



INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT

**OF THE SEVENTEENTH MEETING OF THE
ASIA/PACIFIC AIR NAVIGATION PLANNING AND
IMPLEMENTATION REGIONAL GROUP
(APANPIRG/17)**

Bangkok, Thailand, 21 to 25 August 2006

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/Pacific Regional Office

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PART I - HISTORY OF THE MEETING

PART I - HISTORY OF THE MEETING

1.1 Introduction

1.1.1 The Seventeenth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/17) was held in Bangkok, Thailand from 21 to 25 August 2006 at the Kotaite Wing of the ICAO Asia/Pacific Regional Office.

1.2 Attendance

1.2.1 The meeting was attended by 85 participants from 13 Member States, 7 other Asia/Pacific States and 3 International Organizations: IATA, IFALPA and IBAC. An expert from SITA was also present during the meeting.

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

1.3 Opening of the meeting

Welcome address by Mr. L.B. Shah, Regional Director, ICAO Asia/Pacific Office

1.3.1 Mr. L.B. Shah welcomed the participants from the APANPIRG member States, non-member States and the International Organizations to the ICAO Asia/Pacific Regional Office and conveyed the best wishes of the President of ICAO Council, Mr. Roberto Kobeh González, and the Secretary General, Dr. Taïeb Chérif.

1.3.2 Mr. Shah acknowledged the presence of several Directors General, Secretary, Chairmen and Chief Executives who were attending APANPIRG/17, thus enhancing the value of the proceedings. With regard to International Organizations, he welcomed the presence of IATA, IFALPA, and IBAC. He also extended a warm welcome to the Chief of Regional Affairs Office of ICAO, Mr. Vladimir Zubkov.

1.3.3 Mr. Shah noted that APANPIRG/17 came at a time when the dynamics of many issues in aviation ranging from pure technical to conceptual were trying to find their place in the global picture. The process of placing these puzzle pieces correctly and in the most cost effective and efficient manner appeared to be the common challenge ahead of the Group.

1.3.4 In highlighting some of the global issues from ICAO's perspective, he pointed out that Asia/Pacific carried some 29 per cent of the total scheduled air traffic and indications pointed to strong air traffic growth through to 2008. This growth continued to bear a lot of pressure on the civil aviation communities, who were entrusted with the responsibility of ensuring a safe, secure and efficient civil aviation industry.

1.3.5 Mr. Shah recalled the Strategic Objectives of ICAO: Safety, Security, Environmental protection, Efficiency, Continuity, and Rule of Law. These Strategic Objectives, approved by the Council in 2004, were shaping ICAO's work programme and under each of these Strategic Objectives, a number of programmes were already underway.

1.3.6 The Business Plan of ICAO integrated the programme activities of all Bureaux and Regional Offices and its goals were to attain a requirements-driven, results-oriented Organization and to introduce new working methods by ensuring the optimal use of limited resources. Together the Strategic Objectives and the Business Plan provided the basis for a reporting framework that united strategies, activities, funds and time frames into an effective means to monitor and evaluate outcomes.

1.3.7 Mr. Shah stressed that the work of APANPIRG must be guided by the Strategic objectives to produce a better focussed set of activities to be implemented. It was a strong desire on the part of ICAO to – not only see a clearer linkage of APANPIRG work programme driven by the six Strategic Objectives but also to experience well demonstrated sets of results with clear benefits.

1.3.8 He reiterated that APANPIRG operated strictly within the framework of the Procedural Handbook with a clear set of Terms of Reference, working procedures and Rules of Procedure for the conduct of meetings. It was a flexible document which had undergone four revisions. He reminded also that the Group should be the guiding and coordinating organ for all activities conducted within ICAO concerning the Air Navigation System for the Asia/Pacific Region.

1.3.9 The Procedural Handbook clearly stated that matters concerning the Group's Terms of Reference, its composition, position in ICAO and working arrangements, would be submitted to the Council. Thus, since its establishment in 1991, the Group has always been under the kind oversight of Council of ICAO and with changing needs, APANPIRG was flexible enough to take on new tasks.

