17 The meeting noted that the FAA and JCAB had agreed to implement Air Traffic Message Handling Services (AMHS) service between the USA and Japan in March 2004. This will be the initial implementation of AMHS in the ASIA/PAC Region. The telecommunication connection between the US and Japan would be a point-point 64 kilobytes per second (kbps) circuit. It is planned to have both the AMHS and aeronautical fixed telecommunications network (AFTN) service operating in parallel in the event AHMS service is disturbed or interrupted. This service will be implemented between the FAA, Salt Lake Facility and Tokyo Area Control Center (ACC) Narita airport.

China/Fiji/PNG/USA Communication upgrade and trials

2.2.18 The USA informed the meeting of ATN trials with China and Fiji and voice improvements to reduce toll charges between Papua New Guinea and the Oakland Center. It was agreed by mutual agreement for the initial verification of the compatibility of the Air Traffic Message Handling Service (AMHS) application by testing Message Transfer Agent (MTA) to MTA using Connection Less Network Protocol (CLNP) with China including configuration and test procedures. AMHS trials between FAA and CAAC were planned for May 2004. The circuit between Fiji and the USA would be upgraded from 9600 bps to 64 Kbps in December 2003. It would accommodate ATS voice, AFTN data, meteorological data and bandwidth allocations for AMHS and ATN testing. The Fiji and USA have initiated informal technical discussions to begin AMHS trials in 2004. The USA was attempting to reduce the ATC telephone toll charges between Oakland ACC and Port Moresby flight information service (FIS) by proposing a direct speech circuit and flexible AFTN connection in

a cost effective manner.

Subject/Tasks List of the ATN Transition Task Force

2.2.19 The meeting noted that the following tasks identified by the Task Force in its effort to further the implementation planning of the ATN AMHS and included the tasks in the updated Task List of the Task Force.

a) AMHS Naming Registration; and
b) AFTN/AMHS Operational Procedures

2.2.20 The meeting reviewed the Subject/Task List of the Task Force taking into account the relevant items listed in the Key Priorities for the CNS/ATM implementation approved by APANPIRG/13. It was noted that the Router ICD identified in the item 1) of the Task No. 6 was completed and the Task No. 7 regarding the use of Public Internet was also completed.

2.2.21 It was also noted that the target date of completion of other items were reviewed and updated. Two new tasks No. 9 and 10 proposed to be undertaken were included in the Tasks List.

2.2.22 In view of the above, the Subject/Tasks List of the ATN Transition Task Force were updated and the following Decision was adopted.

Decision 14/16 - Updated Subject/Tasks List of the ATN Transition Task Force

That, the updated Subject/Tasks List of the ATN Transition Task Force provided in Appendix A be adopted.

AFTN Improvements

2.2.23 It was noted that the Sub-Group had reviewed and updated the status of implementation of AFTN circuits. The main highlights of the AFTN improvements made during the year 2002 and early 2003 were as follows:

- Apia-Faleolo/USA 2400 bps AFTN circuit with X.25 protocol was implemented using a router provided at Pago Pago, American Samoa;

- Singapore/Tokyo AFTN circuit was upgraded from 1200 bps to 9600 bps using X.25 protocol on 15 January 2003;

- Colombo/Mumbai AFTN circuit was upgraded from 50 baud to 64 Kbps using X.25 on 19 March 2003;

- A 64 Kbps circuit was implemented in April 2003 to upgrade AFS circuits between Chennai/Kuala Lumpur;

- Kolkata/Mumbai AFTN circuit was upgraded from 9600 bps to 64 Kbps in March 2003;

- Colombo/Singapore AFTN circuit was upgraded from 75 Baud to 9600 bps using X.25 protocol on 12 May 2003;

- Christchurch - USA 9600 bps AFTN circuit using X.25 protocol is under testing and expected to be implemented in July 2003;

- Christchurch/Tongatapu AFTN circuit was implemented using 2400 bps; and
- Routing of AFTN messages between Kolkata and Dhaka was established via Mumbai and Bangkok. The AFTN message transit time requirements for those messages relayed via the alternate route were satisfied.

Inter-regional AFTN entry/exit point

2.2.24 It was noted that a new 64 Kbps AFTN circuit between Brisbane to Johannesburg was being established in 2-3 months time to replace the existing Brisbane/Mauritius 50 Baud AFTN circuit in accordance with the Conclusion 13/9 of the Thirteenth African Planning and Implementation Regional Group (APIRG/13) Meeting which had proposed to change the AFI- ASIA/PAC AFTN entry/exit point from Mauritius to Johannesburg. It was noted that it would not require amendment to the ASIA/PAC AFTN Plan.

2.2.25 It was also advised that the 2400 bps COP-B circuit between Brisbane and Singapore was converted to X.25 protocol on 13 November 2002. In order to provide diversity between two centres in Australia, capability has been provided at Melbourne to operate Melbourne/Singapore AFTN using IPL. A need to rationalize three circuits linking to USA from Brisbane, Nadi and Christchurch was identified. The ATN Transition Task Force at its next meeting would address this issue

2.2.26 .

2.2.26 Japan had made a proposal to the Russian Federation to upgrade the Tokyo/Moscow circuit from 200 baud to 9600 bps through a 64 Kbps satellite circuit. Japan is expecting response from the Russian Federation concerning their readiness to upgrade the circuit.

AFS Communication Improvements in India

2.2.27 India provided status of implementation and the progress made in upgrading various AFTN circuits. The Chennai/Medan ATS direct speech communication had been implemented since December 2002 using IDD hotline to support implementation ATS route included in EMARSSH route structure. The meeting noted the above status and appreciated the efforts made by the Administrations concerned in upgrading the circuits to comply with the requirements specified in the AFTN Plan.

AFTN services in the Pacific

2.2.28 The meeting noted that Airways New Zealand had installed new AFTN terminals in Tonga and Samoa and upgraded the AFTN terminal in Rarotonga. All the circuits were operating with the signalling speed of 2400 bps. The implementation of the AFTN user terminals at Tonga, Samoa and Rarotonga has improved the efficiency of flight planning and provides access to a common database. It was noted that the implementation of a direct AFTN circuit between Christchurch and the United States was nearing completion.

AFTN/AIS database upgrade in New Zealand

2.2.29 The meeting noted that Airways New Zealand had embarked on AFTN replacement project, known as AMSAD (Aeronautical Message Switch/Aeronautical Database), not only provides current AFTN and Database functionality but has the ability to keep pace with the latest developments in AFTN and ATS message handling systems (AMHS). It provides an up-to-date windows interface through Airways' SkyLine ATM workstations and an enhanced environment in the NOTAM office.

Alternate routing proposal for ATS direct speech circuits between USA/Fiji and USA/New Zealand

2.2.30 The meeting noted USA's proposal for the establishment of a reliable ATC voice communications with alternate routing capability between USA/Fiji and USA/New Zealand, which was critical for safety, airspace efficiency, and the timely coordination of aircraft operations. The proposal to replace the existing IDD back service with an alternate routing was being considered by administrations concerned.

Result of COM co-ordination meeting

2.2.31 The meeting noted that in order to address resolution of deficiency in the communication field a COM Co-ordination Meeting was held in Dhaka, Bangladesh from 27-29 May 2003. The meeting developed a co-ordinated action plan, which called upon all Administrations concerned to take necessary actions to resolve noted deficiencies by the end of 2003. It was also agreed to upgrade the Colombo/Male 50 baud AFTN circuit to 9600 bps by the end of 2003 to comply with the requirement specified in the AFTN Plan.

International Direct Dialling (IDD) hotline for direct speech circuits

2.2.32 It was also noted that IDD hotlines were used by States to support the ATS direct speech circuits. It generally meets the requirement for 15 seconds access time in low-density traffic areas. Such IDD circuits should be upgraded to dedicated circuits or AIDC should be introduced when requirement warrants.

Use of VSAT to support AFS communications

2.2.33 The meeting expressed the view that the States concerned should give serious consideration for the use of VSAT as a cost effective solution to establish and upgrade AFS circuits and also to provide link to RCAG VHF sites. States were urged to take necessary action to overcome regulatory restriction for the use of VSAT between States to support aeronautical circuits.

2.2.34 It was noted that technical assistance was provided by IATA to Afghanistan and its neighbouring countries to establish VSAT link to implement required AFTN and ATS direct speech circuits as a cost effective means and thus IATA encouraged States to overcome regulatory restrictions and other constraints and implement VSAT as a cost effective means to support AFS circuits, where required.

Aeronautical Mobile Service

2.2.35 The meeting recognized that the following issues would serve as guidelines for States in the preparation for AN-Conf/11 from the ASIA/PAC perspective while dealing with agenda item 7 of the Conference.

a) a channel spacing of 25 kHz will continue to be the operational specification in ASIA/PAC Region as it is expected to satisfy requirement for the foreseeable futures;

b) the VHF voice service, backed by CPDLC and HF will be the primary communication medium for transcontinental traffic; and a combination of CPDLC and HF voice will be the communication medium for oceanic traffic; and

c) the requirements for basic voice communications will continue, supplemented by data link Flight Information Services (DFIS) applications including D-VOLMET, D-ATIS and PDC, which would significantly release the pressure of VHF spectrum congestion.

Data Link Services

2.2.36 The meeting noted the successful trials on Data link –automatic terminal information services (D-ATIS), Data link - VOLMET (D-VOLMET) and Pre-Departure Clearance (PDC) conducted by Hong Kong, China. The systems had been closely established and confirmed that they could offer added operational and/or safety benefits.

2.2.37 The meeting further noted that Republic of Korea had developed using domestic technology, as part of the new CNS/ATM system implementation, the pre-departure clearance (PDC) and Data link-ATIS (D-ATIS) systems and implemented at Gimpo International Airport. The number of aircraft serving domestic routes with ACARS had been increasing since 2002 and the frequency of requests for the PDC/D-ATIS using data link had been rising as more users have begun to acknowledge the convenience of the systems.

Satellite Voice Communication

2.2.38 It was noted that SATCOM voice was available for airline operational control communication and public communications and was also used for emergency communication but there was no procedure available for the use of SATCOM voice for ATS function. In view of the, Australia had identified a need to develop a globally coherent policy and operating procedure for the use of SATCOM voice for ATS function. This issue was considered to be one of the items that could be raised at the AN-Conf/11. During the discussions IFALPA had advised the meeting that SATCOM voice and data are minimum requirements for the use of the ATS route L888 in the Western part of China.

2.2.39 Secretariat informed the meeting that the SATCOM voice currently provided on board aircraft do not satisfy technical specification of Annex 10. Therefore, implementation and its performance had not been reviewed in terms of provisions of ATS.

2.2.40 In view of the foregoing, it was proposed that States use SATCOM voice service in compliance with the existing SARPs and that ICAO review the relevant Technical Work Programme (ANC Task No. CNS-9902) with respect to SATCOM to provide a global policy for use of SATCOM voice and endorsed the following Conclusion.

Conclusion 14/17 - Use of SATCOM voice for ATS

That,

a) SATCOM voice be used in compliance with existing SARPs; and

b) ICAO develop a global policy for the use of SATCOM voice for ATS function.

AMS Network Management

2.2.41 The current AMSS SARPs cover data transactions and do not define satellite voice. There is a need to address SARPs for satellite voice services and also to address network management arrangements between service providers.

2.2.42 VDL SARPs recognize intra network and system management. However inter networking was essential to ensure efficiencies related to frequency management and channel throughput. Network management arrangements must be pursued by service providers taking into account appropriate spectrum use to ensure service protection and recognition.

HF Communication

2.2.43 Republic of Korea informed the meeting of the need for an aeronautical station at Seoul to provide HF air-ground communication service for aircraft operating in the area out of VHF coverage in the North Central Asia-3 (NCA-3) network. The number of aircraft flying from the Republic of Korea to Russia, Mongolia, DPR Korea, and European countries via NCA-3 network had steadily increased since the early 1990s. It was noted that the airlines flying in the area had identified the need to provide HF aeronautical mobile communication service in NCA-3 network by Seoul radio. It was noted that provision of aeronautical mobile communication service in Major World Air Route Area (MWARA) NCA-3 network by Seoul radio would contribute to the safety and efficiency of aircraft operating in the region. The meeting agreed to the proposal made by the Republic of Korea to join MWARA NCA-3 network and provide aeronautical mobile service from the end of 2003 using 3004 kHz and 13303 kHz frequencies, which were allotted to NCA-3, network stations. Accordingly, the meeting endorsed the following Conclusion.

Conclusion 14/18 - Inclusion of Seoul in MWARA NCA-3

That, the ASIA/PAC FASID be amended in accordance with the established procedure to specify requirement for an aeronautical station in Seoul to provide HF air-ground communication in the MWARA NCA-3 Network.

HF/VHF Communication improvements

2.2.44 The meeting noted Australia's initiatives to rationalize and modernize HF voice communication services for international and domestic air-ground services by replacing the current International and Domestic High Frequency (HF) communications systems. The antennas utilized at several locations were capable of connecting high and low angles signals to separate receivers, where they would then be individually analyzed to determine signal quality and the best overall signal would be presented to the operator.

2.2.45 The meeting noted the overall status on improvement and enhancement of VHF coverage in Indian airspace using RCAG VHF stations at different sites controlled by Chennai, Kolkata and Mumbai, ACCs. An interim measure adopted by India to enhance VHF coverage in Delhi FIR using a RCAG station at Khajuraho was also noted. Plan to improve quality of HF air-ground communication was also noted. It was also informed that as a long-term measure, India had planned to enhance the VHF coverage using RCAG stations supported by satellite links. India had also plan to introduce VDL Mode 2 initially.

ADS/CPDLC

2.2.46 It was further stated by India that ADS/CPDLC at Kolkata and Chennai airports using air-ground link through SITA network is in operation for FANS-1/A users. Target date for implementation of ADS/CPDLC at Delhi and Mumbai airports integrated with flight data processing

system (FDPS)/ Radar data processing system (RDPS) automation system was end of 2004. The air-ground linkage for this application would be provided through a data link service provider.

A seminar on implementation of data link and SATCOM communication

2.2.47 The meeting was informed that a seminar on implementation of data link and SATCOM communication will be held in Bangkok from 17 to 19 November 2003 in conjunction with Aeronautical Communication Panel (ACP) Working Group M meeting scheduled for 20 to 28 November 2003.

Regional Strategies

2.2.48 The meeting noted the Strategy for the Implementation of GNSS Navigation Capability in the ASIA/PAC Region as updated by the CNS/MET SG/7, which included an operation requirement of RNP 10 and 4 for en-route navigation and RNP 1 in the terminal area. System availability dates for Category I (2006) and Category II/III (2010 -2015) were reflected to update the information in the considerations part of the Strategy.

2.2.49 In the Strategy for the Provision of Precision Approach and Landing Guidance System an additional item was included to ensure the protection of radio spectrum for ILS, MLS and GNSS applications. Accordingly, the meeting endorsed proposed revisions and updated both strategies and adopted the following Conclusion:

Conclusion 14/19 - Updated Strategy for Precision Approach and Landing Guidance Systems and the Strategy for the Implementation of GNSS Navigation Capability in the ASIA/PAC region

That, the updated Strategy for Precision Approach and Landing Guidance Systems and the Strategy for the Implementation of GNSS Navigation Capability in the ASIA/PAC Region provided in Appendices B and C respectively, to the report on Agenda Item 2.2 be adopted and provided to States.

Space Based Augmentation Systems

2.2.50 Japan informed the meeting on the current status of the MSAS and supporting MTSAT. MTSAT will be launched in early 2004. It will take several months for the testing of the satellite and it is expected that the AMSS will be operational in late 2004 and the MSAS to be operational in 2005. It is necessary for the MSAS to be strictly tested and certified before the commissioning.

2.2.51 The United States provided a status report on the Wide Area Augmentation System (WAAS). The most significant point was the commissioning of WAAS on 10 July 2003 for use in all phases of air navigation in the United States' NAS. After an extensive testing and assessment programme WAAS performance consistently demonstrates 1 m horizontal and 1.5 m vertical accuracy. WAAS IOC would provide users with the capability to fly approaches with vertical guidance. This initial WAAS capability also provides improved guidance to users in the en route and departure domains. At commissioning, over 500 LNAV/VNAV procedures would have been published, which could be flown by WAAS capable aircraft. LNAV/VNAV is an approach procedure with vertical guidance with nominal minimums of a 350' decision height, 1½-mile visibility, 556m horizontal alert limit (HAL), and 50m vertical alert limit (VAL). The WAAS service area is the continental United States and portions of Alaska.

2.2.52 A post IOC implementation strategy would see an optimization of terminal approach procedures (TERPS) and investment in GEO satellite services to ensure that WAAS IOC and FOC would be supported with redundant services. The United States informed the meeting of availability of TSO-145/146 receivers for WAAS.

AN-Conf/11 issues

2.2.53 The meeting noted Agenda Item 6 of the AN-Conf/11 and the explanatory notes of this agenda to develop better understanding of the issues involved. The meeting recognized that harmonised implementation of navigation system was desirable. The strategies for Precision Approach and Landing and for GNSS Implementation represent the regional position for the implementation of navigation services. It was considered important that implementation plans were suited to the Region's environment and maintained harmonisation with other regions.

ADS-B Trial

2.2.54 Australia informed the meeting of progress with the Operational Trial of ADS-B. The project has installed a single ADS-B ground station and equipped a number of aircraft with ADS-B avionics and has modified an operational air traffic management system to process and display ADS-B tracks. A safety case had been submitted to the Australian regulator and it was expected that the system would be used operationally using 5NM radar like separation standards. The performance of the system has exceeded expectations. The meeting was shown examples of coverage of low level helicopter operations, track comparisons between SSR radar and more dynamic ADS-B data and opportunity observation of an international freight aircraft.

2.2.55 The meeting was also informed by Australia of progress by the Separation and Airspace Safety Panel (SASP) on the use of 5NM radar separation standards for ADS-B. It is anticipated that the necessary amendments to PANS-ATM Doc 4444 will be finalised late 2004 with final publication in late 2005. It was also identified that the European implementation of Elementary and Enhance surveillance and United States changes to transponders for security purposes provide an opportunity to minimise the cost of ADS-B out equipage.

Update of ADS-B Activities in Mongolia

2.2.56 Mongolia informed the meeting of their activities regarding the implementation of ADS-B for both domestic and international airspace. Demonstrations and modelling have demonstrated the capability of ADS-B as well as capabilities achievable by combinations of ADS-C, ADS-B and radar. Continued validation and information gathering is being pursued through investment in two CNS/VDL Mode 4 ground stations and five airborne units that include cockpit display of traffic information (CDTI). The equipment will be installed on board domestic flying MIAT AN 24´s and the ground stations will be placed in Ulaan Baataar and Muren. Both ground stations will be connected to the Ulaan Baataar ATC Center.

2.2.57 The domestic traffic throughout the domestic network of airports has a need for surveillance coverage to ease constraints between aircraft. Another useful tool for the introduction of ADS-B is enhancement of the national search and rescue (SAR) capability.

2.2.58 Taking into consideration that the agreed recommendation for ADS-B data link for the ASIA/PAC Region will be Mode S (1090 ES), Mongolia advised the meeting that VDL Mode 4 data link equipment would only be used for domestic airline operations and planned to install additional ADS-B Mode S (1090 ES) equipment for use by international airlines.

Update of ADS-B Activities in USA

2.2.59 USA updated the ADS-B related information. The FAA ADS-B link decision was made in July 2002 and approved two data links. The 1090 MHz extended squitter ADS-B data link is to be used by air carrier and private/commercial operators operating in the higher altitudes, while a universal access transceiver (UAT) ADS-B link will be used by the typical, general aviation users. In 2003, the Alaska Capstone programme conducted the first commercial flight using an "optimized" RNAV Special FAR 97 route structure in conjunction with enhanced Capstone Phase 2 avionics that includes a GPS/WAAS receiver certified under TSO 145a, in airspace inaccessible with conventional avionics. The United States remarked that ADS-B was currently the most significant advancement for aviation. IATA supported this remark. The meeting was informed that the U.S. FAA would continue to use operational ADS-B in the separation of aircraft within the State of Alaska.

Automatic Dependence Surveillance-Broadcast (ADS-B) Study and Implementation Task Force (ADS-B SITF/1)

2.2.60 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.

2.2.61 The meeting noted that the ADS-B SITF/1 reviewed ADS-B related activities had conducted by States, Industries and ICAO Panels. The meeting also noted the excellent progress made by the Task Force in establishing direction for the implementation of ADS-B in the Region.

Near term applications of ADS-B in ASIA/PAC Region

2.2.62 The meeting noted the following potential ADS-B applications in the ASIA/PAC 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

Near Term Benefits

2.2.63 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

2.2.64 The meeting noted that the report of ADS-B SITF/1 was reviewed by the thirteenth meeting of ATS/AIS/SAR/SG and the combined meeting of CNS/MET/SG/7 and CNS/ATM/IC/SG/10. The meeting reviewed three draft conclusions, which were developed by the ADS-B Task Force and revised by Sub Groups.

2.2.65 It was noted that the ADS-B Task Force unanimously recommended Mode S Extended Squitter (1090 ES) as the data link for ADS-B radar like services for the near term in the ASIA/PAC Region. The Task Force described the datalink selection of Mode-S ES 1090 as near term and in the future additional datalinks may be specified as necessary. The meeting adopted the following Conclusion.

Conclusion 14/20 - Near term ADS-B datalink selection

That, Mode S Extended Squitter (1090 ES) be used as the data link for ADS-B radar like services in the ASIA/PAC Region in the near term.

2.2.66 The meeting agreed with the recommendation made by the Task Force and endorsed by the ATS/AIS/SAR Sub Group for implementation of "ADS-B out" ground-based surveillance services in ASIA/PAC Region on a sub-region by sub-region basis with a target date of January 2006. The meeting noted that the "ADS-B out" refers to the broadcast of ADS-B transmissions from aircraft without the installation of complementary receiving equipment to process and display ADS-B data on cockpit display to pilots. The complementary processing is called "ADS-B in". Accordingly, the meeting adopted the following Conclusion.

Conclusion 14/21 - Target date of ADS-B Implementation

That States, where necessary to do so, be encouraged to implement "ADS-B out" for ground-based surveillance services in ASIA/PAC

Region on a sub-region by sub-region basis with a target date of January 2006.

2.2.67 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 adopted the following Conclusion.

Conclusion 14/22 - Needs for development of ICAO SARPs for ADS-B

That, in view of the progress made by States with operational trials for the implementation of ADS-B, ICAO be requested 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.

2.2.68 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/PAC Region taking into account available equipment standards and the readiness of airspace user and ATS providers. The meeting approved the proposed new Terms of Reference for the ADS-B Study and Implementation Task Force and adopted the Decision as follows:

Decision 14/23 - Terms of Reference of ADS-B Task Force

That, the new Terms of Reference of the ADS-B Study and Implementation Task Force be adopted as shown in Appendix D.

24 Bit Aircraft Addresses

2.2.69 It was noted that in a paper presented at the CNS/MET SG/7 meeting by Japan, an analytical result of the unauthorized aircraft addresses in 2002 by Aircraft Address Monitoring System (AAMS) installed at New Tokyo and Kansai international airports was provided. A downward trend in the number of unauthorised addresses was noted over the three year span of analysis. It was also noted that detected unauthorised addresses were followed-up with the operator. It was stated that the AAMS only detects aircraft within the vicinity of either New Tokyo or Kansai international airports so the result should be considered in that light. Discussion highlighted safety issues of addresses set to all zeros. These addresses were ignored by ACAS systems and therefore nullify the projection offered by ACAS.

2.2.70 The meeting also noted by that ICAO had written to States to ensure appropriate allocation, management and implementation of aircraft addresses. The mater was also raised at the 39th DGCA Conference, which formulated Action Item 39/9 to seek resolution of the problem.

2.2.71 It was agreed that the Regional Office should write to States referring to previous correspondence, advising States of continuing illegal or incorrect addresses being used by aircraft, emphasising that this can be a safety issue. It was also suggested to request States to advise their national airlines of this continuing problem and seek their assistance in overcoming it. Furthermore, it was suggested to seek advice from the SCRS Panel on:

a) plans or procedures for the allocation of 24 bit addresses to airport vehicles;

b) plan or procedures for the allocations and management of 24 bit addresses to leased aircraft; and
c) whether or not consideration has been given in SARPs or Guidance Material requirements for periodic checks (ramp testing) for 24 bit addresses.

Aeronautical electromagnetic spectrum utilization

2.2.72 The Secretariat provided details of the outcome of WRC-2003 on all Agenda Items of interest to aviation. The decisions of the WRC-2003 on all Agenda Items that addressed or affected aeronautical allocations fully met the ICAO Position whereas on 3 Agenda Items of WRC-2003 the ICAO Position was partially met. Many Administrations and Regional and International Organizations supported important elements of the ICAO Position.

2.2.73 Pivotal in achieving these results was the active participation of aeronautical experts from civil aviation administrations and ICAO at the various meetings of the regional telecommunication organizations and at WRC-2003 in accordance with Assembly Resolution A-32/13, APANPIRG Conclusions and Action Items of DGCA Conferences.

2.2.74 During the preparation for the WRC-2003, ICAO played an active role in the activities of the regional telecommunication organizations “Asia-Pacific Telecommunity (APT)” and also organized two Regional Preparatory Meetings to review and address developments by States and regional telecommunication organizations.

2.2.75 Designation of focal point of contact responsible for preparation for WRC-2003 was a very important factor in facilitating coordination with Telecommunication Regulators in each State to coordinate aviation position.

2.2.76 Australia had presented a comprehensive review of the outcome of the WRC-2003. The agenda for the WRC-2003 contained more than fifteen items, which will have an impact on aeronautical radionavigation and communication services to a greater or lesser degree. Subjects of particular importance include radionavigation satellite service/aeronautical radionavigation service (RNSS/ARNS) compatibility, future aeronautical utilization of the 5 GHz band in light of spectrum requirements for the microwave landing system (MLS), regulatory provisions permitting the operation of new ICAO standard systems supporting navigation and surveillance functions in the band 108-117.975 MHz and possible new requirements for ARNS and/or aeronautical mobile (R) services (AM(R)S).

2.2.77 That the meeting noted that there are significant issues that have implications for aviation resulting from WRC-2003 such as:

a) the use of the 14 GHz band for non-safety of life broadband satellite communication for aircraft passengers internet applications, HF interference mitigation techniques, protection of DME with the implementation of L5 GNSS, protection of radars with the evolution of L2 GNSS, protection of radars in the 2.9-3.1 GHz and 5 GHz bands, and spectrum allocations for GBAS/GRAS and VDL Mode 4; and

b) co-primary allocations in the 9 GHz aeronautical radar band, spectrum requirements for wideband aeronautical telemetry, use of the 5 GHz aviation band for air-ground voice communication and runway incursion systems, and modernization of civil aviation telecommunication systems through current satellite allocations;

2.2.78 IATA emphasized the need for spectrum in the 5 GHz band required for runway incursion and prevention will be one of the important issues to be considered by WRC-2007.

2.2.79 In view of the foregoing the meeting endorsed the following Conclusion to initiate actions for timely preparation for WRC-2007.

Conclusion 14/24 - Preparation for World Radiocommunication Conference- 2007 (WRC-2007)

That, States,

a) assign high priority to aeronautical spectrum management;

b) participate in the development of States' position for WRCs at the national level to ensure support to the ICAO position;

c) ensure, to the extent possible that, aviation representatives are included in States delegations to the Asia-Pacific Telecommunity (APT) Conference Preparatory Group meetings and at WRCs;

d) to nominate an ICAO designated focal point or contact person for aviation issues related to the WRC-07; and

e) ensure participation of the designated focal point or contact person at the ICAO Regional Preparatory Group Meetings for WRC-07, APT Conference Preparatory Group Meetings for WRC-07, and at WRC-2007.

Progress in implementation of the ISCS and SADIS

2.2.80 The FASID Table MET 7, which indicates the current status of implementation of SADIS and ISCS in the ASIA/PAC Region, has been reviewed and updated, as necessary. The meeting was informed that the provisions related to SADIS and ISCS in the regional ANPs should be harmonized for all ICAO regions. In this regard, a new simplified format of FASID Table MET 7 has been proposed. The meeting agreed on the proposed new table as shown in Appendix E to the report on Agenda Item 2.2 and requested the Secretariat to process it in accordance with the established procedure.

Follow-up of the SADISOPSG/8 meeting

2.2.81 The eighth meeting of SADISOPSG, Bangkok, 7 to 10 July 2003 formulated two draft conclusions to the attention of the PIRGs served by SADIS, related to the future development of the SADIS. The APANPIRG reviewed the proposals by the SADISOPSG/8 meeting and adopted the following Conclusions:

Conclusion 14/25 - Implementation of the SADIS second-generation system (SADIS 2G)

That, subject to the successful completion of the trials, the APANPIRG endorses the implementation of the SADIS second-generation broadcast (SADIS 2G).

Conclusion 14/26 - Discontinuation of the current first-generation SADIS two-way VSAT programme

That, the APANPIRG notes the plan to discontinue the current SADIS two-way VSAT programme as of 1 January 2004.

SADIS Strategic Assessment Tables

2.2.82 The meeting reviewed the SADIS Strategic Assessment Tables with entries regarding the current and projected data volumes for the period 2003-2007. The meeting agreed on the proposed tables and adopted the following Conclusion:

Conclusion 14/27 - SADIS strategic assessment tables

That, the ASIA/PAC SADIS strategic assessment tables, as given in Appendix F to the report on Agenda Item 2.2, be adopted and forwarded to the SADISOPSG for planning the future SADIS bandwidth requirements.

Implementation of the ISCS

2.2.83 A transition to a successor ISCS has been planned by the U.S. in connection with advances in computer and telecommunication technologies and also because the telecommunication provider's contract for the current ISCS would terminate in September 2003. The transition would require upgrade of the VSAT receivers currently in use due to the change from X.25 to TCP/IP protocol and replacement of the STAR4 workstations for processing and display of WAFS data received through ISCS. The meeting was provided with a revised schedule for implementation of the new ISCS, as follows:

- the TCP/IP protocol will be introduced in mid September 2003; the X.25 protocol will be also available until 1st January 2004; and

- after 1st January 2004 only TCP/IP protocol will be supported; thus, for a workstation to receive data via ISCS, it must be capable of interfacing to TCP/IP.

2.2.84 The U.S. informed the States concerned that, while the upgrading of the VSAT receiver, including the on-site installation of the necessary new components, will be taken up by the U.S., the replacement of the workstations will fall into the purview of each State. It was emphasized that all ISCS user States should have their new ISCS workstations operational by 15th December 2003 in order to continue receiving WAFS products and OPMET data via the new ISCS.

2.2.85 The meeting was informed of the possible interim solutions of acquiring WAFS data for those States who might not have a new or upgraded operational workstation at the time X.25 was no longer supported on ISCS. WAFC London was currently providing a free ftp service via Internet as a WAFS back-up for all authorized SADIS and ISCS users. If this service were used, visualization software for the WAFS products would be necessary. The meeting agreed that the ftp back-up service provided by the UK was the most suitable option for those States that might not be ready on time for receiving and processing WAFS data through the new ISCS, and adopted the following Conclusion:

Conclusion 14/28 - Use of the SADIS Internet Back-up Service by ISCS User States

That, the ISCS user States be encouraged to consider the use of the SADIS internet-based ftp back-up service as an interim solution for

reception of WAFS products and OPMET data in the event of difficulties in meeting the ISCS transition schedule.

Note: The use of the SADIS internet-based back-up service would require a software for visualization of the WAFS products.

Issues related to SADIS cost sharing

2.2.86 The meeting was informed of the concern expressed at the CNS/MET SG/7 meeting by the experts from China and Malaysia regarding the current mandatory scheme on the sharing of costs of SADIS from the perspective of developing countries. The meeting felt that this matter was more appropriate to the SADIS Cost Recovery Allocation Group (SCRAG), which was the group with the necessary expertise for discussing cost sharing matters. The meeting urged China and Malaysia, if they wished to pursue the matter with SCRAG, to support their case with a very comprehensive comparative analysis related to expected changes resulting from the proposed new method for calculating the States' shares and to take into account ICAO's guidance material and policies concerning the recovery of costs for provision of air navigation services.

2.2.87 It was further clarified that by introducing the mandatory scheme for SADIS cost sharing, it was always emphasized that the States could recover their shares through the air navigation charges. However, while the ICAO policy was that the service provided in accordance with Annex 3 was subject to cost recovery, some States had been facing practical difficulties in implementing the cost recovery through air navigation charges. Based on this discussion, the meeting considered it appropriate to encourage States to recover the costs incurred from the transition to the GRIB/BUFR coded WAFS products, the related changes in the SADIS and ISCS systems, and other costs, including the mandatory SADIS shares, following the relevant guidelines. In agreeing on this, The meeting adopted the following Conclusion:

Conclusion 14/29 - Cost Recovery for the utilization of WAFS by the States

That, ASIA/PAC States be encouraged to include the costs associated with the receipt and provision of WAFS products, in particular, the mandatory SADIS charges, the cost for the replacement or upgrade of WAFS workstations and software required for the transition to the GRIB and BUFR coded WAFS products, the upgrade and maintenance of the SADIS/ISCS VSAT equipment, in the cost recovery for the meteorological services provided in their territory via the air navigation service charges.

Note: The recovery of the costs should be in accordance with ICAO principles and policy on the air navigation service charges.

WAFS current status and ongoing issues for resolution

2.2.88 The current status of the WAFS and the outstanding issues related to the transition to the so called "final" phase were discussed in light of the recommendations by the MET Divisional Meeting (2002). It was reminded that in order to decode and display WAFS SIGWX products in BUFR code form, it would be necessary for the States to obtain the appropriate software and for their staff to be trained in its use. States should develop their plans for transition to GRIB/BUFR in such a way as to be ready well in advance to the target date of 1 July 2005, when the production/transmission of WAFS graphical output, i.e. T4 facsimile charts, by the WAFCs would be discontinued.

2.2.89 The meeting reviewed the results from the regional survey on the States' plans for transition to the GRIB/BUFR coded WAFS products, carried out during January–May 2003 by the WAFS Transition Task Force (WAFS/T TF) of the CNS/MET Sub-group in coordination with the ICAO Office, Bangkok, as a follow-up of APANPIRG Conclusion 13/25. The survey results, based on replies from 26 States and territories in the ASIA/PAC Region, were presented and the following findings were highlighted:

- 83% of States/Territories had yet to be capable to operationally convert BUFR coded WAFS products into SIGWX charts and 69% of States/Territories had yet to be capable to operationally convert GRIB coded WAFS products into Wind/Temperature charts;

- 14 returns indicated requirements for training in GRIB and/or BUFR;

- a number of States expressed difficulties in having operational GRIB and/or BUFR capability before the July 2005 time frame or indicated that more time may be required for the transition.

2.2.90 Based on the survey results, the meeting stressed that, as the anticipated date of removal of T4 facsimile products from the WAFS satellite broadcast was only two years ahead, it was imperative that:

a) all States should be urged to start the necessary preparation for the migration to GRIB and BUFR as soon as possible, if they have not already done so; and

b) considerable assistance in terms of the provision of equipment, software and training was urgently required for States having difficulties in the migration to GRIB and BUFR.

2.2.91 The CNS/MET SG/7 meeting was advised by the observer from the World Meteorological Organization (WMO) that, in view of the very short time left to the transition to the GRIB/BUFR coded WAFS products, requests by the States for assistance under the WMO Voluntary Cooperation Programme (VCP) should be submitted to WMO as soon as possible. The meeting noted this important information and adopted the following Conclusion:

Conclusion 14/30 - States' Actions for the Migration to the Operational Use of GRIB and BUFR coded WAFS Products

That,

a) ASIA/PAC States be urged to start the necessary preparations for the migration to the operational use of GRIB and BUFR coded WAFS products as a matter of urgency, if they have not already done so;

b) States having difficulties in the migration to the operational use of GRIB and BUFR coded WAFS products be encouraged to urgently approach WMO for assistance under the WMO Voluntary Cooperation Programme (VCP).

Note: In order to expedite WMO consideration of VCP requests, States are encouraged to contact potential donors and subsequently inform WMO.

BUFR coded SIGWX forecasts

2.2.92 The meeting noted the information regarding some outstanding technical issues related to the generation of SIGWX charts from BUFR coded data. The meeting agreed in this regard that further evaluation by WAFC London would be carried out to ascertain that the SIGWX charts generated by the available software packages meet the requirements of Annex 3 in full without the need for significant manual inputs. As regards the extent of the manual inputs to be required for generation of SIGWX charts from BUFR coded WAFS products, the meeting felt that States had to be made aware of the possible changes to the current operational procedures in handling WAFS SIGWX products in BUFR code instead of T4 facsimile charts. It was stressed that the SIGWX chart generation process from BUFR coded data, in particular for the generation of charts for the standard ICAO areas, should be automated to the extent possible. In this connection, the meeting adopted the following Conclusion:

Conclusion 14/31 - Automatic Production of SIGWX Charts from BUFR Coded WAFS Products

That, the WAFSOPSG be invited to consider the requirement for automatic production of SIGWX charts for the standard ICAO chart areas from BUFR coded WAFS products to be included into the set of minimum requirements to be achieved by the WAFS workstation manufacturers.

GRIB/BUFR training

2.2.93 The meeting was informed about the ASIA/PAC SADIS Workstation Software Training for decoding of WAFS products in the GRIB and BUFR codes held in Bangkok, Thailand from 18 to 20 November 2002 as a follow-up of APANPIRG Conclusion 12/22. The training was provided by the SADIS provider State, the organization and programme of the event being coordinated with the WMO.

2.2.94 The meeting was also informed of the ISCS provider State's plan for a similar training event for decoding and visualization of WAFS products in the GRIB and BUFR codes to be provided in late-2004/early-2005 after most of the ISCS user States had upgraded their ISCS workstations and received initial training from the workstation suppliers. Noting from the results of the regional survey that a number of SADIS user States in the ASIA/PAC Region indicated that training on GRIB and/or BUFR was still required, the meeting adopted the following Conclusion:

Conclusion 14/32 - GRIB/BUFR Training

That, the SADIS and ISCS provider States be invited to provide further training on the operational use of GRIB and BUFR coded WAFS products for the States in the ASIA/PAC Regions in coordination with ICAO and WMO.

Note: It is desirable that the above training is organized conjointly by the SADIS and ISCS provider States for both SADIS and ISCS user States in the ASIA/PAC Region in late 2004/early 2005.

Coordination with the new WAFS Operations Group (WAFSOPSG)

2.2.95 The meeting was informed of the establishment of the WAFS Operations Group (WAFSOPSG) as a successor of the WAFS Study Group (WAFSSG) to provide assistance in the

future planning and development of the WAFS. Australia, as an ex-RAFC Provider State, and Singapore, as an user State, would nominate members to WAFSOPSG from the ASIA/PAC Region.

2.2.96 With the establishment of the WAFSOPSG it was likely that the role of the PIRGs in WAFS planning would become of lesser importance. However, in respect of WAFS implementation, the CNS/MET SG was expected to continue to address the ongoing issues, including in particular, the States' progress in their capability to receive, decode, and process WAFS output products in the GRIB and BUFR code forms. In view of the above developments, the CNS/MET SG/7 meeting reviewed the TORs and the work programme of the WAFS Transition Task Force (WAFS/T TF) and agreed that the group should continue its work for one more year since the results of the GRIB/BUFR regional survey showed that urgent follow-up actions were required so that the States in the ASIA/PAC Region be ready for the migration to GRIB and BUFR by mid-2005. The meeting agreed also that the WAFS/T TF should focus on implementation aspects and amended the TORs of the group accordingly.