Opening remarks by Mr. W. L. Wong, DGCA Singapore and Chairman of APANPIRG

1.3.10 In his opening remarks the Chairman of APANPIRG emphasized that the aviation industry continued to face new challenges. The security alerts at London that caused major disruption to air travel worldwide just two weeks ago, highlighted the increasing security concern in civil aviation. Ever rising fuel costs threatened the survival of airlines which in turn put pressure on airport operators and air navigation service providers to enhance efficiency of their services and reduce costs for the airlines. Given the global nature of civil aviation, the possible spread of highly communicable diseases such as the Avian Flu created uneasiness among stakeholders in the industry.

1.3.11 The air traffic growth in the region put greater demand on civil aviation administrations, regulatory authorities, air navigation services providers, airports and airlines to enhance their efficiency while ensuring that safety and security of their business and operations were not compromised. The greater focus on safety was also evident by the outcome of the landmark DGCA's Conference on a Global Strategy for Aviation Safety held in Montreal in March this year. At that Conference, States agreed to work towards reinforcing the current safety framework through greater openness and transparency in sharing of safety related information among all stakeholders as well as strengthening the safety oversight of their aircraft operators, for example through the implementation of safety management systems. The impetus that arose from that Conference would drive the work of PIRGs in their respective region to ensure the integrity of air transport.

1.3.12 The Chairman noted further that under the able leadership of the ICAO Asia/Pacific Regional Office and with the commitment of States, APANPIRG and its Sub-Groups and Task Forces had made notable progress in many areas over the last year. Some of major achievements were:

- Removal of 24 out of 90 deficiencies from the APANPIRG Deficiency List since the last meeting;
- Implementation of some important routes in accordance with the Route Catalogue which was a good example of sound planning and coordination among States to bring about greater route capacity to airlines. In addition, where airlines could plan for shorter routings, these routes would result in fuel savings as well as greater convenience to air travelers, and at the same time, contributed to the environment through the reduction in CO2 emissions;

- The implementation of RVSM in the region brought about benefits to both air traffic services providers and airspace users.
- Another major initiative was the introduction of an air traffic flow management (ATFM) tool known as the Bay of Bengal Cooperative ATFM Advisory (BOBCAT) system in July 2006 to regulate air traffic during the peak hours between South East Asia and Europe.

1.3.13 Mr. Wong acknowledged that, although much had been achieved since APANPIRG/16, there were also areas of concern. For example, there remained an urgent need to upgrade communications facilities and services in some parts of the region. Without good communications between pilots and controllers, it would be difficult to implement the next phase of improvements. For instance, the implementation of reduced longitudinal separation based on RNP operations which would bring about tremendous benefits to users and service providers, would require direct controller-pilot communications. Hence, it was important for States in the Region to ensure that good communications facilities were available.

Remarks by Mr. Vladimir Zubkov, Chief, Regional Affairs Office

1.3.14 Mr. Zubkov addressed several new developments in ICAO. There was a strong intent to establish a more efficient structure and administrative organization of the Secretariat at Headquarters and the Regional Offices. A strong reason to do this was the pressing need to reduce costs, as well as to include in the structure of the Organization several new functions, Strategic and Business Planning being among them.

1.3.15 Another development was the preparation of the budget for the next triennium 2008-2010. The new budget was not expected to have a significant nominal growth compared with the current one. This, together with the need to absorb new programmes like AVSEC, combined with a number of other circumstances, would pose a serious challenge to ICAO. That is why, measures leading to increase in efficiency, careful prioritization of programmes and innovative approaches would become absolutely essential in order to maintain ICAO's ability to deliver results.

1.3.16 The Secretariat had developed a Business Plan, which translated the Strategic Objectives into actions. The Business Plan ensured a firm link between planned activities, organizational costs and performance assessment.

1.3.17 In light of growing complexity of the tasks and ever constrained resources there was a need to pay greater attention to the partnership, and put stronger emphasis on a cooperative approach to the aviation problems and tasks in hand. A vivid proof of this was present in ALLPIRG/5 meeting. Another proof of this was the emergency meeting of the ICAO Council to examine counter actions to the security threats posed by the new age of terror. There were urgent submissions of papers with analysis of the situation and constructive proposals from IATA, ACI and ICAO itself. ICAO leadership had been recognized, but work was carried out hand in hand with partners.

1.3.18 Mr. Zubkov drew the attention of the Group to the ICAO Global Air Navigation Plan as another new development which would guide the work of APANPIRG in the future. He expected that APANPIRG/17 would make positive contribution to the improved delivery of the ICAO programmes.

1.4 Officers and Secretariat

1.4.1 Mr. W. L. Wong, DGCA, Singapore as Chairmen of the Group presided over the meeting.

1.4.2 Mr. Lalit B. Shah, ICAO Regional Director, Asia/Pacific Office, was the Secretary of the meeting, assisted by Mr. D. H. Ivanov, Regional Officer/MET. Mr. Vladimir Zubkov, Chief of Regional Affairs Office, ICAO Headquarters, was advisor to the meeting.

1.4.3 The meeting was also assisted by Mr. H.V. Sudarshan, Regional Affairs Officer, ICAO Headquarters, Mr. Andrew Tiede, Mr. Kyotaro Harano and Mr. Polawat Chootai, Regional Officers/ATM, Mr. Li Peng, Regional Officer/CNS, Mr. Roger Mulberge, Regional Officer/SO, and Ms. Sarangtip Sundarachampaka, Regional Officer/Administration from the ICAO Asia/Pacific Regional Office.

1.5 **Agenda of the Meeting**

1.5.1 The meeting adopted the following agenda:

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| Agenda Item 1 | Review of: |
| | 1.1 Council and ANC actions on APANPIRG/16 Report |
| | 1.2 Global Developments |
| Agenda Item 2 | ASIA/PAC Air Navigation System and Related Activities |
| | 2.1 ATM/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 **Working Arrangements, Language and Documentation**

1.6.1 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) considered by the meeting are listed in the **Attachment 2** to this Report.

1.7 **Conclusions and Decisions - Definition**

1.7.1 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.

1.7.2 Lists of Conclusions and Decisions are given on pages i-7 to i-9.

1.8 **Terms of Reference of APANPIRG**

1.8.1 The Terms of Reference of APANPIRG approved by the Council of ICAO (6th Meeting of its 171st Session on 27 February 2004) are as follows:

- a) to ensure continuous and coherent development of the Asia/Pacific Regional Air Navigation Plan and other relevant regional documentation in a manner that is harmonized with adjacent regions, consistent with ICAO SARPs and Global Air Navigation Plan for CNS/ATM systems (DOC 9750) and reflecting global requirements;
- 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.

In order to meet the Terms of Reference, the Group shall:

- a) review, and propose when necessary, the target dates for implementation of facilities, services and procedures to facilitate the coordinated development of the Air Navigation Systems in the Asia/Pacific region;
- b) assist the ICAO Asia/Pacific Regional Office in fostering the implementation of the Asia/Pacific Regional Air Navigation Plan;
- c) 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) 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 Plan to reflect changes in the operational requirements;
- f) monitor implementation of air navigation facilities and services and where necessary, ensure interregional harmonization, taking due account of organizational aspects, economic issues (including financial aspects, cost/benefit analyses and business case studies) and environmental matters;
- 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 and recommend to the Air Navigation Commission such changes as may be required in the light of new developments in the air navigation field;
- i) request financial institutions, on a consultative basis as appropriate to provide advice 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.