2.2.97 In view of the recent developments towards harmonization of the WAFS procedures in all ICAO Regions, the meeting agreed that the regional procedures related to WAFS in the ASIA/PAC Basic ANP and FASID needed to be updated and adopted the following Conclusion:

Conclusion 14/33 - Amendment of regional procedures related to WAFS in the ASIA/PAC Basic ANP and FASID

That, the ASIA/PAC Basic ANP and FASID (Doc 9673) be amended as indicated in Appendix G to the report on Agenda Item 2.2.

2.2.98 The CNS/MET SG/7 meeting identified that a notification procedure should be developed to ensure that all States would be promptly informed on any important changes in the WAFS operations in order to prepare their WAFS processing system. The following Conclusion was adopted in this regard:

Conclusion 14/34 - Notification for significant changes in the WAFS operation

That, WAFSOPSG be invited to develop adequate notification procedure for significant changes in the WAFS operation to ensure that all States/users concerned are informed with enough lead time to prepare for those changes.

OPMET Exchange

2.2.99 The first meeting of the OPMET Exchange Task Force of the CNS/MET Sub-group (OPMET/E TF/1), held in Bangkok, 19-21 February 2003, carried out a comprehensive review of the current status of the OPMET exchange schemes in the ASIA/PAC Region and the exchange with the other ICAO regions. The meeting was provided with detailed information on the OPMET management in the EUR Region by the observers from the EUR Bulletin Management Group.

2.2.100 It was agreed that the ROBEX scheme should continue to be used for the purpose of scheduled regular OPMET exchange within the Region. In addition to the current data types METAR (SA), "long" TAF (FT) and AIREP (UA), the scheme should accommodate SPECI (SP) and "short" TAF (FC). In the future, the scheme should be capable of carrying all OPMET data types, including the non-regular messages.

2.2.101 The meeting agreed that the current structure of the ROBEX scheme needed optimization and improved management. It was decided that in place of the current variety of collection centres, a number of ROBEX centres should be established. Each ROBEX centre should be responsible for all OPMET data types within its area of responsibility. It is expected that the second meeting of the OPMET/E TF would finalize the proposal for the new structure of the ROBEX scheme.

ROBEX optimization

2.2.102 A new format of the ROBEX tables was proposed by OPMET/E TF and presented to the CNS/MET SG/7 meeting. After reviewing the tables the meeting agreed upon the new format and that the new tables for the METAR and TAF exchange, and the table for the availability of METAR and TAF against the requirements in the ASIA/PAC AOP1 Table, as shown in Appendix H to the report on Agenda Item 2.2, be included in the new edition of the ROBEX Handbook. The meeting noted the plans for the draft new edition of the ROBEX Handbook with the updated ROBEX tables and other changes, reflecting the decisions of the OPMET/E TF/1 meeting, to be finalized by the end of September 2003 and after review by the States to be published by ICAO. The meeting requested that an electronic version of the Handbook would be made available on the ICAO, Bangkok web site.

2.2.103 The meeting was informed of the organization of the inter-regional OPMET exchange, as agreed by the OPMET/E TF/1 meeting. It would be carried out by inter-regional OPMET gateways, as follows: Singapore ROBEX centre for EUR Region, Tokyo ROBEX centre for NAM Region and Bangkok ROBEX centre for MID and AFI Region.

2.2.104 The meeting was aware that the 9-hour TAFs, issued by some States in the ASIA/PAC Region, were required by the operators, however, so far there was no formal requirement for these forecasts in the Regional ANP; that is why, they were not included in the ROBEX exchange. The meeting agreed that the 9-hour TAFs should be added to the ROBEX exchange and that the OPMET/E TF should make the necessary coordination and updates the relevant documentation. Based on this, the following Conclusion was adopted:

Conclusion 14/35 - Inclusion of 9-hour TAF in the ROBEX exchange

That, the ASIA/PAC States who are issuing 9-hour TAF, be invited to include these bulletins into the regular exchange under the ROBEX scheme.

Regional OPMET Data Banks (RODB)

2.2.105 The meeting agreed that all ASIA/PAC RODBs should handle all OPMET data types. Mirroring of the data bank content between the RODBs was found necessary in order to facilitate the users' access to all OPMET data available in the Region. It was agreed that the RODBs Tokyo, Singapore and Bangkok should start working on the procedure of mirroring of data banks content and the other two data banks should join on a later stage.

2.2.106 The OPMET TF/1 meeting proposed that OPMET monitoring procedures similar to those in use in the EUR Region should be developed and implemented by the RODBs in the ASIA/PAC Region. It was agreed that Bangkok RODB should perform the first monitoring trial on the regular METAR and TAF exchange. This trial was held on 1st July 2003 for 24 hours. During this period all received METAR and TAF bulletins by Bangkok RODB were filed and analysed in regard to the availability of METAR and TAFs from the aerodromes required by the ROBEX tables.

2.2.107 The meeting was aware that the current AFTN capacity was enough to accommodate much more OPMET information. It was recalled that the current user requirement, as reflected in APANPIRG Conclusion 10/23, was that all international aerodromes listed in ASIA/PAC FASID Table MET 1A should be included in the regular OPMET exchange. It was further explained that for the aerodromes, which do not operate continuously on 24-hour basis, the OPMET information should be made available for the exchange when produced by the responsible meteorological office.

Future work programme of the OPMET Exchange Task Force

2.2.108 The meeting was informed of the decision by the CNS/MET SG/7 meeting to change the title of the OPMET Exchange Task Force to OPMET Management Task Force to reflect better the work to be done by this task force. The terms of reference of the group were amended accordingly.

Issues related to SIGMET

2.2.109 The meeting recalled that the MET Divisional Meeting (2002) noted that some of the ICAO PIRGs had identified serious problems with the implementation of the issuance of SIGMETs by the meteorological watch offices (MWO) in certain States. The problems were related to all types of SIGMET but were most noticeable for SIGMETs for volcanic ash. The meeting emphasized that this problem was a serious safety issue and formulated two recommendations on the subject. ICAO gave urgent consideration to the implementation of special implementation projects (SIP) recommended by the PIRGs to assist States in fully implementing the SIGMET provisions in Annex 3. Regional surveys of the issuance of SIGMET messages in order to identify any deficiencies, as well as update of the regional SIGMET guides were amongst other actions to be taken in resolving the SIGMET related problems.

2.2.110 As a follow up of the MET Divisional Meeting recommendations a new edition of the ASIA/PAC Regional SIGMET Guide has been prepared by the ICAO Office, Bangkok. The Guide was aimed at providing assistance to the MWOs in better understanding the SIGMET format, the procedures for SIGMET issuance and dissemination, and the responsibilities and coordination between the MWOs and the associated ATS units. The CNS/MET SG/7 meeting reviewed the draft new edition of the Regional SIGMET Guide and agreed upon its publication by ICAO according to the established procedures. The meeting adopted the following Conclusion:

Conclusion 14/36 - ASIA/PAC Regional SIGMET Guide

That,

a) ICAO publish the new edition of the ASIA/PAC Regional SIGMET Guide in accordance with the established procedures; and

b) based on the guidance provided in the ASIA/PAC Regional SIGMET Guide, the States be invited to review the operations of the designated MWOs and ensure that SIGMET messages are issued in full compliance with the Annex 3 provisions and the requirements stated in the ASIA/PAC Regional ANP.

2.2.111 The meeting was further informed of the analysis carried out by the ICAO Regional Office on the SIGMET availability and format for a limited period of time in the first half of 2003. Through this analysis it was identified that there were two common problems regarding the implementation of SIGMET requirements by the MWOs, as follows: SIGMETs were not issued at all or issued only occasionally; or SIGMETs were issued but their format was not compliant with the format specified in Annex 3.

2.2.112 Particular attention was given to the existing format discrepancies in regard to the geographical part of the SIGMET, which was subject to greatest number of errors. It was considered in this regard, that the current SIGMET format as specified by Annex 3 needed some amendments aimed at standardizing the reporting of the geographical information in SIGMET. The meeting agreed that the proposed amendments to the SIGMET format would facilitate the MWOs in the preparation of SIGMET messages and adopted the following Conclusion:

Conclusion 14/37 - Amendments to the SIGMET format

That, ICAO be invited to consider amendments to the SIGMET format specified by Annex 3, in particular to the part of the SIGMET message related to the geographical location of the weather phenomenon, for which the SIGMET is issued, aimed at facilitating the preparation of SIGMET information and further standardization of the message format.

Note: Examples of proposed changes to the SIGMET format are shown in Appendix I to the report on Agenda Item 2.2.

2.2.113 The meeting was further informed of the decision by the CNS/MET SG/7 meeting on conducting a regional survey to identify all existing deficiencies related to the issuance of SIGMET by the MWOs. The results of such survey would be used in deciding on the further assistance to States needed.

Progress in the implementation of the IAVW in the ASIA/PAC Region

2.2.114 The meeting recalled that the implementation of the IAVW in the ASIA/PAC Region was undertaken by five Volcanic Ash Advisories Centres (VAAC): Anchorage, Darwin, Tokyo, Washington and Wellington, and a number of MWOs designated by the States. A statistical analysis on the issuance of volcanic ash advisories by all VAACs in the ASIA/PAC Region for the period 1998 – 2002 had been prepared by the VA Task Force. The results of this analysis showed that the VAACs had been performing very well during this period and as far as the advisories were concerned the IAVW was considered fully implemented in the Region.

2.2.115 Another study undertaken by the VA Task Force was aimed at receiving feed-back from the ASIA/PAC States on the utilization of the VA advisories by the MWOs in the issuance of VA SIGMETs. One of the findings of this survey was that most of the MWOs issued volcanic ash SIGMETs very rarely since volcanic ash was extremely rare event for their areas of responsibility. In this respect, concern was expressed that the personnel of the MWOs, who did not issue volcanic ash SIGMET for long periods of time, might not be prepared to do so in the rare but very important cases when SIGMET would be necessary. It was suggested that, in order to keep the system ready for action, periodic tests and exercises should be conducted with the participation of the VAACs and the MWOs under their areas of responsibility. The VA Task Force was tasked to develop procedures for such tests.

ASIA/PAC Special Implementation Project (SIP) on SIGMET for volcanic ash

2.2.116 The meeting recalled the APANPIRG Conclusion 11/33 that called for an ICAO SIP to address the deficiencies related to VA SIGMETs. A SIP proposal, which took into account also the recommendations by the MET Divisional Meeting (2002) on the subject, was submitted to the ICAO Council and was consequently approved for implementation during 2003.

2.2.117 The SIP would be conducted through visits to selected States aimed at identifying the problems in the implementation of the SIGMET procedures and providing on-site assistance to

develop actions for eliminating the existing deficiencies. The States with the highest volcanic activity to which visits would be conducted were: the Russian Federation, Indonesia, Papua New Guinea, Japan and Philippines.

2.2.118 The SIP started in April 2003 with visits to Japan and Philippines. Some preliminary findings based on these missions were presented to the CNS/MET SG/7 meeting. A full report, prepared in coordination with the VA Task Force would be presented to the CNS/MET SG/8 meeting in 2004.

Coordination with the new IAVW Operations Group (IAVWOPSG)

2.2.119 The meeting was informed of the establishment of the International Airways Volcano Watch Operations Group (IAVWOPSG) in response to recommendation by the MET Divisional Meeting (2002). This new group would take most of the planning of the IAVW, which became *de facto* global. With regard to the IAVW implementation, the APANPIRG role would not change and the CNS/MET sub-group should continue addressing all the implementation issues, in particular, regarding the States' progress in their capability to issue volcanic ash advisories (VAAC Provider States) and SIGMETs for volcanic ash clouds.

2.2.120 In view of the above changes of the responsibilities related to IAVW planning and implementation, the CNS/MET SG/7 meeting considered the future of the Volcanic Ash Task Force (VA TF), established by Decision 13/31 of APANPIRG. The meeting felt that there were a number of implementation issues regarding the volcanic ash advisories and SIGMETs in the Region that should be addressed by a group of experts. It was further discussed that similar implementation problems existed in regard to the tropical cyclones advisories and SIGMETs and that it would be feasible that one task force could address the issues related to both tropical cyclones and volcanic ash. Thus, it was proposed to disband the current VA TF and to replace it by a new task force on the implementation of volcanic ash and tropical cyclone advisories and SIGMETs. The meeting formulated the following draft decision:

Decision 14/38 - Task Force on the implementation of volcanic ash and tropical cyclone advisories and warnings (VA/TC Implementation TF)

That,

a) the Volcanic Ash Task Force, established by Decision 13/31 of APANPIRG be disbanded; and

b) a Task Force on the implementation of the volcanic ash and tropical cyclone advisories and SIGMETs in the ASIA/PAC Region (VA/TC Implementation TF) be established with terms of reference, work programme and composition as shown in Appendix J to the report on Agenda Item 2.2.

Harmonization of the format of VA and TC advisories

2.2.121 The CNS/MET SG/7 meeting noted some differences existing in the format of the field tags in the templates for the TC and VA advisories specified in Annex 3. Thus, the TC advisory template tags contained abbreviations, while the VA advisory template contained plain text, e.g., the date/time field in the TC advisory template was indicated with the abbreviation "DTG:", while in the VA template it was indicated as "ISSUED:". It was also recognized that the VA advisory contained a "remark" section and no such section was present in the TC advisory template. Since both types of

advisories were used by the MWOs, it was considered that their formats should be harmonized. In this regard, the meeting adopted the following Conclusion:

Conclusion 14/39 - Harmonization of the format of volcanic ash and tropical cyclone advisories

That, IAVW Operations Group (IAVWOPSG) be invited to review the format of the volcanic ash and tropical cyclone advisories and propose changes aimed at harmonizing the format of those elements which are common for both types of advisory messages.

Recent developments of the IAVW services in the States

2.2.122 The meeting was informed of the plans of VAAC Tokyo to introduce later this year the issuance of VA advisories regardless the height of the VA cloud to fully comply with Annex 3 provisions.

2.2.123 The expert from New Zealand informed the meeting of the difficulties experienced by the Wellington VAAC and Wellington MWO in the provision of service (volcanic ash advisories and warnings) south of 60 degrees South. It was explained also that the flight operations in this area were very infrequent. New Zealand was comfortable, that due to the absence of information in the extreme south of the Wellington VAAC area, and knowing that there were extremely little civilian international flight operations in the area, a note was introduced in FASID Table Met 3 – Volcanic Ash Advisory Areas, indicating that "*coverage south of 60°S latitude is currently not feasible"*. For very much the same reasons New Zealand would prefer that the ASIA/PAC FASID Table Met 1B – Meteorological Watch Offices, be amended with a similar note for the limitation of Wellington MWO coverage of the Auckland Oceanic FIR (NZZO) south of 60ºS. The meeting agreed with the request by New Zealand and formulated a Draft Conclusion as follows:

Conclusion 14/40 - Amendment to FASID Table MET 1B in regard to the service provided by the meteorological watch office Wellington

That, FASID Table MET 1B be amended by adding a note for MWO Wellington, New Zealand, as shown in the Appendix K to the report on Agenda Item 2.2.

Implementation of Annex 3 format of the TC advisories by the TCACs

2.2.124 The meeting recalled that the MET Divisional Meeting (2002) noted that some of the designated Tropical Cyclone Advisory Centres (TCAC) did not yet issue their TC advisories in the format required by ICAO. In this regard, a recommendation was adopted, which invited all TCAC Provider States to implement the Annex 3 format for the TC advisories for aviation. As a follow-up of this recommendation, a letter was sent by the ICAO Regional Office to the TCAC Provider States in the ASIA/PAC region calling for implementation of the issuance of TC advisories for aviation in full accordance with the format spelled out in Annex 3, paragraph 3.7.2.

2.2.125 Most of the TCACs in the ASIA/PAC Region cooperated fully in implementing the standard format of the TC advisories according to Annex 3. TCACs Darwin, Nadi and Tokyo implemented the Annex 3 format in the beginning of 2003. In May 2003 TCACs Miami and Honolulu added the 18-hour forecast of the TC centre to bring the TC advisories into full compliance with the information content and format in Annex 3.

2.2.126 The meeting expressed concern on the non-implementation of the TC advisories for aviation by TCAC New Delhi. The lack of TC advisories for the Bay of Bengal and Arabian Sea was considered a serious deficiency in view of the large number of important air routes over the region. The issue was addressed from ATM perspective by the ATA/AIS/SAR SG/13 meeting in June 2003. It was recognized that, the information for tropical cyclones was important for the planning and implementation of Large-Scale Weather Deviation Contingency Procedures by the Area Control Centres (ACC) in this region. In view of the above, the meeting agreed that the urgent implementation of the requirements for TC advisories by TCAC New Delhi should be given high priority and adopted the following Conclusion:

Conclusion 14/41 - Implementation of the requirement for TC advisories by TCAC New Delhi

That, India, as TCAC Provider State, be invited to implement, as a matter of urgency, the requirement for issuance of TC advisories by TCAC New Delhi as specified in the ASIA/PAC Basic ANP and FASID (Doc 9673), following the provisions of Annex 3, regarding the format of these advisories.

2.2.127 The meeting was informed of the discussions at the CNS/MET SG/7 meeting related to some difficulties in the implementation of Annex 3 provisions for tropical cyclone advisories and SIGMETs. It was felt that these issues should be addressed by ICAO in line with the feed-back from States calling for certain improvements, for instance: inclusion of a +6 hour forecast of the TC centre in and introduction of a “remark” section in the TC advisory format, detailing the provisions for the issuance of SIGMETs up to 12 hours before the FIR is affected by the tropical cyclone. Noting the need for a review of these proposals and subsequent amendments to the Annex 3 provisions related to the TC advisories and warnings, the meeting adopted the following Conclusion:

Conclusion 14/42 - Further development of the ICAO provisions for the tropical cyclone advisories and SIGMETs

That, ICAO be invited to consider further development of the Annex 3 provisions related to the format and content of the tropical cyclone advisories issued by the Tropical Cyclone Advisory Centres (TCAC) and SIGMETs for tropical cyclones issued by the meteorological watch offices (MWO).

Quality assurance seminar

2.2.128 The meeting recalled the APANPIRG Conclusion 13/32, calling ICAO to organize, in coordination with the WMO, a seminar on the quality assurance in the provision of meteorological services to aviation in the ASIA/PAC Region in 2003. The meeting was informed that, during the review of the APNAPIRG/13 report by the ICAO Council this conclusion was addressed to WMO, in accordance with the working arrangements between ICAO and WMO. The meeting was further informed that in April 2003 the Secretary General of ICAO sent a letter to the Secretary General of the WMO inviting WMO to arrange, in coordination with ICAO, the said training seminar. The meeting noted that Hong, Kong, China had offered to host this seminar. The meeting considered the next steps for organizing the training seminar and agreed to set up an ad-hoc team composing experts from Hong Kong, China, Malaysia, New Zealand, Singapore, USA, and WMO to draw up a tentative programme for the seminar, subject to confirmation from WMO.

Review Subject/Tasks List of the CNS/MET Sub-Group

2.2.129 The meeting reviewed the Terms of Reference of the CNS/MET Sub-Group and did not see the need to propose any change.

2.2.130 The meeting then reviewed the Subject/Task List of the CNS/MET Sub-Group. It was noted that of the 40 tasks 29 tasks were completed and the completed Tasks had been deleted from the list. It was noted that the Task No. 31 had identified the need to provide COM facility to support aircraft access to OPMET data bank. It was recognized that it was not operationally required to provide data link at 5 OPMET data banks in the ASIA/PAC region. Instead, it was considered desirable to provide access to VOLMET broadcast stations by aircraft via data link in accordance with Key Priority in the CNS/ATM Implementation. The Task No. 31 was therefore, amended accordingly in line with the Key Priority. Tasks No. 32 and 37 were amended to reflect new developments in the MET field. New Tasks, No. 39 on the improvement of the OPMET exchange in the ASIA/PAC region, and No.40 on the development of Quality Management Systems for the meteorological services provided for the international air navigation, were added to the list.

2.2.131 The target dates, actions proposed and/or in progress were updated to indicate the progress.

2.2.132 The updated Subject/Task List is provided in Appendix L. In consideration of the foregoing, the meeting adopted the following Decision.

Decision 14/43 - Update Subject/Tasks List of the CNS/MET Sub-Group

That, the updated Subject/Tasks List of the CNS/MET Sub-Group presented in Appendix L be adopted.

TITLE AND TERMS OF REFERENCE

TITLE: ATN Transition Task Force

TERMS OF REFERENCE:

Plan for implementation of the Aeronautical Telecommunication Network (ATN) in the ASIA/PAC Region to meet performance and capacity requirements of CNS/ATM Systems. The planning also addresses the ongoing development of the AFS including digital speech communication.

Subject/Tasks List of the ATN Transition Task Force

No.	Ref.	Task	Priority	Action Proposed/In Progress	Target
1	RAN/3 C 10/12 C 10/11d	Subject: ATN Transition Guidance Material. Task: Develop Regional ATN Transition Guidance Material.		1) Development of detailed guidance material.	Completed
2	RAN/3 C 10/11d	Subject: ATN Transition Plan Task: Develop an ATN Transition Plan to provide seamless transition to ATN.		1) Develop Ground Transition Plan taking into account Air-to-Ground aspects. 2) Develop a set of planning documents covering: i) ATN Regional Routing Architecture ii) ATN Naming and Addressing Conventions, and iii) Documentation of the Assigned ATN Names and Addresses.	Completed
3		Subject: ATN major elements. Task: Provide performance and functional requirements of ATN.	A	1) Develop ATN Technical Documents. - Security - Performance - System Management	~~2003~~ 2004 ~~2003~~ 2004 ~~2003~~ 2004
4	RAN/3 C 10/11b	Subject: AFTN related issues Task: Review operation of AFTN.	B	1) Evaluate and review the effect of increases or decreases in capacity and network changes, on circuit loading. 2) Plan network changes for support of OPMET and AIS databases, automated VOLMET broadcast.	On-going ~~2003~~ completed
5		Subject: Planning and implementation information in ANP. Task: Develop G/G part of the CNS FASID.	A	Development of detail description for the existing tables and Charts for the G/G part of the CNS FASID. 1) Table CNS 1B – ATN Router Plan 2) Table CNS 1C – ATS MHS 3) Table CNS 1D – AIDC Routing Plan	 Completed ~~2003~~ 2004 ~~2003~~ 2005

No.	Ref.	Task	Priority	Action Proposed/In Progress	Target
6		Subject: ATN Documentation Task: Development of ATN Routing Documentations and ICDs.	A	Development of ATN Documents: 1) A Router ICD 2) A Routing policy for IDRP 3) A Routing policy for MTA 4) Directory of Service 5) An AMHS ICD 6) An AIDC ICD	~~2003~~ completed completed ~~2003~~ 2004 2004 completed 2004
7		Subject: Use of the public Internet Task: Develop guidance material for the use of the public internet technology to support AFTN, where required.	A	Study the possibility of using the public Internet and develop guidance material for its use to support low speed AFTN stations, as an interim measure, with particular emphasis on security and reliability.	~~2003~~ completed
8		Subject: Use of IP Task: Develop guidance material for the use of IP as a Sub-Network for ATN	B	In accordance with the work being performed by ATNP, develop guidance material for the support of IP as a Sub-Network of the ATN, with particular emphasis on system compatibility between adjacent centers and security.	(2005) (Monitor development in ACP)
9		Subject: AMHS Naming Registration Task: Develop registration forms for assigning AMHS address for the region	A	To develop an AMHS Naming Registration Planning Document for registering the AMHS naming conventions and assignments to be used within the region.	2004
10		Subject: AFTN/AMHS Operational Procedures Tasks: Revise and develop operational procedures applicable to the use of the AMHS.	A	To review existing AFTN proceduress and adopt or develop new procedures applicable to the operation and use of the AMHS.	2004

UPDATED STRATEGY FOR THE PROVISION OF PRECISION APPROACH AND LANDING GUIDANCE SYSTEMS

Considering:

a) ~~that,~~ in the ASIA/PAC Region, ILS is capable of meeting the majority of requirements for precision approach and landing;

b) ~~that,~~ requirements for provision of terrestrial-based navigation facilities~~,~~ non-precision and precision approach and landing have been implemented in most cases;

c) the availability of ICAO ~~GNSS~~ SARPs and guidance material ***for GNSS with augmentation to support Cat I precision approach;***

d) the knowledge that GNSS without augmentation can support non-precision approaches and that augmented GNSS- based systems ***is expected to*** ~~will~~ be available to support Category I operations ***by year 2006*** ~~from end of year 2004~~;

e) ~~feasibility of GBAS systems~~ ***GNSS with augmentation*** to support category II and III operations ***is expected to be available in 2010 – 2015 time frame*** ~~in 2006~~;

f) ~~the availability of a proven and standardized MLS to meet all weather operations requirements;~~ ***MLS Cat I is operational and ground and airborne Cat III B certification is in progress;***

g) ~~the development and deployment of multimode receivers;~~ ***a multi-modal airborne approach and landing capability is necessary and expected to be available;***

h) the definition of Required Navigation Performance for approach, landing and departure operations;

i) the need to maintain aircraft interoperability both within the region and between the ASIA/PAC Region and other ICAO regions and to provide flexibility for future aircraft equipage.

The strategy for ASIA/PAC Region in the provision of precision approach and landing guidance is:

a) ***Retain*** ILS ~~be retained~~ as an ICAO standard system for as long as it is operationally acceptable and economically beneficial;

b) Implement GNSS with ***augmentation*** ~~GBAS~~ to support Category I operations where ***operationally required and economically beneficial*** ~~appropriate~~;

c) Conduct studies for the implementation of GNSS ground- based augmentation systems and GNSS avionics equipment for Category II and III operations;

d) Introduce applicable Required Navigation Performance (RNP) for approach, landing and departure operations in accordance with ICAO provisions.

e) Conduct necessary on-going GNSS and RNP education and training for operational personnel to ensure safe operations.

f) Implement MLS where operational requirements cannot be satisfied by implementation of ILS or GNSS.

g) Protect radio frequency spectrum of ILS, MLS and GNSS since the transition from ILS to GNSS and /or MLS will be evolutionary and will take some time.

UPDATED STRATEGY FOR THE IMPLEMENTATION OF GNSS NAVIGATION CAPABILITY IN THE ASIA/PAC REGION

Considering that:

1) Safety is the highest priority;

2) Elements of Global Air Navigation Plan for CNS/ATM system on GNSS and requirements for the GNSS implementation have been incorporated into the CNS part of FASID;

3) GNSS SARPs, PANS and guidance material for GNSS implementation are available;

4) The availability of avionics including limitations of some receiver designs; the ability of aircraft to achieve RNP requirements and the level of user equipage;

5) Development of GNSS systems including satellite constellations and improvement in system performance;

6) Airworthiness and operational approvals allowing the current GNSS to be used for en-route and non precision approach phases of flight without the need for augmentation services external to the aircraft;

7) Development status of aircraft-based augmentation systems;

8) Regional augmentation systems include both satellite-based (SBAS) and ground-based systems (GBAS);

9) Human, environmental and economic factors will affect the implementation of GNSS.

~~**The general strategy for the implementation of GNSS in the Asia/Pacific Region is detailed below.**~~ This strategy ~~**is based on the**~~

10) The regional navigation requirements are~~of~~:

(a) RNP10/***RNP4*** for en-route ~~in remote/oceanic areas~~;
(b) RNP4 for ~~en-route and~~ ***transition to*** terminal phase of flight;
(c) *RNP1 for terminal phase of flight*;
(~~c~~d) NPA/APV for approaches and departures; and
~~(d)~~(e) Precision approaches at selected airports.

The general strategy for the implementation of GNSS in the ASIA/PAC Region is detailed below:

1) There should be an examination of the extent to which the GNSS system accessible in the Region can meet the navigational requirements of ATM service providers and aircraft operators in the Region;

2) Evolutionary introduction of GNSS Navigation Capability should be consistent with the Global Air Navigation Plan for CNS/ATM Systems;

3) During transition to GNSS, sufficient ground infrastructure for current navigation systems must remain available. Before existing ground infrastructure is considered for removal, users should be given reasonable transition time to allow them to equip with GNSS to attain equivalent navigation service;

~~3)~~4) Implementation shall be in full compliance with ICAO SARPs and PANS;

~~4) Introduce the use of GNSS as primary means of navigation in remote/oceanic areas;~~

~~5) Introduce the use of GNSS as a supplementary means of en-route navigation and non-precision approach~~;

5) Introduce the use of GNSS for en-route, terminal and approach navigation;

6) States are encouraged to implement future GNSS approvals based on TSO C145/146 receiver standards or equivalents;

7) To the extent possible, States should work co-operatively on a multinational basis to implement GNSS augmentation systems in order to facilitate seamless and inter-operable systems;

8) States consider segregating traffic according to navigation capability and granting preferred routes to aircraft with better navigation performance ~~with the exception of State aircraft~~ ***, taking due consideration of the need of State aircraft.***

9) States undertake a co-coordinated R & D programme on GNSS implementation and operation;

10) ICAO and States should undertake education and training to provide necessary knowledge in GNSS theory and operational application, including RNP, and

11) States establish multidisciplinary GNSS implementation teams, using section 6.10.2 of ICAO Circular 267, Guidelines for the Introduction and Operational Approval of the GNSS , as a guide.

Note1: Identified SBAS systems are EGNOS, MSAS and WAAS. The MSAS is expected to be available for providing augmentation for the Asia/Pacific region.

TOR of ADS-B STUDY AND IMPLEMENTATION TASK FORCE

TERMS OF REFERENCE

Complete an industry wide ADS-B cost/benefit study for the near term use of ADS-B throughout the ASIA/PAC Region.

Develop an implementation plan for near term ADS-B applications in Asia Pacific including target dates taking into account available equipment standards and readiness of airspace users and ATS providers.

Note:

1. The Task Force, while undertaking the task, should take into account of the work being undertaken by OPLINK, SAS, SCRS and AMC Panels with a view to avoid any duplication.

2. The Task Force should report to the APANPIRG meeting to be held in 2004 and subsequent meetings.

ASIA/PAC FASID **6-7-1**

FASID TABLE MET 7 — ~~IMPLEMENTATION~~ AUTHORIZED USERS OF THE SADIS AND ISCS2 SATELLITE BROADCAST in ASIA/PAC Region

EXPLANATION OF THE TABLE

Column

1. Name of the State or Territory.

2. User of the satellite broadcast. Abbreviations used:

CAA — civil aviation authority
NMS — national meteorological service
O — other than the civil aviation authority or the national meteorological service.

3. Location of VSAT : town and, where applicable, aerodrome to be indicated.

~~4. Indication whether the access to the satellite broadcast has been approved:~~

~~X — yes~~
~~[blank] no~~

~~5~~4. Indication whether the equipment is operational:

2w — two-way VSAT operational
1w — one-way VSAT operational
[blank] — no

Editorial Note. —	Column 4 considered redundant and proposed therefore for deletion.

International Satellite Communication System (ISCS/2) provided by the United States					
State/Territory	**WAFS User**	**Location of VSAT**	**~~Access Approved~~**	**~~Equipment Installed~~**	**Equipment Operational**
1	2	3			4
American Samoa (United States)		Information received from the US NWS, Honolulu via a dedicated circuit			
Australia	Bureau of Meteorology	Melbourne	~~X~~	~~X~~	~~X~~1w
China China Meteorological Administration (CMA) Civil Aviation Administration Civil Aviation Administration Hong Kong Observatory Chinese Aeronautical Meteorology Association		National MET Centre, Beijing Beijing Intl. Airport Shanghai Intl. Airport Hong Kong Intl. Airport Taibei	~~X~~ ~~X~~ ~~X~~ ~~X~~ ~~X~~	 ~~X~~ ~~X~~ ~~X~~	 ~~X~~1w ~~X~~1w ~~X~~1w
Cook I.	Meteorological Service				
Fiji	Meteorological Service	Nadi Intl. Airport	~~X~~	~~X~~	~~X~~1w
French Polynesia (France)	Meteo France	Information received from France via satellite	~~X~~		
Indonesia	Meteorological and Geophysical Agency	Soekarno – Hatta International Airport	~~X~~	~~X~~	~~X~~1w
Japan	Japan Meteorological Agency	~~Kokusai Denshin Denwa Co.~~ KODI Co.	~~X~~	~~X~~	~~X~~1w
Kiribati					
Malaysia	Department of Meteorology	Kuala Lumpur International Airport	~~X~~		1w
Mongolia	Civil Aviation Authority	Ulaanbaatar	~~X~~		
Nauru					
New Caledonia (France)	Meteo France		~~X~~	~~X~~	~~X~~1w
New Zealand	MET Service of New Zealand, Ltd.	Auckland Wellington	~~X~~ ~~X~~	~~Backup only~~ ~~X~~	 ~~X~~1w
Niue					
Papua New Guinea	Meteorological Department	Port Moresby Intl. Airport	~~X~~	~~X~~	~~X~~1w[1]
Philippines	Department of Meteorology	Manila	~~X~~	~~X~~	~~X~~1w[1]
Republic of Korea	Korea Meteorological Administration	Incheon Intl. Airport	~~X~~	~~X~~	~~X~~1w
Samoa					
Singapore	Singapore MET Service	Singapore/Changi Intl. Airport	~~X~~	~~X~~	~~X~~1w
Thailand	Meteorological Department	Bangkok Intl. Airport	~~X~~		
Tonga					
Tuvalu					
Vanuatu	Meteorological Service	Port Vila	~~X~~		
Viet Nam	Meteorological Service	Hanoi City	~~X~~	~~X~~	~~X~~1w
United States	National Weather Service	Guam Hawaii	~~X~~ ~~X~~	 ~~X~~	 ~~X~~1w

[1] Information received from the State that equipment is not operational.

International Satellite Communication System (ISCS/2) provided by the United States					
State/Territory	**WAFS User**	**Location of VSAT**	**~~Access Approved~~**	**~~Equipment Installed~~**	**Equipment Operational**
1	2	3			4
Wallis I. (France)	Meteo France	Wallis	~~X~~	~~X~~	~~X~~1w

Satellite Distribution System (SADIS) provided by the United Kingdom					
State/Territory	**WAFS User**	**Location of VSAT**	**~~Access Approved~~**	**~~Equipment Installed~~**	**Equipment Operational**
1	2	3			4
Bangladesh	Department of Meteorology	Dhaka			~~X~~1w
~~Brunei~~	~~Department of Civil Aviation~~	~~Brunei Intl. Airport~~	~~X~~	~~X~~	~~X~~
China	China Meteorological Administration (CMA)	National MET Centre, Beijing	~~X~~	~~X~~	
	Civil Aviation Administration	Beijing Intl. Airport	~~X~~	~~X~~	~~X~~1w
	Civil Aviation Administration	Shanghai Intl. Airport	~~X~~	~~X~~	~~X~~1w
	Hong Kong Observatory	Hong Kong Intl. Airport	~~X~~	~~X~~	~~X~~1w
	Chinese Aeronautical Meteorology Association	Taibei	~~X~~	~~X~~	
	Civil Aviation Administration	Macau Intl. Airport	~~X~~	~~X~~	~~X~~1w
DPR of Korea	General Administration of Civil Aviation	Pyongyang Intl. Airport	~~X~~	~~X~~	~~X~~1w
India	Meteorological Department	New Delhi	~~X~~	~~X~~	~~X~~1w
Indonesia	Meteorological and Geophysical Agency	Headquarters	~~X~~	~~X~~	
Lao PDR	Department of Meteorology	Vientiane, Watty	~~X~~	~~X~~	~~X~~1w
Malaysia	Department of Meteorology	Kuala Lumpur Intl. Airport	~~X~~	~~X~~	~~X~~1w
Maldives	Department of Meteorology	Male Intl. Airport	~~X~~	~~X~~	~~X~~1w
Mongolia	Civil Aviation Authority	Ulaanbaatar Intl. Airport	~~X~~	~~X~~	~~X~~1w
Nepal	Department of Meteorology	Kathmandu Intl. Airport	~~X~~	~~X~~	~~X~~1w
Pakistan	Meteorological Department	Karachi Intl Airport	~~X~~	~~X~~	~~X~~1w
Republic of Korea	Korea Meteorological Administration	Incheon Intl. Airport	~~X~~	~~X~~	~~X~~1w
Sri Lanka	Department of Meteorology	Colombo	~~X~~	~~X~~	~~X~~1w
Thailand	Thai Meteorological Department	Bangkok Intl. Airport	~~X~~	~~X~~	~~X~~1w
Vietnam	~~Civil Aviation Administration~~	~~Gialam Airport, Hanoi~~	~~X~~	~~X~~	~~X~~1w
	Civil Aviation Administration	Tan-Son-Nhat Intl. Airport, Ho Chi Minh	~~X~~	~~X~~	

SADIS STRATEGIC ASSESSMENT TABLES
CURRENT AND PROJECTED DATA VOLUMES 2003-2007

Note 1:1 octet = 1 byte = 1 character;

Note 2: low level (SWL) <FL 100; medium level (SWM): FL100 – FL 250; high level (SWH): >FL250.

Table 1. ASIA— OPMET data volumes

Main routing(s): AFTN, direct line (GTS)

OPMET data	*Current 2003*	*Projected 2004*	*Projected 2005*	*Projected 2006*	*Projected 2007*
ALPHANUMERIC DATA					
Number of FC bulletins issued per day	106	110	120	130	140
Average number of stations per FC bulletin	6	6	6	6	6
Number of **FT bulletins** issued per day	211	220	230	240	250
Average number of stations per FT bulletin	6	6	6	6	6
Number of **SA bulletins** issued per day	1448	1500	1550	1600	1650
Average number of stations per SA bulletin	6	6	6	6	6
Number of **SP bulletins** issued per day	0	20	30	40	50
Number of **SIGMET** bulletins issued per day	25	25	25	25	25
Number of **FK/FV** bulletins issued per day?	**4**	**5**	**5**	**5**	**5**
BINARY DATA					
Number of other bulletins issued per day	**0**	**0**	**0**	**0**	**0**
(please specify header(s))					
Average number of stations per bulletin	**0**	**0**	**0**	**0**	**0**
TOTALS					
Total number of OPMET bulletins per day	1794	1880	1960	2040	2120
Average size of OPMET bulletin (bytes)	350	350	350	350	350
Total estimated OPMET data volume per day (bytes)	628K	658K	686K	714K	742K

Table 2. ASIA — T4 Facsimile chart volumes

Editorial Note.—	*Proposed for deletion*; no requirement.

Table 3. ASIA — BUFR data volumes

Main routing(s): GTS

BUFR SIGWX messages	*Current 2003*	*Projected 2004*	*Projected 2005*	*Projected 2006*	*Projected 2007*
(a) WMO Header					
Time(s) of issue of data (UTC)	No requirement	No requirement	0700, 1300, 1900, 0100	0700, 1300, 1900, 0100	0700, 1300, 1900, 0100
Average size of message (bytes)			15K	15K	15K
Data level (e.g. FL range or low (SWL)/medium (SWM) level)			SWL/SWM	SWL/SWM	SWL/SWM
Validity time(s) of data VT (UTC)			1200, 1800, 0000, 0600	1200, 1800, 0000, 0600	1200, 1800, 0000, 0600
TOTALS					
Total number of BUFR messages per day			12	12	12
Average size of messages (bytes)			15K	15K	15K
Total estimated volume of BUFR messages per day (bytes)			180K	180K	180K

Note: It is assumed that only one site will have the capacity to send BUFR information to WAFC London.