List of Conclusions

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| Conclusion 17/2 | – Implementation of ALLPIRG/5 conclusions by States |
| Conclusion 17/3 | – Implementation of ALLPIRG/5 conclusions by International Organizations |
| Conclusion 17/4 | – Long Term Monitoring of RVSM Height Keeping Performance |
| Conclusion 17/6 | – Completion of the horizontal safety assessment for the South China Sea route structure |
| Conclusion 17/7 | – Implementation of Conditional ATS Routes |
| Conclusion 17/8 | – Definition of Conditional ATS Route and ATS Designator |
| Conclusion 17/9 | – Coordination of UAV Procedures Development |
| Conclusion 17/11 | – Adoption of Model National ATM Contingency Plan |
| Conclusion 17/12 | – Compliance with ATFM Operational Trial procedures |
| Conclusion 17/14 | – Improvement of aeronautical information exchange and management |
| Conclusion 17/16 | – Conduct of Comprehensive AIS Survey |
| Conclusion 17/17 | – Non-Compliance with Annex 15 Provisions |
| Conclusion 17/18 | – Additional Asia/Pacific Office ATM Resources |
| Conclusion 17/20 | – Revision to the Terms of Reference and the Subject/Tasks List of ATNIGG |
| Conclusion 17/21 | – Updating of the Strategy for Implementation of ATN |
| Conclusion 17/22 | – Amendment to FASID Table CNS 2 Aeronautical Mobile Communications |
| Conclusion 17/23 | – Performance Based Navigation Seminar/Workshop |
| Conclusion 17/24 | – Revision of the Strategies for Approach handling and Departure Guidance Systems and implementation of GNSS Navigation Capability in the ASIA/PAC Region |
| Conclusion 17/25 | – The First Amendment to the AIGD |
| Conclusion 17/26 | – Investigation and expedition of way to present ADS-B Data using ACAS hardware |
| Conclusion 17/29 | – Mode S transponder inspection |
| Conclusion 17/30 | – Preparation for World Radiocommunication Conference - 2007 (WRC-2007) |

Conclusion 17/31	–	RF interference on the protected DME frequency
Conclusion 17/32	–	HF Interference
Conclusion 17/33	–	Enhancement of ISCS/2 Operational Efficacy Survey
Conclusion 17/34	–	Continuation of PNG-formatted SIGWX Charts
Conclusion 17/35	–	Survey on the transition from SADIS 1G to SADIS 2G in ASIA/PAC
Conclusion 17/36	–	Further development of WAFS Output Performance Indicators
Conclusion 17/37	–	Update of ROBEX Handbook
Conclusion 17/38	–	Amendment to ASIA/PAC FASID Table MED 1A, Meteorological service required at aerodromes
Conclusion 17/39	–	Coordination of plan for transition to BUFR-code OPMET information
Conclusion 17/40	–	Standard message format for volcano observatories participating in IAVW
Conclusion 17/41	–	Development of web page for monitoring SIGMET availability in the ROBEX scheme
Conclusion 17/42	–	ASIA/PAC SIGMET Seminar
Conclusion 17/43	–	Development of provisions on MET/ATM coordination
Conclusion 17/44	–	Development of new windshear posters
Conclusion 17/45	–	Applicability of the turbulence metric based on EDR for approach/take-off
Conclusion 17/48	–	Funding of Pacific RMA & CRA
Conclusion 17/49	–	Use of ADS-B 1 090 MHz Extended Squitter for automatic air-reporting
Conclusion 17/50		New ICAO abbreviations for windshear warning
Conclusion 17/51	–	Special Implementation Project to assist rectification of Deficiencies
Conclusion 17/52	–	Special assistance for resolution of MET deficiencies in the South-West Pacific Small Island Developing States (SIDS)
Conclusion 17/53	–	A regional on-line database of air navigation deficiencies in ASIA/PAC Region
Conclusion 17/54	–	Deficiency resolution objective for ASIA/PAC States

List of Decisions

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| Decision 17/1 | – Implementation of ALLPIRG/5 conclusions by APANPIRG |
| Decision 17/5 | Establishment of the WPAC/SCS RVSM Scrutiny Working Group |
| Decision 17/10 | – Establish APANPIRG Regional Performance Framework Task Force |
| Decision 17/13 | – Reconvening of the AIDC Task Force |
| Decision 17/15 | – Terms of Reference of the AIS Implementation Task Force |
| Decision 17/19 | – ATM/AIS/SAR Subject/Task List |
| Decision 17/27 | – Development of Strategy for the implementation of surveillance systems in the ASIA/PAC Region |
| Decision 17/28 | – Revised Terms of Reference for ADS-B Study and Implementation Task Force |
| Decision 17/46 | – Updated Subject/Tasks List of the CNS/MET Sub-group |
| Decision 17/47 | – Task Force to establish Regional Airspace Safety Monitoring Committees |
| Decision 17/55 | – Third meeting of DRTF |

PART II - REPORT ON AGENDA ITEMS

AGENDA ITEM 1: REVIEW OF :

**AGENDA ITEM 1.1: COUNCIL AND ANC ACTIONS ON
APANPIRG/16 REPORT**

Agenda Item 1: Review of:

1.1 Action taken by ANC and the Council on APANPIRG/16 Report

1.1.1 The meeting reviewed the actions taken by the Air Navigation Commission and the Council on the Report of the Sixteenth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) held in Bangkok from 22 to 26 August 2005.

1.1.2 Regarding funding arrangements for regional monitoring mechanisms, the meeting noted that the Council had acknowledged the issue (Conclusion 16/2 refers) and requested the Secretary General to develop a global guidance for establishing, funding and determining the basis for cost recovery for regional monitoring mechanisms. The meeting was pleased to note that the global guidance has since been developed and approved by the Council.

1.1.3 The meeting noted that the Commission had expressed concern as some of the States had not adequately complied with safety management provisions and consequently supported the approach of APANPIRG that further regional implementation of reduced separation minima should only proceed when implementing States can demonstrate the ability to comply with provisions in Annex 11 (Conclusion 16/5 refers). Furthermore, the meeting was informed that the Commission supported Conclusion 16/6 which calls for those States that do not submit safety-related data to RMA to be reflected in the deficiency list.

1.1.4 With regard to development of the *Asia/Pacific ATS Route Catalogue* which will serve as a planning tool (Decision 16/9 refers), the meeting was pleased to note that the Commission had appreciated this initiative and called upon the Secretary General to explore the benefit of a similar catalogue to serve as a planning tool in other regions.

1.1.5 In view of the difficulties expressed by APANPIRG, the meeting noted that the Commission agreed for further improvement of the SIGMET provisions (Conclusion 16/46 refers) and also for revising the template for aerodrome warnings in Annex 3 — Meteorological Service for International Air Navigation (Conclusion 16/49 refers) and requested the Secretariat to address these issues with the assistance of the Meteorological Information Data Link Study Group (METLINKSG).

1.1.6 Responding to a request of APANPIRG to address the issue of unmanned aerial vehicles (UAVs) (Conclusion 16/61 refers), the meeting was apprized that the Commission had convened a meeting of informal ICAO working group on UAVs in May 2006 with the goal of developing a programme plan.

1.1.7 On the subject of protection of the aeronautical frequency spectrum, the meeting noted that the Council recognized the contribution of the Asia/Pacific Region in addressing this issue in a number of fora, such as meetings of Directors General of Civil Aviation (DGCA) and Asia-Pacific Telecommunity (APT) regional preparatory meetings. It also noted that the Council requested the need for the civil aviation community to continue to remain vigilant in safeguarding the aeronautical interest.

1.1.8 Concluding the review, the meeting thanked the Council and Air Navigation Commission for their valuable guidance on various activities of the APANPIRG which would be taken into account in the development of ongoing action plan of the region.

Review of action taken by States and Secretariat on APANPIRG/16 Report

1.1.9 The meeting further reviewed the follow-up action taken by the States and Secretariat on the Conclusions and Decisions of APANPIRG/16 meeting. The status of follow-up action, as agreed by the meeting, is provided in **Appendices A and B** to the Report on Agenda Item 1.1.