Table 4. ASIA — AIS data volumes

Main routing(s): AFTN

AIS (Subject to statement of an operational requirement)	*Current 2003*	*Projected 2004*	*Projected 2005*	*Projected 2006*	*Projected 2007*
ALPHANUMERIC AIS DATA (e.g. NOTAMs, ASHTAMs)					
Bulletin type	No requirement	No requirement	No requirement	No requirement	No requirement
Number of bulletins issued per day					
Average size of each bulletin (bytes)					
Bulletin type					
Number of bulletins issued per day					
Average size of each bulletin (bytes)					
CHART AIS DATA (e.g. AIP CHARTS)					
Header number/Chart type (e.g. AIP)					
Time(S) of issue of chart (UTC)					
Average size of chart (bytes)					
Validity time of chart VT(UTC)					
Header number/Chart type (e.g. AIP)					
Time(S) of issue of chart (UTC)					
Average size of chart (bytes)					
Validity time of chart VT(UTC)					
TOTALS					
Total number of AIS bulletins per day					
Average size of AIS bulletin (byte)					
Total number of AIS charts issued per day					
Average size of AIS chart (byte)					
Total estimated volume of AIS data per day (bytes)					

AMENDMENT PROPOSAL TO ASIA/PAC BASIC ANP AND FASID (DOC 9673)

ASIA/PAC BASIC ANP–MET **6-0-1**

PART VI

METEOROLOGY (MET)

. . . .

8. World area forecast system (WAFS)
(FASID Tables MET 5, MET 6 and MET 7)

8.1 FASID Table MET 5 sets out the ASIA/PAC Regions requirements for WAFS ~~products: upper wind and temperature and significant weather (SIGWX) charts, and the gridded binary (GRIB) data, and abbreviated plain language SIGWX,~~ forecasts to be provided by WAFCs London and Washington.
[APANPIRG/10 Concl. 10/18]

~~8.2 All the WAFS products should be prepared by WAFCs London and Washington for fixed valid times of 00, 06, 12 and 18 UTC.~~
~~[APANPIRG/10 Concl. 10/18]~~

Editorial Note. – Paragraph is redundant as it repeats Annex 3, 3.2.3.

8.~~3~~2 The levels for which forecasts of upper-air wind and temperature and SIGWX forecasts in charts ~~form~~ are to be provided by the WAFCs London and Washington and the areas to be covered by these charts ~~and the GRIB data~~ are indicated in FASID Table MET 5.
[APANPIRG/10 Concl. 10/18]

Note.– WAFCs will continue to issue forecasts of upper-air wind and temperature and of SIGWX in chart form until 1 July 2005.

8.~~4~~3 FASID Table MET 6 sets out the ~~WAFCs~~ responsibilities ~~for~~ of WACs London and Washington for the production of ~~SIGWX~~ WAFS forecasts ~~and upper wind and temperature charts for the areas of coverage indicated, and GRIB data. Each WAFC is responsible for the routine production, and dissemination by satellite broadcast, of charts for the areas of coverage listed.~~ For back-up purposes, each WAFC should have the capability to produce ~~SIGWX~~ WAFS forecasts for all the required areas of coverage.
[APANPIRG/10 Concl. 10/18]

8.~~5~~4 The projection of the WAFS forecasts in charts ~~from~~ and their areas of coverage should be as indicated in FASID Charts MET 4, MET 5 and MET 6 associated with FASID Table MET 6; their scale should be 1:20 X 10^6, true at 22.5^0 in the case of charts in the Mercator projection, and true at 60^0 latitude in the case of charts in the polar stereo-graphic projection.
[APANPIRG/10 Concl. 10/18]
[ASIA/PAC/3 Rec. 8/21]
[APANPIRG/12 Concl. 12]

Note.– WAFCs will continue to issue forecasts of upper-air wind and temperature and of SIGWX in chart form until 1 July 2005.

8.~~6~~5 WAFS products should be disseminated by WAFC London using the satellite distribution system for information relating to air navigation (SADIS) and by WAFC Washington using the international satellite communications system (ISCS2) covering the reception area shown in FASID Chart CNS 7. To fulfil the requirements of long distance flights, transmission of WAFS products should be completed not later than 11 hours before validity time.
[APANPIRG/10 Concl. 10/18]

8.~~7~~6 The amendment service to the ~~WAFS products~~ SIGWX forecasts issued by WAFCs London and Washington should be by means of ~~abbreviated plain language messages~~ amended BUFR files disseminated through SADIS and ISCS2.
[APANPIRG/10 Concl. 10/18]

8.8 Each State should make the necessary arrangements to receive and make full operational use of WAFS products ~~issued~~ disseminated by WAFCs London and Washington. FASID Table MET 7 provides ~~the status of~~ lists the authorized ~~access by~~ users of the SADIS and ISCS2 ~~users to the~~ satellite broadcasts in the ASIA/PAC Regions and location of the operational VSATs.
[APANPIRG/10 Conc. 10/18]

ASIA/PAC FASID–MET **6-0-1**

PART VI

METEOROLOGY (MET)

. . . .

6. WORLD AREA FORECAST SYSTEM (WAFS)

(FASID Tables MET 5, MET 6 and MET 7
FASID Charts MET 4, MET 5, MET 6, and MET 7)

6.1 FASID Table MET 5 sets out the ASIA/PAC Regions requirements for WAFS ~~products: upper wind and temperature and significant weather (SIGWX) charts, and the gridded binary (GRIB) data, and abbreviated plain language SIGWX~~ forecasts, to be provided by WAFCs London and Washington.

6.2 FASID Table MET 6 sets out the ~~WAFCs~~ responsibilities ~~for the production of SIGWX forecasts and upper wind and temperature charts for the areas of coverage indicated, and the GRIB data~~ of WAFCs London and Washington for the production of WAFS forecasts. ~~WAFS~~ The maximum areas of coverage of WAFS forecasts in chart form are shown on FASID Charts MET 4, MET 5, MET 6, and MET 7).

Note. – WAFCs will continue to issue forecasts of upper-air wind and temperature and of SIGWX in chart form until 1 July 2005.

6.3 FASID Table MET 7 ~~provides the status of~~ lists the authorized ~~access by~~ users of SADIS and ISCS2 ~~users to the~~ satellite broadcasts in ASIA/PAC Regions and location of the operational VSATs. The table is included in the FASID for information purposes and kept up-to-date by the Regional Offices concerned.

FASID TABLE MET 5 – REQUIREMENTS FOR WAFS PRODUCTS

EXPLANATION OF THE TABLE

~~*PRODUCT REQUIRED*~~

~~W/T Chart = Wind and temperature chart~~
~~SWM = Medium level significant weather chart (FL 100 - 240)~~
~~SWH = High level significant weather chart (FL 250 - 630)~~

Column

1. WAFS products required by the ASIA/PAC States, to be provided by WAFC London and Washington.

2. Area of coverage required for the WAFS forecasts, to be provided by WAFC London and Washington.

CHART COVERAGE REQUIRED

D, E, F, G, H, I, J, K, M = Maximum area of coverage required (see Charts MET 4, 5, 6 and 7 attached to Table MET 6)

FASID TABLE MET 5 - REQUIREMENTS FOR WAFS PRODUCTS

~~PRODUCT~~ FORECAST REQUIRED		AREAS REQUIRED
1		2
W/T CHART >	FL 390	D, E, F, G, I, J
A @ A @	FL 390	D, E, F, G, I, J
A @ A @	FL 340	D, E, F, G, I, J
A @ A @	FL 300	D, E, F, G, I, J
A @ A @	FL 240	D, E, F, G, I, J
A @ A @	FL 180	D, E, F, G, I, J
A @ A @	FL 100	D, E, F, G, I, J
A @ A @	FL 50	D, E, F, G, I, J
SWM (FL 100 - 450)		D
SWH CHART (FL 250 - 630)		D, E, F, G, I, J, K, M
~~GRIB data~~ SIGWX forecasts in the BUFR code form		GLOBAL
~~Amendment to SIGWX forecasts in abbreviated plain language~~ Upper-air wind and temperature forecasts in the GRIB code form		~~D, E, F, G, I, J, K~~ GLOBAL

Note 1.— SWM charts are provided for limited geographical areas as determined by regional air navigation agreement.

Note 2.— WAFCs will continue to issue forecasts of upper-air wind and temperature and of SIGWX in chart form until 1 July 2005.

FASID TABLE MET 6 – RESPONSIBILITIES OF THE WORLD AREA FORECAST CENTRES

EXPLANATION OF THE TABLE

Column

1 Name of the world area forecast centre (WAFC).

2 Area of ~~responsibility for the preparation~~ coverage of the significant weather (SIGWX) forecasts by the WAFC in Column 1.

3 Area of coverage of the SIGWX charts prepared or relayed by the WAFC in Column 1.

4 Area of coverage of the upper-air wind and temperature ~~charts prepared~~ forecasts in the GRIB code form issued by the WAFC in Column 1.

5 Area of coverage of the upper-air wind and temperature forecasts in chart form ~~GRIB data~~ prepared by the WAFC in Column 1.

FASID TABLE MET 6 B RESPONSIBILITIES OF THE WORLD AREA FORECAST CENTRES

WAFC	Areas of coverage of			
	SIGWX forecasts		Upper-air wind and Ttemperature forecasts	
	~~Area of responsibility~~ In the BUFR code form	~~Areas of coverage of SIGWX~~ In chart form[21]	~~Areas of charts coverage~~ In the GRIB code form	~~GRIB data~~In charts form[21]
1	2	3	4	5
London	Global[1]	D, E, G, K~~,~~ ~~ASIA SOUTH MEDIUM~~D (FL100-450)	~~D, E, G~~ gGlobal[1]	~~Global~~ D, E, G
Washington	~~global~~[1]Global	F, I, J, M	~~F, I~~ gGlobal[1]	~~Global~~ F, I, J, M

~~*Note : All SIGWX charts are for FL250 – 630, except for ASIA SOUTH*~~ *Notes corresponding to superscripts in FASID Table MET 6 above*

~~1) For back-up purposes~~

~~2~~1~~)~~ ~~Special medium level chart (FL100-450)~~ WAFCs continue to issue forecasts of upper-air wind and temperature and of SIGWX in chart form until 1 July 2005.

NEW ROBEX TABLES

Table 1. ROBEX Collection and Dissemination of METAR Bulletins - APAC Region

Explanation of Table

Col. 1: Name and ICAO location indicator of the MCC.

Col. 2: Description of the METAR Bulletin.

Col. 3: Regional OPMET Data Bank (RODB) responsible for collection and disssemination of the bulletin.

Col. 4: Official time of the bulletin. Aerodromes indicated with an asterisk (*) make half-hourly reports with official bulletin time in brackets.

Col. 5: Addresses to be used by the RODB in Col. 3 for the distribution in bulletin.

Table 1. ROBEX Collection and Dissemination of METAR Bulletins - APAC Region

1		2			3	4	5	
MCC		METAR Bulletin			RODB	Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome			MCC Name	AFTN Address
Bangkok	VTBD	SAAS31	VTBD	BANGKOK/Bangkok Intl	BANGKOK	HH +30	Brisbane	YBZZSPTX
			VTCC	CHIANG MAI/Chiang Mai Intl		(HH +00)	Calcutta	VECCYPYX
			VTBU	RAYONG/U-Tapao Intl			Colombo	VCCCYPYX
			VTSS	SONGKHLA/Hat Yai Intl			Delhi	VIDPYPYX
			VTSP	PHUKET/Phuket Intl			Hong Kong	VHZZYPYX
			VLVT	VIENTIANE/Wattay			Jakarta	WIZZMCMC
			VYYY	YANGON/ Yangon Intl			Kuala Lumpur	WMZZYPYR
			VVTS	HO-CHI-MINH/Tan-Son Nhat			Mumbai	VABBYPYX
			VVNB	HANOI/Noibai			Incheon	RKSIYPYX
			VVDN	DANANG/Danang			Singapore	WSZZYPYM
			VDPP	PHNOM PENH/Pochentong			Wellington	NZZZYPYX
Beijing	ZBBB	SACI31	ZBAA	BEIJING/Capital	TOKYO	HH + 00	Bangkok	VTBBYPYX
			ZBTJ	TIANJING/Binhai		(HH + 30)	Brisbane	YBZZSQJX
			ZBYN	TAIYUAN/Wusu			Hong Kong	VHZZYPYX
			ZGGG	GUANGZHOU/Baiyun			Jakarta	WIZZMZBB
			ZSHC	HANGZHOU/Xiaoshan			Karachi	OPZZYPYX
			ZSPD	SHANGHAI/Pudong			Mumbai	VABBYPYX
			ZSSS	SHANGHAI/Hongqiao			Incheon	RKSIYPYX
			ZWWW	URUMQI/Diwopu			Singapore	WSZZYPYM
			ZYTL	DALIAN/Zhoushuzi			Tokyo	RJAAYPYX
			ZYTX	SHENYANG/Taoxian			Ulan Bator	ZMUBYMYX
							Wellington	NZZZYPYX
		SACI32	ZGKL	GUILIN/Liangjang	TOKYO	HH + 00	Bangkok	VTBBYPYX
			ZGNN	NANNING/Wuxu			Brisbane	YBZZSQSX
			ZGOW	SHANTOU/Shantou			Hong Kong	VHZZYPYX
			ZGSZ	SHENZHEN/Baoan			Jakarta	WIZZMZBB
			ZLXY	XIAN/Xianyang			Kuala Lumpur	WMZZYPYX
			ZMUB	ULAANBAATOR/Bryant-Ukhaa			Incheon	RKSIYPYX
			ZPPP	KUNMING/Wujiaba			Singapore	WSZZYPYM
			ZSAM	XIAMEN/Gaoqi			Tokyo	RJAAYPYX
			ZSQD	QINGDAO/Liuting			Wellington	NZZZYPYX
			ZUUU	CHENGDU/Shuangliu				
		SACI41	ZBHH	HOHHOT/Baita	TOKYO	HH + 00	Bangkok	VTBBYPYX
			ZGHA	CHANGSHA/Huanghua			Brisbane	YBZZSQJX
			ZHHH	WUHAN/Tianhe			Hong Kong	VHZZYPYX
			ZJHK	HAIKOU/Meilan			Jakarta	WIZZMZBB

1		2			3	4	5	
MCC		METAR Bulletin			RODB	Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome			MCC Name	AFTN Address
			ZJSY	SANYA/Fenghuang			Karachi	OPZZYPYX
			ZLLL	LANZHOU/Zhongchuan			Mumbai	VABBYPYX
			ZSNJ	NANJING/Lukou			Incheon	RKSIYPYX
			ZSOF	HEFEI/Luogang			Singapore	WSZZYPYM
			ZUCK	CHONGQING/Jiangbei			Tokyo	RJAAYPYX
			ZWSH	KASHI			Ulan Bator	ZMUBYMYX
			ZYCC	CHANGCHUN/Dafangshen			Wellington	NZZZYPYX
			ZYHB	HARBIN/Yanjiangang				
Brisbane	YBBN	SAAU31	YSSY	SYDNEY/Kingsford Smith Intl	BRISBANE	HH + 00	Jakarta	WIZZMIMI
			YMML	MELBOURNE/Melbourne Intl		(HH + 30)	Nadi	NFFNYPYX
			YBBN	BRISBANE/Brisbane			Port Moresby	AYPYYMYX
			YPAD	ADELAIDE/Adelaide			Incheon	RKSIYPYX
			YPDN	DARWIN/Darwin			Wellington	NZZZYPYX
			YPPH	PERTH/Perth int			Hong Kong	VHZZYPYX
			YBCS	CAIRNS/Cairns				
			YBAS	ALICE SPRINGS/Alice Springs				
			YPLM	LEARMONTH/Learmonth				
			YBTL	TOWNSVILLE/Townsville				
			YPCC	COCOS ISL/Cocos Isl				
			YPXM	CHRISTMAS ISL/Christmas Isl				
			YPTN	TINDAL /Tindal RAAF				
		SAAU32	YSCB	CANBERRA/Canberra*	BRISBANE	HH + 00	Jakarta	WIZZMIMI
			YBCG	COOLANGATTA/Coolangatta*		(HH + 30)	Nadi	NFFNYPYX
			YMAV	AVALON/Avalon*			Port Moresby	AYPYYMYX
			YBRK	ROCKHAMPTON/Rockhampton*			Seoul	RKSSYPYX
			YPKG	KLAGOORLIE/Kalgoorlie*			Wellington	NZZZYPYX
			YPPD	PORT HEDLAND/Port Hedland*				
			YBRM	BROOME/Broome*				
			YSNF	NORFOLK ILS/Norfolk Isl*				
			YSDU	DUBBO/Dubbo				
			YSRI	RICHMOND/Richmond *				
			YWLM	WILLIAMTOWN/Williamtown *				
			YMLT	LAUNCESTON/Launceston*				
			YMHB	HOBART/Hobart*				
			YPEA	PEARCE/Pearce				

1		2			3	4	5	
MCC		METAR Bulletin			RODB	Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome			MCC Name	AFTN Address
Colombo	VCCC	SASB31	VCBI	COLOMBO/Katunayake	BANGKOK	HH +50	Bangkok	VTBBYPYX
			VRMM	MALE/Male Intl		(HH + 20)	Kuala Lumpur	WMZZYPYR
							Mumbai	VABBYPYX
							Singapore	WSZZYPYM
							Tokyo	RJAAYPYX
							Hong Kong	VHZZYPYX
Delhi	VIDP	SAIN32	VIDP	DELHI/Indira Gandhi Intl	BANGKOK	HH + 30	Bangkok	VTBBYPYX
			VILK	LUCKNOW		(HH + 00)	Brisbane	YBZZSPXX
			VIBN	VARANASI/Varanasi			Calcutta	VECCYPYX
			VIAR	AMRITSAR/Amritsar			Karachi	OPZZYPYX
							Mumbai	VABBYPYX
							Tokyo	RJAAYPYX
							Hong Kong	VHZZYPYX
Hong Kong	VHHH	SAHK31	VHHH	HONG KONG/Hong Kong Intl	TOKYO	HH + 00	Bangkok	VTBBYPYX
			RCTP	TAIBEI/Taibei Intl		(HH + 30)	Beijing	ZBBBYPYX
			RCKH	GAOXIONG/Gaoxiong			Brisbane	YBZZSPHX
			RCSS	TABEI/Sungshan			Guangshou	ZGGGYPYX
			VMMC	MACAU/Macau Intl			Kuala Lumpur	WMZZYPYR
			RPLL	MANILA/Ninoy Aquino Intl*			Incheon	RKSIYPYX
			RPVM	LAPU LAPU/Mactan Cebu Intl*			Singapore	WSZZYPYM
			RPMD	DAVAO/Francisco Bangoy Intl			Tokyo	RJAAYPYX
			RPLB	SUBIC BAY/Subic Bay Intl			Wellington	NZZZYPYX
Jakarta	WIII	SAID31	WIIH	JAKARTA/Halim	SINGAPORE	HH + 00	Bangkok	VTBBYPYX
			WIII	JAKARTA/Soekarno-Hatta		(HH + 30)	Brisbane	YBZZSSHX
			WIMM	MEDAN/Polonia			Kuala Lumpur	WMZZYPYR
			WRSJ	SURABAYA/Juanda			Singapore	WSZZYPYM
			WRRR	DENPASAR*			Wellington	NZZZYPYX
			WAAA	UJUNG PANDANG/Hasanuddin			Hong Kong	VHZZYPYX
			WABB	BIAK/Frans Kaisieppo				
Calcutta	VECC	SAAE31	VECC	CALCUTTA/Netaji Subhash Chandra Bose Intl	BANGKOK	HH + 50	Bangkok	VTBBYPYX
			VEPT	PATNA/Patna			Brisbane	YBZZSPWX
			VGZR	DHAKA/Zia Intl			Colombo	VCCCYPYX
			VGEG	CHITTAGONG/M. A. Hannan Intl			Delhi	VIDPYPYX
			VNKT	KATHMANDU/Tribhuvan Intl*			Karachi	OPZZYPYX
							Mumbai	VABBYPYX
							Tokyo	RJAAYPYX
							Hong Kong	VHZZYPYX

1		2			3	4	5	
MCC		METAR Bulletin			RODB	Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome			MCC Name	AFTN Address
Karachi	OPKC	SAPK31	OPKC	KARACHI/Quaid-E-Azam Intl	BANGKOK	HH +50	Abu Dhabi	OMZZYPYX
			OPRN	ISLAMABAD/Chaklala		(HH +20)	Bahrain	OBZZYPYX
			OPLA	LAHORE/Lahore			Beijing	ZBBBYPYX
			OPNH	NAWABSHAH			Calcutta	VECCYPYX
			OPGD	GAWADAR			Delhi	VIDDYPYX
			OPPS	PESHAVAR			Mumbai	VABBYPYX
							Tehran	OIZZYPYX
							Hong Kong	VHZZYPYX
Kuala Lumpur	WMKK	SAMS31	WMKK	KUALA LUMPUR/Kuala Lumpur Intl	SINGAPORE	HH + 30	Bangkok	VTBBYPYX
			WSSS	SINGAPORE/Changi		(HH + 10)	Colombo	VCCCYPYX
			~~WSAP~~	~~SINGAPORE/Paya Lebar~~			Hong Kong	VHZZYPYX
			WMKP	PENANG/Bayan Lepas			Jakarta	WIZZMBMB
			WBKK	KOTA KINABALU/Kota Kinabalu Intl			Manila	RPLLYPYX
			WBGG	KUCHING/Kuching			Mumbai	VABBYPYX
			WBSB	BANDAR SERI BEGAWAN /Brunei Intl			Incheon	RKSIYPYX
							Wellington	NZZZYPYX
Mumbai	VABB	SAIN31	VABB	MUMBA/Jawaharial Nehru Intll	BANGKOK	HH + 40	Abu Dhabi	OMZZYPYX
			VOMM	CHENNAI/Chennai		(HH + 10)	Bahrain	OBZZYPYX
			VOTR	TIRUCHCHIRAPPALLI			Bangkok	VTBBYPYX
			VOTV	TRIVANDRUM/Trivandrum Intl			Brisbane	YBZZSPVX
			VAAH	AHMADABAD/Ahmadabad			Calcutta	VECCYPYX
			VOHY	HYDERABAD			Colombo	VCCCYPYX
			VANP	NAGPUR			Delhi	VIDPYPYX
							Karachi	OPZZYPYX
							Singapore	WSZZYPYM
							Tehran	OIZZYPYX
							Tokyo	RJAAYPYX
							Hong Kong	VHZZYPYX
Port Moresby	AYPY	SAPW31	AYPY	PORT MORESBY/Jacksons	BRISBANE	HH + 00	Bangkok	VTBBYPYX
			AYMD	MADANG		(HH + 30)	Beijing	ZBBBYPYX
			AYWK	WEWAK			Brisbane	YBZZSPSX
							Hong Kong	WSZZYPYM
							Wellington	NZZZYPYX

1		2			3	4	5	
MCC		METAR Bulletin			RODB	Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome			MCC Name	AFTN Address
Incheon	RKSI	SAKO31	RKSI	SEOUL/Incheon Intl	TOKYO	HH + 00	Bangkok	VTBBYPYX
			RKSS	SEOUL/Gimpo Intl		(HH + 30)	Beijing	ZBBBYPYX
			RKPC	JEJU/Jeju Intl			Brisbane	YBZZSPSX
			RKPK	BUSAN/Gimhae Intl			Hong Kong	WSZZYPYM
			RKTU	CHEONGJU/Cheongju Intl			Singapore	WSZZYPYM
			RKNY	YANGYANG/Yangyang Intl			Tokyo	RJAAYPYX
			RKTN	DAEGU/Daegu Intl			Wellington	NZZZYPYX
							Mumbai	VABBYPYX
Tokyo	RJTD	~~SAJP31~~	RJAA	TOKYO/New Tokyo Intl	TOKYO	HH + 00	Beijing	ZBBBYPYX
		SAFE31	RJTT	TOKYO/Tokyo Intl		(HH + 30)	Brisbane	YBZZSPAX
			ROAH	NAHA/Naha			Hong Kong	VHZZYPYX
			RJOO	OSAKA/Osaka Intl			Incheon	RKSIYPYX
			RJBB	OSAKA/Kansai Intl			Singapore	WSSSYMYX
			RJNN	NAGOYA/Nagoya			Wellington	NZZZYPYX
							Bangkok	VTBBYPYX
							Guam	PGUMCOAX
							Nadi	NFZZRCXX
		~~SAJP32~~	RJCC	SAPPORO/New Chitose	TOKYO	HH + 00	Beijing	ZBBBYPYX
		SAFE32	RJFF	FUKUOKA/Fukuoka		(HH + 30)	Brisbane	YBZZSPAX
			RJFK	KAGOSHIMA/Kagoshima			Hong Kong	VHZZYPYX
			RJCH	HAKODATE/Hakodate			Incheon	RKSIYPYX
			RJFU	NAGASAKI/Nagasaki			Singapore	WSSSYMYX
							Bangkok	VTBBYPYX
							Guam	PGUMCOAX
							Nadi	NFZZRCXX
							London	EGZZMASI
							Wellington	NZZZYPYX
Wellington	NZKL	SANZ31	NZWN	WELLINGTON/Wellington Intl	BRISBANE	HH + 00	Bangkok	VTBBYPYX
			NZAA	AUCKLAND/Auckland Intl			Beijing	ZBBBYPYX
			NZCH	CHRISTCHURCH/Christchurch Intl			Brisbane	YBZZSPNX
							Jakarta	WIZZYPYX
							Hong Kong	VHZZYPYX
							Nadi	NFFNYPYX
							Port Moresby	AYPYYMYX
							Incheon	RKSIYPYX
							Singapore	WSZZYPYM
							Tokyo	RJAAYPYX

Table 2. ROBEX Collection and Dissemination of TAF (FT) Bulletins - APAC Region

Explanation of the Table

Col. 1:	Name of the TCC.
Col. 2:	Location indicator of TCC
Col. 3:	Bulletin id
Col. 4:	Location indicators of the aerodromes in the bulletin
Col. 5:	Name of the aerodrome
Col. 6:	Filing time of the bulletin
Col. 7:	Start of validity time for the TAFs in the bulletin
Col. 8:	Regional OPMET data bank responsible for the bulletin
Col. 9:	Name of the aerodromes/OPMET centres to which the bulletin shall be disseminated
Col 10:	AFTN address of the aerodrome/OPMET centre

Table 2. ROBEX Collection and Dissemination of TAF (FT) Bulletins - APAC Region

TCC		TAF Bulletin					Dissemination		
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of v.	RODB	Aerodrome	AFTN
1	2	3	4	5	6	7	8	9	10
Bangkok	VTBD	FTAS31	VTBD	BANGKOK/Bangkok Intl	0400	0600	BANGKOK	Abu Dhabi	OMZZYPYX
			VYYY	YANGON/ Yangon Intl	1000	1200		Bahrain	OBZZYPYX
			VGZR	DHAKA/Zia Intl	1600	1800		Beijing	ZBBBYPYX
			VLVT	VIENTIANE/Wattay	2200	0000		Beirut	OLLLYPYX
			VVTS	HO-CHI-MINH/Tan-Son Nhat				Brisbane	YBZZSQEX
			VDPP	PHNOM PENH/Pochentong				Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Kuala Lumpur	WMZZYPYR
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Singapore	WSZZYPYX
								Tehran	OIIIYPYX
								Tokyo	RJAAYPYX
								Wellington	NZZZYPYA
		FTAS32	VTBU	RAYONG/U-Tapao Intl	0400	0600	BANGKOK	Abu Dhabi	OMZZYPYX
			VTCC	CHIANG MAI/Chiang Mai Intl	1000	1200		Bahrain	OBZZYPYX
			VTSS	SONGKHLA/Hat Yai Intl	1600	1800		Beijing	ZBBBYPYX
			VTSP	PHUKET/Phuket Intl	2200	0000		Beirut	OLLLYPYX
			VVNB	HANOI/Noibai				Brisbane	YBZZSQEX
			VVDN	DANANG/Danang				Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Kuala Lumpur	WMZZYPYR
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Singapore	WSZZYPYX
								Tehran	OIIIYPYX
								Tokyo	RJAAYPYX
								Wellington	NZZZYPYA
Beijing	ZBBB	FTCI31	ZBAA	BEIJING/Capital	0500	0600	TOKYO	Bangkok	VTBBYPYX
			ZBTJ	TIANJING/Binhai	1100	1200		Brisbane	YBZZSQJT
			ZBYN	TAIYUAN/Wusu	1700	1800		Hong Kong	VHZZYPYX
			ZGGG	GUANGZHOU/Baiyun	2300	0000		Karachi	OPZZYPYX
			ZSSS	SHANGHAI/Hongqiao				Mumbai	VABBYPYX

TCC		TAF Bulletin					Dissemination		
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of v.	RODB	Aerodrome	AFTN
1	2	3	4	5	6	7	8	9	10
			ZSHC	HANGZHOU/Xiaoshan				Incheon	RKSIYPYX
			ZYTX	SHENYANG/Taoxian				Singapore	WSZZYPYX
			ZYTL	DALIAN/Zhoushuzi				Tokyo	RJAAYPYX
			ZWWW	URUMQI/Diwopu				Ulan Bator	XMUBYMYX
			ZSPD	SHANGHAI/Pudong				Wellington	NZZZYPYA
		FTCI32	ZPPP	KUNMING/Wujiaba	0500	0600	TOKYO	Bangkok	VTBBYPYX
			ZGNN	NANNING/Wuxu	1100	1200		Brisbane	YBZZSQJT
			ZGOW	SHANTOU/Shantou	1700	1800		Hong Kong	VHZZYPYX
			ZGSZ	SHENZHEN/Baoan	2300	0000		Jakarta	WIZZYPYX
			ZSAM	XIAMEN/Gaoqi				Karachi	OPZZYPYX
			ZSQD	QINGDAO/Liuting				Kuala Lumpur	WMZZYPYR
			ZUUU	CHENGDU/Shuangliu				Mumbai	VABBYPYX
			ZLXY	XIAN/Xianyang				Singapore	WSZZYPYX
			ZMUB	ULAANBAATOR/Bryant-Ukhaa				Tokyo	RJAAYPYX
			ZGKL	GUILIN/Liangjang				Wellington	NZZZYPYA
		FTCI41	ZBHH	HOHHOT/Baita	0500	0600	TOKYO	Bangkok	VTBBYPYX
			ZGHA	CHANGSHA/Huanghua	1100	1200		Brisbane	YBZZSQJX
			ZJHK	HAIKOU/Meilan	1700	1800		Hong Kong	VHZZYPYX
			ZHHH	WUHAN/Tianhe	2300	0000		Jakarta	WIZZYPYX
			ZSOF	HEFEI/Luogang				Karachi	OPZZYPYX
			ZSNJ	NANJING/Lukou				Mumbai	VABBYPYX
			ZUCK	CHONGQING/Jiangbei				Incheon	RKSIYPYX
			ZLLL	LANZHOU/Zhongchuan				Singapore	WSZZYPYX
			ZYHB	HARBIN/Yanjiangang				Tokyo	RJAAYPYX
			ZYCC	CHANGCHUN/Dafangshen				Ulan Bator	ZMUBYMYX
			ZWSH	KASHI				Wellington	NZZZYPYX
Brisbane	YBBN	FTAU31	YSSY	SYDNEY/Kingsford Smith Intl	0500	0600	BRISBANE	Bangkok	VTBBYPYX
			YPAD	ADELAIDE/Adelaide	1100	1200		Beijing	ZBBBYPYX
			YBBN	BRISBANE/Brisbane	1700	1800		Hong Kong	VHZZYPYX
			YMML	MELBOURNE/Melbourne Intl	2300	0000		Jakarta	WIZZYPYX
			YBCS	CAIRNS/Cairns				Manila	RPLLYPYX
			YPPH	PERTH/Perth				Mumbai	VABBYPYX
			YPDN	DARWIN/Darwin				Nadi	NFZZRFXX
			YBAS	ALICE SPRINGS/Alice Springs				Port Moresby	AYPYYMYX
			YPTN	TINDAL/Tindal				Singapore	WSZZYPYX
			YPXM	CHRISTMAS ISLAND/Christmas Island				Tokyo	RJAAYPYX
								Wellington	NZZZYPYX

TCC		TAF Bulletin					Dissemination		
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of v.	RODB	Aerodrome	AFTN
1	2	3	4	5	6	7	8	9	10
		FTAU32	YSCB	CANBERRA/Canberra	0500	0600	BRISBANE	Bangkok	VTBBYPYX
			YBCG	COOLANGATTA/Coolangatta	1100	1200		Hong Kong	VHZZYPYX
			YMAV	AVALON/Avalon	1700	1800		Jakarta	WIZZYPYX
			YBTL	TOWNSVILLE/Townsville	2300	0000		Manila	RPLLYPYX
			YBRK	ROCKHAMPTON/Rockhampton				Mumbai	VABBYPYX
			YPLM	LEARMOUNTH/Learmounth				Nadi	NFZZRFXX
			YPKG	KALGOORLIE/Kalgoorlie				Singapore	WSZZYPYQ
			YPPD	PORT HEDLAND/Port Hedland				Tokyo	RJAAYPYX
			YPEA	PEARCE/Perace RAAF				Wellington	NZZZYPYX
			YPCC	COCOS ISLAND/Cocos Island					
		FTAU33	YBRM	BROOME/Broome	0100	0200	BRISBANE	Bangkok	VTBBYPYX
			YSNF	NORFOLK ISLAND/Norfolk Island	0700	0800		Hong Kong	VHZZYPYX
			YSDU	DUBBO/Dubbo	1300	1400		Jakarta	WIZZYPYX
			YSRI	RICHMOND/Richmond RAAF	1900	2000		Manila	RPLLYPYX
			YWLM	WILLIAMTOWN/Williamtown RAAF				Mumbai	VABBYPYX
			YMLT	LAUNCESTON/Launceston				Nadi	NFZZRFXX
			YMHB	HOBART/Hobart				Singapore	WSZZYPYQ
								Tokyo	RJAAYPYX
								Wellington	NZZZYPYX
Hong Kong	VHHH	FTHK31	VHHH	HONG KONG/Hong Kong Intl	0400	0600	TOKYO	Abu Dhabi	OMZZYPYX
			RCTP	TAIBEI/Taibei Intl	1000	1200		Bahrain	OBZZYPYX
			RCKH	GAOXIONG/Gaoxiong	1600	1800		Bangkok	VTBBYPYX
			RCSS	TABEI/Sungshan	2200	0000		Beijing	ZBBYPYX
			VMMC	MACAU/Macau Intl				Beirut	OLLLYPYX
			RPLL	MANILA/Ninoy Aquino Intl				Brisbane	YBZZSQKX
			RPVM	LAPU LAPU/Mactan Cebu Intl				Karachi	OPZZYPYX
			RPMD	DAVAO/Francisco Bangoy Intl				Mumbai	VABBYPYX
			RPLB	SUBIC BAY/Subic Bay Intl				Incheon	RKSIYPYX
			RPMZ	ZAMBOANGA/Zamboanga Intl				Singapore	WSZZYPYQ
			RPLI	LAOAG/Laoag Intl				Tehran	OIIIYPYX
								Tokyo	RJAAYPYX
								Wellington	NZZZYPYA
Karachi	OPKC	FTPK31	OPKC	KARACHI/Quaid-E-Azam Intl	0400	0600	BANGKOK	Abu Dhabi	OMZZYPYX
			OPRN	ISLAMABAD/Chaklala	1000	1200		Bahrain	OBZZYPYX
			OPLA	LAHORE/Lahore	1600	1800		Bangkok	VTBBYPYX
			OPNH	NAWABSHAH/Nawabshah	2200	0000		Beijing	ZBBYPYX
			OPPS	PESHAVAR				Beirut	OLLLYPYX

TCC		TAF Bulletin					Dissemination		
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of v.	RODB	Aerodrome	AFTN
1	2	3	4	5	6	7	8	9	10
			OPGD	GAWADAR				Brisbane	YBZZSQKX
								Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Singapore	WSZZYPYQ
								Tehran	OIIIYPYX
								Tokyo	RJAAYPYX
Mumbai	VABB	FTIN31	VABB	MUMBAI/Jawaharlal Nehru Intl	0400	0600		Abu Dhabi	OMZZYPYX
			VAAH	AHMADABAD/Ahmadabad	1000	1200		Bahrain	OBZZYPYX
			VECC	CALCUTTA/Calcutta	1600	1800		Bangkok	VTBBYPYX
			VCBI	COLOMBO/Katunayake	2200	0000		Beijing	ZBBYPYX
			VIDP	DELHI/Indira Gandhi Intl				Beirut	OLLLYPYX
			VILK	LUCKNOW*				Brisbane	YBZZSQKX
			VOMM	CHENNAI/Chennai				Hong Kong	VHZZYPYX
			VOTV	TRIVANDRUM/Trivandrum				Jeddah	OEJDYPYX
			VANP	NAGPUR/Nagpur				Karachi	OPZZYPYX
			VNKT	KATHMANDU/Tribhuvan Intl				Singapore	WSZZYPYQ
								Tehran	OIIIYPYX
								Tokyo	RJAAYPYX
Nadi	NFFN	FTPS31	NFFN	NADI/Intl	0400	0600	NADI	Brisbane	YBZZSUGX
			NWWW	NOUMEA/La Tontouta	1000	1200		Hong Kong	VHZZYPYX
			NSTU	PAGO PAGO/Intl, Tutuila I.	1600	1800		Singapore	WSZZYPYX
					2200	0000		Wellington	NZZZYPYA
Incheon	RKSI	FTKO31	RKSI	SEOUL/Incheon Intl	0500	0600	TOKYO	Bangkok	VTBBYPYX
			RKSS	SEOUL/Gimpo Intl	1100	1200		Hong Kong	VHZZYPYX
			RKPC	JEJU/Jeju Intl	1700	1800		Karachi	OPZZYPYX
			RKPK	BUSAN/Gimhae Intl	2300	0000		Singapore	WSZZYPYQ
			RKTU	CHEONGJU/Cheongju Intl				Tokyo	RJAAYPYX
			RKNY	YANGYANG/Yangyang Intl				Wellington	NZZZYPYX
			RKTN	DAEGU/Daegu Intl					
Singapore	WSSS	FTSR31	WSSS	SINGAPORE/Changi	0430	0600	SINGAPORE	Abu Dhabi	OMZZYPYX
			WSAP	SINGAPORE/Paya Lebar	1030	1200		Bahrain	OBZZYPYX
			WMKK	KUALA LUMPUR/Kuala Lumpur Intl	1630	1800		Bangkok	VTBBYPYX
			WRRR	DENPASAR/Ngurah Rai (Bali Intl)	2230	0000		Beijing	ZBBBYPYX
			WMKJ	JOHOR BAHRU/Sultan Ismail				Beirut	OLLLYPYX

TCC		TAF Bulletin					Dissemination		
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of v.	RODB	Aerodrome	AFTN
1	2	3	4	5	6	7	8	9	10
			WMKP	PENANG/Bayan Lepas				Brisbane	YBZZSVLX
			WRSJ	SURABAYA/Juanda				Colombo	VCCCYPYX
			WIIH	JAKARTA/Halim				Hong Kong	VHZZYPYX
			WIII	JAKARTA/Soekarno-Hatta				Karachi	OPZZYPYX
			WMSA	SUBANG/Sultan Abdul Aziz Shah				Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Nadi	NFZZRFXX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Tokyo	RJAAYPYX
								Wellington	NZZZYPYA
		FTSR32	WBSB	BANDAR SERI BEGAWAN /Brunei Intl	0430	0600	SINGAPORE	Bangkok	VTBBYPYX
			WBKK	KOTA KINABALU/Kota Kinabalu Intl	1030	1200		Beirut	OLLLYPYX
			WBGG	KUCHING/Kuching	1630	1800		Brisbane	YBZZSVMX
			WIMM	MEDAN/Polonia	2230	0000		Hong Kong	VHZZYPYX
								Manila*	RPLLYMYX
								Mumbai	VABBYPYX
								Wellington	NZZZYPYX
Tokyo	RJTD	FTJP31	RJAA	TOKYO/New Tokyo Intl	0300	1200	TOKYO	Bangkok	VTBBYPYX
			RJTT	TOKYO/Tokyo Intl	0900	1800		Beijing	ZBBBYPYX
			ROAH	NAHA/Naha	1500	0000		Beirut	OLLLYPYX
			RJOO	OSAKA/Osaka Intl	2100	0600		Brisbane	YBZZSWRX
			RJCH	HAKODATE/Hakodate				Hong Kong	VHZZYPXX
			RJBB	OSAKA/Kansai Intl				Mumbai	VABBYPYX
			RJSS	SENDAI/Sendai				Seoul	RKSIYPYX
								Singapore	WSZZYPYX
								Wellington	NZZZYPYA
								Colombo	VCBIYMYX
								Roma	LIIBYMYX
								London	EGZZFRXX
								Singapore	WSSSYMYX
								Nadi	NFZZRAXX
								Washington	KWBCYMYX
								Saipan	PGSNYMYX
								Guam	PGUMCOAX
								Brasilia	SBBRYZYX