1.1.10 The meeting acknowledged that out of 62 Decisions/Conclusions adopted by APANPIRG/16, the follow-up action on 53 was completed or closed, which resulted in 85% completion of the planned action. The meeting also discussed further actions necessary on the outstanding APANPIRG/16 Decisions/Conclusions.

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APANPIRG/17
Appendix A to the Report on Agenda Item 1.1

STATUS OF ACTION TAKEN ON CONCLUSIONS/DECISIONS OF APANPIRG/16 IN THE ATM/AIS/SAR & AOP FIELDS
(Reviewed/Updated by ATM/AIS/SAR/SG/16 – June 2006)

Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
D16/1		Safety Monitoring Agency (SMA) That, the term Safety Monitoring Agency (SMA) be used to describe an organization approved by regional agreement to provide airspace safety monitoring and implementation services for international airspace in the Asia/Pacific region for implementation and operation of reduced horizontal separation.	Decision 16/1 adopted by APANPIRG/16	Completed
C16/2	C	Funding arrangements for regional airspace safety monitoring That, a study group be convened to develop a feasible and sustainable proposal to equip States to organize and finance necessary safety monitoring mechanisms for the provision of safety services for the international airspaces in the Asia/Pacific region and that States be represented at that meeting by their appropriate legal, financial and organizational experts who would be best equipped and empowered to resolve any difficulties. The study group should report to RASMAG not later than the end of June 2006. <i>Noted the conclusion and acknowledging that other regions, such as the MID Region, are also experiencing a similar situation, requested the Secretary General to develop a global approach for establishing, funding and determining the basis for cost recovery for regional monitoring mechanisms.</i>	Regional Office issued a State Letter Ref.: T3/10.1.17 – AP021/06 (ATM) on 24 March 2006 Matter addressed during RASMAG/5 5-8 June 2006. APANPIRG/17 established a Task Force to pursue the matter	Closed

APANPIRG/17
Appendix A to the Report on Agenda Item 1.1

Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/3		<p>Large Height Deviations – Western Pacific/South China Sea area</p> <p>That, in noting the prevalence of RVSM large height deviation occurrences in the Western Pacific/South China Sea area, the Regional Office draw the attention of all States concerned to identify and put in place remedial actions to mitigate such significant errors on an urgent basis.</p>	Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05 (ATM), dated 21 Nov 2005 advising States of a standardized approach to the collection of vertical and horizontal traffic sample data, and emphasizing a number of relevant Conclusions adopted by APANPIRG/16	Completed
C16/4		<p>Traffic Sample Data Collection</p> <p>That, States be advised by the Regional Office that December every year had been adopted for the routine collection of 30 days of traffic sample data to satisfy airspace safety monitoring requirements</p>	Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05 (ATM), dated 21 Nov 2005 advising States of a standardized approach to the collection of vertical and horizontal traffic sample data	Completed

APANPIRG/17
Appendix A to the Report on Agenda Item 1.1

Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/5		<p>Non-implementation of reduced separation unless compliant with Annex 11</p> <p>That, recognizing that some States had not adequately complied with safety management provisions, the Regional Office advise States of the Asia/Pacific Region that further regional implementation of reduced separation minima should only proceed in circumstances where implementing States can demonstrate an ability to comply with Annex 11, Chapter 2, safety management provisions for the continuous monitoring and regular assessment of the safety level achieved.</p>	Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05 (ATM), dated 21 Nov 2005 emphasizing a number of relevant Conclusions, including 16/5, adopted by APANPIRG/16.	Completed
C16/6	C	<p>Non-provision of safety related data by States</p> <p>That the Regional Office advise that States not providing safety related data to approved regional safety monitoring agencies, including RMAs, in accordance with the requirements of safety monitoring agencies will be included in the APANPIRG List of Deficiencies in the ATM/AIS/SAR fields.</p> <p><i>Noted the conclusion and requested the Secretary General to urge States to submit safety related data to regional safety monitoring agencies and furthermore advise the other regional planning groups to consider adopting the same measures if they have not already done so.</i></p>	Regional Office issued a State Letter (Ref: T3/10.0, T3/10.1.17 – AP117/05 (ATM), dated 21 Nov 2005 advising States of a standardized approach to the collection of vertical and horizontal traffic sample data, and emphasizing a number of relevant Conclusions, including C16/6, adopted by APANPIRG/16.	Completed