TCC		TAF Bulletin					Dissemination		
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of v.	RODB	Aerodrome	AFTN
1	2	3	4	5	6	7	8	9	10
		FTJP32	RJFF	FUKUOKA/Fukuoka	0300	1200	TOKYO	Bangkok	VTBBYPYX
			RJNN	NAGOYA/Nagoya	0900	1800		Beijing	ZBBBYPYX
			RJCC	SAPPORO/New Chitose	1500	0000		Beirut	OLLLYPYX
			RJFK	KAGOSHIMA/Kagoshima	2100	0600		Brisbane	YBZZSWRX
			RJSN	NIIGATA/Niigata				Hong Kong	VHZZYPXX
			RJFU	NAGASAKI/Nagasaki				Mumbai	VABBYPYX
			RJFT	KUMAMOTO/Kumamoto				Seoul	RKSIYPYX
			RJOA	HIROSHIMA/Hiroshima				Singapore	WSZZYPYX
			RJOB	OKAYAMA/Okayama				Wellington	NZZZYPYA
			RJOT	TAKAMATSU/Takamatsu				Colombo	VCBIYMYX
			RJFO	OITA/Oita				London	EGZZFRXX
			RJNT	TOYAMA/Toyama				Nadi	NFZZRAXX
			RJNK	KANAZAWA/Komatsu				Washington	KWBCYMYX
								Saipan	PGSNYMYX
								Guam	PGUMCOAX
								Brasilia	SBBRYZYX
Wellington	NZKL	FTNZ31	NZWN	WELLINGTON/Wellington Intl		1200	BRISBANE	Bangkok	VTBBYPYX
			NZAA	AUCKLAND/Auckland Intl		1800		Beijing	ZBBBYPYX
			NZCH	CHRISTCHURCH/Christchurch Intl		0000		Brisbane	YBZZSQCX
						0600		Nadi	NFZZRFYX
								Port Moresby	AYPPYMYX
								Singapore	WSZZYPYQ
								Tokyo	RJAAYPYX
								Hong Kong	VHZZYPYX

* - not in the FASID MET 1A Table

Table 3. ROBEX Exchange of METAR and TAF compared with ASIA/PAC ANP Table AOP1 (FASID Table MET 1A)

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
AMERICAN SAMOA(United States)					
PAGO PAGO/Pago Pago Intl	RS	NSTU		FTPS31 NFFN	Nadi
AUSTRALIA					
ADELAIDE/Adelaide	RS	YPAD	SAAU31 YBBN	FTAU31 YBBN	Brisbane
ALICE SPRINGS/Alice Springs	AS	YBAS	SAAU31 YBBN	FTAU31 YBBN	
BRISBANE/Brisbane	RS	YBBN	SAAU31 YBBN	FTAU31 YBBN	
BROOME/Broome	AS	YBRM	SAAU32 YBBN	FTAU33 YBBN	
CAIRNS/Cairns	RS	YBCS	SAAU31 YBBN	FTAU31 YBBN	
CHRISTMAS I./Christmas I.	RS	YPXM	SAAU31 YBBN	FTAU31 YBBN	
COCOS I./Cocos I.	RS	YPCC	SAAU32 YBBN	FTAU32 YBBN	
DARWIN/Darwin	RS	YPDN	SAAU31 YBBN	FTAU32 YBBN	
DUBBO/Dubbo	AS	YSDU	SAAU32 YBBN	FTAU33 YBBN	
HOBART/Hobart	RS	YMHB	SAAU32 YBBN	FTAU33 YBBN	
LEARMONTH/Learmonth	AS	YPLM	SAAU31 YBBN	FTAU32 YBBN	
MELBOURNE/Melbourne Intl	RS	YMML	SAAU31 YBBN	FTAU31 YBBN	
NORFOLK I./Norfolk I.	RS	YSNF	SAAU32 YBBN	FTAU33 YBBN	
PERTH/Perth Intl	RS	YPPH	SAAU31 YBBN	FTAU32 YBBN	
PORT HEDLAND/Port Hedland	RS	YPPD	SAAU32 YBBN	FTAU32 YBBN	
ROCKHAMPTON/Rockhampton	AS	YBRK	SAAU32 YBBN	FTAU32 YBBN	
SYDNEY/Kingsford Smith Intl	RS	YSSY	SAAU31 YBBN	FTAU31 YBBN	
TINDAL/Tindal	AS	YPTN	SAAU31 YBBN	FTAU32 YBBN	
TOWNSVILLE/Townsville	RS	YBTL	SAAU31 YBBN	FTAU32 YBBN	
CANBERRA*		YSCB	SAAU32 YBBN	FTAU32 YBBN	
COOLANGATA*		YBCG	SAAU32 YBBN	FTAU32 YBBN	
AVALON*		YMAV	SAAU32 YBBN	FTAU32 YBBN	
KLAGOORLIE*		YPKG	SAAU32 YBBN	FTAU32 YBBN	
RICHMOND*		YSRI	SAAU32 YBBN	FTAU33 YBBN	
WILLIAMTOWN*		YWLM	SAAU32 YBBN	FTAU33 YBBN	
LAUNCESTON*		YMLT	SAAU32 YBBN	FTAU33 YBBN	
PEARCE*		YPEA	SAAU32 YBBN	FTAU32 YBBN	
BANGLADESH					
CHITTAGONG/Chittagong	RS	VGEG	SAAE31 VECC		Bangkok
DHAKA/Zia Intl	RS	VGZR	SAAE31 VECC	FTAS31 VTBB	
BHUTAN					
PARO/Paro	RS	VQPR			
BRUNEI DARUSSALAM					
BANDAR SERI BEGAWAN/ Brunei Intl	RS	WBSB	SAMS31 WMKK	FTSR32 WSSS	Singapore
CAMBODIA					
PHNOM-PENH/Pochentong	RS	VDPP	SAAS31 VTBD	FTAS31 VTBB	Bangkok
SIEM-REAP/Angkor	AS	VDSR			
CANADA					Tokyo
ABBOTSFORD/Abbotsford	AS	CYXX			
CALGARY/Calgary Intl	RS	CYYC			
COMOX/Comox	AS	CYQQ			

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
EDMONTON/Edmonton Intl	RS	CYEG	**Not required for regular ROBEX exchange, but to be available on request through Tokyo RODB**		
VANCOUVER/Vancouver Intl	RS	CYVR			
VICTORIA/Victoria Intl	RNS	CYYJ			
CHILE					
ISLA DE PASCUA/Mataveri	RS	SCIP			
CHINA					
BEIJING/Capital	RS	ZBAA	SACI31 ZBBB	FTCI31 ZBBB	Tokyo
CHANGSHA/Huanghua	RS	ZGHA	SACI41 ZBBB	FTCI41 ZBBB	
CHENGDU/Shuangliu	RS	ZUUU	SACI32 ZBBB	FTCI32 ZBBB	
CHONGQING/Jiangbei	RS	ZUCK	SACI41 ZBBB	FTCI41 ZBBB	
DALIAN/Zhoushuizi	RS	ZYTL	SACI31 ZBBB	FTCI31 ZBBB	
FUZHOU/Changle	RS	ZSFZ			
GAOXIONG/Gaoxiong	RS	RCKH	SAHK31 VHHH	FTHK31 VHHH	
GUANGZHOU/Baiyun	RS	ZGGG	SACI31 ZBBB	FTCI31 ZBBB	
HAIKOU*/Meilan		ZJHK	SACI41 ZBBB	FTCI41 ZBBB	
GUILIN/Liangjiang	RS	ZGKL	SACI32 ZBBB	FTCI32 ZBBB	
HANGZHOU/Jianqiao	RS	ZSHC	SACI31 ZBBB	FTCI31 ZBBB	
HARBIN/Yanjiagang	RS	ZYHB	SACI41 ZBBB	FTCI41 ZBBB	
HEFEI/Luogang	AS	ZSOF	SACI41 ZBBB	FTCI41 ZBBB	
HOHHOT/Baita	RS	ZBHH	SACI41 ZBBB	FTCI41 ZBBB	
JINAN/Yaoqiang	RS	ZSJN			
KASHI/Kashi	AS	ZWSH	SACI41 ZBBB	FTCI41 ZBBB	
KUNMING/Wujiaba	RS	ZPPP	SACI32 ZBBB	FTCI32 ZBBB	
LANZHOU/Zhongchuan	AS	ZLLL	SACI41 ZBBB	FTCI41 ZBBB	
NANJING/Lukou	RS	ZSNJ	SACI41 ZBBB	FTCI41 ZBBB	
NANNING/Wuxu	AS	ZGNN	SACI32 ZBBB	FTCI32 ZBBB	
QINGDAO/Liuting	RS	ZSQD	SACI32 ZBBB	FTCI32 ZBBB	
SANYA/Fenghuang	RS	ZJSY	SACI41 ZBBB		
SHANGHAI/Hongqiao	RS	ZSSS	SACI31 ZBBB	FTCI31 ZBBB	
SHANGHAI/Pudong	RS	ZSPD	SACI31 ZBBB	FTCI31 ZBBB	
SHANTOU*		ZGOW	SACI32 ZBBB	FTCI32 ZBBB	
SHENYANG/Taoxian	RS	ZYTX	SACI31 ZBBB	FTCI31 ZBBB	
SHENZHEN/Huangtian	RS	ZGSZ	SACI32 ZBBB	FTCI32 ZBBB	
TAIBEI/Sungshan	AS	RCSS	SAHK31 VHHH	FTHK31 VHHH	
TAIBEI/Taibei Intl	RS	RCTP	SAHK31 VHHH	FTHK31 VHHH	
TAIYUAN/Wusu	AS	ZBYN	SACI31 ZBBB	FTCI31 ZBBB	
TIANJIN/Binhai	RS	ZBTJ	SACI31 ZBBB	FTCI31 ZBBB	
URUMQI/Diwopu	RS	ZWWW	SACI31 ZBBB	FTCI31 ZBBB	
WUHAN/Tianhe	RS	ZHHH	SACI41 ZBBB	FTCI41 ZBBB	
XIAMEN/Gaoqi	RS	ZSAM	SACI32 ZBBB	FTCI32 ZBBB	
XI'AN/Xianyang	RS	ZLXY	SACI32 ZBBB	FTCI32 ZBBB	
XICHANG/Qingshan	RNS	ZUXC			
Hong Kong, CHINA					
HONG KONG/Hong Kong Intl	RS	VHHH	SAHK31 VHHH	FTHK31 VHHH	Tokyo
Macau, CHINA					
MACAU/Macau Intl	RS	VMMC	SAHK31 VHHH	FTHK31 VHHH	Tokyo
COOK ISLANDS					
AVARUA/Rarotonga Intl	RS	NCRG			Brisbane
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA					
PYONGYANG/Sunan	RS	ZKPY			

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
FIJI					
NADI/Nadi Intl	RS	NFFN		FTPS31 NFFN	Nadi
SUVA/Nausori	RS	NFSU			
FRENCH POLYNESIA					
RANGIROA/Rangiroa	AS	NTTG			
TAHITI/Faaa	RS	NTAA			Brisbane
GUAM(United States)					
GUAM I./Agana NAS	RS	PGUM			
GUAM I./Anderson AFB	AS	PGUA			
INDIA					
AHMADABAD/Ahmadabad	AS	VAAH	SAIN31 VABB	FTIN31 VABB	Bangkok
AMRITSAR/Amritsar	RS	VIAR	SAIN32 VIDP		
CALCUTTA/Calcutta	RS	VECC	SAAE31 VECC	FTIN31 VABB	
CALICUT/Calicut	RS	VOCL		(FTIN31 VABB)	
CHENNAI/Chennai	RS	VOMM	SAIN31 VABB	FTIN31 VABB	
DELHI/Indira Gandhi Intl	RS	VIDP	SAIN32 VIDP	FTIN31 VABB	
HYDERABAD*		VOHY	SAIN31 VABB	(FTIN31 VABB)	
LUCKNOW*		VILK		FTIN31 VABB	
MUMBAI/Jawaharlal Nehru Intl	RS	VABB	SAIN31 VABB	FTIN31 VABB	
NAGPUR/Nagpur	AS	VANP	SAIN31 VABB	FTIN31 VABB	
PATNA/Patna	RS	VEPT	SAIN31 VABB		
TIRUCHCHIRAPPALLI/Tiruchchirappalli	RS	VOTR	SAIN31 VABB		
TRIVANDRUM/Trivandrum	RS	VOTV	SAIN31 VABB	FTIN31 VABB	
VARANASI/Varanasi	RS	VIBN	SAIN32 VIDP		
INDONESIA					
AMBON/Pattimura	RNS	WAPP			Singapore
BALIKPAPAN/Sepinggan	RS	WRLL			
BANJARMASIN/Syamsuddin Noor	AS	WRBB			
BATAM/Hang Nadim	AS	WIKB			
BIAK/Frans Kaisieppo	RS	WABB	SAID31 WIII		
DENPASAR/Ngurah Rai (Bali Intl)	RS	WRRR	SAID31 WIII	FTSR31 WSSS	
JAKARTA/Halim Perdanakusuma	RS	WIIH	SAID31 WIII	FTSR31 WSSS	
JAKARTA/Soekarno Hatta Intl	RS	WIII	SAID31 WIII	FTSR31 WSSS	
JAYAPURA/Sentani	RS	WAJJ			
KUPANG/Eltari	RS	WRKK			
MANADO/Sam Ratulangi	RS	WAMM			
MEDAN/Polonia	RS	WIMM	SAID31 WIII	FTSR32 WSSS	
MERAUKE/Mopah	RNS	WAKK			
PADANG/Tabing	RS	WIMG			
PALEMBANG/Sultan Mahmud Badaruddin II	RNS	WIPP			
PEKANBARU/Simpang Tiga	RS	WIBB			
PONTIANAK/Supadio	RS	WIOO			
SURABAYA/Juanda	RS	WRSJ	SAID31 WIII	FTSR31 WSSS	
TANJUNG PINANG/Kijang	RS	WIKN			
TARAKAN/Tarakan	RS	WRLR			
TIMIKA/Tembagapura	RNS	WABP			
UJUNG PANDANG/Hasanuddin	RNS	WAAA	SAID31 WIII		
JAPAN					
FUKUOKA/Fukuoka	RS	RJFF	SAFE32 RJTD	FTJP32 RJTD	Tokyo
HAKODATE/Hakodate	AS	RJCH	SAFE32 RJTD	FTJP31 RJTD	
HIROSHIMA/Hiroshima	RS	RJOA		FTJP32 RJTD	
KAGOSHIMA/Kagoshima	RS	RJFK	SAFE32 RJTD	FTJP32 RJTD	

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
KANAZAWA/Komatsu*		RJNK		FTJP32 RJTD	
KUMAMOTO/Kumamoto	RS	RJFT		FTJP32 RJTD	
NAGASAKI/Nagasaki	RS	RJFU	SAFE32 RJTD	FTJP32 RJTD	
NAGOYA/Nagoya	RS	RJNN	SAFE31 RJTD	FTJP32 RJTD	
NAHA/Naha	RS	ROAH	SAFE31 RJTD	FTJP31 RJTD	
NIIGATA/Niigata	RS	RJSN		FTJP32 RJTD	
OITA/Oita	RS	RJFO		FTJP32 RJTD	
OKAYAMA/Okayama	RS	RJOB		FTJP32 RJTD	
OSAKA/Kansai Intl	RS	RJBB	SAFE31 RJTD	FTJP31 RJTD	
OSAKA/Osaka Intl	RS	RJOO	SAFE31 RJTD	FTJP31 RJTD	
SAPPORO/New Chitose	RS	RJCC	SAFE32 RJTD	FTJP32 RJTD	
SENDAI/Sendai	RNS	RJSS		FTJP31 RJTD	
TAKAMATSU/Takamatsu	RS	RJOT		FTJP32 RJTD	
TOKYO/New Tokyo Intl	RS	RJAA	SAFE31 RJTD	FTJP31 RJTD	
TOKYO/Tokyo Intl	AS	RJTT	SAFE31 RJTD	FTJP31 RJTD	
TOYAMA/Toyama*		RJNT		FTJP32 RJTD	
JOHNSTON I.(United States)					
JOHNSTON I./Johnston Atoll	RS	PJON			
KIRIBATI					
KIRITIMATI/Christmas I.	RS	PLCH			
TARAWA/Bonriki Intl	RS	NGTA			
LAO PEOPLE'S DEMOCRATIC REPUBLIC					
VIENTIANE/Wattay	RS	VLVT	SAAS31 VTBD	FTAS31 VTBB	Bangkok
MALAYSIA					
JOHOR BAHRU/Sultan Ismail	RS	WMKJ		FTSR31 WSSS	Singapore
KOTA KINABALU/Kota Kinabalu Intl	RS	WBKK	SAMS31 WMKK	FTSR32 WSSS	
KUALA LUMPUR/Kuala Lumpur Intl	RS	WMKK	SAMS31 WMKK	FTSR31 WSSS	
KUANTAN/Kuantan	RS	WMKD			
KUCHING/Kuching	RS	WBGG	SAMS31 WMKK	FTSR32 WSSS	
MALACCA/Malacca	RS	WMKM			
PENANG/Bayan Lepas	RS	WMKP	SAMS31 WMKK	FTSR31 WSSS	
PULAU LANGKAWI/Pulau Langkawi	RS	WMKL			
TAWAU/Tawau	RS	WBKW			
MALDIVES					
GAN/Gan	AS	VRMG			Bangkok
MALE/Hulule	RS	VRMM	SASB31 VCCC		
MARSHALL ISLANDS					
MAJURO ATOLL/Marshall I. Intl	RS	PKMJ			
MICRONESIA, FEDERATED STATES OF					
MOEN/Truk Intl	RS	PTKK			
PONAPE I./Ponape	RS	PTPN			
YAP I./Yap Intl	RS	PTYA			
MONGOLIA					
ULAN BATOR/Ulan Bator	RS	ZMUB	SACI41 ZBBB	FTCI32 ZBBB	Tokyo
MYANMAR					
YANGON/Yangon Intl	RS	VYYY	SAAS31 VTBD	FTAS31 VTBB	Bangkok

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
NAURU					
NAURU I./Nauru	RS	ANAU			
NEPAL					
KATHMANDU/Tribhuvan Intl	RS	VNKT	SAAE32 VECC	FTIN31 VABB	Bangkok
NEW CALEDONIA (France)					
NOUMEA/La Tontouta	RS	NWWW	SANC01 NWWW	FTPS31 NFFN	Nadi
NEW ZEALAND					
AUCKLAND/Auckland Intl	RS	NZAA	SANZ31 NZWN	FTNZ31 NZKL	Brisbane
CHRISTCHURCH/Christchurch Intl	RS	NZCH	SANZ31 NZWN	FTNZ31 NZKL	
WELLINGTON/Wellington Intl	RS	NZWN	SANZ31 NZWN	FTNZ31 NZKL	
NIUE(New Zealand)					
ALOFI/Niue Intl	RS	NIUE			
NORTHERN MARIANA ISLANDS (United States)					
ROTA/Rota Intl	RS	PGRO			
SAIPAN I. (OBYAN)/Saipan I. (Obyan) Intl	RS	PGSN			
PAKISTAN					
GWADAR/Gwadar	RS	OPGD			Bangkok
ISLAMABAD/Chaklala	RS	OPRN	SAPK31 OPKC	FTPK31 OPKC	
KARACHI/Quaid-E-Azam Intl	RS	OPKC	SAPK31 OPKC	FTPK31 OPKC	
LAHORE/Lahore	RS	OPLA	SAPK31 OPKC	FTPK31 OPKC	
NAWABSHAH/Nawabshah	AS	OPNH	SAPK31 OPKC	FTPK31 OPKC	
PESHAWAR/Peshawar	RS	OPPS		FTPK31 OPKC	
PALAU					
KOROR/Koror	RS	PTRO			
PAPUA NEW GUINEA					
PORT MORESBY/Jacksons	RS	AYPY	SAPW31 AYPY	FTAU32 YBBN	Brisbane
VANIMO/Vanimo	RS	AYVN	SAPW31 AYPY		
PHILIPPINES					
DAVAO/Francisco Bangoy Intl	RNS	RPMD	SAHK31 VHHH	FTHK31 VHHH	Tokyo
LAOAG/Laoag Intl	AS	RPLI		FTHK31 VHHH	
LAPU-LAPU/Mactan Intl	RS	RPVM	SAHK31 VHHH	FTHK31 VHHH	
MANILA/Nimoy Aquino Intl	RS	RPLL	SAHK31 VHHH	FTHK31 VHHH	
OLONGAPO/Cubi Intl	RNS	RPMB			
SUBIC BAY*		RPLB	SAHK31 VHHH	FTHK31 VHHH	
ZAMBOANGA/Zamboanga Intl	AS	RPMZ		FTHK31 VHHH	
REPUBLIC OF KOREA					
BUSAN/Gimhae Intl	RS	RKPK	SAKO31 RKSI	FTKO31 RKSI	Tokyo
CHEONGJU/Cheongju Intl	RS	RKTU	SAKO31 RKSI	FTKO31 RKSI	
DAEGU/Daegu Intl	RS	RKTN	SAKO31 RKSI	FTKO31 RKSI	
SEOUL/Incheon Intl	RS	RKSI	SAKO31 RKSI	FTKO31 RKSI	
JEJU/Jeju Intl	RS	RKPC	SAKO31 RKSI	FTKO31 RKSI	
SEOUL/Gimpo Intl	AS	RKSS	SAKO31 RKSI	FTKO31 RKSI	
YANGYANG/Yangyang Intl	RS	RKNY	SAKO31 RKSI	FTKO31 RKSI	

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
SAMOA					
APIA/Faleolo Intl	RS	NSAP			
SINGAPORE					
SINGAPORE/Changi	AS	WSSS	SAMS31 WMKK	FTSR31 WSSS	Singapore
SINGAPORE/Paya Lebar	AS	WSAP		FTSR31 WSSS	
SINGAPORE/Seletar	RS	WSSL			
SOLOMON ISLANDS					
HONIARA/Henderson	RS	AGGH			
SRI LANKA					
COLOMBO/Katunayake	RS	VCBI	SASB31	FTIN31 VABB	Bangkok
MINNERIYA/Hingurakgoda (1997)	AS	VCCH			
THAILAND					
BANGKOK/Bangkok Intl	RS	VTBD	SAAS31 VTBB	FTAS31 VTBB	Bangkok
CHIANG MAI/Chiang Mai Intl	RS	VTCC	SAAS31 VTBB	FTAS32 VTBB	
CHIANG RAI/Chiang Rai Intl	RS	VTCR			
KHON KAEN/Khon Kaen		VTUK			
PHITSANULOK	RS	VTPP			
PHUKET/Phuket Intl	RS	VTSP	SAAS31 VTBB	FTAS32 VTBB	
RAYONG/Utapao Intl	RS	VTBU	SAAS31 VTBB	FTAS32 VTBB	
SONGKHLA/Hat Yai Intl	RS	VTSS	SAAS31 VTBB	FTAS32 VTBB	
SURAT THANI/Surat Thani	RS	VTSB			
UBON RATCHATHANI	RS	VTUU			
TONGA					
TONGATAPU/Fua'amotu Intl	RS	NFTF			
VAVA'U/Vava'u	RS	NFTV			
TUVALU					
FUNAFUTI/Funafuti Intl	RS	NGFU			
UNITED STATES					Tokyo
ANCHORAGE/Anchorage Intl	RS	PANC			
ANCHORAGE/Elmendorf AFB	AS	PAED			
COLD BAY/Cold Bay	AS	PACD			
EVERETT/Snohomish County	AS	KPAE			
FAIRBANKS/Eielson AFB	AS	PAEI			
FAIRBANKS/Fairbanks Intl	RS	PAFA			
FRESNO/Fresno Air Terminal	AS	KFAT			
HILO/General Lyman Field	AS	PHTO			
HONOLULU/Barbers Points NAS	AS	PHNA			
HONOLULU/Honolulu Intl	RS	PHNL			
KAHULUI/Kahului	AS	PHOG			
KING SALMON/King Salmon	AS	PAKN	**Not required for regular ROBEX exchange, but to be available on request through Tokyo RODB**		
LOS ANGELES/Los Angeles Intl	RS	KLAX			
OAKLAND/Metropolitan Oakland	AS	KOAK			
ONTARIO/Ontario Intl	AS	KONT			
PALMDALE/Palmdale P.F.T.I.	AS	KPMD			
PORTLAND/Portland Intl	AS	KPDX			
SACRAMENTO/Metropolitan	AS	KSMF			
SAN DIEGO/Lindbergh Field	AS	KSAN			
SAN FRANCISCO/San Francisco	RS	KSFO			
SAN JOSE/San Jose Intl	RS	KSJC			
SEATTLE BOEING FIELD/King County Intl	AS	KBFI			

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
SEATTLE/Seattle-Tacoma Intl	RS	KSEA			
SPOKANE/Spokane Intl	AS	KGEG			
STOCKTON/Metropolitan	AS	KSCK			
WASHINGTON/Dulles Intl	RS	KIAD			
VANUATU					
PORT-VILA/Bauerfield	RS	NVVV			
SANTO/Pekoa	RS	NVSS			
VIET NAM					
DANANG/Danang	AS	VVDN	SAAS31	FTAS32 VTBD	Bangkok
HANOI/Noibai	RS	VVNB	SAAS31	FTAS32 VTBD	
HO-CHI-MINH/Tan-Son-Nhut	RS	VVTS	SAAS31	FTAS31 VTBD	
WALLIS ISLANDS(France)					
WALLIS/Hififo	RS	NLWW			

* Aerodrome required for ROBEX exchange but not in FASID Table MET 1A

EXAMPLES OF PROPOSED CHANGES TO THE SIGMET FORMAT

Proposals for amendment of the format of location information in SIGMETs

1. It is felt that the current SIGMET format given in Annex 3, Appendix 5, Table A5-1, does not provide complete guidance regarding the format of the location information. The following typical cases are proposed for review and amendment of the current SIGMET format:

Example 1a: Description of a sector of a FIR referring to a meridian, given by its longitude:

E OF Ennn[nn] or Wnnn[nn] or
W OF Ennn[nn] or Wnnn[nn]

Example 1b: Description of a sector of a FIR referring to a parallel, given by its latitude:

N OF Nnn[nn] or Snn[nn] or
S OF Nnn[nn] or Snn[nn]

Note: These two cases are covered by the current provisions.

Example 2: Description of a sector of a FIR referring to a parallel and a meridian, given by their latitude and longitude respectively, for instance:

N OF Nnn[nn] [AND] W OF Ennn[nn]

Note: In this case, the word "AND" should be added to the SIGMET format.

Example 3: Description of a sector of a FIR referring to an arbitrary line given by lat/lon coordinates of 2 (or 3 points in case of a non-straight line), for instance:

NW OF [LINE] Nnn[nn]Ennn[nn][-]Nnn[nn]Ennn[nn]

Note: In this case, the word "LINE" should be added to the SIGMET format.

Example 4: Description of an arbitrary area of a FIR referring to up to 5 points forming a polygon, given by lat/lon coordinates of these points, for instance:

WI [AREA] Nnn[nn]Ennn[nn][-]Nnn[nn]Ennn[nn][-]
Nnn[nn]Ennn[nn][-][Nnn[nn]Ennn[nn][-]]
[Nnn[nn]Ennn[nn]]

Notes: *1) The limitation of "up to 5 points" should be imposed to avoid too lengthy SIGMET messages.*
2) In this case, the word "AREA" should be added to the SIGMET format.

2. It is necessary to standardize the format of reporting the geographical coordinates in the SIGMETs and the volcanic ash and tropical cyclone advisories. The exact format for latitude/longitude information should be clearly stated and used in all examples in the Annex 3.

3. In the case of reporting location by means of "geographic features well known internationally", the words "OVER" and "PART" could be added to the SIGMET format, to facilitate the description of the phenomenon location.

ASIA/PAC TASK FORCE ON THE IMPLEMENTATION OF VOLCANIC ASH AND TROPICAL CYCLONE ADVISORIES AND SIGMET (VA/TC IMPLEMENTTAION TF)

1. Terms of Reference

(a) Monitor the implementation of the tropical cyclone (TC) and volcanic ash (VA) advisories and SIGMETs within the ASIA/PAC Regions and identify any deficiencies.

(b) Coordinate operational issues related to the issuance of the VA and TC advisories and SIGMETs.

c) Continually seek ways to improve the operational effectiveness of the IAVW and the TC advisory and warning system;

d) Provide advice to the CNS/MET Sub-group on the above issues.

2. Work Programme

The work to be addressed by the ASIA/PAC VA/TC Implementation Task Force includes:

(a) review procedures for the issuance of VA and TC advisories and SIGMETs in the region and propose actions for their improvement;

(b) investigate the deficiencies in the format and dissemination of the VA and TC advisories and SIGMETs and propose actions for their elimination;

(c) investigate the need of the States for guidance and/or training related to the implementation of IAVW and tropical cyclone warning system;

(d) follow the developments in the States related to the improvement of the VA and TC advisories and warnings and provide regional input on these matters to the IAVW Operations Group (through APANPIRG);

(e) report on its work to the CNS/MET Sub-group of APANPIRG.

The work is expected to be carried out primarily by correspondence.

3. Composition

(a) The Task Force is composed by experts from:

Australia, Japan (Rapporteur), New Zealand, United Kingdom, United States, China, Tonga and Maldives.

(b) IATA is invited to participate in the work of the Task Force.

AMENDMENT PROPOSAL TO ASIA/PAC FASID TABLE MET 1B

APAC FASID – MET **6-1B-5**

TABLE MET 1B – METEOROLOGICAL WATCH OFFICES

MWO location Emplacement du MWO Lugar de la OVM	ICAO location indicator Indicateur d'emplace-ment OACI Indicador de lugarde la OACI	Area served/Région desservie/Zona de servicio		Remarks Observations Observaciones
		Name/Nom/Nombre	ICAO location indicator Indicateur d'emplace-ment OACI Indicador de lugarde la OACI	
1	2	3	4	5
NAURU				
NAURU I./Nauru	ANAU	Nauru FIR and SRR	ANAU	
NEPAL				
KATHMANDU/Tribhuvan Intl	VNKT	Kathmandu FIR and SRR	VNSM	
NEW ZEALAND				
NEW ZEALAND/Wellington ~~Intl~~*	NZWW	Auckland Oceanic FIR and SRR	NZZO	
		New Zealand FIR AND SRR	NZZC	
NORTHERN MARIANA ISLANDS (United States)				
SAIPAN I. (OBYAN)/Saipan I.(Obyan) Intl	PGSN	Guam SRR		
PAKISTAN				
KARACHI/Quaid-E-Azam Intl	OPKC	Karachi FIR and SRR	OPKR	
LAHORE/Lahore	OPLA	Lahore FIR and SRR	OPLR	
PAPUA NEW GUINEA				
PORT MORESBY/Jacksons	AYPY	Port Moresby FIR and SRR	AYPY	
PHILIPPINES				
MANILA/Ninoy Aquino Intl	~~RPMM~~RPLL	Manila FIR and SRR	~~RPMM~~RPHI	
REPUBLIC OF KOREA				
INCHEON/Incheon Intl	RKSI	Daegu FIR and SRR	RKRR	
SINGAPORE				
SINGAPORE/Singapore Changi	WSSS	Singapore FIR and SRR	WSJC	
SOLOMON ISLANDS				
HONIARA/Henderson	AGGH	Honiara FIR and SRR	AGGG	
SRI LANKA				
COLOMBO/Katunayake	VCBI	Colombo FIR and SRR	VCBI	

* Operational monitoring coverage south of 60˚S is limited due to the lack of information

TERMS OF REFERENCE OF THE

COMMUNICATIONS, NAVIGATION, SURVEILLANCE/METEOROLOGY (CNS/MET) SUB-GROUP OF APANPIRG

TERMS OF REFERENCE

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

2. Review and identify deficiencies that impede the implementation or provision of efficient CNS/MET services in the ASIA/PAC Region.

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

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

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

SUBJECT/TASKS LIST IN THE CNS/MET 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 medium priority on which work should be under taken as soon as possible but not to the detriment of Priority "A tasks; and
C = Tasks of medium priority on which work should be undertaken as time and resources permit but not to the detriment of priority "A" and "B" tasks.
TOR = Terms of Reference of the Sub-Group

TASKS NO. 1-29 HAVE BEEN COMPLETED AND REMOVED FROM THE LIST

No.	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
30	RAN/3 C.11/10 (TOR 1)	Subject: Ensure effective transition to sat. coms. Task: Planning for the implementation of satellite communications.	B	In planning for the implementation of CNS/ATM take into account: 1) Requirements for an effective transition, 2) Time frame for implementing changes, 3) HF requirements after implementation of satellite communications, 4) Human factors (staffing, retraining).	CNS/MET	On-going
31	RAN/3 C.11/11 (TOR 1)	Subject: Need for data link to access VOLMET broadcast stations by aircraft. Task: Automation of meteorological information for aircraft in flight (VOLMET) broadcasts.	B	In planning CNS/ATM implementation consider automation of VOLMET broadcast and introduction of D-VOLMET by VOLMET broadcast stations specified in the FASID.	CNS/MET	2008
32	RAN/3 C.8/14 APANPIRG/ 14 (TOR 3)	Subject: Inadequate implementation of procedures for advising aircraft on volcanic ash and tropical cyclones Task: ~~Regional Planning for~~ Monitoring of the implementation of international airways volcano watch (IAVW) and tropical cyclone advisories and SIGMETs	A	~~Plan~~ Monitor and provide assistance in the implementation of ~~IAVW~~ volcanic ash and tropical cyclone advisories and SIGMETs procedures to ensure provision of timely information on volcanic ash and tropical cyclones to aircraft.	CNS/MET Task Force on the implementation of Volcanic Ash and Tropical Cyclone advisories and SIGMETs (VA/TC TF)	On going

No.	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
33	APANPIRG D. 9/21	Problem : SADIS strategic assessment Task: SADIS strategic assessment of data/information to be included in the satellite broadcast.		Review requirements for SADIS broadcasts and maintain the SADIS strategic assessment tables.	CNS/MET SG	On-going
34	APANPIRG (TOR 3)	Subject: Lack of procedure for application of MET data in ADS messages Task: Use of MET data from ADS messages	A	1) Review MET information transmitted with ADS messages Presentation of the WP on the subject to the CNS/MET/SG/6 2) Develop procedures for utilization of the available MET data by operational units, MET offices and WAFCs	CNS/MET New Zealand CNS/MET	2003 ~~2002~~ ~~Completed~~ 2004
35	(TOR 3)	Subject: To facilitate regional implementation of CNS/ATM Tasks: a) coordinate training/workshops to allow States to develop and implement new CNS/ATM procedures b) encourage States to participate in the evaluation and training of new CNS/ATM systems c) progress the adoption of WGS-84 co-ordinate system and introduction of high integrity systems for the management of the co-ordinate data	A	1) identify topics for training, develop syllabi and plan training programme 2) encourage States in the evaluation and training of new CNS/ATM systems 3) co-ordinate with States and monitor progress 4) collect information and suggest methods of resolving problems commonly faced by States	CNS/MET CNS/ATM IC SG	On-going On-going On-going On-going

No.	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
36	APANPIRG D. 4/46 RAN/3 C.12/3 APANPIRG 5/3 (TOR 3)	Subject: Provision of adequate CNS/MET services Task: Monitor CNS/ATM systems research and development, trials and demonstrations in the fields of CNS/MET and facilitate the transfer of this information and expertise between States.	A	• Encourage States to conduct R&D, trials & demonstrations of new CNS/MET services • Monitor global developments that may have beneficial consequences on regional planning activities • Consolidate information on new capabilities in the CNS/ATM system, for the Sub-Groups review and action • Serve as a focal point for review of ongoing work of Regional formal and informal working groups that is relevant to CNS/MET • Provide for coordinated training/seminars to keep all States informed on developments of trials and demonstrations	CNS/MET	On-going
37	C 12/24	Subject : Transition to the ~~final phase~~GRIB and BUFR coded ~~of~~ WAFS products Task : Implementation of the transition to the GRIB and BUFR coded WAFS products~~final phase of WAFS~~	A	1) Development of guidelines for the use of BUFR and GRIB codes for the production of WAFS products. 2) Planning and coordinating the transfer of SIGWX and WIND/TEMP charts from the current T4 facsimile format to BUFR and GRIB format. 3) Development of a regional training programme for the operational use of BUFR and GRIB. 4) Participate in the development and implementation of an adequate WAFS back-up system for dissemination of WAFS products in the ASIA/PAC Region.	CNS/MET SG WAFS ~~Transition~~ Implementation Task Force	~~2002~~ Completed ~~2004~~July 2005 ~~2003~~2004 Completed ~~2004~~
38	C12/36	Subject : Lack of ATM requirements for MET components of the ASIA/PAC CNS/ATM Plan. Task : Developing the MET Chapter for the ASIA/PAC CNS/ATM Plan.	A	1. Development of the initial draft of the MET Chapter. 2. Development of the MET components of the CNS/ATM concept/ strategy. 3. Inclusion of ATM requirements for MET information in the CNS/ ATM Plan.	CNS/MET SG with assistance of MET WG on CNS/ATM Plan CNS/MET SG with assistance of the METATM TF	Completed ~~2003~~ Completed 2004

No.	Ref.	Task	Priority	Action Proposed/In Progress	Action By	Target Date
39	APANPIRG /13 D 13/28	Subject: To improve the efficiency of the regional and inter-regional OPMET exchange and the availability of OPMET information from the ASIA/PAC Region Task: Review and optimize the ROBEX scheme and other OPMET exchanges; introduce monitoring and management procedures for the ROBEX centres and Regional OPMET data banks	A	1) Review and update regional ROBEX tables and relevant documents 2) Propose optimization chages to the ROBEX scheme 3) Improve the availability of OPMET data at the Regional OPMET Data Banks (RODB) 4) Improve the availability of OPMET information from the Pacific States 5) Introduce monitoring and management procedures	CNS/MET SG OPMET Management Task Force	2003 2004 on-going on-going on-going
40	APANPIRG /13 C 13/32	Subject: Quality Management of the meteorological service for the international air navigation Task: Foster the development and implementation of quality management systems by the States' MET authorities/providers in the ASIA/PAC Region	B	1) Review the status of implementation of the quality management system in the region 2) Assist in the organization of regional seminars/workhops to foster exchange of information between the States on the matters of quality management systems	CNS/MET SG	On-going

AGENDA ITEM 2.3: ATS CO-ORDINATION GROUPS' ACTIVITIES

2.3 ATS Co-ordination Groups' Activities

Review ATS Co-Ordination Groups Activities

2.3.1 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.

2.3.2 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.

2.3.3 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)

2.3.4 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.

2.3.5 The following information is provided on the Coordination Groups' activities:

Bay of Bengal ATS Coordination Group (BBACG) and the FANS Action Team

2.3.6 The BBACG/12 meeting was last 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)

2.3.7 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.