APANPIRG/17
Appendix A to the Report on Agenda Item 1.1

Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/7		Deletion of ATS Routes from the APANPIRG List of Deficiencies That, the ATS routes in the APANPIRG List of Deficiencies, which are no longer applicable to the List as a result of revision of ATS route network and have been incorporated in the <i>Asia/Pacific ATS Route Catalogue</i> , be deleted from the APANPIRG List of Deficiencies in the ATM/AIS/SAR fields.	Adopted by APANPIRG/16, Routes deleted.	Completed
D16/8		To Discontinue the Development of ATS Route Master Database That, as the ATS route data required was provided in the <i>Asia/Pacific ATS Route Catalogue</i> and was available from other sources, the development of the ATS Master Database by the Asia and Pacific Regional Office be discontinued.	Adopted by APANPIRG/16, master database discontinued.	Completed
D16/9	ANC	Acceptance of the Asia/Pacific ATS Route Catalogue That, the <i>Asia/Pacific ATS Route Catalogue</i> as shown in Appendix A to the Report on Agenda Item 2.1 be accepted as a regional planning tool and be maintained and updated on regular basis. <i>Noted the decision and requested the Secretary General to explore whether other regions would benefit from a similar catalogue to serve as a planning tool.</i>	Adopted by APANPIRG/16.	Completed

APANPIRG/17
Appendix A to the Report on Agenda Item 1.1

Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/10		Review of ATS Route Catalogue by States That, the States concerned study the routes in the <i>Asia/Pacific ATS Route Catalogue</i> in respect to the feasibility of the route requirements, in order to consider their implementation with appropriate priorities, and to raise route implementation proposals at relevant ATS Coordination Meetings in the Asia/Pacific Region.	Catalogue presented to all ATS Coordination Group meetings during 2005/2006 including, BBACG, SEACG; ISPACG, IPACG. Revisions included in Version 3 (June 2006) of the Catalogue. ATS Routes are a standing item on the agenda of ATS Coordination Groups.	Completed
D16/11		To Disband the ARNR Task Force That, as the ARNR/TF had completed the tasks assigned by APANPIRG/14, and all outstanding issues have been identified and follow up actions completed or assigned to other ATS coordination groups as appropriate, the ARNR Task Force be disbanded.	Adopted by APANPIRG/16, task force disbanded.	Completed
C16/12		Implementation of 30/30 NM Separation Minima That, recognizing the comprehensive planning and implementation processes, especially in regard to safety management practices, adopted by ISPACG to implement 30 NM lateral and 30 NM longitudinal separation minima in specific airspace in the Pacific Region, States be advised by letter from the Regional Office to use this as a model in implementing reduced separation applications.	State Letter Ref.: T3/10.0, T3/8.23 : AP061/06 (ATM) transmitted 23 June 2006.	Completed

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Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/13		<p>ATM Contingency Planning for Volcanic Ash Cloud avoidance</p> <p>That, Asia/Pacific States be urged by State Letter from the Regional Office to amend or develop ATM contingency plans, as necessary, that would:</p> <p>a) provide Air Traffic Management policy and coordination procedures that ensure safe and orderly flow of air traffic around areas of volcanic ash;</p> <p>b) promulgate the status of active volcanoes via the colour code system as specified in Annex 15, Aeronautical Information Service, and the Handbook on the International Airways Volcano Watch (Doc 9766); and</p> <p>c) provide templates and a rapid means of disseminating volcanic Ash SIGMETs, ASHTAM's, NOTAM's, Volcanic Ash Advisories and other flight information.</p>	State Letter sent to States: T 4/3.1 AP0060 (MET) of 17 August 2006.	Completed
D16/14		<p>Contingency Plans on ATS Coordination Group Agendas</p> <p>That, the development of State Contingency Plans be included as an item on the agenda of State ATS coordination meetings.</p>	Included as standing Agenda Item on BBACG and SEACG Agendas, considered by ISPACG, IPACG and ASIOCG.	Completed