17th Meeting of the Informal South Pacific ATS Coordinating Group (ISPACG/17)

2.3.8 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.

2.3.9 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.

2.3.10 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.

2.3.11 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.

2.3.12 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.

2.3.13 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)

2.3.14 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)

2.3.15 The RACGAT/12 meeting was held in Las Vegas, Nevada, USA, on 21-24 October 2002.

2.3.16 NAV CANADA, reported on the implementation of RVSM, Automatic Waypoint Reporting (WPR), CPDLC, Northern Radars and National Flow Management Centre.

2.3.17 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.

2.3.18 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.

2.3.19 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.

2.3.20 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.

2.3.21 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.

2.3.22 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.

2.3.23 The American Co-Chair for the meeting discussed the future work plan of RACGAT. 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.

2.3.24 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.

2.3.25 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.

2.3.26 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.

China, Mongolia, Russian Federation, IATA (CMRI)

2.3.27 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

2.3.28 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.

2.3.29 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.

2.3.30 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.

2.3.31 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.

2.3.32 The meeting noted that, in regard to 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.

2.3.33 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

2.3.34 The meeting was advised that 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.

2.3.35 The meeting noted that, in accordance with the ICAO interim compromise position which was suggested at CMRI/3 meeting last year, China now has internal 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.

2.3.36 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.

2.3.37 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.

2.3.38 The meeting was advised that, 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 30 June 2003.

2.3.39 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.

AGENDA ITEM 2.4: OTHER AIR NAVIGATION MATTERS

Agenda Item 2.4 Other Air Navigation Matters

Statement of Basic Operational Requirements and Planning Criteria (BORPC)

2.4.1 The meeting was presented with a Statement of Basic Operational Requirements and Planning Criteria as contained in Part I of the ASIA/PAC Basic Air Navigation Plan and FASID document that was approved by the President of the Council on 11 August 2001.

2.4.2 The statement of BORPC provides operational and planning criteria which forms the basis for development of the Air Navigation Plans. The meeting noted that APANPIRG/13 formulated Conclusion 13/35 pertaining to changes to the MET part as contained in section 9 of the BORPC as a result of the closure of the Regional Area Forecast Centres (RAFCs) and new provisions in regard to the exchange of OPMET data included in Amendment 72 of Annex 3, that became applicable on 1 November 2001.

2.4.3 The meeting was informed that the task of revising the BORPC would be initiated after the completion of the 11th Air Navigation Conference in October 2003.

2.4.4 In reviewing the BORPC, the meeting did not feel the need to propose any changes.

Progress Report on the Preparatory Work for the Conduct of Safety Audits in the areas of Expansion

2.4.5 The meeting was presented with a progress report on the preparatory work for the conduct of safety oversight audits in the areas of expansion of the ICAO Universal Safety Oversight Audit Programme (USOAP) to Annex 11 — *Air Traffic Services*, Annex 13 — Aircraft Accident and Incident Investigation and Annex 14 — *Aerodromes.*

2.4.6 The preparatory work has focussed initially on the development of the relevant auditing documentation, including the pre-audit questionnaires, audit protocols, auditors' training courses and related guidance material. The pre-audit questionnaire will be an essential auditing tool, designed to solicit relevant information required for audit scheduling and planning purposes, as well as to provide a user-friendly format for States to ascertain the status of implementation of Standards and Recommended Practices (SARPs) in their national framework and to identify any difference which may exist between their national regulations and relevant Annex provisions. The meeting noted that pre-audit questionnaire; called State Aviation Activity Questionnaire (SAAQ) has already been prepared and dispatched to all Contracting States on 30 May 2003. Furthermore, the electronic format (Web-based) is available on Safety Oversight Audit Section's web page of the ICAO-Net to facilitate States to submit their response online. The meeting was apprised that a memorandum of understanding (MOU) relating to the conduct of audits in the areas of the expansion has also been developed and includes the elements contained in the MOU of the Universal Security Audit Programme (USAP).

2.4.7 The work in progress includes preparation of the draft audit protocols, training programmes for auditors and update of Doc 9734, Part A — *The Establishment and Management of a State's Safety Oversight System* . The meeting noted that on the advice of the Commission, the Secretariat will also develop guidance material for the establishment of regional or group of States safety oversight system. The resulting manual will be known as *Safety Oversight Manual*, Part B — *The Development and Management of Regional Safety Oversight Systems*, and would be published before the commencement of audits in early 2004.

Asia Pacific Traffic Forecasting Group

2.4.8 The meeting was advised that the Asia Pacific Area Traffic Forecasting Group (APA TFG) held its Eleventh Meeting in Bangkok between 30 September to 4 October 2002. The key findings of the APA TFG were presented and attention was drawn to significant long-term reductions in Trans-Pacific aircraft movements as a result of the events of 11 September 2001. However, it was pointed out that the APA TFG needs to review its forecasts in the context of the current set of adverse conditions.

2.4.9 It was explained that, while circumstances in recent years have made the task of forecasting more challenging, the review of the long-term impacts of the events of 11 September 2001 demonstrated the importance of the APA TFG's work to APANPIRG. It was pointed out that the APA TFG requires the full support of States through the provision of suitable experts to participate in the development of forecasts and regularly attend TFG meetings along with the provision of data and other information required for the development of forecasts. The meeting was advised that this support had not been fully forthcoming in recent years and attention was drawn to APANPIRG Conclusion 13/37 – Need for Adequate Resources for Traffic Forecasting Groups.

2.4.10 The meeting noted the revised forecasts and the need to review these in the light of recent events. The meeting also expressed strong support for the APA TFG in its reaffirmation of APANPIRG Conclusion 13/37.

11th Air Navigation Conference

2.4.11 The meeting noted the AN-Conf/11 matters regarding ATM and the Report of the AN-Conf/11 Preparatory meeting held at Bangkok, 27-28 January 2003.

Air Traffic Management Operational Concept

2.4.12 The meeting noted that the ATM Operational Concept document developed by the Air Traffic Management Concept Panel (ATMCP) would be presented to the AN-Conf/11 under Agenda Item 1 and would also form the basis of the major part of the discussions under the ATM Agenda Items 2 to 4.

2.4.13 The meeting noted that the ATM operational concept was a gate-to-gate approach that would facilitate implementation of a seamless global ATM system. In this regard, the global ATM operational concept describes how an integrated global ATM system should operate and would provide States and industry with clearer objectives for designing and implementing ATM and supporting systems. This aspect was of considerable interest to States and the regions in respect to determining operational requirements for implementation of airspace improvements associated ATM enhancements and supporting technology.

2.4.14 The meeting endorsed the view of the AN-Conf/11 Preparatory Meeting, which emphasized that interoperability, efficiency and cost were of primary concern. Also, priority needed to be given to integrate present ATM systems and this work would be primarily undertaken at a regional level.

2.4.15 Of considerable interest to the meeting was how the ATM systems of today would transition to a global ATM system as envisaged in the ATM Concept, and expected AN-Conf/11 to give clear guidance on this matter. In this regard, the meeting reinforced the view of the Preparatory Meeting that the review and assessment of the ATM Concept by the AN-Conf/11 should have a practical focus that would facilitate the eventual acceptance and implementation of the ATM

Concept into the planning framework of States and planning and implementation regional groups (PIRGs). Further, the meeting fully supported the comment made by the Preparatory Meeting that harmonizing air traffic services regionally has proved to be difficult to achieve, and implementation issues were major obstacles to achieving a global ATM system. In particular, interoperability issues States' ATM automated systems and aircraft systems had a significant impact on successful implementation of regional planning.

2.4.16 The meeting supported the approach taken in the ATM operational concept that the driver for change in the ATM system should be ATM user expectations within a framework of safety case/cost/benefit analyses and a business case. The meeting noted that, in the planning and implementation experience of this region, this matter was given high priority.

2.4.17 In regard to safety certification of ATM systems the meeting recognized that this was an important matter that required considerable in depth examination, and felt it would be difficult to achieve standardization given the wide range of ATM systems in use. The adopting of existing international standards for ATM systems such as the International Organization for Standardization (ISO) system of standards and certification, which were widely used by States, could be an approach to take. The users of ATM systems should expect and receive systems, which were installed and maintained to the highest possible standards irrespective of the airspace they were flying over, or entering. In this regard, the meeting noted that the expansion of the Universal Safety Oversight Audit Programme to include Annex 11 - *Air Traffic Services* and Annex 14 - *Aerodromes* in 2004 would further strengthen improving overall safety.

Airspace safety management systems and programmes

2.4.18 The meeting noted that the availability of safety management guidance material was a matter of priority and urgently needed by States in meeting the Annex 11 applicable on 27 November 2003 requiring States to establish the acceptable level of safety and safety objectives applicable to ATS within airspaces and at aerodromes.

Required System Total Performance (RSTP)

2.4.19 There was high expectation that the AN-Conf/11 would clarify the concept of use of Required System Total Performance (RSTP) and its components, which would give direction to equipment manufacturers and ATS providers. The meeting reiterated that concepts needed to be rooted in practical application that met State requirements as reflected in regional air navigation plans.

Enhancing capacity

2.4.20 In regard to enhancing capacity, the meeting noted the strides taken in the Asia/Pacific Region through a cooperative approach between ICAO, States and international organizations to utilize available CNS/ATM technology to improve the airspace structure. For example, the revised South China Sea ATS route structure and the EMARSSH project were major airspace ATS route structures that made use of RNAV, RNP 10 and reduced horizontal separation, and were successfully implemented in 2001 and 2003 respectively. Also, extensive use was being made of ADS and CPDLC in the Pacific Region Planning was underway to implement these systems in the Asia Region.

2.4.21 The meeting recognized that considerable progress made to enhance capacity in the international airspace of the Region, including widespread introduction of RVSM. Similar attention

had not been given at an international level to airports and terminal operations. It was recognized that airport capacity was the defining limiting factor in achieving maximum utilization of airspace capacity, and thereby gaining full benefits of a gate-to-gate ATM system. The meeting expected the AN-Conf/11 to address this matter and provide appropriate guidance on how to integrate, en-route, terminal and airport operations to achieve a balanced capacity and demand.

Regional issues

2.4.22 The meeting noted that there was no regional specific item on the agenda of AN-Conf/11, although many of the subjects had regional relevance and would have significant impact on regional planning and implementation. A regional view or position on the conference agenda items had not been sought by ICAO and the meeting hoped that there would be full regional involvement in the post AN-Conf/11 activities. In regard to a regional perspective and bringing these before AN-Conf/11, the meeting emphasized that it would be left to individual States to present and represent regional interests at AN-Conf/11.

IATA preparations

2.4.23 The meeting noted that the IATA working papers along with the other papers to be presented at AN-Conf/11 were available at www.icao.org/icao/en/anb/meetings/anconf11/index.html.

Outcome of the WRC-2003 and its impact on aeronautical electromagnetic spectrum utilization

2.4.24 It was noted that the meeting reviewed the explanatory notes on agenda item. APANPIRG meetings and DGCA Conferences had urged States to provide necessary support for the ICAO position at national level discussions, at the regional level as well as at WRC-2003. In order to provide supporting technical information and to assure coordinated efforts by all designated contact points, the Regional Office conducted two Regional Preparatory Group Meetings, which were well attended. Necessary support was secured for ICAO Position at the Regional level.

2.4.25 The meeting reviewed the outcome of the WRC 2003 and noted that ICAO position was fully supported with the exception of 3 agenda items for which there were partial support. It was noted that the AN-Conf/11 would assess its impact on aeronautical spectrum requirements and would also consider the need to ensure continuing availability of spectrum for aeronautical communications and navigation. It was, therefore, considered very important for States to study spectrum allocations to all aeronautical services in light of the outcome of WRC 2003 and present proposals at the AN-Conf/11 if further actions are required to ensure availability of adequate spectrum to support the ATM operational concept.

Aeronautical navigation issues

2.4.26 The meeting thoroughly reviewed the agenda item and the explanatory notes on this agenda item with a view to develop full understanding of the issues involved. The meeting also reviewed the strategies for the provision of precision approach and landing guidance system and the GNSS implementation for the ASIA/PAC region adopted by APANPIRG. The strategy contained in Annex 10, Volume I, and Attachment B was reviewed. It was also noted that Attachment B would be updated by the Conference based on the developments and progress in implementation of GNSS. It was also noted that the Conference would recommend revision to the Global Air Navigation Plan for the CNS/ATM System – Second Edition 2002, develop guidelines for transition to GNSS, identify the need for a back-up system and draft amendments to SARPs in Annex 10.

2.4.27 It was further noted that an inter-operability of various systems such as GPS, GLONASS, Galileo, and WAAS, EGNOS and MSAS as SBAS would be addressed by the Conference.

2.4.28 Emphasis was placed on the training need to make full use of the capabilities afforded by GNSS. It was recognized that a formal training programme was required to be conducted at regular intervals, such as procedure design, training of concerned personnel and to address issue relating to certification and operational approvals, etc. IATA had emphasized that full capability of GNSS would also greatly assist in providing navigation guidance to address CFIT accidents.

Aeronautical air-ground and air-to-air communications

2.4.29 The meeting noted that availability of adequate spectrum for different communication systems is becoming a critical aspect of air navigation planning.

2.4.30 It was noted that almost all the SARPs for air-ground data links were completed. The outstanding issues identified were the need for integration of multiple data links for simultaneous operation and provision to ensure priority access and pre-emption over non-aeronautical users on the 1.5/1.6 GHz band AMS(R) S spectrum. The agenda proposed by Japan and supported by Australia for WRC-2007 to review the current provision which had caused practical difficulty in ensuring preemption, priority access and protection of the AMS (R) S in the band 1.5/1.6 GHZ was delayed until WRC 2010.

2.4.31 The meeting noted that SARPs for SSR Mode-S data link and VDL Mode-4 have been included in Annex 10 and SARPs for UAT being considered for ADS-B. The interoperability of the three data links was a matter of concern. It was recognized that careful consideration should be given in identifying a suitable a data link for ADS-B including possibility of multi model data link system which would address interoperability issue.

2.4.32 Subsequently, the ADS-B Study and Implementation Task Force had identified SSR Mode-S Extended Squitter 1090 MHz as a suitable link to be used in the ASIA/PAC region. The proposal was endorsed by APANPIRG/14. States, while preparing paper for the AN-Conf/11, were encouraged to take note of the recommendation of APANPIRG.

2.4.33 The meeting reviewed the Key Priorities for CNS/ATM Implementation in the ASIA/PAC region. In particular, the meeting took note of the item, ADS-B study and implementation.

2.4.34 The meeting noted the Sub-Groups, under relevant agenda items, had addressed the tasks assigned to them by APANPIRG/13 to deal with the AN-Conf/11 agenda items in order to assist States in the preparation for the Conference.

AGENDA ITEM 3: CNS/ATM IMPLEMENTATION AND RELATED ACTIVITIES

Agenda Item 3: CNS/ATM Implementation and Related Activities

CNS/ATM Implementations Coordination Sub-Group

3.1 The meeting reviewed the report of the tenth meeting of the Communications Navigation and Surveillance and Air Traffic Management Implementation Co-ordination Sub-Group (CNS/ATM/SG/10) as well as working papers covering CNS/ATM implementation matters. The meeting expressed its appreciation for the work progressed by the Sub-Group.

Status of CNS/ATM Implementation

Australia

Air Traffic Management Strategic Planning Framework

3.2 The meeting noted information provided by Australia on the Australian ATM Strategic Plan which was developed through a cooperative planning approach that involved a cross section of Government and aviation industry organizations that had a stake in the future of Australia's ATM system.

3.3 The Plan grew out of a need both from a pragmatic recognition of the current ad-hoc nature of CNS implementation and ATM enhancement – both regionally and globally - and from a recognition of the potential significant benefits of a cooperative approach to future investments in ATM systems by airspace users (in terms of airborne equipment) and service providers (in terms of ground based infrastructure and systems). Furthermore, there was a growing appreciation that ATM covers all aircraft operations from the time a flight was planned through to time the aircraft parks at the destination airport – not simply that component currently managed by the ATS Provider. The development of new ATM systems also had safety regulatory implications. Hence the need to engage broad representation from aircraft and airport operators and the aviation safety regulator in the strategic planning process.

3.4 As part of the ongoing process and the continued collaborative approach to planning, Australia had also developed a Target Operational Concept, which describes an ideal future vision of ATM. It presents a concept of how this advanced system would operate in terms of operational practice, need and outcome, and attempts to remain independent of enabling technologies and applications. The future concept, in articulating an ideal, also represents a target towards which the current system would aspire, and forms a basis for the design and development of transitional strategies and migratory planning.

3.5 The Australian ATM stakeholders realized that no one single organization could give effect to the level of coordination required to achieve the "ideal future" of ATM. Instead, a "round table" of key stakeholders needed to be created, each participating on a "strategic partnership" basis, each understanding that their participation was purely in the interests of harmonization and effective use of available resource. The ATM strategic management framework had been structured such that there was a core component of the key ATM stakeholders (the Australian ATM Strategic Management Group - ASTRA) consisting of the Australian industry, Airservices, the Civil Aviation Safety Authority, the Department of Transport and Regional Services and Defence.

3.6 The major benefit of adapting and adopting the ATM strategic management framework for the development of a regional ATM Strategic Plan, was that it would facilitate a systematic and collaborative approach by all ATM stakeholders to ATM planning and implementation within the region.

3.7 The meeting noted the approach taken by Australia and the strategic management framework developed for the future planning of the ATM system, and this should be taken into account in developing the APSC Regional Plan for the New CNS/STM Systems

Australia and Papua New Guinea ATM and GNSS projects

3.8 The meeting was updated by Australia on some of the ATM activities of Australia and Papua New Guinea on a number of ATM and GNSS projects that had taken place since CNS/ATM/IC/9 was held in March 2003.

3.9 The Australian Strategic ATM Group, (ASTRA), had continued their collaborative efforts in the development of a second version of the ATM Strategic Plan and its accompanying sub-plans which were expected to be formally launched in September 2003 and would be available on web site: www.astra.aero. The overall Plan, Volume III, includes the Communication, Navigation and Surveillance Plan, which contains the expected transition to GNSS based navigation as well as increasing the use of ADS-B for surveillance.

3.10 In recognition of the APANPIRG recommendation that new GNSS standards should be based on the FAA TSO C145/6 receiver standard, the ASTRA group was undertaking a research project to confirm the findings of previous theoretical studies and determine the operational issues associated with using this receiver to provide GNSS navigation in Australia domestic airspace. This study would include using a GPS simulator to test various fault and interference scenarios as well as flight-testing to examine human factor issues and operational use approvals. The study would also examine the operational use of the US SBAS signal from the WAAS, which was expected to be declared operational in July 2003.

3.11 An AusAID funded US DoT study in Papua New Guinea in 2001, recommended that the country transition domestic air transport operations to full GNSS using the TSO C145/6 receivers. Now that these receivers had been certified and were available, the PNG CAA, in conjunction with the industry, had decided to accept the DOT study findings. A project was being developed, with AusAID assistance, to move domestic IFR navigation in PNG to GNSS by 2006. Selected airports would retain conventional ground based aids including ILS and VOR/DME to support international operations.

Hong Kong, China

3.12 The meeting was advised by Hong Kong, China of its future development of the ATC systems. With more than four years operational experience at the new Hong Kong International Airport, it was recognized that the Hong Kong ATC systems would need to be enhanced to expand the systems capabilities, functionalities and human-machine interface. This would ensure that the systems continue to effectively handle the anticipated increase in density and complexity of air traffic movements in Hong Kong as well as the Pearl River Delta region.

3.13 In line with the ICAO global and regional implementation plans for CNS/ATM systems, the Civil Aviation Department (CAD) of Hong Kong, China was continuing its study and trial phases of CNS/ATM implementation, and would put those systems into operational use that had proved to offer additional operational and safety benefits.

3.14 Several major and critical systems either had been upgraded or would be replaced. The current status was as follows:

a) enhancement of Automatic Message Switching System (AMSS) – completed May 2002;

b) speech Processing Equipment (SPE) Enhancement – completed December 2002;

c) Aeronautical Information Database System (AIDB) Enhancement – completed January 2003;

d) enhancement of Radar Data Processing and Display System/Flight Data Processing System/Simulator (RDPDS/FDPS/SIM) – completed March 2003; and

e) replacement Route Surveillance Radar (RSR) – Factory Acceptance Test completed, and to be commissioned in end-December 2003.

3.15 To date trials had been conducted on the following CNS/ATM system elements:- Digital-ATIS (D-ATIS) and Digital-VOLMET (D-VOLMET); ADS/CPDLC; Pre-Departure Clearance (PDC) delivery via data-link; ATS Message Handling System (AMHS); VHF Digital Link (VDL) Mode 2; GNSS En-route applications; SATCOM; AIDC for ATM

3.16 With various enhancements made to the ATC systems, the runway movement rate at Hong Kong International Airport had been increased in phases from 31 movements per hour when the new Airport opened, to the present 49 movements per hour. Further increase in runway movement rate was being considered.

3.17 In its future planning, the DVOR/DME on Tung Lung Island would be replaced by 2006. To provide a complete radar/VHF communication coverage within the Hong Kong FIR, discussions with ATMB of CAAC were underway to make available to Hong Kong ATC, the SSR and VHF communication facilities to be installed in the South China Sea area. This would help to streamline the ATC operational workflow and achieve further enhancements on safety and airspace capacity.

India

GPS and GEO Augmented Navigation in India (GAGAN)

3.18 India provided updated information of GPS and GEO Augmented Navigation in India (GAGAN). Places for Reference Stations and Ionospheric Grid Stations (IGS) are finalized for installation of the requisite equipment. Installation of GPS-TEC at IGS was completed at four places i.e. Ahmedabad, Bhopal, Jodhpur and Delhi airport and installation of the remaining GPS-TEC receivers will be completed during 2003. Agreements were signed with universities and R&D institutions involved in the ionospheric studies for their participation in data collection, analysis and modelling. GAGAN would be developed to meet the ICAO GNSS SARPs and it would be interoperable with WAAS, EGNOS and MSAS.

Nepal

3.19 The meeting noted information provided by the Civil Aviation Authority of Nepal (CAAN) regarding the development of air transportation in Nepal Nepal. The following activities have been completed:

a) transformation of all coordinates into WGs-84 system and published in AIP Nepal;

b) the National CNS/ATM Transition plan for a 10 year period prepared and under review;

c) GPS based IFR en-route network as well as non precision approach (NPAs) procedures for six airports have been implemented on a trail bais;

d) in-house interaction programmme, presentations, workshops and seminars on different topics on CNS/ATM completed;

e) ATS Route G-348 (Kathmandu – Baghdogra – Paro) established.

3.20 In its ongoing activities, the requirements of CNS/ATM were being addressed and included: forming an ATN Task Force; establishing RCAG stations for VHF coverage of the Kathmandu FIR; establishing a VSAT link with ACCs in India; introducing GNSS navigation and GPS based procedures; revision of airspace to improve traffic flows; digitization of approach charts and amendment to the AIP Nepal; completing letters of agreement with India,; and completing outstanding EMARSSH routes.

3.21 In its future plans, the following matters were being progressed: upgrade of the AFTN network to the ATN and for transition in the year 2005; restructuring of the air routes; development of GPS based NPAs and SIDs; development of legislation to enable eventual implementation of IFR GPS based air navigation; and replacement of the CVOR/DME at Nepalgunj with a DVOR/DME.

3.22 In Human Resource Development (HRD), CAAN had completed a study with the help of Kathmandu University School of Management. The study includes a guideline for HRD plan for a period of five years and to support its institutional capacity and service quality enhancement goal. To keep pace with the rapid growth of the civil aviation industry, a need had been identified for development in the area of physical infrastructure, installation, maintenance and operation of CNS/ATM equipment. CAAN was able to meet the ICAO Standard since only licensed staffs were allowed to perform their duties. The Civil Aviation Training Centre was upgraded to Civil Aviation Academy to provide different types of training for civil aviation sectors.

New Zealand

3.23 The meeting was advised by New Zealand, that New Zealand Airways Corporation Ltd, the air navigation service provider for New Zealand, had established a project in early 2000 to renew its domestic ATM system. This system was required to support not only the current capacity, performance and functional requirements but also predicted growth over the next 10 years and had the ability to implement any required CNS/ATM concepts.

3.24 The SkyLine system, supplied by Lockheed Martin was selected and the initial system was required to provide services to 3 major International Towers, 4 Regional Towers and 3 En-route Centres; that encompassed 39 radar positions, and provided a feature-rich, high availability, distributed and modular architecture as well as a seamless expansion capability. Transition to the SkyLine system was planned to occur in three phases over a four month period during which time the new and old systems would operate seamlessly together; with messages between the two being exchanged using AIDC. The first two phases of the transition had been completed successfully, with the third, and last, transition expected to be completed in early September 2003.

3.25 The domestic SkyLine system had been successfully integrated with New Zealand's Oceanic system and the existing domestic system (Aircat) via AIDC. This system provides the platform to implement other CNS/ATM features such as CPDLC, ADS-B, ATN, PDC, etc when operationally required.

Republic of Korea

3.26 The Republic of Korea presented information to the meeting on its modernization project of the new Incheon ACC, which was completed in November 2001 with state-of-the-art technology, leading to increased capacity and enhanced control system that would ensure safe and expedient operation of aircraft in the 21st century. The ACC modernization project was started in May 1995 and completed in October 2001. The new system underwent a transition period from August to September 2001 when both the new and old systems were operated. After the final operation trial at the end of September, the new system was officially established as the operating system on 17 October 2001. No deficiencies in the new operation were found during the transition period.

United States

Controller-pilot Data Link Communications (CPDLC)

3.27 The meeting noted information provided by the United States on implementation of CPDLC (Build 1) at the Miami Air Route Traffic Control Center (ARTCC) in October 2002. CPDLC Build 1 was designed for domestic operations in continental United States.

3.28 It was planned to expand CPDLC Build 1A to seven ARTCCs and upgrade the CPDLC equipment at the Miami ARTCC in the 2004-2006 timeframe, with all eight ARTCCs having CPDLC operations by the end of 2006. At the present time the CPDLC program, Build 1A and beyond, had unfortunately been suspended indefinitely. Although there had been promising results, the current budget constraints within the FAA, the events of September 11, 2001, and the economic challenges facing aviation were factors which made this decision necessary.

3.29 With regard to implementation of ADS/CPDLC in oceanic areas within the area of responsibility of the United States, the meeting noted that the Advanced Technologies Oceanic Procedures (ATOP) Build 1Ocean 21 Auto System was being integrated into the New York and Oakland ACCs. An enhanced Build 2 Ocean 21 Auto System had been developed for Anchorage ACC, which provides radar data processing capabilities for use in radar transition airspace as well as enhancements required to support reduction of separation in Pacific airspace to 30 NM lateral and longitudinal. Once this system was operational at the Anchorage ACC, both New York and Oakland would be retro-fitted with the enhanced Build 2 Ocean 21 giving equivalent capabilities to Anchorage.

. Viet Nam

3.30 Viet Nam informed the meeting that the national air navigation system was being upgraded in Viet Nam. With new surveillance radar system put into operation in the Ha Noi FIR, Viet Nam had three PSRs and six SSRs connecting by two FDP/RDPs. ILS/DME with precision approach lighting CAT 2 system at Tansonnhat international airport was planned to be operational in third quarter of 2003. A new 3800 m long runway with ILS and lighting CAT2 system at Noibai international airport would be operational in 2004. One more new VHF RCAG station would be installed for ACC Ho Chi Minh to enhance the communication coverage serving air routes over the high seas.

Report of the South Pacific FANS Interoperability Team

3.31 The meeting noted that the success of the South Pacific (SOPAC) FIT during its first five years of operation had led to the formation of similar groups that monitor FANS operations (ADS and CPDLC operations using the FANS 1/A aircraft systems) in other regions. Currently there were

three other groups covering the Central and North Pacific, North Atlantic, and the Bay of Bengal. There was also some discussion about another group being established to coordinate FANS implementation in the Polar Region.

3.32 Boeing continues to act as the Central Reporting Agency (CRA) for the SOPAC FIT and had begun to fill the role of CRA Support Agency (CRASA) for the FAA element of the IPACG FIT. The CRA receives problem reports from stakeholders and coordinates problem report resolution with the respective FIT. The CRA also processes monthly system performance data. The Japan Civil Aviation Bureau (JCAB) has established a similar CRA function for aircraft flying in the Tokyo and Naha FIRs; its supporting CRASA liaises closely with CRASA personnel at Boeing.

3.33 In the South Pacific Region, four of the five ATS providers had fully commissioned FANS controller workstations offering CPDLC, ADS, and ATC Inter-Facility Ground/Ground Data Communications (AIDC) services. The fifth ATSP was currently in the process of upgrading its existing workstations to include ADS capability.

3.34 Operational problems (i.e., due to controllers or pilots failing to follow procedures) and technical problems (i.e., due to hardware or software faults) continue to be reported in the SOPAC FIRs. Overall, the number of problem reports received had decreased. End-to-end system performance was high and relatively stable, and monitoring continues.

3.35 The user-preferred route (UPR) trials had been completed and UPRs were now a normal facet of regional operations. Significant operating benefits had been realized by the participating airlines since UPRs were first introduced. Using UPR procedures, airlines could optimize flight plans according to their own unique operating parameters for the type of aircraft, weight, and forecast weather at the time of departure. On long-haul flights, which were typically payload limited, use of UPR procedures enable Airlines to carry additional payload, which generates additional revenue on each flight.

3.36 The SOPAC FIT continues to work on reduction of separation minima based on overall system performance and FANS equipage. CPDLC provides the communications enhancements necessary for the implementation of 50 NM lateral separation in areas of convective weather activity. As other FIRs achieve full FANS functionality, FANS functions would allow a reduction of longitudinal separation to 50 NM throughout the South Pacific. Further reductions in both lateral and longitudinal separation minima to 30 NM remain a final goal for the team.

CNS/ATM Implementation Planning Matrix

3.37 The meeting noted that the CNS/ATM Implementation Planning Matrix, which contains the implementation status of CNS elements such as ATN, AIDC, CPDLC, GNSS and ADS had been updated. The Matrix was reviewed by APANPIRG and its Sub-Groups on a regular basis to assess progress of implementation. The Matrix would be progressively developed to include implementation status of major CNS/ATM elements covering all ASIA/PAC FIRs. The updated Matrix is provided in **Appendix A** to the Report on Agenda Item 3.

MET component of CNS/ATM

Report of the MET/ATM Task Force of the CNS/MET SG

3.38 The meeting noted the report of the MET/ATM Task Force of the CNS/MET SG. The report had emphasized that the meteorological information/products specified in Annex 3 in the majority of cases had been developed to cater for flight planning requirements. Traditionally, the ATM users had used these products, which were adequate for a range of uses. In recent times

however, the advancement of the ATM systems and procedures had generated demand for more user-focused meteorological information. This demand had been approached on a number of fronts and scales. On the global scale it was present in the development of the WAFS while at the local scale a wide range of meteorological information was being provided by States to satisfy the specific requirements of the ATM. The report concentrated on the meteorological service being provided by a number of States in the ASIA/PAC Region with respect to user requirement, content and systems.

3.39 Hong Kong, China presented information on the development of the meteorological systems in support of the new CNS/ATM systems by the Hong Kong Observatory (HKO) during the past year in the following areas: downlink of meteorological data from aircraft; a trial on real-time retrieval of weather information from an HKO database via the ground-to-ground ATN/ATS Message Handling System (AMHS); and new weather services in support of ATM.

3.40 The meeting noted that application of the mode-S data link specified in ICAO Manual on Mode S Specific Services (Doc 9688) in automatic air-reporting, which would not incur ACARS communication cost, appeared to be an attractive alternative to ADS, especially for the ascent/descent phases of the flight. The meeting further noted that, if a particular airspace was already under the coverage of surveillance radars, ADS might not be used for aircraft surveillance and thus no automatic air-reports would be available from the airspace concerned. While the weather reporting function had been specified for the mode-S data link, it had not been implemented in the onboard mode-S transponder software. Furthermore, the transponder supplier indicated no plan to implement the weather reporting function due to the lack of requirements from airlines.

3.41 The meeting recognized that the availability of some 50,000 automatic air-reports in the U.S. had demonstrated the significant value this would provide to improvement of numerical weather prediction for aviation weather forecast. On the other hand, at present, only one State in the ASIA/PAC Region was able to receive automatic air-reports through ADS.

3.42 In view of the foregoing, the meeting formulated the following Conclusion:

Conclusion 14/44 – Application of Mode-S data link in automatic weather reporting

That, ICAO be invited to consider the application of the Mode-S data link in automatic air-reporting as an alternative to ADS over areas covered by surveillance radars and to consider ways to facilitate its implementation in the ASIA/PAC Region.

D-VOLMET

3.43 The meeting was informed by Hong Kong, China of the D-VOLMET service implemented in April 2001, in parallel with the VOLMET radio voice broadcast service. The D-VOLMET messages provided the same OPMET information as in the VOLMET broadcast and were updated immediately when new information was available. Aircraft equipped with the appropriate ACARS hardware and software could retrieve the D-VOLMET messages via data link service provider who served as the data transporter. The meeting noted the benefits of the D-VOLMET service to aircraft, including reduced workload for pilots, removal of errors due to reception/transcription, retrieval at will by pilots, quick access to latest weather information including the SIGMET, and improved area coverage.

Future Work Programme of the MET/ATM TF

3.44 The report of the MET/ATM/TF provided some initial guidance to States on the development of tailor-made products to support ATM. It was the view of the meeting that the work on

the MET component of the CNS/ATM system should continue involving experts from both MET and ATM fields. It was agreed in this regard, that the MET/ATM Task Force of CNS/MET SG should continue its work and that the terms of reference of the Task Force should be updated to reflect the discussion of this meeting.

3.45 The meeting recognized the importance of the exchange of information between the MET and ATM communities in order to enhance the awareness of the requirements for MET support to the ATM and the current and future capabilities of the meteorological information and services. Such exchange would foster the mutual understanding between the two communities and facilitate further development of the MET component of the new CNS/ATM systems in the ASIA/PAC Region. In noting this, the meeting formulated the following Conclusion:

Conclusion 14/45 – Fostering of exchanges between MET and ATM

That,

a) the MET Authorities/Providers of the States, be encouraged to continually assess with the corresponding ATM authorities the requirements for MET information with the aim of developing new products/information to support the ATM, bearing in mind the potential costs and benefits involved; and

b) ICAO be invited, in coordination with WMO, to organize a MET/ATM coordination seminar in ASIA/PAC Region in 2004, to foster the exchanges between the MET and ATM experts in order to facilitate further development of the MET component of the CNS/ATM systems in the ASIA/PAC Region.

Airspace user perspective on CNS/ATM services in the Asia Pacific Region

3.46 IATA presented an airspace user perspective on CNS/ATM services in the Asia Pacific Region. The meeting noted the history of the development of the CNS/ATM system the ICAO Special Committee on Future Air Navigation Systems (FANS) established in 1983 to study, identify and assess new technologies, including satellite technology, and to made recommendations for the future development of navigation systems for civil aviation, up to the introduction of operational data link services using the FANS 1/A aircraft system.

3.47 The first operational CPDLC services, pioneered by ISPACG and its partners using the FANS 1/A aircraft systems, were introduced in the South Pacific in 1995. The data link trials, which began in 1993 resolved interoperability issues and led to development of a South Pacific Operations Manual (SPOM) for operating procedures for FANS 1/A aircraft.

3.48 Subsequent developments in the South Pacific had resulted in almost total coverage of the Pacific Ocean with CPDLC and ADS services to suitably equipped aircraft. This enabled FANS 1/A equipped aircraft to experience significant benefits by using flexible tracks between Australia/New Zealand and the United States, which resulted in considerable flight time and fuel savings per flight. However, IATA stated that, elsewhere, the implementation of FANS had been a long and frustrating experience with millions of dollars invested on expectation of near term benefits. ICAO separation standards for 30 NM lateral and longitudinal separation became available in November 2002, and IATA felt that more effort needed to be made to implement these separation minima to take advantage of the significant benefits that could be realized.

3.49 IATA advised the meeting that airlines and States in the Asia Pacific Region had invested in the FANS 1/A system, and in excess of 2000 FANS 1/A capable civil air transport aeroplanes were in service. In addition, significant numbers of U.S. military (approximately 1400 over

a period to 2016) and all Airbus A330, A340, A380 and Boeing B767, B777 and B747 aircraft were FANS 1/A capable. In addition, there were significant numbers of integrated or stand-alone FANS automation systems provided by ATS Providers in the Asia/Pacific. With such significant investment by States and users in FANS technology, IATA was of the opinion, that regrettably, there was very little benefit being currently realized.

3.50 IATA would like to see more ICAO assistance in fostering the expansion of existing CNS/ATM capabilities within the region, particularly in the planning, trials and demonstrations of CPDLC, ADS and RNP 4. IATA was pleased that APANPIRG and ICAO were addressing key priorities for CNS/ATM Implementation, They supported the positive steps being taken by ICAO through ICAO's ADS-B Implementation Task Force and the decision to recommend Mode-S enhanced (1090-ES) as the regional link protocol for ADS-B.

3.51 IATA stressed that considering the economic recovery of the airline industry and the existing numbers of aircraft equipped with the FANS 1/A capability, it was of utmost importance that both providers and users start to realise the safety and economic benefits of FANS - the existing generation of CNS/ATM. IATA was concerned that the next generation of CNS/ATM may have little chance of gaining airline acceptance, if the benefits to presently equipped aircraft were not seen in the next few years.

3.52 The meeting noted IATA's concerns over the pace of implementation of CNS/ATM systems taking advantage of FANS 1/A. The meeting recognized that the FANS 1/A system was not ICAO SARPs compliant, and there had been lengthy deliberations in many forums on how best to make use of these systems on a global basis, when the technology being used did not meet ICAO technical performance requirements for provision of ATC services. However, in spite of early difficulties, and the need for many States to upgrade their ATM systems to a level that could support data link services, there had been notable progress in recent times. The meeting noted that it had been generally accepted that FANS 1/A aircraft systems, with its supporting technologies, were an acceptable interim system that should be utilized to the extent possible. Although SARPs were not being developed for FANS 1/A, ICAO had provided horizontal separation minima (30 and 50 NM) that were developed using FANS 1/A and associated ATM ground systems' technical performance. Also, ICAO had carried out a major technical review of the *Asia/Pacific Manual on CNS/ATM Operations*, which included substantial material from the SPOM, to ensure that the guidance was in accordance with the procedures contained in the PANS-ATM, as reported above.

Key Priorities

3.53 The meeting noted that while reviewing the information on the developments and activities relating to CNS/ATM system, the CNS/ATM/IC/SG identified the need to include implementation of Data Link Flight Information Services (DFIS) applications including D-ATIS, D-VOLMET and PDC into the list of key priorities in the CNS/ATM implementation based on benefits identified.

3.54 Following the discussion on proposed changes to the regional strategy for the GNSS implementation, the Sub-Group meeting recognized the need to update to the existing key priorities items and to add a new key priority regarding implementation of APV and RNP Approaches in the list of key priorities in the CNS/ATM implementation.

3.55 The Sub-Group also recognized the need to include a new item of Safety Management System.

3.56 The meeting noted the updated information in the Table of Key Priorities and identified new key priority items. In view of the foregoing, the meeting formulated the following Decision.

Decision 14/46 – Amendment to the key priorities for implementation of the CNS/ATM systems for the Asia/Pacific Region

That, the amended list of Key Priorities for implementation of the CNS/ATM systems for the Asia/Pacific Region be adopted as shown in **Appendix B** to the Report on Agenda Item 3.

Review of the *Asia Pacific Regional Plan for New CNS/ATM Systems*

3.57 The meeting noted that the CNS/ATM/IC/SG/10 had reviewed and updated the *Asia Pacific Regional Plan for New CNS/ATM Systems*. The meeting noted that key aspects of the plan were focused on the nine major traffic flows, the ATM operational enhancements for en-route operations, associated required aircraft functions and ground services, and the ATM system transition time lines. The meeting noted that a detailed review and updating of the tables could not be fully carried out at the Sub-Group meeting due to the limited time available, which had been constrained due to the combining of the two Sub-Group meetings. The information on the facilities and services required were also related to the ANP FASID, and correlation of the material in these documents was required. The Sub-Group had considered whether the tables still provided useful information and whether the annual review and update should continue.

3.58 In this regard, the Sub-Group agreed that there was value in retaining the information but for the material to be of value, it needed to be kept up-to-date and this required time and resources to carry out the exercise, and States would need to bring to the meeting the necessary information. In this regard, the Secretariat was requested to remind States to update the tables prior to the meeting.

Safety and Security in Air Traffic Management

Status of Safe Flight 21

3.59 The meeting noted information provided by the United States on their Safe Flight 21 Programme, which was a cooperative government/industry programme to evaluate capabilities to improve aviation safety, efficiency, and capacity. This programme was conceived in 1998 and addresses the CNS issues and provides information to the FAA and industry so that they could make decisions about implementing these systems.

3.60 Safe Flight 21 was focused on a manageable set of operational capabilities that were important to the user community. These include the cockpit display of traffic, weather, and terrain information, improved information for controllers, and improved surface situational awareness. The new technologies were based on the use of GPS, ADS-B, Traffic Information Service-Broadcast (TIS-B), Flight Information Services-Broadcast (FIS-B), and the use of a multi-functional display in the cockpit and enhanced controller displays.

3.61 The objectives of Safe Flight 21 were to identify, evaluate, and mitigate the risks associated with the selection, implementation, and integration of planned CNS capabilities and corresponding procedures. In mitigating these risks, the programme would:

Safe Flight 21 Demonstration and Evaluation

3.62 Safe Flight 21 demonstrates and evaluates the benefits of the applications. Prior to committing the FAA and the users to a full-scale implementation of these enhancements, there would be a consensus of the feasibility and business case for the enhancements among the stakeholders. The FAA and industry would jointly define, develop, and evaluate the enhancements.

3.63 The Safe Flight 21 Programme Office would demonstrate and evaluate the benefits of this new technology. This would include operational and procedural issues, as well as cost/benefit matters. The review of operations and procedures would ensure that pilot, controller, operator, FAA air traffic maintenance, and flight standards issues were addressed. The cost/benefit activity would define the cost of the data link and quantify and qualify the economic and safety benefits derived from each capability.

3.64 The following Safe Flight 21 programme activities had taken place:

a) 2000 Operational evaluation to demonstrate the efficiency and safety benefits of using ADS-B and to evaluate air traffic controller use of ADS-B in the terminal area environment;

b) 2001 Air traffic modernization forum to demonstrate newly installed multi-lateration surveillance capabilities and the use of on-board moving map displays for monitoring surface aircraft and vehicle movement;

c) 2002 – A multi-lateration system installed at Louisville, Kentucky, and a new automation platform for that facility to support on-going ADS-B test and evaluation efforts was procured; and

d) 2003 - continuing to conduct CEFR simulations, survey and deliver new airport digital maps to the surface moving maps database and expand the vehicle tracking evaluation and establishment of a vehicle tracking test bed; RTCA Steering Committee SC-186 (ADS-B) approved the 1090 MHz ADS-B Minimum Operations Performance Standard (MOPS), Rev A; ADS-B demonstrations were ongoing in the Gulf of Mexico; and ADS-B ground stations had been installed on oil platforms to demonstrate surveillance applications in a non-radar environment.

3.65 As a result of Safe Flight 21 demonstration activities in Alaska and the Ohio River Valley, progress was being made toward implementing operational enhancements and applications related to the use of GPS, ADS-B, TIS-B, FIS-B, and the use of a multi-functional display in the cockpit and enhanced controller displays.

3.66 The Safe Flight 21 programme continues to evaluate and demonstrate potential applications to take full advantage of the ADS-B, TIS-B and FIS-B technology. Information on the Safe Flight 21 is on the FAA websites at: http://www.faa.gov/safeflight21 and http://www.alaska.faa.gov/capstone.

CNS/ATM training

Australia

3.67 Australia provided information to the meeting that they, along with several other South Pacific ATS providers, had been using CPDLC as the primary medium for communications in

oceanic airspace since 1995. In 1999, Australia introduced ADS services in the South Pacific, and by early 2000, ADS and CPDLC services were being provided to more than a dozen aircraft operators in all Australian non-radar airspace.

3.68 It was noted by the meeting that the implementation of data link had brought about significant changes in pilot/controller communications practices, operating procedures and surveillance techniques. Aircraft operators, ATS providers and other industry groups had worked together to ensure the data link practices and procedures used from region to region are as standard as possible. It was further pointed out that investigation of problem reports and incidents during more than 7 years of data link operations had highlighted the absolute necessity for pilots and controllers to use standard procedures and practices and to have understanding of the capabilities and limitations of data link systems. Most incidents involving missed communications, misunderstandings and failures to comply with ATC clearances could have been avoided if standard operating procedures and practices had been followed completely.

3.69 The meeting recognized based on the experience gained by Australia and other ATS providers in the South Pacific, that comprehensive controller and pilot training programmes were essential for building the appropriate knowledge. Once training programmes for CPDLC and ADS were in place, aircraft operators must obtain operational approval from the relevant authorities in the State of registry prior to the operational use of ATC data link. Other state authorities may also have operational approval requirements. Operators should obtain the relevant requirements and guidance directly from States in which data link operations are expected.

3.70 The meeting noted that Airservices Australia provided structured one and two-day training courses covering all operational aspects of ATC data link. These courses had been specifically designed for aircraft operators, ATS providers and safety regulators. Also, a number of airlines currently conducting data link operations had made their training programmes available to other operators on a commercial basis. A list of operators offering programmes can be obtained from IATA.

Hong Kong, China

3.71 The meeting noted information presented by Hong Kong, China on the importance of systematic and formalized training to personnel involved in the civil aviation industry. Hong Kong established the Hong Kong Civil Aviation Training Center in early 2003, which aims to deliver target oriented training programmes to aviation personnel on a global basis through a knowledge-sharing process.

3.72 To ensure the safety, efficiency and regularity of air transport services in the increasingly complex operating environment, personnel in the civil aviation industry must continuously demonstrate the highest level of professionalism, dedication and efficiency in their work. In this regard, quality, systematic and formalized training plays a vital role.

3.73 The Hong Kong Civil Aviation Department (CAD), was committed to the provision of a safe and efficient air transport system. The CAD, to reinforce its commitment and to respond to new challenges in the civil aviation industry, had developed comprehensive and target oriented training programmes for their staff. The establishment of the HKCATC in April 2003 builds on this experience and provides an opportunity for the CAD to make a contribution to improving the safety and efficiency of air transport through the establishment and conduct of systematic and formalized training for aviation personnel from around the world. Further information on the training programmes could be obtained through the Training Center Administrator on email: apsd@cad.gov.hk.

Republic of Korea

3.74 The meeting noted information presented by the Republic of Korea on the status of their international training course developed to contribute to the enhancement and promotion of safety for international civil aviation. The Republic of Korea had established specialized training courses on airway facilities and ATC not only for domestic personnel but also for international needs, contributing to the enhancement and promotion of safety in international civil aviation.

3.75 The Republic of Korea Civil Aviation Training Center was established as a dedicated civil aviation technical training institute in 1984 and had trained in-country aeronautical technical personnel since then. From the year 2001, the government had sponsored international training courses in the area of airway facilities and ATC at no expense to international trainees. Further, in January of 2001, international training courses had been established for aeronautical technical personnel from developing countries including those in Asia. These courses were conducted under co-sponsorship of the Civil Aviation Safety Authority, the Ministry of Construction and Transportation and the Korea International Cooperation Agency (KOICA), as part of a human resource development programme for developing countries. The training courses provide the opportunity for participants to experience Korean culture, and stimulates exchange of the latest aeronautical information and mutual understanding between the participating nations. The Republic of Korea would continue its effort to develop and expand the international training courses.

Environmental issues related to CNS/ATM system

3.76 The meeting noted informaiton provide by Australia on Airservices Australia's experience with aligning its Environmental Management System (EMS) to the International Standards Organisation (ISO 14001:1996 'Environment management systems – Specification with guidance for use'). This had proved to be an effective tool to facilitate the management of CNS/ATM environmental issues.

3.77 Airservices Australia's EMS ensures all changes to ATM practices that could impact on aircraft operations were assessed prior to implementation, to ensure that their potential impact had been minimised and were not significant. All environmental assessments were recorded in its advance risk management system (ARMS).

3.78 The EMS had helped to reduce Airservices Australia business risks and improve relations with stakeholders, the aviation industry, the public and regulators. With the efficiencies incorporated in the EMS, and in particular the efficiencies offered by ARMS, the implementation of the EMS was seen had having a very positive return on investment.

3.79 The meeting recalled that ICAO's work on environmental matters was primarily carried out by the Committee on Aviation Environmental Protection (CAEP). The meeting noted that environmental concerns were addressed during regional implementation projects such as establishment of ATS route structures and RVSM. Environment issues, which were of interest to CAEP, should continue to be provided and coordinated by the Regional Office.

A regional framework for the implementation of a global ATM System – progress and challenges

3.77 The meeting noted that, in order to achieve an interoperable global ATM system, ICAO has been addressing the planning and implementation of CNS/ATM systems worldwide in a progressive, cost-effective and cooperative manner. As the formulation of regional, sub-regional and national plans for air navigation systems including CNS/ATM systems is progressively gaining maturity, States and aircraft operators are investing in the enabling technologies to gain early benefits.

As this equipage progresses, both on the ground and in aircraft, further steps are need to be addressed to meet the challenges of integration, interoperability and harmonization of the systems thus leading to a global ATM system.

3.80 With the gradual and phased implementation of CNS/ATM systems, the meeting recognized that it becomes necessary to reconcile the differences both within regions (intra-regional) and with neighbouring regions (interregional) by adopting an approach based on regional cooperation and consensus-building, as well as by utilizing harmonization tools and techniques.

3.81 The meeting noted that the overall strategy for the realization of a global ATM system should be planned and implemented within the framework of the ATM operational concept. The strategy would consist of a mix of top-down and bottom-up approaches and would be guided by expectations of the ATM community. To promote the evolution and minimize the risks associated with the changes in the ATM infrastructure, a multiple sequence of step changes is encouraged within the time frame of twenty-five years, as defined in the ATM operational concept. The collective commitment is central to the success of this regional implementation framework. The meeting noted that, within this regional framework, it was essential to address the elements namely political plane, institutional aspects, operational matters and technical issues.

3.82 The meeting noted that a number of actions had been taken by ICAO related standard-setting organizations as well as manufacturers with regard to development of SARPs, avionics standards and guidance material, and the PIRGs through sub-regional groups and States had implemented, and put in place a number of ongoing initiatives enveloping ATM, communications, navigation, surveillance, economic and institutional areas. The meeting agreed that it was necessary for ICAO and the CNS/ATM partners to place emphasis on identifying and addressing the interface issues with a view to facilitating the harmonized implementation of air navigation systems giving rise to a global ATM system.

3.83 In this regard the meeting received clarification that the ATM operational concept after its review by AN-Conf/11 would be reflected in the *Global Air Navigation Plan for CNS/ATM Systems* (Global Plan, Doc 9750). Furthermore, the meeting was apprised that, ICAO was in the process of developing a global air navigation plan database containing all tabular material from all the regional ANPs (both Basic ANP and FASID), and these would be made available to all contracting States through web. This database, which can be updated online, would support regional and interregional planning, implementation and harmonization.

Review of the terms of reference and work programme of CNS/ATM/IC/SG

3.84 The meeting reviewed the Terms of Reference and work programme of the CNS/ATM/IC Sub-Group as amended by APANPIRG/13 Decision 13/43.

3.85 In considering the future work programme and TORs of the Sub-Group, the meeting was of the view that AN-Conf/11 would produce results that could have a major impact on the future planning and implementation of CNS/ATM in the ICAO regions, in particular in regard to ATM and application of the ATM operational concept. Also, developments in technology such as ADS-B, airborne separation assurance systems, data link communications and satellite voice communications would need to be reviewed, and the *Asia/Pacific Regional Plan for New CNS/ATM Systems* revised and guidance material developed as appropriate. Although it was not anticipated that AN-Conf/11 would have a major effect on regional activities in the short term, it was necessary to review the outcome of the Conference and consider its impact on the region. This could lead to new work items to be undertaken by the APANPIRG Sub-Groups, and changes to their TORs.

3.86 Further, the meeting recognized that the present work programme of the CNS/ATM/IC/SG was not task orientated and no timelines were established to complete its work. The meeting noted that the question of the Sub-Groups continued existence had been addressed by APANPIRG/10 and a Task Force had been established to review the Sub-Groups TORs and work programme. In its report on the review to APANPIRG/11, it was recommended that the CNS/ATM/IC/SG should be dissolved and the work items assigned to the ATS/AIS/SAR and CNS/MET Sub-Groups. The Task Force had recognized that the CNS/ATM/IC/SG had made significant contributions to the work of APANPIRG, in particular in the harmonization of the *Asia/Pacific Regional Plan for the New CNS/ATM Systems* with the *Global Air Navigation Plan for CNS/ATM Systems*, updating the Regional Plan, and formulating key priorities for the CNS/ATM implementation. APANPIRG/11 decided to defer the matter and review this again at APANPIRG/12.

3.87 At APANPIRG/12, it was noted, in regard to the future of the Sub-Group, that the CNS/ATM/IC/SG/8 members were very enthusiastic in their support of the Sub-Group continuing its activities with revised terms of reference, and with a work programme that placed greater emphasis on the co-ordination, monitoring and advancement of CNS/ATM activities. Also, there was a need to eliminate areas of duplication of work with other Sub-Groups. Accordingly, APANPIRG/12 agreed to the continuation of the Sub-Group (Conclusion 12/46 refers), and added additional tasks on business cases for various options of CNS/ATM implementation taking into account environmental benefits, to develop a framework for regional training plans and to co-ordinate,m and harmonize the establishment and operation of ASIA/PAC system performance monitoring agencies.

3.88 APANPIRG/13 further endorsed the continuation of the Sub-Group and had observed that implementation of CNS/ATM needed to be accelerated to derive early benefits and that the Sub-Group's activities were important to achieving this objective. APANPIRG/13 was therefore of a strong view that this Sub-Group should continue to carry out its functions in accordance with the TORs revised by APANPIRG/12. Also, in light of the importance of environmental issues, APANPIRG/13 amended the TORs of the Sub-Group to include more specific requirements to address environmental issues.

3.89 The CNS/ATM/IC/SG/10 meeting on reviewing the issues raised concerning its effectiveness and continuation, agreed that there was a need to undertake a major review of its TORs and work programme, and develop a detailed task list, timelines and to take into account the outcome of AN-Conf/11. Further, the Sub-Group was not in a position to complete this work due to the constraints on time and ATM representation at the meeting due to the combined meeting of the two Sub-Groups. Therefore, it recommended to APANPIRG/14 that a Task Force be formed to undertake this review.

3.90 The meeting discussed at length the background to the Sub-Groups continued existence, taking into account the issues for and against that had been raised at earlier APANPIRG meetings and raised again at this meeting. The meeting was aware of the changing role of the CNS/ATM/IC/SG and the overlapping of work with the other two Sub-Groups and there was a need to resolve this problem. Also, it was recognized that the Sub-Group did not have a detailed task list and deliverables identified with timelines.

3.91 At this stage, it was not evident to the meeting what the outcome of AN-Conf/11 would produce but there could be significant issues arising of relevance to the region. In this regard, there could be merit in assigning new tasks to the CNS/ATM/IC/SG. Also, the meeting was not able to arrive at a consensus whether to continue with the Sub-Group. Accordingly, the meeting decided that in view of the need to ensure APANPIRG was fulfilling its mandate in line with the Procedural Handbook in the functioning of its Sub-Groups, and in light of AN-Conf/11 to be held on 30 September – 3 October 2003, the meeting agreed to establish a Future Direction Task Force (FDTF). Its terms of reference are shown in **Appendix C** to the Report on Agenda Item 3.

Decision 14/47 – Establishment of the Future Directions Task Force (FDTF)

That, a post 11th Air Navigation Conference Future Directions Task Force be established in accordance with the terms of reference as shown in Appendix xx to the Report on Agenda item 3.

3.92 The meeting agreed that the Task Force should meet not later than May 2004 and report to APANPIRG/15, and inform the meetings of the Sub-Groups of the outcome of its review prior to APANPIRG /15.

Report on Regional developments in the modernization of air navigation systems

3.93 The meeting was presented with an overview of the regional developments in the modernization of air navigation systems as well as future plans of CNS/ATM systems. The meeting noted through the panels of the Air Navigation Commission and the Secretariat, assisted by study groups, ICAO has made substantial progress in the development of SARPs, PANS and guidance material

3.94 The meeting noted that various regional planning groups, through the sub-regional groups, have implemented and also put in place a number of ongoing initiatives enveloping ATM, communications, navigation, surveillance as well as economic and institutional areas that would enhance and expedite the process of attaining an integrated global ATM system. A detailed list of the sub-regional and regional projects/plans covering past, present and future contributing to regional harmonization was provided to the meeting. On examination of the comparative picture of regional developments, the meeting recognized the need to enhance the ongoing inter-regional coordination for the harmonized implementation of air navigation systems.

Regional Airspace Safety Monitoring Advisory Group (RASMAG)

3.95 The Chairman of the Asia Pacific Airspace Safety Monitoring Task Force (APASM/TF) reported to the meeting on the outcome of the work of the Task Force, which had been completed at its sixth meeting held in May 2003 in accordance with APANPIRG/12 (Conclusion 12/44). The APASM/TF was tasked to develop an airspace safety system performance monitoring structure and funding arrangements for the Asia/Pacific Region. APANPIRG/13 (Conclusion 13/45 refers) 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.

Structure of the organization

3.96 The meeting noted that 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.

3.97 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. As existing airspace safety monitoring arrangements operated by States providing regional monitoring services in support of airspace implementation planning, were operating satisfactorily, the Task Force agreed that there was no requirement to establish a business organization. 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.

3.98 The Task Force decided that the body should be established as a Sub-Group of APANPIRG operating within the ICAO system in accordance with the APANPIRG Procedural Handbook, and named the Regional Airspace Safety Monitoring Advisory Sub-Group (RASMA/SG). The establishment of the RASMA/SG should ensure that a group of multi-disciplinary experts would be permanently available to advise APANPIRG and States on airspace safety matters.

3.99 The meeting considered whether forming of a Sub-Group would be an appropriate arrangement in view of the long term nature of the groups activities. In accordance with the Procedural Handbook (Part I, paragraph 6 refers), the establishment of a Sub-Group for the proposed terms of reference of this Group, did not fit the conditions in the Handbook for establishing a Sub-Group. Accordingly, the meeting decided that a specialist group should be formed and titled the Regional Airspace Safety monitoring Advisory group with, terms of reference are as shown in the **Appendix D** to Agenda Item 3

Existing monitoring services

3.100 The meeting noted that within the Asia/Pacific Region, airspace safety monitoring was being carried out by several monitoring agencies: the United States FAA operates APARMO for RVSM monitoring in the Asia/Pacific Region and safety assessment services for its FIRs, Airservices Australia provides safety monitoring services for RVSM in its FIRs and other safety assessment services for the Asia Region, the Civil Aviation Authority of Singapore provides monitoring for RNP operations on the South China Sea ATS route structure, and AEROTHAI, Thailand was planning to take over RVSM monitoring responsibilities from APARMO for the Asia Region. Other States, e.g. India and Japan were establishing national monitoring programmes and indicated their willingness to provide regional or sub-regional airspace safety monitoring services.

3.101 Additionally, monitoring services were provided through the ISPACG and the IPACG, which operated the Central Reporting Agencies (CRAs) and FANS Interoperability Teams (FITs) for data link applications, i.e. ADS and CPDLC. In addition, the FANS Action Team – Bay of Bengal (FAT-BOB), had been established by ICAO for the Bay of Bengal area under the BBACG, and a similar arrangement was to be established for Southeast Asia (FAT-SEA) under the SEACG.

3.102 The meeting recognized that in order to provide an effective role, the membership to the RASMA Sub-Group should be from States and international organizations with extensive experience in conducting airspace safety monitoring, safety assessments and airspace safety management.

Funding arrangements

3.103 The meeting recalled that providing adequate resources to undertake the airspace safety monitoring work was a significant issues and it was essential that funding was made available on a continuous basis to avoid disruption to monitoring services essentials to the safety of the airspace concerned. In this regard, the meeting noted that, aircraft height-keeping performance monitoring services were presently being funded where required 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. It was expected that user charges would continue to be the main means of funding airspace safety monitoring services. The meeting agreed that provision of monitoring services would need to be provided in a cost effective manner based on cost/benefit considerations.

Stakeholder considerations

3.104 The meeting noted that the 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 would centralizes these activities.

3.105 Further, the meeting recognized that 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. The meeting agreed that this was best achieved for international airspace operations through ICAO and its contributing bodies. In this regard the meeting further agreed that APANPIRG was the appropriate body to oversee this activity.

Establishment of RASMAG

3.106 The meeting recognized that the RASMA Group would provide a framework for airspace safety monitoring services at a time when further monitoring activities were being established for implementation of ADS and CPDLC in the Asia Region as mentioned above. The present airspace monitoring activities were extensive and would continue to grow as more States provide data link capability and implement reduced vertical and horizontal separation minima. Therefore, it was timely to establish the RASMA Group to provide support and to keep airspace safety monitoring activities under review and to report to APANPIRG.

3.107 The meeting noted the detailed plan provided by the APASM/TF on the establishment of the RASMA Group, and expressed its appreciation to the Task Force members for having completed this important and difficult task, recognizing that this was the first region to have taken this step and bring together the diverse monitoring activities and bodies under a unified regional structure. The meeting agreed to establish the RASMA Group and formulated the following Decisions:

Decision 14/48 – Establishment of the Regional Airspace Monitoring Advisory Group (RASMAG)

That, the Regional Airspace Safety Monitoring Advisory Group (RASMAG) be established with terms of reference as shown in Appendix xx to the Report on Agenda Item 3. The RASMAG shall report annually to APANPIRG and the ATM/AIS/SAR/SG on the results of its airspace safety monitoring activities. The members of the Group should compromise experts from the regional monitoring agencies and other specialists as required.

Decision 14/49 – To dissolve the Asia/Pacific Airspace Safety Monitoring Task Force

That, the Asia/Pacific Airspace Safety Monitoring Task Force having completed its work programme be dissolved.

CNS/ATM Implementation Planning Matrix								
State/ Organization	**ATN G/G Boundary Intermediate System (BIS) Router/AMHS**	**AIDC**	**CPDLC**	**GNSS**		**ADS-B**	**ADS-C**	**Remarks**
				NPA Supplemental Means (S) Primary means (P)	**En-route Supplemental Means (S) Primary means (P)**			
AUSTRALIA	ATN tests were conducted. BIS Router and Backbone BIS Router will be implemented by 2005 and AMHS in 2005.	AFTN based AIDC Implemented between Brisbane and Auckland.	Implemented to support FANS1/A equipped aircraft.	Implemented (S) 260 GPS NPA Final 26 aerodromes to be completed 2002.	Developed en-route as (P) for approval to use in domestic airspace.	ADS-B trial being conducted.	FANS 1/A ADS-C implemented.	
BANGLADESH	ATN BIS Router and AMHS planned for 2005							
BHUTAN	ATN BIS Router planned for 2005			Procedures developed for NPA as (S)				
BRUNEI DARUSSALAM	ATN BIS Router planned for 2005							
CAMBODIA								
CHINA	ATN BIS Router will be implemented by 2005.	IDC between ACCs within China are being implemented.	Implemented to support ATS Route L888 and polar routes. Trial on HF data link conducted for use in western China.		Implemented in certain airspace as (S).		FANS 1/A ADS-C implemented to support L888 and polar routes.	

CNS/ATM Implementation Planning Matrix								
State/ Organization	**ATN G/G Boundary Intermediate System (BIS) Router/AMHS**	**AIDC**	**CPDLC**	**GNSS**		**ADS-B**	**ADS-C**	**Remarks**
				NPA Supplemental Means (S) Primary means (P)	**En-route Supplemental Means (S) Primary means (P)**			
HONG KONG, CHINA	-AMHS trial with Australia conducted in late 2002; - Tripartite BBIS trial with Beijing and Bangkok conducted in end of 2002; -BBIS/AMHS trials with Thailand and Japan are conducted in 2003. Implementation in 2003/2004; - An operational AMHS planned for commissioning by end of 2003.	Trial on the AFTN based AIDC with Guangzhou China commenced. Implementation planned for 2003/2004. AIDC trial with Sanya commenced in mid 2003.	Trials continuing for CPDLC. D-ATIS D-VOLMET and PDC implemented. VDL Mode-2 trial commenced Sep. 2002 and further trials being conducted.		Implemented in certain airspace as (S).	ADS-B trial scheduled for 2004.	FANS 1/A Trials continuing for ADS-C.	
MACAO, CHINA	ATN BIS router planned for 2005. Planning for trial with China and Hong Kong , China going on							ATZ within Hong Kong and Guangzhou FIRs. In ATZ full VHF coverage exist. Radar coverage for monitoring purposes.
COOK ISLANDS								
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA								

CNS/ATM Implementation Planning Matrix								
State/ Organization	**ATN G/G Boundary Intermediate System (BIS) Router/AMHS**	**AIDC**	**CPDLC**	**GNSS**		**ADS-B**	**ADS-C**	**Remarks**
				NPA Supplemental Means (S) Primary means (P)	**En-route Supplemental Means (S) Primary means (P)**			
FIJI	AMHS in-house trials planned for 2003. AMHS trials with USA in 2004. ATN BIS Router will be implemented in 2005.	Implementation of AFTN based AIDC with Brisbane and Auckland in 2003.	FANS-1. Implemented since 1997.	NPA procedures for (S) completed in Dec. 2002.	Implemented as (S).	ADS-B trials planned for 2004. Implementation in 2005/2006.	ADS-C implemented in oceanic airspace using EUROCAT 2000 X.	
FRANCE French Polynesia Tahiti		Implementation of limited message sets with adjacent centres under discussion.	FANS-1. Implemented since 1996.				FANS 1/A ADS-C implemented since March 1999.	
INDIA	ATN BIS Router and BBIS router planned for implemented at Mumbai in 2005.		FANS-1 limited Implemented at Kolkata and Chennai. Planned for Mumbai and Delhi.		SBAS (S). Planned for 2005.		FANS 1/A ADS-C implemented at Kolkata and Chennai. Plan to implement in Delhi and Mumbai.	
INDONESIA	ATN BIS Router planned implementation in 2005.	AFTN based AIDC planned for implementation between Brisbane and Jakarta in 2004.	FANS-1/A. CPDLC in Jakarta, Ujung Pandang FIRs planned for 2004.	Procedure to be completed in 2006 for NPA (S).			FANS 1/A ADS-C trial planned for Jakarta and Ujung Pandang FIRs for 2004.	

CNS/ATM Implementation Planning Matrix								
State/ Organization	**ATN G/G Boundary Intermediate System (BIS) Router/AMHS**	**AIDC**	**CPDLC**	**GNSS**		**ADS-B**	**ADS-C**	**Remarks**
				NPA Supplemental Means (S) Primary means (P)	**En-route Supplemental Means (S) Primary means (P)**			
JAPAN	ATN BBIS already implemented. AMHS implementation between Japan, USA and Hong Kong planned for 2004.	AIDC based. AFTN procedure implemented with Oakland USA.	FANS1/A system Implemented in Tokyo FIR.				FANS 1/A. ADS-C implemented in Tokyo FIR.	
KIRIBATI								
LAO PDR	ATN BIS Router planned for implementation with Bangkok in 2005.		FANS-1/A Planned for Bay of Bengal and South China Sea areas. Equipment is under test operation.		Implemented as (S).		FANS-1/A. ADS-C planned for Bay of Bengal and South China Sea areas. Equipment under test operation.	
MALAYSIA	ATN BIS Router planned for 2005.		Planned for Bay of Bengal and South China Sea areas.	NPA (S) at KLIA planned for 2003.			FANS 1/A ADS-C planned for Bay of Bengal and South China Sea areas.	
MALDIVES	BIS Router/AMHS trial planned for 2003 – 2005 and implementation in 2005.	Planned for 2006.	FANS1/A planned for 2006.		Trials planned for 2005-2008. Implementation in 2008.	Trials planned for 2004-2006. Implementation in 2006.		
MARSHALL ISLANDS				NPA (S) implemented at Majuro Atoll.				
MICRONESIA FEDERATED STATES OF								
Chuuk				NPA(S) implemented				

CNS/ATM Implementation Planning Matrix								
State/ Organization	**ATN G/G Boundary Intermediate System (BIS) Router/AMHS**	**AIDC**	**CPDLC**	**GNSS**		**ADS-B**	**ADS-C**	**Remarks**
				NPA Supplemental Means (S) Primary means (P)	**En-route Supplemental Means (S) Primary means (P)**			
Kosrae				NPA(S) implemented				
Pohnpei				NPA(S) implemented				
Yap				NPA(S) implemented				
MONGOLIA	ATN BIS Router planned for 2005. Trial with Bangkok planned for 2003.		Function available. Regular trials are conducted.	GPS procedures are being developed and implemented at 10 airports.	Implemented as (P).	ADS-B trial in progress implementation planned for 2006.	FANS 1/A ADS-C implemented since August 1998.	
MYANMAR	Trial for ATN BIS Router with Thailand planned for 2003. Test with China planned for 2005.		Implemented since August 1998				Implemented since August 1998	
NAURU								
NEPAL	BIS Router planned for 2005.			Development of arrival procedure and NPA as (S) completed. Departure procedure is being developed.	Implemented as (S).			
NEW ZEALAND	BIS Router planned for 2005. Implementation will be confirmed based on operational requirement.	AFTN based AIDC implemented between New Zealand, Australia and USA. Tests with Fiji planned by the end 2003.	FANS/1A. Implemented	42 NPA implemented presently.	will be implemented as required.	Trials planned 2006-2008. National coverage starts 2008 to be completed by 2010.	FANS 1/A Implemented.	

CNS/ATM Implementation Planning Matrix								
State/ Organization	**ATN G/G Boundary Intermediate System (BIS) Router/AMHS**	**AIDC**	**CPDLC**	**GNSS**		**ADS-B**	**ADS-C**	**Remarks**
				NPA Supplemental Means (S) Primary means (P)	**En-route Supplemental Means (S) Primary means (P)**			
PAKISTAN	Implementation of ATN considered for Phase II (2005-2010).	Implemented between Karachi and Lahore ACCs	Implementation planned from 2005-2010.	Arrival and departure NPA procedure as (s) are being developed.	Planned for 2005-2010.	Planned for 2005 – 2010.	Planned for 2005-2010	RADAR coverage provided in Karachi and Lahore FIRs.
PAPUA NEW GUINEA								
PHILIPPINES	ATN BIS Router planned for 2005. Implementation for AMHS also planned.		D-ATIS and CPDLC Planned for 2006.				FANS 1/A ADS-C planned for 2006.	
REPUBLIC OF KOREA	ATN BIS planned for 2005.	FTN based AIDC implemented between Incheon ACC and Seoul APP.					FANS 1/A ADS-C planned for 2003.	
SINGAPORE	ATN BBIS Router trial with Hong Kong conducted between April and June 2003. Trial with Thailand planned for 2004.		Implemented since 1997. Integrated in the ATC system in 1999. D-ATIS implemented since February 2000.	NPA (S) procedure developed and is being published in the AIP.	Implemented (S).	Trial planned for 2005.	FANS 1/A ADS-C implemented since 1997. Integrated with ATC system in 1999.	
SRI LANKA	ATN BIS Router Planned for 2005. AMHS planned along with BIS in 2005.		CPDLC implemented since November 2000.	NPA (S) planned for 2005.			FANS 1 /A ADS-C implemented since November 2000.	GPS based domestic route structure being developed.

CNS/ATM Implementation Planning Matrix								
State/ Organization	**ATN G/G Boundary Intermediate System (BIS) Router/AMHS**	**AIDC**	**CPDLC**	**GNSS**		**ADS-B**	**ADS-C**	**Remarks**
				NPA Supplemental Means (S) Primary means (P)	**En-route Supplemental Means (S) Primary means (P)**			
THAILAND	ATN G/G system implemented for domestic services. BBIS/BIS Routers already implemented. AMHS 2005.	ATN based AIDC Implemented in Domestic Sector.	FANS-1/A Implemented.		Implemented as (S).		FANS 1/A ADS-C Implemented.	
TONGA								
UNITED STATES								
Anchorage				NPA(S) implemented	En-route (P) implemented	ADS-B trials continuing.	FANS/1-ADS-C 2004.	
Fairbanks				NPA(S) implemented				
Guam (Agana NAS)				NPA(S) implemented				
Guam (Anderson)				NPA(S) implemented				
Honolulu Intl.				NPA(S) implemented	En-route (P) implemented		FANS 1/A ADS-C planned for Dec. 2004	
Johnston Atoll				NPA(S) implemented				
Kahului				NPA(S) implemented				

CNS/ATM Implementation Planning Matrix								
State/ Organization	**ATN G/G Boundary Intermediate System (BIS) Router/AMHS**	**AIDC**	**CPDLC**	**GNSS**		**ADS-B**	**ADS-C**	**Remarks**
				NPA Supplemental Means (S) Primary means (P)	**En-route Supplemental Means (S) Primary means (P)**			
Oakland	AMHS implementation between Japan and USA scheduled for March 2004. Acceptance testing Sept. 2003 – Feb. 2004. US/China and US/Fiji AMHS testing scheduled for 2004.	Implemented using AFTN procedure. ATN AIDC planned for 2005.	FANS-1 2001. Phase I ATN CPDLC implemented in Sept 2001. Phase IA planned for implementation at 20 en-route centres in USA for en-route function in 2006/2007 time frame.	NPA (S) implemented	En-route (P) implemented		FANS-1/A ADS-C planned for Dec. 2004.	
Saipan				NPA (S) implemented				
VANUATU								
VIET NAM	ATN BIS Router planned for 2005 and AMHS in 2005.	ATN based AIDC planned between Ho-Chi-Minh and Bangkok in 2005.	Planned for 2005.	Planned for NPA (S) for 2004.	Implementation as (S) planned for 2004.		FANS 1/A ADS-C planned for 2005.	Most of air space in Hanoi and Ho-Chi-Minh FIRs covered by RADAR.

Key Priorities for CNS/ATM Implementation in the Asia/Pacific Region

NO.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS
1	ATN Implementation	Implementation of Ground-to-Ground element of ATN is required.	2005	CNS/MET ATN Transition Task Force	2005
2	Incorporation of CNS/ATM Material into Regional ANP & FASID	Incorporation of CNS/ATM Material into Regional ANP & FASID	APANPIRG/13	ATS/AIS/SAR	On-going
3	WGS-84 Implementation	To achieve uniformity in aeronautical data publication across the Region in order to ensure a standard reference system for CNS/ATM.	Immediate (Effective Date was 1 Jan 1998)	ATS/AIS/SAR	Implementation is monitored at each meeting using the uniform format for the reporting of WGS-84 implementation. Report progress to APANPIRG/14
4	RVSM Implementation	To provide more efficient flight profiles and to increase airspace capacity in conjunction with the implementation of CNS/ATM.	Bay of Bengal – 27 November 2003	ATS/AIS/SAR	

NO.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS
5	RNP Implementation En-route RNP 10 & 4 Terminal RNP 4& 1 Approach RNP 0.3	*Implement RNP based navigation, operation and procedures to improve the efficiency and flexible use of airspace.*	On Going Report to APANPIRG	ATS/AIS/SAR & CNS/ATM/IC	Phased implementation.
6	ADS-C	The implementation of ADS in oceanic or remote areas in accordance with the Regional CNS/ATM Plan is required for the enhancement of safety and ATM.	APANPIRG	ATS/AIS/SAR	-Phased implementation. Revised Regional CNS/ATM Guidance Material developed containing ADS section. -Implementation focus and timetable need to be developed. -States are gaining experience in the use of ADS.
7	Technical Co-operation in Regional CNS/ATM Planning & Implementation	The continuation and enhancement of ICAO's co-ordinating role of technical co-operation in CNS/ATM planning and implementation, in close co-operation with all partners and taking into account the regional approach, is required.	APANPIRG/14	All	Sub-groups to identify requirements.
8	Preparation for WRC-2007	The co-operative participation of States is required with their respective telecommunications regulatory authorities, regional groups such as the APT and at the WRC, preparatory meetings and study groups to ensure that aviation spectrum requirements	WRC-2007	All	

NO.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS
		are fulfilled including GNSS spectrum requirements are protected.			
9	GNSS Implementation • ABAS • SBAS • GBAS	To implement GNSS in accordance with the Asia Pacific Regional Strategy. Develop regional GNSS Augmentation requirements Ensure region wide awareness of developing GNSS systems integrate into Regional Plan.	On Going. Report to APANPIRG	All	*SBAS – WAAS IOC announced on 10 July 2003* *SBAS receiver - TSO C145/6 receivers now available* *GBAS – FAA LAAS contract for delivery in 2006*
10	ATS route implementation	To review and develop new requirements for ATS routes.	APANPIRG/15	ATS/AIS/SAR	*2004*

NO.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS
11	Final phase of WAFS	To implement transition to the final phase of WAFS to support the CNS/ATM system.	2004	CNS/MET SG	• WAFS Transition Plan and Procedures has been developed and is being successfully implemented. • Transfer of responsibility of RAFCs to WAFCs London and Washington has been implemented. • Closure of RAFCs has been implemented.
12	MET Chapter 8 of the ASIA/PAC Regional Plan for New CNS/ATM System	To develop MET components of the ASIA/PAC CNS/ATM concept/strategy To develop MET Chapter of the Regional CNS/ATM Plan	2003 2004	CNS/MET SG with assistance of the ATS/AIS/SAR SG METATM TF	• The first draft of MET Chapter of the Regional CNS/ATM Plan has been developed. • METATM TF to develop MET components of the ASIA/PAC CNS/ATM concept/strategy.
13	Data – link Communications	Implementation of CPDLC. AIDC to be introduced where ATS automated systems are implemented.	On -going 2005	All All	Sub – Groups to review progress of implementation. Implementation focus and time table need to be developed.

NO.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS
14	ADS-B	Data Link Selection for ADS/B recommended by ADS-B Task Force Target date of Implementation: States, where appropriate, implement "ADS-B out" for ground-based surveillance services on a sub-regional basis. ADS-B Task Force to develop implementation plan and sub-groups foster implementation.	2003 2006	CNS/MET All	APANPIRG/14 adopted 1090 MHz ES as the data link for ADS-B in ASIA/PAC region.
15	Implementation of APV and RNP Approaches	Review applicability of APV and RNP Approach Design Standards for Asia Pacific. Develop implementation strategy.	On Going. Report to APANPIRG	ATS/AIS/SAR	APV and RNP Design standards now in PANS OPS. Aircraft certified for RNP and APV approaches.

NO.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS
16	Data Link Flight Information Services (DFIS) applications	To implement the following applications via request/response mode of data link in the Asia and Pacific Regions: a) Data link –automatic terminal information services (D-ATIS); b) VOLMET data link service (D-VOLMET); c) Pre-Departure Clearance (PDC) delivery via data-link;	2008	All	Trials and demonstrations are conducted and some operational services are provided by States; D-VOLMET to be implemented by VOLMET Broadcast Stations specified in the FASID.
17	Safety Management Systems	States to establish national safety management systems and effective application of safety programmes which are required for the provision of air traffic services.	APANPIRG/14	CNS/ATM/IC RASMA/SG (Subject to APANPIRG/14)	Annex 11 provision effective 27 November 2003.

FUTURE DIRECTIONS TASK FORCE

Terms of Reference of the Future Directions Task Force (FDTF)

Considering:

a) the Terms of Reference of APANPIRG;

b) the Terms of Reference and Subject/Task List of the ATM/AIS/SAR, CNS/ATM/IC and CNS/MET Sub-Groups and the RASMA Group; and

c) the outcomes of the 11th Air Navigation Conference

The Task Force shall:

a) in light of c) above, and review the terms of reference and work programme of APANPIRG's contributory bodies;

b) review the coordination, effectiveness and efficiency of the Sub-Groups to achieve the APANPIRG objectives taking into account the terms of reference and work programme of each Sub-Group; and

c) to make recommendations as to the changes that may be necessary in the operation of APANPIRG's contributory bodies.

The Future Directions Task Force to be constituted from:

a) the Chairperson or nominee of the ATM/AIS/SAR, CNS/ATM/IC and CNS/MET Sub Groups and RASMA Group; and

b) not more than ten other members drawn from States and International Organizations:

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

Terms of Reference of the RASMAG

The objectives of the Group are to:

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

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

To meet these objectives the Group shall:

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

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

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

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

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

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

g) address other airspace safety related issues as necessary;

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

i) provide to APANPIRG comprehensive reports on regional airspace safety.

Task List

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

a) reduced vertical separation minimum (RVSM);

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

c) aircraft separation applications using ADS and CPDLC).

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AGENDA ITEM 4: DEFICIENCIES IN THE AIR NAVIGATION FIELDS

Agenda Item 4: Deficiencies in the Air Navigation Field

Report of the First Meeting of the Deficiency Review Task Force (DRTF)

4.1 The meeting was briefed on the first meeting of the Deficiency Review Task Force (DRTF/1) which was convened from 22 – 23 July 2003 and attended by ten (10) members from Australia, Hong Kong (China), Fiji, India, Malaysia, Singapore, IATA, IFALPA and IFATCA.

4.2 The meeting recalled that APANPIRG/13 considered the need to develop a supplement to the Uniform Methodology for Identification, Assessment and Reporting of Air Navigation Deficiencies in order to provide guidance in identifying and evaluating deficiency. It was noted that the existing Methodology does not clearly specify what subjects or requirements, including SARPs, should be considered when PIRGs develop a list of deficiencies and this has been left at the discretion of the PIRGs. Another problem was the lack of precise procedures for validation and assessment of the reported deficiencies as well as for monitoring of the corrective actions. In view of the above, APANPIRG/13 agreed to the setting up of a Task Force to assist APANPIRG and the Secretariat in progressing the work on management of deficiencies.

4.3 The meeting was apprised on the single definition of deficiency as approved by the Council on 30 November 2001 and its broad definition, which now included elements of regularity and efficiency. During the discussions that subsequently ensued, comments were raised as to what constitute regularity and efficiency as these were, in some instances, arbitrary and subjective. In this regard, the meeting noted that DRTF/1 was in the process of formulating guidelines to assist in its implementation.

4.4 In order to avoid differing interpretations, the meeting felt that the definition of deficiency could be further clarified and some guidelines were required with regard to the practical aspects of its implementation. On another issue, a question was raised as to which party was ultimately responsible for the conduct of a safety assessment and determining if there was negative impact from the deficiencies. The meeting felt that the safety assessment was the most important part in the process of identification of deficiencies and that guidelines were required in this aspect.

4.5 On the subject of collection of information, the meeting noted that in order to prevent duplication of deficiencies reported by IATA and IFALPA, some sort of collaborative effort be undertaken by both the users in producing a list of common deficiencies. It was further suggested that along with the list, a statement on the negative safety impact the deficiency might give rise to should be included in the user's reporting mechanism and this would go a long way in assisting the work of the Regional Office. In this regard, the member from IFATCA suggested the use of a pro-forma with standard tick-boxes in the reporting of deficiencies by users, as suggested during DRTF/1, was noted. IFATCA had, during the same meeting, volunteered to pursue the subject of providing information on deficiencies to the ICAO Regional Office and to seek possible collaboration with IFALPA to collate and disseminate the data.

4.6 The meeting advised the DRTF that, in carrying out the commendable work that had been progressed, it should not attempt to change the definition of deficiency nor the Uniform Methodology other than to provide further guidance in its interpretation and implementation. The DRTF was reminded that one of its prime objectives was also to review the long list of deficiencies that had remained outstanding for a long time.

4.7 Accordingly, the meeting formulated the following Conclusion:

Conclusion 14/50 - Asia Pacific Supplement to the Uniform Methodology

That, the concept for the "Asia Pacific Supplement" to the Uniform Methodology for the identification, assessment and reporting of air navigation deficiencies contained in the attachment to the Report of the 1st Meeting of the Task Force be circulated to States for comments and the Task Force finalize the development of the Supplement taking into account comments from States".

4.8 The meeting recognized the good work that was achieved by the DRTF and noted that whilst substantial progress had been achieved in drafting a supplement to the Uniform Methodology, the work of DRTF had not been completed and felt the need for another meeting to, inter alia, develop specific procedures and further guidelines as enumerated in the draft Supplement. The meeting formulated the following Decision:

Decision 14/51 - 2nd Meeting of the Asia Pacific Deficiency Review Task Force (DRTF/2)

That, a second meeting of the DRTF be convened during early 2004 to finalize the procedures and develop further guidelines to be included in the Asia Pacific Supplement to the Uniform Methodology, taking into account comments received from States and Organizations concerned.

4.9 The meeting recorded its appreciation on the continuing effort by IFALPA in providing the ICAO Asia/Pac Regional Office with an annual updated list of deficiencies as contained in IFALPA's Annex 19 Part 3 and urged other Iinternational Organizations, in their capacity as users of air navigation facilities, to provide if they have not already done so, a list of deficiencies on a regular basis to the Regional Office for validation and action in accordance with Assembly Resolution A33-14 Appendix M.

4.10 The meeting was reminded by IATA that from 1 January 2002, Annex 6 requires all aircraft to be equipped with a pressure-altitude reporting transponder. In the interest of safety, States must take action to ensure that aircraft not equipped with a pressure-altitude reporting transponder do not operate in airspace where aircraft were equipped with ACAS, in particular, in terminal airspace where international flights were operating. The meeting emphasized that this was a serious safety concern, and States were required to notify a Difference to Annex 6 if they do not comply. The meeting recalled that Annex 11 requires States to establish requirements for carriage and operation of pressure-altitude reporting transponders within defined airspace. IATA advised the meeting that many States have not re-classified their airspace to ensure compliance.

4.11 The meeting recalled that APANPIRG/12 had decided that States that had not complied with Annex 6, this would be listed as a 'Deficiency" in the list of air navigation deficiencies in the Asia/Pacific Region. Further, with the carriage of ACAS II being required by Annex 6, applicable on 1 January 2003 for all turbine-engined aeroplanes of a maximum certificated take-off mass of 15 000 kg or authorized to carry more than 30 passengers, non-compliance would also be listed as a 'Deficiency'

Lists Of Deficiencies in the Air Navigation Field

4.12 The meeting was advised by some of the States attending the meeting of the actions taken by them with regard to the items in the list of deficiencies. The updated information is attached in the Appendices to the Report on Agenda Item 4.

4.13 The meeting was advised that in the field of ATS/AIS/SAR, the following progress has been made since APANPIRG/13:

ATS Routes

4.14 There were thirty (30) ATS routes listed as priority 'B' and two (2) routes as priority 'A', and fourteen (14) routes had been requested to be deleted by States. The meeting noted that in order for a route to be deleted, it would have to undergo an amendment process to the ASIA/PAC ANP in accordance with established procedure.

4.15 The meeting noted that the ATS Route Network Review Task Force had been established by the ATS/AIS/SAR/SG/13 meeting to conduct a review of the ATS route requirements in the region and to amend the APAC ANP as appropriate. It was expected that this work would be completed by APANPIRG/15. It was thus recognized that a considerable number of the routes may be removed from the list. However, until such time as the above Task Force meets, the meeting was of the view that the deficiency status on the ATS routes be retained as currently reflected.

WGS-84

4.16 There were twelve (12) States listed as deficient under priority 'A'. The Regional Office had been notified that one State had completed the WGS-84 conversion but not yet published information. One (1) State had completed the conversion but was in the process of redoing it due to flaws in their conversion. Six (6) States had partially implemented, and work was ongoing to complete the conversion. Four (3) States had not implemented. One (1) State notified as having completed implementation. The WGS-84 matrix was updated as shown in **Appendix B** to the Report on Agenda Item 4.

Type of ATS

4.17 Two (2) States were listed as deficient under priority 'A" as not providing Area Control Service on international ATS routes. One State had implemented ATC service, and the other was upgrading HF communications and ATC service would be provided in early 2004, thereby removing the deficiencies.

Airspace classification

4.18 Fourteen (14) States were listed as deficient under priority 'A' as not having classified their airspace. One (1) State has notified a difference, seven (6) States have advised the Regional Office that classification has been carried out but not provided official confirmation. One (1) State has notified completion. Four (4) States have not classified their airspace.

AIP Format

4.19 Twelve (12) States were listed as deficient under priority 'A' as not having published their AIP in the ICAO format. Five (5) States have advised the Regional Office that they have completed the format but not provided official confirmation. Two (2) States would complete the

format in September 2003 and another in 2004. Four (4) States have not completed the format and no up-to-date information was available.

SAR capability

4.20 Three (3) States were listed as deficient under priority 'U'. One (1) State had provided written information that a SAR agreement was being developed. One (1) State advised the Regional Office that they provided SAR services and facilities and SAR agreements with their neighbouring States were under development, and official confirmation would be provided. One State had not up-dated the Regional Office.

4.21 The meeting noted that considerable progress was made to remove the deficiencies and further action was in hand and at APANPIRG/15 there should be a substantial improvement in the elimination of deficiencies. States continue to be reminded to up-date the Regional Office by 30 April each year and to provide official confirmation when deficiencies have been rectified.

4.22 In the AOP field, the meeting was informed on the good progress that had been achieved in the rectification of deficiencies. The meeting was apprised that sixty-two (62) deficiencies were identified and reflected in the list of deficiencies. Based on additional information provided at the meeting and corrective actions taken by States concerned, a total of forty-seven (47) deficiencies representing seventy-six percent (76%) of the deficiencies were identified as being completed.

4.23 During the discussions on deficiencies in the AOP field, IFALPA had requested that a mechanism be made available for the verification of remedial actions taken by States. In this regard, the 2nd Meeting of the DRTF would include such a procedure whereby the services of the offices of the IFLAPA Regional Vice-Presidents will be called upon in providing such assistance and updates to the Regional Office once the relevant providers/authorities had accomplished the necessary rectification works.

4.24 In the CNS field, States concerned had taken actions to improve the aeronautical communications services in two of the three deficiencies identified. Alternate arrangements had been made for the AFTN routing between Bangladesh and India in accordance with an action agreed by a COM coordination meeting. ATS direct speech circuits had also been established between concerned centres using IDD service. Actions were agreed by States concerned to further improve the qualify of service and eventually implement the direct dedicated circuits.

4.25 In the MET field, of the six deficiencies identified in the list two were partly resolved and one other State has reported that corrective action has been taken since the last APANPIRG meeting. The deficiencies related to the implementation of the IAVW were being addressed by means of an on-going Special Implementation Project (SIP) approved by the ICAO Council for implementation in 2003. As requested by IATA, the status of the deficiency on reporting of information on volcanic eruptions to civil aviation units has been changed from "A" to "U" since it was considered a serious safety issue. A new MET deficiency has been added to the list on the non-implementation of the tropical cyclone advisories by the TCAC New Delhi, India.

4.26 The meeting requested States and users sources to provide regular updates on the list of deficiencies including instances where actions have been taken by States for the resolution of deficiencies.

REPORTING FORM ON 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

REPORTING FORM ON 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

REPORTING FORM ON 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. Lao PDR implemented 11 Jul 02	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

REPORTING FORM ON 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

REPORTING FORM ON 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	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

REPORTING FORM ON 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 deltetion 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

REPORTING FORM ON 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 and Oman are of the view that the proposed route is not considered as a requirement in view of availability of new ATS routes under EMARSSH project which provide connectivity from Mumbai and Oman. India anjd Oman suggested deletion of this item.	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

REPORTING FORM ON 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~~	~~Implemented~~		~~AIP SUP A 02/02 dated 11 Jul 02 Effective date 5 Sep 02~~		~~Lao PDR~~	~~Completed~~	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

REPORTING FORM ON 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.	India informed the meeting that the existing HF radion is being modernized and new HF radio wth data link coapability is being installed at the Air Traffic centres at Mumbai, Delhi, Kolkata, Chennai and Thiruvananthapuram. Work is expected to be completed by December 2003, but expected well ahead of schedule. ADS/CDLC wil be installed at Mumbai and Delhi FIC/ACC. Subsequently Area Control Service will be provided.	India	December 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

REPORTING FORM ON 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	Kiribati	Not implemented	7/7/99			Kiribati	TBD	A
~~Airspace Classification~~	~~Lao PDR~~	~~Implemented~~	~~7/7/99~~	~~AIP SUP A01/02 dated 11 Jul 02 effective 5 Sep 02~~	~~Area, Approach and Tower control services est. 1 Nov~~	~~Lao PDR~~	~~Completed Official confirmation 6 Aug 03~~	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
Airspace Classification	Samoa	Not implemented	7/7/99		CTR C and D Samoa Sector Class G	Samoa	Completed Official confirmation required	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, Official confirmation required.	~~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~~	~~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

REPORTING FORM ON 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	Lao PDR	Aeronautical information has been put in new AIP format. On final check before production	7/7/99	On-going	On-going	Lao PDR	3-Sep	A
AIP Format	Myanmar	Not implemented	7/7/99			Myanmar	Completed 2003 (To be published)	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
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

REPORTING FORM ON 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****
SARPs in Annex 12	Cook Islands	Annex 12 requirements not implemented. No agreements with adjacent States.	31/1/95	SAR agreement with New Zealand under development	Cook Islands - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Cook Islands	2004	U
SARPs in Annex 12	Maldives	Annex 12 requirements not implemented. No agreements with adjacent States.	24/4/1997	SAR services and facilites provided (details to be confirmed). SAR agreements with neighbouring States under development	Maldives - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Maldives	2004	U

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												
VLVT Vientiane			X	X	X			X				
Vientiane												
RS	13	PA 1				X						
	31	NPA										
VLLB LUANG PHABANG					**X**							
Luang Phabang								**X**				
RS	**06**	**NPA**				**X**						
	24	**NPA**										
VLPS PAKSE					**X**							
Pakse								**X**				
RS	**15**	**NPA**										
	33	**NPA**										
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				

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
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					
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			

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
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					
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												

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
NAURU												
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/												

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
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			
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	

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
	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	
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			

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
	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				
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												

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
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			
	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			

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
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												
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

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
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				
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
PHNL HONOLULU/					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
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			
KSMF SACRAMENTO/					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
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					
AS	24R	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
	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			

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
	Bangladesh							
~~RAN/3 Rec. 4/10~~	~~Dhaka~~	~~Runway, taxiway and apron markings and marker boards faded.~~	~~1999~~	~~All markings on paved areas should be inspected and a schedule of painting be established.~~	~~All marking are freshly painted now, Daily inspections are being carried out. Runway designators centerline, and parking bay markings are painted every two month. By the end of July/03 all the marker boards will be changed to fluorescent types.~~	~~Director, Zia International Airport, Dhaka.~~	~~July 2003~~	~~Completed~~
	PR China							
~~**Annex 14 § 3.1.22**~~	~~Beijing~~	~~RWY 18L/36R slippery when wet.~~	~~2001~~	~~RWY surface to provide good friction characteristics when wet.~~	~~Friction values taken in June 2003 using SAAB friction tester meet requirements in §3.1.22 Annex 14.~~	~~CAAC~~	~~June 2003~~	~~Completed~~

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
Annex 14 § 9.2.3		RFF inadequate.		Level of RFF protection shall be appropriate to the aerodrome category.	Inspection carried out in June 2003 confirm meeting requirements for Cat 9, Annex 14.	CAAC	June 2003	Completed
Annex 14 § 5.3.5	Guangzhou	No PAPIs RWY 03 or 21.	2001	PAPI/VASI to be provided to serve approach to RWY.	PAPI rwy 03 installed and operational since 1987. PAPI rwy 21 -ditto- 1999. Calibration certs. issued yearly.	CAAC	1999 & yearly certs. Issued	Completed
Annex 14 § 5.3.15 & 16		Taxi-way lighting inadequate.		Improve taxi-way lighting system.	)Reconstructed, checked)and accepted by CAAC)Visual lighting and)marking systems)rectified according to)ICAO Annex 14 stds.	CAAC	April 2003	Completed
RAN/3 Rec. 4/10		Directional markings inadequate.		All markings on paved surfaces should be inspected and a schedule of painting be established.	)Reconstructed, checked)and accepted by CAAC)Visual lighting and)marking systems)rectified according to)ICAO Annex 14 stds.	CAAC	April 2003	Completed
§ 3.1.22	Shanghai/ Hongqiao	RWY uneven and slippery when wet.	2001	RWY surface to provide good friction characteristics when wet.	Comply with straight edge test. Friction values taken in June 2003 using SAAB friction tester meet requirements in §3.1.22 Annex 14.	CAAC	June 2003	Completed

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
~~**RAN/3 Rec. 4/10**~~		~~Taxiways poorly signed and lit.~~	~~2001~~	~~To comply with Annex 14 § 5.4.~~	~~Lighting system renovated in April 2002 and conforms to §5.4 Annex 14. RMB 1.2 million spent on improving guidance signs that do not meet standards, to be completed by June 2003.~~	~~CAAC~~	~~June 2003~~	~~Completed~~
~~**Annex 14 § 9.2.3**~~		~~RFF inadequate.~~	~~2001~~	~~Level of RFF protection shall be appropriate to the aerodrome category.~~	~~Inspection carried out in June 2003 confirm meeting requirements for Cat 9, Annex 14.~~	~~CAAC~~	~~June 2003~~	~~Completed~~
	Fiji							
~~**Annex 14 § 3.1.9**~~	~~Suva Nausori~~	~~RWY width only 30m.~~	~~2001~~	~~Width of runway should not be less than 45 m.~~	~~RWY can only be extended after Control Tower and Terminal Buildings relocated. Risk assessment carried out, res trictions apply e.g. aircraft type & when X wind exceeds certain limits.~~	~~Airports Fiji Ltd.~~	~~July 2003~~	~~Completed~~

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
~~**Annex 14 § 5.3.4**~~	**India**	~~No approach lighting on either RWY.~~	~~2003~~	~~Where physically practicable, approach lighting system shall be provided.~~	~~Due to constraints on land access and availability, this will not be implemented in near future. GPS approaches planned.~~	~~Airports Fiji Ltd.~~		~~Completed~~
~~**RAN 3 Rec. 4/10**~~	Delhi	~~Taxiway and~~ Apron lighting inadequate.	~~2002~~	Improve ~~taxiway~~ and apron lighting system.	~~All the taxiways at Delhi Airport are provided with taxiway edge lights as per ICAO specifications. Taxiway centerline lights have also been provided on all taxiways which are taxi routes for ILS CAT III operations.~~ Action to improve the apron lighting is in progress by replacing existing lattice type tower with lowering type high mast.	~~AAI~~	30.06.2004	~~Completed~~ "B"
		~~High speed Taxiway "I" require stop signs.~~	~~2002~~	~~To comply with Annex 14 § 5.4.~~	~~High speed taxiway at Delhi Airport is 'L' which has been mistakenly mentioned as 'I'. 'L' being high speed exit taxi track only, the entry has been prevented by providing red centerline lights on the taziway upto 75m from taxiway 'P' and~~	~~AAI~~	~~31.07.2003~~	~~Completed~~

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
~~**Annex 14 § 5.3.4**~~	~~Madras/Chennai~~	~~No approach lighting for RWY 25 available.~~	~~2002~~	~~Where physically practicable, approach lighting system shall be provided.~~	~~'L-1' towards runway. NO ENTRY BOARD HAS BEEN PROVIDED. In addition, NO ENTRY sign is being provided by 31.07.2003.~~ ~~Approach lighting is available for Runway 07/25 as follows: Runway 07 (ILS Runway): Runway 07 is provided with CAT-1 approach lighting system. The length of the approach lighting system is 900 mtrs. Total number of crossbars - 5 at a spacing of 150 mtrs. Each. Runway 25: Runway 25 is provided with CAT-1 truncated system since the land is not~~	~~AAI~~		~~Completed~~

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
					~~available to provide full CAT-1 system. The length of approach lighting system is 510 mtrs. Total number of crossbars - 3 at a spacing of 150 mtrs each. Information already published in AIP India & Jeppesen Manual.~~			
Annex 14 § 5.3.5		Problem in distinguishing the colours for PAPIS on RWY 25.	2002	Flight check and ground inspections shall be performed regularly.	Airline operators such as Indian Airlines, Jet Airways & Air Sahara have not reported any such observations. Ground calibration of PAPI units is being carried out regularly. Flight check shall be carried out shortly.			"A"
~~**Annex 14 § 5.3.1.2**~~		~~Runway 25, potential hazard as runway lighting blends with existing road lights and is difficult to differentiate.~~	~~2001~~	~~Action to be taken to extinguish, screen or modify the lights to prevent confusion.~~	~~A number of lighted hoardings erected along the highway have been responsible for this observation. Action to extinguish those lights was initiated with local Govt. authorities. Electricity Board at Chennai is disconnecting electric supply to the hoardings.~~		~~31.07.2003~~	~~Completed~~

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
Annex 14 § 3.8.3		Taxiway Bravo is unusable for aircraft with a wing span exceeding 36 metres.	2001	TWY clearance should be provided to permit safe movement of aircraft.	Action to provide suitable clearance to aircraft with wing span exceeding 36m by widening the taxiway and shifting the centerline of Taxiway 'B' has been initiated. However, taxiway 'F' is available for Runway 07 for taxiing of aircraft of wing span exceeding 36m.	AAI	31.05.2004	"A"
				This information needs to be promulgated in the AIP AND Jeppesen Manuals.	Information promulgated in Jeppesen Manual. Action to include the information in the AIP INDIA as an AIP Amendment is in progress.			
	Indonesia							
Annex 14 § 5.3.5	Bali	PAPIS on RWY 09 not calibrated.	2001	Flight checks and ground inspections should be performed regularly.				"A"
§ 9.5		Excessive bird activity on the airport with no bird control programme available.	2001	Action to be taken to decrease number of birds constituting hazards to aircraft operations.				"A"

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
	Japan							
~~**RAN/3 Rec. 4/10**~~	~~Fukuoka~~	~~Taxi procedure to RWY 34 is inadequate for wide body a/c.~~	~~2002~~	~~Crossing active RWY is presently required. E11 should be available for wide body jets.~~	~~Taxiway E11 has been reconstructed to meet the international srandards. It has been notified by AIP on 23 January 2003.~~	~~JCAB~~	~~Jan 2003~~	~~Completed~~
~~Annex 14 § 5.3.7~~		~~RWY lead in light for RWY 16 difficult to identify.~~		~~The lights may be augmented by steady burning lights to assist in identifying the system.~~	~~A Precision approach category I lighting system is implemented for RWY 16 at Fukuoka Airport for straight in approach, and RWY lead in lights are not required for the RWY~~.	~~JCAB~~	~~July 2003~~	~~Completed~~
Annex 14 § 3.1.6	**Narita/New Tokyo**	B runway (16L/34R) is considered short for international operations (7,150 ft).	2002	Length of r/w should be adequate to meet operational requirements of aeroplanes for which the runway is intended.	Site acquisition for the remaining 2500m of the runway. In progress.	JCAB	On-going	"A"
Annex 14 § 4.2.19		Obstacles above the approach surface slope (2%) on finals for runway 34R.	2002	No obstacles are permitted above an approach surface.	Removal of the trees existence on final approach area in progress. Information about the removal of obstacle will be notified by AIP.	JCAB	On-going	"U"

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
~~**Annex 14 § 9.1.14 & 9.2.2**~~	~~Okinawa/Naha~~	~~No adequate RFF facilities for over water areas.~~	~~1999~~	~~AEP and specialist RFFS to be provided in difficult environment~~	~~Aerodrome emergency planning that includes the coordination with Japan Coast Guard and Japan Maritime Self-Defence Force exists at this airport. Therefore specialists RFFS for over-water areas have already provided at this airport.~~	~~JCAB~~	~~July 2003~~	~~Completed~~
~~**Annex 14 § 9.1.14 & 9.2.2**~~	~~Okinawa/app. Area~~	~~No adequate RFF facilities for over water areas.~~	~~1999~~	~~AEP and specialist RFFS to be provided in difficult environment.~~	~~In Okinawa/app. Area, the international airport is only Naha Airport. As stated above, specialists RFFS for over water areas have already provided at Naha Airport.~~	~~JCAB~~	~~July 2003~~	~~Completed~~
~~**Annex 14** § 9.1.14 & 9.2.2~~	~~Osaka/Kansai~~	~~No adequate RFF facilities for over water areas.~~	~~1999~~	~~AEP and specialist RFFS to be provided in difficult environment.~~	~~Aerodrome emergency planning that includes the coordination with Japan Coast Guard, Japan Maritime Self-Defence Force, Osaka Marine Fire Department and Osaka Onwater Police Station exists at this airport. Therefore specialists RFFS for over water areas have already provided at this airport.~~	~~JCAB~~	~~July 2003~~	~~Completed~~

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
~~**Annex 14** § 9.1.14 & 9.2.2~~	~~Tokyo/Haneda~~	~~No adequate RFF facilities for over water areas.~~	~~1999~~	~~AEP and specialist RFFS to be provided in difficult environment.~~	~~Aerodrome emergency planning that includes the coordination with Japan Coast Guard, Japan Maritime Self-Defence Force exists at this airport. Therefore specialists RFFS for over-water areas have already provided at this airport.~~	~~JCAB~~	~~July 2003~~	~~Completed~~
~~**Ran/3 Rec. 4/10**~~	~~Nagoya~~	~~Parking areas and bay numbers are not properly marked.~~	~~1999~~	~~All markings on paved areas should be inspected and a schedule of painting be.~~	~~All markings for parking areas and bay numbers are properly re-painted once a year.~~	~~JCAB~~	~~July 2003~~	~~Completed~~
	Maldives							
~~**RAN 3 Rec. 4/10**~~	~~Male~~	~~RWY often wet or sandy as result of sea spray/strong winds. Touchdown RWY 18 has subsidence filled with sand.~~	~~1996~~	~~Surface irregularities may adversely affect the take-off or landing of aircraft.~~	~~Sea wall reinforced with sheet piling and paved area around touchdown RWY 18 has ceased sea spray and sand being blown on to the area.~~	~~CAD~~	~~2003~~	~~Completed~~
~~**Annex 14 § 5.3.4**~~		~~No approach lighting RWY 18.~~	~~1999~~	~~Where physical practicable, approach lighting system should be established.~~	~~Runway 18 meets the standard for Non-precision approach runway stated under 5.3.4.1 of Annex 14. This runway is only used~~	~~CAD~~	~~2003~~	~~Completed~~

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
					~~in conditions of good visibility and a PAPI is installed for visual guidance.~~			
~~**§ 5.3.12.2**~~		~~No RWY centerline lights.~~	~~1999~~	~~Centerline lights should be provided on PA1 r/w when used by aircraft with high landing speeds or where width between edge lights >50 m.~~	~~Under the standard 5.3.12.1 runway centerline lights are a requirement for CAT II and CATIII precision approach runways. The runway at Male' is a CAT I runway. This requirement shall be complied with once the category is changed.~~	~~CAD~~	~~2003~~	~~Completed~~
~~**RAN 3 Rec. 4/10**~~		~~Apron markings hardly discernible.~~	~~1996~~	~~All markings on paved areas should be inspected and a schedule of painting be established.~~	~~Due to limited parking space available it is not feasible to have designated parking positions or aircraft stands and hence the safety lines required at aircraft stands. However, Apron edge lines and apron service roads are marked. Maneuvering of aircraft on the apron are precisely controlled by trained marshallers so that at all times they will be kept clear of the adjacent aircraft, buildings and service vehicles on the apron.~~	~~CAD~~	~~2003~~	~~Completed~~

Appendix C to the Report on Agenda Item 4

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
	Myanmar							
~~**Annex 14 § 3.1.6**~~	~~Yangon~~	~~RWY length inadequate.~~	~~1999~~	~~RWY length to be adequate to meet operational requirements of aeroplanes for which the runway is intended.~~	~~Current length sufficient for B767 & A300. Rwy will be extended when funds are available.~~	~~DCA~~	~~July 2003~~	~~Completed~~
~~**Annex 14 § 3.1.22**~~		~~RWY slippery when wet.~~	~~2001~~	~~RWY surface to provide good friction characteristics when wet.~~	~~Present length 2400 m overlaid with 4 cm asphalt concrete.~~	~~DCA~~	~~4.8.2000~~	~~Completed~~
Annex 14 § 5.3.4		No approach lighting RWY 03.	1994	Where physically practical, a simple approach lighting system shall be provided.	PAPI installed in 2002. Approach lights to the installed when funds available.	DCA		"A"
Annex 14 § 9.1.12-13		Emergency plan to be updated.	1996	Emergency exercises to be carried out and AEP updated.	Updating/exercising AEP in progress.	DCA	Will inform in due course	"B"
~~**Annex 14 § 9.2.3**~~		~~RFF Category inadequate~~	~~1996~~	~~Level of RFF protection shall be appropriate to the aerodrome category.~~	~~RFF increased from VI to VII accordingly.~~	~~DCA~~	~~1.12.2002~~	~~Completed~~
	Nepal							
Annex 14 § 5.2.7.1	Kathmandu	No side stripe markings.	2002	Side stripe marking shall be provided between the thresholds of a paved RWY where there is a lack of contrast between RWY edge and the shoulders or surrounding terrain.				"A"

Appendix C to the Report on Agenda Item 4

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
	New Zealand							
	~~Auckland~~							
~~**Annex 14 § 1.3.4**~~		~~Confusion due to proximity of normal runway 05R/23L with temporary runway 05L/23R especially in low visibility conditions.~~	~~2002~~	~~Perform safety assessment of aerodromes especially in low visibility condition.~~	~~3 modes of operations broadcast in AKL ATIS. Parallel rwy operations prohibited. Low vis take-off not permitted below 800m, restrictions apply. Active rwy identified by strobe lights and/or rwy end identifier lights. Twr monitors approach of IFR acft landing by use of Approach Monitoring Aid based on SSR info. Instrument Flight guide highlights caution, warning notes to alert/remind pilots of special circumstances, conditions and restriction.~~	~~CAANZ/AIA Ltd.~~	~~June 2003~~	~~Completed~~
~~**Annex 14 § 5.4**~~		~~Some aircraft movement signage is confusing due to the proximity of parallel taxiway Bravo to temporary runway 05L/23R.~~	~~2002~~	~~Review signage placing and content.~~	~~Signage specifically upgraded for introduction of temporary r/w. Same signs had been relocated.~~	~~CAANZ/AIA Ltd.~~	~~June 2003~~	~~Completed~~

Appendix C to the Report on Agenda Item 4

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
Annex 14 § 3.4	Wellington	Runway-end safety areas RWY 16/34 inadequate.	2000	RESA shall be provided and shall extend from the end of a RWY strip to a distance of at least 90 m.	Amendments to Civil Aviation Rules required. Cost benefit analysis carried out, NPRM review in progress.	CAA	On-going	"A"
	Pakistan							
~~**RAN/3 Rec. 4/10**~~	~~Karachi~~	~~RWY and Taxiway markings inadequate and are not clearly visible at night.~~	~~2001~~	~~All markings on paved areas should be inspected and a schedule of painting be establish.~~	~~Runway and taxiway markings repainted and checked by aircraft, reported satisfactory.~~	~~Director JIAP Karachi~~	~~2003~~	~~Completed~~
	Papua New Guinea							
Annex 14 § 3.8.1	Port Moresby/ Jacksons	No parallel taxi-way servicing main runway.	2002	Taxiways should be provided to permit safe and expeditions aircraft movement.				"A"
§ 3.12.2	Vanimo	Limited parking.	2002	Total apron area should be adequate to permit expedition handling of aerodrome traffic at its max-anticipated density.				"B"
§ 9.2.3		No RFF facilities.	1999	Level of RFF protection shall be appropriate to the aerodrome category.				"A"

Appendix C to the Report on Agenda Item 4

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
	Philippines							
~~**RAN 3 Rec. 4/1, 4/2**~~	~~Manila~~	~~Rwy 06/24 surface rough Heavy rubber deposits and very slippery when wet.~~	~~1998~~	~~RWY surface to provide good friction characteristics when wet. Rwy friction values to be taken regularly.~~	~~Overlay of RWY 06/24. Derubberizing works & testing w/friction tester equipment.~~	~~Engineering~~	~~Completed & Regularly done~~	~~Completed~~
~~**RAN 3 Rec. 3/1**~~		~~No approach lights on rwy 06.~~	~~1995~~	~~Where physically practicable, a PA1 approach lighting system to be provided.~~	~~Simple approach lights, 900 m.~~	~~Engineering~~	~~Installed November 2002~~	~~Completed~~
~~**Annex 14 § 8.4.1 & § 8.4.2**~~		~~Airport security lax, allowing livestock to stray on to active runways.~~	~~1999~~	~~Improved airport perimeter fencing and general security within the perimeter of the airport required.~~	~~Perimeter fences at JOCASP & terminal 2.~~	~~Engineering~~	~~Completed~~	~~Completed~~
					~~Rehab of Perimeter fence at Int'l Cargo Terminal.~~	~~Engineering~~	~~Installed October 2002~~	~~Completed~~
					~~Repair of Security Cameras NAIA security sectorized.~~	~~Security~~	~~Completed~~	~~Completed~~

Appendix C to the Report on Agenda Item 4

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
	Republic of Korea							
~~**Annex 14 § 3.1.22**~~	~~Seoul/Gimpo~~	~~RWY slippery when wet.~~	~~2002~~	~~RWY surface to provide good friction characteristics when wet. Friction values to be taken regularly.~~	~~RWY 14 L/R grooved, rubbers removed 3 x a year since 2001 after calibration test.~~	~~KMOCT/ KAC~~	~~(3 x yearly)~~	~~Completed~~
~~**Annex 14 § 3.8.3**~~		~~Taxiway P5 Insufficient wingtip clearance.~~	~~1999~~	~~To comply with Annex requirements.~~	~~Separation distance between aircraft stand centerline and object extended to 42.5m by marking relocation.~~	~~KMOCT/ KAC~~	~~It will be completed by July 2003~~	~~Completed~~
	Thailand							
~~**Annex 14 § 3.1.21**~~	~~Bangkok~~	~~Parallel taxiway is very rough and almost unusable even at low taxi speeds (5 kts) .~~	~~1999~~	~~Despite the completion of the resurfacing the taxiway surface remains undulated.~~	~~Parallel taxiway C had already been repaired. Repair and improvement to surface of parallel taxiway A completed.~~	~~AOT~~	~~July 2003~~	~~Completed~~

Appendix C to the Report on Agenda Item 4

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
	Viet Nam							
Annex 14 § 3.1.21	Hanoi/Noibai	RWY surface is rough.	2000	Surface of runway shall be constructed without irregularities that would result in friction loss or adversely affect take-off and landing.	The existing RWY (RWY 1A) is made of betonite. Currently it is being operated safely. However another RWY (RWY 1B) is under construction and expected to be completed in the fourth quarter of 2003. So the existing RWY is planned to be closed in 2004 for upgrading.	Northern Airport Authority	2004	"A"
~~**Annex 14 § 8.4.1 & § 8.4.2**~~		~~Apron congested. Poor security with no proper perimeter fencing.~~	~~2000~~	~~Improved airport perimeter fencing and general security within the perimeter of the airport required.~~	~~Currently the apron is able to hold 17-19 aircraft. New aprons are expected to be constructed in the West of the airport. The preparations for new constructions already began this year. The perimeter fencing is being improved and safeguarded 24/24 hours.~~	~~Northern Airport Authority~~	~~2004 for apron expansion and construction. Third quarter of 2003 for perimeter fencing.~~	~~Completed~~
~~**RAN/3 Rec. 4/10**~~		~~Faint taxiway and ramp markings.~~	~~2000~~	~~All markings on paved areas should be inspected and a schedule of painting be established.~~	~~All taxiways and markings have been repainted by schedule.~~	~~Northern Airport Authority~~		~~Completed~~

Appendix C to the Report on Agenda Item 4

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action**
~~**Annex 14 § 3.1.22**~~	~~Hochiminh/ Tansonnhat~~	~~RWY 25L slippery when wet.~~	~~2000~~	~~Runway surface to provide good friction characteristics when wet.~~	~~Already extended and upgraded~~	~~Southern Airport Authority~~	~~June 2003~~	~~Completed~~
~~**§ 5.3.4 § 5.3.5**~~		~~RWY 07R No app lighting, PAPIs.~~		~~Where physically practicable, approach light system shall be provided. PAPI/VASI to be provided to serve the approach to RWY.~~	~~Already installed~~	~~Southern Airport Authority~~	~~July 2003~~	~~Completed~~
~~**§ 5.3.12.2 § 5.3.12.3 § 5.3.12.4**~~		~~No RWY centerline lighting.~~	~~2000~~	~~Centreline lights to be provided in certain circumstances.~~	~~Already installed~~	~~Southern Airport Authority~~	~~July 2003~~	~~Completed~~
~~**RAN/3 Rec. 4/10**~~		~~Taxiway markings not clear.~~	~~2000~~	~~All markings on paved areas should be inspected and a schedule of painting be established.~~	~~Already repainted~~	~~Southern Airport Authority~~	~~July 2003~~	~~Completed~~
~~**§ 8.4.1 & § 8.4.2**~~		~~Security is poor near the main taxiway where access to the whole airport poses a risk.~~		~~Improved airport perimeter fencing and general security within the perimeter of the airport required.~~	~~Already corrected~~	~~Southern Airport Authority~~	~~July 2003~~	~~Completed~~

AIR NAVIGATION DEFICIENCIES IN THE CNS FIELD IN THE ASIA/PAC REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
VHF coverage to be provided in the Southern Part of Dhaka FIR and withdrawal of HF	Bangladesh	No requirement for HF except for smaller portion of FIR.~~HF used for ground-to-ground COM due to lack of ER VHF and reliable ATS DSCs.~~	1992	Relevant sector of ATS routes has been delegated to adjacent ACC.	An action item was developed by a COM coordination meeting held in June 03 to expedite implementation of RCAGs included in a Project. An interim arrangement has been made for implementation of one RCAG site in the southern part of Dhaka FIR.	Civil Aviation Authority of Bangladesh	Target date is set by end of 2003.	A
Reliable AFS communications between Kolkata and Dhaka FIRs.	Bangladesh and India	HF RTT AFTN circuit had been operating far below the required reliability of 97%. ATS DSC not implemented. IDD service used for ATS coordination not meeting operational requirement. ~~Agartala/Dhaka and Dhaka/Guwahati. ATS DSCS not implemented.~~	ATS DSC 1993 AFTN 1995	HF RTT circuit was required to be to be upgraded to LTT. Corrective action required to improve performance of the IDD services initially. A dedicated circuit should be established between Kolkata and Dhaka. ~~IDD service to be provided for Agartala/Dhaka and Dhaka/Guwahati ATS DSC.~~	HF RTT circuit was withdrawn. Alternate routing was established via Bangkok/Mumbai/ Kolkata for AFTN traffic between Dhaka and Kolkata. In accordance with action agreed at a COM coordination meeting held in June 03 implementation of a 64 Kbps data circuit is planned to support both AFTN and DSC requirements. ~~Agartala/Dhaka, Dhaka/Guwahati and Dhaka/Kolkata ATS DSCs. implemented on IDD hotlines.~~	CAA Bangladesh and Airports Authority of India	November 2003 for upgrading AFTN circuit; and December 2003 for establishment of DSC between Dhaka/Kolkata	A

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date for completion**	**Priority for action****
Adequate and reliable VHF COM	Myanmar	Quality and reliability of RCAG VHF inadequate and unavailability of required coverage	1998	Improvements in the quality of link to RCAG stations and power supply system are required.	Action should be taken to provide reliable links between the RCAG stations and Yangon ACC. Power supply to the RCAG sites needs improvement.	DCA Myanmar	Revised target date is end of 2003	A

Appendix E to the Report on Agenda Item 4

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD 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 ***
Meteorological observations and reports. Provision of Annex 3, Chapter 4	Solomon I.	Weather information is inadequate and not provided on a regular basis	1996	Reported by airlines operating to Solomon I.	Equipment to be upgraded and arrangements to be made for regular observations	Ministry of Transport, Works and Aviation, Solomon I. *Note: OPMET/E TF to carry out survey on availability in 2003*	TBD	A
~~a) Requirements for forecasts to be provided. ASIA/PAC ANP, Part IV- Meteorology. Table MET 1A.~~ b) Meteorological observations and reports. Provision of Annex 3, Chapter 4.	Kiribati	~~a) TAFs for Kiribati not regularly provided by MET Centre of Fiji.~~ b) MET observations from Kiribati not available on regular basis.	1998	Reported by the National Weather Service concerned during introduction of the new flight operations.	~~a) Fiji reported that TAFs for Tarawa, Kiribati have been provided regularly.~~	Directorate of Civil Aviation, Kiribati. Civil Aviation Authority, Fiji *Note: OPMET/E TF to carry out survey on availability in 2003*	~~a) Completed~~ b) TBD	A

Appendix E

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD 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 ***
a) Reporting of information on volcanic eruptions to civil aviation units. Provision of Annex 3. b) International airways volcano watch (IAVW) operational procedures.	Indonesia Philippines	Information on volcano activities not always reaches civil aviation units due to lack of fixed communications with volcano observatories.	1995	a) Observed by States concerned. b) Reported at the WMO/ICAO Workshop on Volcanic Ash Hazards (Darwin, 1995)	a) MOU to be signed between Department of Transportation and Department of Mining and Energy, Indonesia b) Volcano observations and warnings to be made available on the Internet by Department of Mining and Energy. c) MOU between Air Transportation Office, the Philippines Institute of Volcanology and Seismology, and PAGASA to be signed.	Civil Aviation Administrations in co-ordination with Met. Authorities of the States concerned. *Note: CNS/MET SG to monitor developments on this subject.*	~~To be determined~~ 2003 *Note: The matter is addressed by an ICAO SIP to be conducted during 2003*	~~A~~ U
a) Service for operators and flight crew members Provision of Annex 3, Chapter 9. b) Requirements for WAFS products for flight documentation. ASIA/PAC ANP, Table MET 1A.	Cambodia Myanmar	VSATs for reception of the ISCS and SADIS satellite broadcasts not installed.	1999	Expected lack of products for flight documentation due to forthcoming implementation of the final phase of WAFS and cease of RAFCs operations.	States consider urgent action to be taken for installation of SADIS or ISCS VSATs.	Civil Aviation Administrations in co-ordination with Met. Authorities of the States concerned. *Note: CNS/MET SG to monitor*	To be determined	A

Appendix E to the Report on Agenda Item 4

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD 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 ***
a) ~~Aerodrome meteorological office,~~ Meteorological watch office provisions of Annex 3, Chapter 3. ~~b) Requirement for aerodrome meteorological office to be established, ASIA/PAC ANP, Table MET 1A;~~ b) Requirements for MWO to be established, ASIA/PAC FASID, Table MET 1B.	Cambodia	Requirements for ~~Aerodrome meteorological office and~~ meteorological watch office (MWO) to be established at Phnom-Penh international airport have not been met.	1992 updated 2003 (MET mission from ICAO RO)	Requirements have not been met due to staffing and funding problems. MET briefing and flight documentation for return flights provided by the MET offices of other aerodromes.	The Authority concerned to take urgent actions to meet requirements of ANP. *Note: If MWO is not able to meet all its obligations, proposal to be considered for temporary transfer of its responsibilities to another MWO and a NOTAM to be issued to indicate such a transfer.*	State Secretariat of Civil Aviation, Cambodia. *Note: The matter was addressed by a MET mission to Cambodia in May 2003. Assistance provided in preparing an action plan*	To be determined	A
a) SIGMET information Provision of Annex 3, Chapter 7 b) Requirements for dissemination of SIGMETs, including SIGMETs for volcanic ash. ASIA/PAC ANP (FASID) Table MET 2A c) International airways volcano watch (IAVW) operational procedures	Bangladesh Cambodia India Indonesia Lao PDR Myanmar Nepal Papua New Guinea Philippines Sri Lanka	Requirements for issuance and proper dissemination of SIGMETs, including SIGMET for volcanic ash, have not been fully implemented.	2000	a) Reported by airlines b) Noted by Volcanic Ash Advisory Centres	~~a) ICAO to consider proposal for Special Implementation Project be established with the primary objective to improve implementation of SIGMET procedures.~~ a) ICAO SIP (on-going in 2003) b) States to take urgent actions to implement the procedures. *Note: Sri Lanka informed that the deficiency is dealt with immediate effect*	a) States' Meteorological Authorities b) ICAO to update the Regional SIGMET Guide *Note: CNS/MET SG to monitor.*	2003 by means of a SIP *and a new edition of the Regional SIGMET Guide*	A

Appendix E

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD 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 ***
a) Annex 3 provisions for Tropical Cyclone Advisory Centres (TCAC) and for the format of tropical cyclone advisories for aviation b) ASIA/PAC Basic ANP (p.6.2) and FASID Table MET 3A	India	TCAC New Delhi does not issue tropical cyclone advisories for aviation	2003	Reported by airlines and identified during ICAO attendance to ESCAP/WMO Panel on Tropical Cyclones, 2002 and 2003	The Authority concerned to take urgent actions to meet requirements of Annex 3 and ASIA/PAC BANP and FASID for provision of tropical cyclone advisory for aviation.	India Directorate General of Civil Aviation; India Meteorological Department	2004	A

AGENDA ITEM 5: REVIEW OF OUTSTANDING CONCLUSIONS AND DECISIONS OF APANPIRG

Agenda Item 5: Review of Outstanding Conclusions and Decisions of APANPIRG

5.1 The meeting reviewed the progress made on the outstanding conclusions and decisions of APANPIRG including the conclusions and decisions of its twelfth meeting.

5.2 The actions taken by States and the Secretariat on the above mentioned conclusions and decisions were reviewed and the updated list is provided in the Appendices A and B to the Report on Agenda Item 5.

5.3. The meeting noted that the list of outstanding conclusions/decisions presented to the APANPIRG/14 contained 70 items, out of which action on 40 items were completed, which was 57% of the total number. The completion status in the respective fields is as follows:

- in the ATM field 23 outstanding conclusions/decisions were completed and 24 were on-going, which was nearly 50% completion;

- in the CNS field there were 2 outstanding conclusion identified and the action on both conclusions was completed resulting in 100% completion of the task;

- in the MET field the figures were 15 completed out of 21 outstanding conclusions or nearly 75% completion.

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

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) Some routes in the Arabian Sea within the Mumbai FIR are still classified Class F with Advisory Services c) .States to update the Regional Office on the current status.	~~Completed~~ On-going 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.	~~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~~
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 20034; and b) A similar project will be organized for the South China Sea and Pacific islands areas. Note: ICAO seminar being planned in conjunction with the Hong Kong, China annual SAREX in November 2003)	2004 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	C	**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. Noted the conclusion	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.	2004/05
~~C 9/1~~	~~C~~	~~**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.~~ ~~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.~~	~~The revised South China Sea ATS route structure was implemented on 1 November 2001.~~	~~Completed~~
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~~	~~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 has been established by APANPIRG/14 and scheduled to meet in the 1st quarter of 2004	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 circulated to States and Organizations concerned.	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~~ Ongoing On-going ~~Ongoing~~
~~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~~ ~~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.~~	~~Completed~~
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~~ ~~Completed~~
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 updated at the ATM/AIS/SAR/SG.	
~~C 11/10~~	~~ANC~~	~~**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.~~ ~~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.~~	~~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.~~ ~~Note: EMARSSH Project Implemented on 28 November 2002.~~	~~To be completed on 28 November 2002~~ ~~Completed~~
~~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;~~ ~~b) development of a project plan;~~ ~~c) form a small project or core team to initiate, develop and lead the project through to implementation;~~ ~~d) plan a number of sub-regional meetings to progress the work; and~~ ~~e) full co-ordination with adjacent regions with regard to the development of the route structure and procedures to be maintained.~~	~~a) a set of Principles were adopted and agreed to;~~ ~~b) a project plan has been formulated;~~ ~~c) a Core Team was established consisting of Australia, Hong Kong, China, India, Singapore, IATA and ICAO as Chairman of the Core Team;~~ ~~d) seven meetings have taken place. Further meetings, including a post-implementation review meeting, are planned; and~~ ~~e) inter-regional coordination was conducted throughout the planning and implementation of this project.~~	~~Completed~~ ~~Completed~~ ~~Completed~~ ~~Completed~~ ~~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~~
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.~~	~~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.	The 1st 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, was held was held in Abu Dhabi, UAE, from 19 to 20 October 2002. A final JCM meeting before implementation on 27 November 2003 is scheduled in Abu Dhabi on 27-28 August 2003.	On-going

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~~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.~~	~~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.~~	~~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~~	~~C~~	~~**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.~~ ~~Noted the conclusion and that such a project would be put forward for the Council's approval through established procedures.~~	~~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.~~	~~Completed~~
~~D 12/9~~	~~ANC~~	~~**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.~~ ~~Noted the conclusion and that the development of lateral offset procedures for regional implementation should be in accordance with global guidelines.~~	~~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.~~	~~Completed~~

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.	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.~~	~~Completed~~
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. *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 2003*	~~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.~~ A Task Force was established by APANPIRG/14 to revise the APAC Guidance Material Guidance and coordinate with IPACG and ISPACG with a view to harmonize the Pacific Operations Manual. A Task Force meeting is scheduled 2-3 October 2003 in Honolulu to coincide with the IPACG/ISPACG/FIT meeting.	On-going

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		November 2002. b) the revised *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region* be published by ICAO as soon as practicable	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 x 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 x 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 x 10^{-9} fatal accidents per flight hour per dimension was adopted for en-route systems in the Asia/Pacific Region.~~	~~Completed~~
~~C 12/43~~	~~ANC~~	~~**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.~~ ~~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.~~	~~ICAO is preparing a global guidance material.~~ ~~Note: ICAO has completed guidance material to be presented to the AN Conference /11 and this Task is no longer required.~~	~~Completed~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
~~D 12/44~~	~~ANC~~	~~**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.~~ ~~Noted the decision and requested the Secretary General to develop provisions for a global approach to establishing airspace safety performance monitoring arrangements.~~	~~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.~~ ~~Note: The APASM/TF continued its work and will present a final report to APANPIRG/14.~~	~~Completed~~
~~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~~
~~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~~
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~~	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 ~~Completed~~

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		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~~.		~~Completed~~
		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.		On-going
		~~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.~~		~~Completed~~
		~~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.~~		~~Closed~~ ~~Note: Being addressed by ICAOHQ~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
		~~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:~~ ~~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~~	~~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.~~	~~Completed~~ ~~Being addressed by HQ~~ ~~Completed~~ ~~Closed~~ ~~Note: Being developed by ICAOHQ~~

Report Reference ---------- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
		~~functionality commensurate with its use as a planning tool and in line with ICAO sale of publications~~		

OUTSTANDING CONCLUSIONS/DECISIONS IN THE CNS/MET FIELDS

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
C 5/19	C	**Need for technical assistance to support WAFS implementation in the ASIA/PAC Regions** That, ICAO initiate action to provide technical assistance in terms of equipment and training of personnel under the Technical Co-operation Programme to those States that are in need of assistance to receive WAFS products by satellite broadcast. Noted the conclusion and requested the Secretary General to take action as appropriate.	The use of SADIS and ISCS/2 by ASIA/PAC States has continued to grow and further expansion is expected. Implementation of the SADIS and ISCS/2 is being monitored to define the extent of the assistance required. – UK provided GRIB/BUFR training for SADIS User States in ASIA/PAC region in November 2002. Note: target date for completion - 2005	On-going
C 9/18		**Operational efficacy of OPMET messages** That, a) ICAO carry out a survey on the operational efficacy of the ISCS/2; and b) Results of the survey be made available to the ISCS/2 provider Stat and reported to the COM/MET/NAV/SUR SG/3 Meeting.	– Proposal to carry out a survey on the operational efficacy of the ISCS/2 was forwarded to the ISCS Provider State for review and consideration. – The United States was invited to review the proposed survey form and to provide comments. Note: Survey to be conducted after the new ISCS/2 becomes operational	On-going
~~C 10/19~~	~~C~~	~~**Future development of the WAFS**~~ ~~That, ICAO give consideration to the future development of the WAFS with a view of meeting the States' requirements for WAFS and non WAFS products after transition to the final phase of WAFS and RAFCs cease to operate.~~ ~~Noted the conclusion and requested the Secretary General to arrange for a study on how to meet any non-WAFS requirements indicated by States, in response to the survey requested in Conclusion 10/20.~~	~~Proposal is being studied by the Secretariat with assistance of the WAFSSG.~~ ~~The subject is included in the Agenda of the MET Divisional Meeting, September, 2002.~~ ~~– MET Divisional Meeting, 2002 adopted recommendations related to the future development of WAFS.~~ ~~– WAFSOPSG was established in place of the WAFSSG to cater for the operation and development of WAFS.~~	~~Closed~~ *Note: The follow-up action is overtaken by the new established WAFSOPSG*

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
~~C 10/21~~	~~ANC~~	~~**Internet access to the WAFS products and OPMET data**~~ ~~That, ICAO consider developing the policy for use of the Internet by States to obtain the WAFS products and OPMET data for operational purposes.~~ ~~Noted the conclusion and its relationship to APIRG/12 conclusion 12/27 and requested the Secretary General to consider developing a uniform policy for the use of the Internet by States to obtain WAFS products and OPMET data for operational purposes, as well as for the dissemination for AIS products.~~	~~The Uniform policy for the use of the Internet by States for operational purposes is being developed by the Secretariat as requested by the ANC. It is included in the agenda of the MET Divisional Meeting to be held in September 2002.~~ ~~The United Kingdom implemented the SADIS internet based service as a back up to the SADIS broadcast to be provided only to States and users authorized to receive SADIS and ISCS broadcasts.~~ ~~SADIS FTP back up service has been operational since May 2002.~~	~~Completed~~
C 10/23		**Revision of the ROBEX Scheme** That, in order to facilitate distribution of the ASIA/PAC OPMET information to the WAFC London and Washington for uplink to the satellite broadcasts, the ROBEX Scheme be revised as shown in Appendix J to this Report on Agenda Item 2.2.	The revised ROBEX Scheme is being implemented. The collection areas of some ROBEX Centres have been extended. OPMET/E TF developed an action list in regard to the further optimization of ROBEX Scheme.	On-going
~~C 11/26~~	~~ANC~~	~~**Authorized access to the global WAFS graphical products via the Internet**~~ ~~That, ISCS and SADIS provider States consider the possibility of providing global availability of WAFS products via the Internet, to the authorized ISCS and SADIS users.~~ ~~Noted the conclusion and that the Secretary General was developing a policy for the operational use of the Internet by States to access WAFS products as well as OPMET data, and for the dissemination of AIS Information.~~	~~The subject matter was discussed by the SADISOPSG/6 and 7. The United Kingdom implemented the SADIS internet based service as a back up to the SADIS broadcast to be provided only to States and users authorized to receive SADIS and ISCS broadcasts.~~ ~~SADIS FTP back up service has been operational since May 2002.~~ ~~A policy for the operational use of the Internet by States is being developed by ICAO. It is included in the agenda of the MET Divisional meeting to be held in September 2002.~~ ~~All SADIS and ISCS users are provided with access to WAFS products through the internet based ftp back up of the SADIS broadcast.~~	~~Completed~~

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
~~C 11/32~~		~~**WAFS Tables MET 5 and 6 of the ASIA/PAC ANP (FASID)**~~ ~~That, Tables MET 5 and 6 of the ASIA/PAC ANP (FASID) be amended as shown in Appendices H and I to the report.~~	~~The ASIA/PAC Basic ANP and FASID have been approved by the Council.~~ ~~Amendment proposal for FASID circulated to States.~~ ~~Amendment proposal approved.~~	~~Completed~~
C 11/33	C	**SIGMET Special Implementation Project** That, ICAO urgently consider a proposal for the ASIA/PAC Special Implementation Project be established with the primary objective to improve implementation of SIGMET procedures. Noted the conclusion and that such project would be put forward for Council approval through established procedures.	The SIP Project Proposal will be put forward for Council approval in 2001. The SIP Proposal is being revised in order to reduce the cost and will be put forward for Council approval in 2002. The revised SIP was approved by the Council for implementation in 2003. Mission to Japan and Philippines completed by May 2003.	On-going
~~C 12/12~~		~~**Need to monitor AFTN circuit performance**~~ ~~That, States concerned closely monitor performance of the following AFTN circuits and coordinate upgrading the circuits capacity, in accordance with the AFTN plan.~~ ~~1. Manila/Singapore 6. Hong Kong/Manila~~ ~~2. *Nadi/Apia Falcolo 7. Kuala Lumpur/Chennai~~ ~~3. Mumbai/Colombo 8. Colombo/Singapore~~ ~~4. Christchurch/Papeete 9. Tokyo/Singapore~~ ~~5. Mumbai/Nairobi 10. Colombo/Male~~ ~~*the Apia Falcolo/Nadi AFTN circuit will be rerouted by Apia Falcolo/USA upon approval of the amendment proposal to ASIA/PAC ANP.~~	~~**States concerned were requested to monitor loading condition and upgrade circuit capacity as specified in Table CNS 1A AFTN Plan. Consequently,**~~ ~~Manila/Singapore upgraded to 300 baud;~~ ~~Nadi/Apia reconfigured to Apia/USA and implemented;~~ ~~Mumbai/Colombo upgraded to64 kbps on 19 March 2003.~~ ~~Christchurch/Papeete - upgraded to 2400 bps;~~ ~~Hong Kong/Manila upgraded to 300 baud;~~ ~~Kuala Lumpur/Chennai upgraded to 64 kbps in April 2003;~~ ~~Colombo/Singapore upgraded to 9600 bps on 12 May 2003~~ ~~Tokyo/Singapore upgraded to 9600 bps on 15 January 2003. and~~ ~~Colombo/Male upgrading planned for 12/ 03.~~	~~Completed~~

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
			~~Among 10 circuits 8 circuits have been implemented /upgradied.~~ ~~Remaining two circuit Mumbai/Nairobi and Colombo/Male are expected to be upgraded by end of 2003. Need to upgrade these two circuits are identified in Conclusion 13/11 and 13/12. It is therefore superceeded by Conclusion 13/11 and 13/12 and actions on Conclusion 12/12 is thus considered completed.~~	
~~C 12/19~~		~~**Protection of Aeronautical Frequency Spectrum**~~ ~~That States:~~ ~~a) assign high priority to the aeronautical spectrum management;~~ ~~b) participate in the development of States' position for WRCs at the national level to ensure support to ICAO position;~~ ~~c) ensure, to the extent possible that, aviation representatives are included in States delegation to the Asia Pacific Telecommunity (APT) Conference Preparatory Group meetings and at WRCs; and~~ ~~d) ensure participation of designated focal point or contact person at the Regional Preparatory Group Meeting for WRC 2003 to be held from 15 to 16 November 2001 followed by the AMCP WG-F Meeting to be held from 19-27 November 2001 in Bangkok and attendance at APTAPG Meetings and WRC 2003.~~ ~~*Noted the Conclusion and requested the Secretary General to continue to encourage States to participate at various levels in different fora to provide support for the ICAO Position at forthcoming WRC 2003*~~	~~ICAO Position was presented to the APT Preparatory Group Meetings for WRC-2003. The conclusion was brought to the attention of States to take appropriate action. List of CAA and APT contact points were provided to States.~~ ~~APT Meeting schedules were also provided to States with a request to participate at APT Meetings.~~ ~~ICAO Position was presented at all five APT Regional Preparatory Group meetings. WRC 2003 was concluded on 4th July 2003 with satisfactory result.~~ ~~Outcome of WRC 2003 was reviewed by the joint meeting of the CNS/MET SG/7 and the CNS/ATM IC SG/10~~	~~Completed~~ ~~Completed~~ ~~Completed~~ ~~Completed.~~ ~~Completed~~
	~~C~~			

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
~~C 12/20~~		**~~Requirement for a new WAFS area of coverage "M"~~** ~~That,~~ ~~a) The ASIA/PAC ANP be amended to include under the WAFS a new area of coverage "M" (FASID Chart MET 7) as shown in Appendix G to the Report on Agenda Item 2.2; and~~ ~~b) FASID Tables MET 5 and MET 6, as developed by APANPIRG/11, be amended to include requirement for SWH prepared by the WAFC Washington for the new WAFC area of coverage "M" as given in Appendices H and I to the Report on Agenda Item 2.2.~~ ~~Note: FASID Chart M should be a mercator projection, with coordinates 100°E and 70°N; 110°W and 70°N; 110°W and 10°S; 100°E and 10°S.~~	~~Proposal for Amendment of FASID circulated to States.~~ ~~FASID Amendment proposal approved.~~	~~Completed~~
~~C 12/22~~	~~C~~	**~~GRIB Training Workshop~~** ~~That, the SADIS Provider State be invited to arrange for a GRIB training workshop, in co-ordination with ICAO, WMO and other States as necessary, in the ASIA/PAC Regions in 2002.~~ ~~*Noted the conclusion and requested the Secretary General to invite SADIS Provider state to hold this workshop in coordination and WMO.*~~	~~The workshop is planned to hold in November 2002.~~ ~~Combined GRIB/BUFR training was provided by UK Met Office in November 2002.~~	~~Completed~~

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
C 12/25		**Application of EUR OPMET update procedure in the ASIA/PAC Regions** That, the procedure similar to the EUR OPMET update procedure be developed and introduced in the ASIA/PAC Regions.	The procedure is to be developed by the OPMET Exchange Task Force.	On-going
C 12/26		**Tropical cyclone advisories with the data designator "FK"** That, the TCACs Honolulu, Miami, New Delhi, Darwin, Nadi and Tokyo, designated to provide the service in the ASIA/PAC Regions, issue the advisories using the data designator "FK" and ensure the routing of these bulletins to aviation users and London Centre for uplink to the SADIS broadcast. **Note: Requirement for Honolulu TCAC in the ASIA/PAC Regions is covered by Conclusion 12/33 formulated by the meeting.**	Implemented by Japan and USA. Other TCACs have been notified through WMO Tropical Cyclone regional bodies. The TC advisories with data designator "FK" and standard Annex 3 format have been implemented by all TCACs in ASIA/PAC except New Delhi.	On-going
~~C 12/28~~		~~**Proposal for amendment of ICAO SUPPS, Doc 7030/4**~~ ~~That, Regional Supplementary Procedures, ICAO Doc 7030/4, MID/ASIA and PAC, Part 3 — Meteorology — Aircraft Observations and Reports, be amended as shown in Appendix M to the Report on Agenda Item 2.2.~~	~~Proposal for Amendment of the regional SUPPs circulated to states.~~ ~~Amendment of the regional SUPPs approved.~~	~~Completed~~
~~C 12/29~~		~~**Gia Lam Meteorological Watch Office (MWO)**~~ ~~That,~~ ~~a) FASID Table MET 1B of the ASIA/PAC ANP be amended to delete requirement for Hanoi and Ho Chi Minh MWOs and to add requirements for Gia Lam MWO; and~~	~~Proposal for Amendment of FASID circulated to States.FASID~~ ~~FASID amendment proposal approved.~~	~~Completed~~

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
		~~b) Consequential amendments be made to FASID Table MET 2A, renamed as FASID Table MET 2B, FASID Table MET 3, Part I and Part II, renamed as FASID Tables 3A and 3B, accordingly.~~		
~~C 12/30~~	~~C~~	~~**Operation of the VAACs**~~ ~~That, ICAO consider the proposal to amend Annex 3, and the Handbook on the IAVW Operational Procedures and Contact List, Doc 9766 accordingly, that each VAAC should operate on a 24 hour basis.~~ ~~*Noted the conclusion and requested the secretary General to develop proposals for amendment of Annex 3 and Doc 9766 to ensure operation of VAACs on a 24-hour basis.*~~	~~The requirement has been included in the draft Amendment proposal 73 to Annex 3.~~	~~Completed~~
~~C 12/31~~		~~**Volcanic ash advisory centers**~~ ~~That, FASID Table MET 3, Part II of the ASIA/PAC ANP, renamed as FASID Table MET 3B, be amended as shown in Appendix N to the Report on Agenda Item 2.2.~~	~~Proposal for Amendment of FASID circulated to States.~~ ~~FASID amendment proposal approved.~~	~~Completed~~
~~C 12/32~~	~~*ANC*~~	~~**Volcanic Ash Advisory and SIGMET in graphical format**~~ ~~That, ICAO give consideration to further improvement of the format in which the graphical advisory should be issued by VAACs and development of proposals for the format of a graphical SIGMET for volcanic ash, including the necessary guidance regarding procedures for dissemination of information.~~ ~~*Noted the conclusion and requested the Secretary General to*~~	~~The recommendation for BUFR-coded graphical volcanic ash advisories to be included in the Amendment proposal 73 to Annex 3.~~	~~Closed~~ *Note: The follow-up action is overtaken by the new established IAVWOPSG*

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
		~~*consider further improving the format of graphical advisories to be issued by VAACs and develop proposals for the graphical format of SIGMET messages for volcanic ash, including the necessary guidance regarding procedures for dissemination of information.*~~		
~~C 12/33~~	~~C~~	~~**Honolulu tropical cyclone advisory centre**~~ ~~That, FASID Table MET 3, Part I of the ASIA/PAC ANP, renamed as FASID Table MET 3A, be amended, as shown in Appendix O to the Report on Agenda Item 2.2, to reflect designation of the TCAC Honolulu with the area of responsibility covering portion of the Central Pacific from 140°W to 180°W.~~ ~~*Noted the conclusion and its relationship to the designation of Honolulu as the tropical cyclone advisory centre for the Central Pacific area.*~~	~~Proposal for Amendment of FASID circulated to States.~~ ~~FASID amendment proposal approved.~~	~~Completed~~
~~C 12/34~~		~~**New FASID Charts MET 2 and MET 3**~~ ~~That, the ASIA/PAC ANP be amended to include the new FASID Chart MET 2 and FASID Chart MET 3, as given in Appendices P and Q to the Report on Agenda Item 2.2, showing the areas of responsibility of TCACs and VAACs respectively.~~	~~Proposal for Amendment of FASID circulated to States.~~ ~~FASID amendment proposal approved.~~	~~Completed~~
~~C 12/35~~		~~**ASIA/PAC Basic ANP and FASID, Part VI – Meteorology**~~ ~~That, the regional procedures given in the introductory text to Part VI – Meteorology of the ASIA/PAC Basic ANP and FASID be amended as shown in Appendices R and S to the Report on Agenda Item 2.2.~~	~~Proposals for Amendment of Basic ANP and FASID circulated to States.~~ ~~Basic ANP and FASID amendment proposal approved.~~	~~Completed~~

Report Reference Concl./Dec. No.	Action by ANC/Council	Decision/Conclusion/ Action Taken	Action by States/ICAO	Status
~~C 12/36~~		~~**Chapter 8 – Meteorology of the ASIA/PAC CNS/ATM Plan**~~ ~~That, the ASIA/PAC Regional Plan for the new CNS/ATM Systems be amended to include Chapter 8 – Meteorology as given in Appendix T to the Report on Agenda Item 2.2.~~	~~To be incorporated in the next version of the Plan.~~ ~~The latest version of the Plan incorporates the MET part as Chapter 11; the Plan is posted on ICAO Bangkok website.~~	~~Completed~~

AGENDA ITEM 6: DEVELOP FUTURE WORKS PROGRAMME

Agenda Item 6: Develop Future Works Programme

Increasing the Efficiency and Effectiveness of PIRGS

6.1 The Meeting noted that the President of the Council of ICAO expressed concerns with regard to the role and activities of PIRGs. The President indicated that, for some time now, he had noticed that the deficiencies listed in some PIRG reports had not changed much and seemed to be carried over from one report to another. Among other issues, the President made a reference to the size of certain PIRG reports and questioned the justification for annual PIRG meetings, as well as their cost efficiency. The President suggested that perhaps more time should be allowed between PIRG meetings to develop issues on the basis of which the PIRGs could meet. He stated that he would like to see the PIRGs focus more on implementation issues rather than planning aspects and acknowledged that, to do that, it may be necessary to revise the terms of reference of PIRGs.

6.2 Against this background, the meeting reviewed the role and working methods of APANPIRG. In relation to size of the reports of APANPIRG meetings, it should be borne in mind that the reports are developed essentially to serve the needs of States, and that the present format and style appeared, generally, to meet their requirements. The meeting agreed with view of the Commission to continue to provide the complete report of APANPIRG meetings that will contain all the appendices and related guidance material.

6.3 The meeting noted that the demands on PIRGs have been changing; APANPIRG had adopted a wider range of responsibilities and expanded their role and activities in the regional planning process. In relation to periodicity and duration of APANPIRG meetings, it was brought out that this aspect is always determined taking into account the established criteria such as the additional responsibilities delegated from RAN meetings to PIRGs, the need to allow enough time for development between each PIRG meeting and the need to conduct activities in the most cost effective manner with the minimum of formality and documentation. The meeting confirmed that the periodicity and duration of APANPIRG meetings are appropriate as it provides continuity, value, flexibility and focus in ensuring the implementation of regional air navigation systems. The participating States and International organizations, in offering full commitment to APANPIRG, expressed its confidence in the mechanism, work programme and productivity of the PIRG and also commended the role of the Regional Office in this context. The meeting agreed to defer the inclusion of AVSEC matters in the work program of APANPIRG.

6.4 With the above in mind and responding to the concerns expressed by the President of the Council, the meeting considered necessary to revise the terms of reference of APANPIRG. The revised draft terms of reference, available at **Appendix A to the Report on Agenda Item 6** takes into account all aspects in enhancing the efficiency and effectiveness of APANPIRG. Accordingly the meeting formulated the following Conclusion:

Conclusion 14/52 - Revised Terms of Reference of APANPIRG

That, ICAO Council approves the revised Terms of Reference of APANPIRG, available at Appendix A to the Report on Agenda Item 6.

Strengthening the Regional Office Resources

6.5 In discussing the future work programme of APANPIRG, the meeting expressed concern with regard to lack of Regional Office resources, in particular the vacant positions in ATM and AIS/MAP. The meeting in extending full support for strengthening the regional office formulated the following conclusion.

Conclusion 14/53 - Filling up key vacant posts in the ASIA/PAC Regional Office

That, the ASIA/PAC Regional Office resources be strengthened by filling up the ATM and AIS/MAP vacant positions.

Schedule of Future Meetings

6.6 The meeting, in noting that the 35th Session of the Assembly will be held in Montreal in October 2004, agreed that the tentative schedule of meetings for 2004 and 2005 shall be as follows:

2004

DRTF/2	Feb 2004	Bangkok
ADS-B Task Force	Mar 2004	Bangkok
ATN Transition Task Force	Apr 2004	Indonesia
Future Directions Task Force	Apr 2004	Bangkok
ATS/AIS/SAR SG/14	17-21 May 2004	Bangkok
CNS/MET SG/8	12-16 Jul 2004	Bangkok
CNS/ATM IC SG/11	26-30 Jul 2004	Bangkok
APANPIRG/15	Aug 2004	Bangkok

2005

ATN Transition Task Force	Apr 2005	TBD
ATS/AIS/SAR SG/15	Jun 2005	Bangkok
CNS/MET SG/9	Jul 2005	Bangkok
CNS/ATM ICSG/12	Jul 2005	Bangkok
APANPIRG/16	Aug 2005	Bangkok

6.7 The meeting decided on the following provisional agenda for the next meeting:

Provisional Agenda for APANPIRG/15

Item 1: Review of Council and ANC actions on APANPIRG/13 Report

Item 2: ASIA/PAC Air Navigation System and Related Activities

2.1 ATS/AIS/SAR Matters
2.2 CNS/MET Matters
2.3 Other Air Navigation Matters

Item 3: CNS/ATM Implementation and Related Activities

Item 4: Deficiencies in the Air Navigation fields

Item 5: Review of Outstanding Conclusions and Decisions of APANPIRG

Item 6: Develop Future Works Programme

Item 7: Any other business

[REVISED] TERMS OF REFERENCE ~~{AND OTHER PROVISIONS APPLICABLE TO}~~ [FOR] THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG)

1. ~~{Role of the group}~~ **[The Terms of Reference of the Group are:]**

~~{1.1 The provisions described hereunder shall be applicable to the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG).~~

~~2. Terms of reference of the APANPIRG~~

~~2.1 The objectives of the group are to:~~

~~a) ensure the}~~

[a]]to ensure continuous and coherent development of the **[Asia/Pacific Regional]** ~~{plans for Asia/Pacific Regions and ensure harmonization with global plan and those of adjacent regions;~~

~~b) develop proposals for improvements in the implementation of the ASIA/PAC}~~ Air Navigation Plan ~~{on the basis of new technological developments;}~~ **[and other relevant regional documentation in a manner that is harmonized with adjacent regions, consistent with ICAO SARPs and reflecting global requirements;]**

~~{c) identify specific problems}~~

[b] to facilitate the implementation of air navigation systems and services as identified in the Asia/Pacific Regional Air Navigation Plan with due observance to the primacy of air safety, regularity and efficiency; and

c) to identify and address specific deficiencies] in the air navigation field ~~{and propose in appropriate form, action aimed at solving these problems; and}~~**[.]**

~~{d) develop, with due regard to the primacy of safety, business cases for various options taking into account the environmental benefits and the need to facilitate financing of preferred options in planning and implementation of air navigation facilities.}~~

[2. In order to meet the Terms of Reference, the Group shall:]

~~{2.2 In order to meet these objectives the group shall:~~

~~a) keep under}~~

[a]]review, and propose when necessary**[,the]** target dates for implementation of facilities, services and procedures~~{. This will}~~ **[to]** facilitate the coordinated development of the Air Navigation ~~{System}~~ **[Systems]** in the ~~{Asia and Pacific Regions}~~ **[Asia/Pacific Region]**;

b) assist the ICAO ~~{regional office providing services in the Asia and Pacific Regions in its assigned task of fostering }~~**[Asia/Pacific Regional Office in fostering the]** implementation of the ~~{ASIA/PAC}~~ **[Asia/Pacific]** Regional Air Navigation Plan;

c) ~~{monitor developments in the air navigation field and develop proposals for consequential improvements in air navigation in the Asia and Pacific Regions;}~~ **[in line with the Global Aviation Safety Plan (GASP), facilitate the conduct of any necessary systems performance monitoring, identify specific deficiencies in the air navigation field, especially in the context of safety, and propose corrective action;]**

~~{d) review any shortcomings in the Asia and Pacific}~~

[d) facilitate the development and implementation of action plans by States to resolve identified deficiencies, where necessary;

e) develop amendment proposals to update the Asia/Pacific] Regional Air Navigation ~~{System and develop recommendations for remedial action;}~~ **[Plan to satisfy changes in the operational requirements;]**

~~{e) originate, as necessary, in coordination with affected State, amendments to the Plan for the ASIA/PAC Regions;}~~

[f) monitor implementation of air navigation facilities and services and where necessary, ensure interregional harmonization, taking due account of environmental benefits and financing issues;]

~~{f) keep under}~~

[g) examine human resource planning and training issues and propose where necessary human resource development capabilities in the region that are compatible with the Asia/Pacific regional Air Navigation Plan;

h)] review the Statement of Basic Operational Requirements and Planning Criteria~~{. Recommend}~~ **[and recommend]** to the Air Navigation Commission such changes to them as may be required in the light of **[new]**developments **[in the air navigation field]**~~{mentioned in c); and}~~**[;]**

~~{g) use an appropriate mechanism to prepare cost/benefit analysis and business cases inclusive of environmental assessments and provide related guidance material in support of "prototype" sets of planned facilities and services. The group may utilize the services of}~~

[i) invite] financial institutions, on a consultative basis **as appropriate in the planning process;**

j) maintain close cooperation with relevant organizations and State grouping to optimize the use of available expertise and resources; and

k) conduct the above activities in the most efficient manner possible with a minimum of formality and documentation and call meetings of the APANPIRG when deemed necessary to do so.

— END —

AGENDA ITEM 7: ANY OTHER BUSINESS

Agenda Item 7: Any other business

Viet Nam's Application for Full Membership with APANPIRG

7.1 The meeting was provided with a summary of the activities in air navigation carried out by Viet Nam.

7.2 Over the years, Viet Nam had been actively participating in meetings, conferences and sub-groups organized by ICAO as well as bilateral and multilaterial meetings held under the auspices of the ICAO Regional Office and relevant States.

7.3 The meeting was informed that from 1988 until the RAN 3 meeting in 1993, Viet Nam had invested in CNS facilities and personnel staff to prepare for the control of air traffic in AORs in Hochminh FIR. Hochiminh ACC had officially controlled the southern part of Hochiminh FIR since 08 December 1994. All air traffic within Hochiminh FIR had been controlled by up-to-date VHF and radars and this had led to significant improvements of the air traffic management over the South China Sea.

7.4 In implementing the RVSM plan in the Asia Pacific region in general and Western Pacific and South China Sea in particular, Viet Nam had collaborated with relevant States and implemented phase 1 of the RVSM on 21 February 2003 and phase 2 on 31 October 2002.

7.5 Viet Nam had also successfully hosted the annual ASIA/PAC Conference of the Directors General of Civil Aviation in 1999 and the South East Asia Coordination Group (SEACG-9) meeting in 2002.

7.6 The meeting, in recognition of Viet Nam's active contributions and commitment towards the improvement of aviation in the region , unanimously decided to recommend Viet Nam's application for APANPIRG membership for approval by the Council of ICAO.

7.6 Viet Nam appreciated and thanked the meeting for the endorsement and pledged full commitment to APANPIRG.

7.7 The meeting formulated the following Conclusion:

Conclusion 14/54 - Viet Nam's application for Full Membership with APANPIRG

That, the ICAO Council consider approving Viet Nam's application for full membership with APANPIRG.

ATTACHMENTS TO THE REPORT

Attachment 1

Fourteenth Meeting of the ASIA/PACIFIC Air Navigation Planning and Implementation Regional Group (APANPIRG/14)
Bangkok, Thailand, 4 to 8 August 2003

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International Civil Aviation Organization

FOURTEENTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/14)
Bangkok, 4 to 8 August 2003

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WP/23	4	Carriage of Pressure-Altitude Reporting Transponders	IATA
WP/24	3	CNS/ATM Activities	Nepal
WP/25	3	Continuation of the CNS/ATM Implementation Coordination Sub-Group (CNS/ATM/IC SG)	Australia
WP/26	4	Definition of Deficiency	IATA