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Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/15	C	<p>Special Implementation Project for Development of a State Contingency Plan</p> <p>That, in order to provide a model for States of the Asia/Pacific Region in preparing their national contingency plans, ICAO undertake a special implementation project (SIP) during 2006 to assist a State of the Region to prepare and implement a contingency plan in accordance with Annex 11, Appendix D, and in line with APANPIRG Conclusion 13/8. The SIP should also identify and prioritize other contingency circumstances that may affect civil aviation operations in the ATM context and make recommendations accordingly.</p> <p><i>Noted the conclusion and that the project would be submitted for the Council's approval through established procedures.</i></p>	SIP proposal prepared by Regional Office and approved by Council of ICAO. SIP field visits conducted July 2006 in Indonesia. Draft contingency plan with Indonesia for review.	On-going
D16/16		<p>Civil Military Coordination</p> <p>That, "Civil Military Coordination" be included as an item on the agendas and/or task lists of regional ATS Coordination Groups.</p>	Included as standing Agenda Item on BBACG, SEACG and ISPACG Agendas, considered by IPACG and ASIOCG.	Completed

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Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/17		Equitable Sharing by Civil and Military Users That, noting that effective coordination between civil and military agencies was essential, States of the Asia Pacific Region be advised by State Letter on the need to adopt the principle of the <i>equitable sharing of both convenience and inconvenience</i> in the use of airspace and facilities by civil and military users.	State Letter Ref.: T3/10.0, T3/4.12: AP063/06 (ATM) transmitted on 23 June 2006.	Completed
C16/18		Assistance to States to develop safety management systems That, recognizing that many States in the Asia/Pacific Region require assistance to implement safety management programmes in accordance with Annex 11, States with expertise in implementing and operating ICAO compliant safety management systems inform ICAO by end of 2005 of their willingness to participate in a series of seminars/workshops to be arranged by ICAO during 2006-2007 to assist States.	Regional Office coordinating with CAD Hong Kong China for conduct of ATS Safety Management Workshop during first quarter 2007 SIP proposal for additional ATS SMS training via field visits was developed by Regional Office and approved by Council of ICAO, for implementation in last quarter 2006. SIP requires participation of one fully funded State safety management expert to assist	On-going

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Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/19		<p>Study of States' preparedness to implement safety management systems</p> <p>That, a study of States' preparedness to implement ICAO safety management systems in accordance with Annex 11 be undertaken by the Asia/Pacific Regional Office in conjunction with the ATS coordination groups and RASMAG by the first quarter of 2006, and a plan of action developed to be reported to APANPIRG/17 in September 2006.</p>	<p>Coordination with States in process.</p> <p>However SIP proposal for additional ATS SMS training via field visits was developed by Regional Office and approved by Council of ICAO, for implementation in last quarter 2006. SIP requires participation of one fully funded State safety management expert to assist.</p>	On-going
C16/20		<p>Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region</p> <p>That the <i>Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region</i>, as shown in Appendix B to the Report on Agenda Item 2.1, be circulated as regional guidance material by the Regional Office, in accordance with established procedures.</p>	<p>Guidance Material distributed by State Letter Ref.: T 3/10.1.17 – AP048/06 (ATM) dated 5 June 2006.</p>	Completed

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Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/21	ANC	<p>Status of compliance with Language Proficiency requirements</p> <p>That, the Regional Office urgently conduct a survey of all Asia/Pacific States for the purposes of ascertaining States' circumstances in respect of compliance by March 2008 with ICAO provisions in respect of Operational Level 4 language proficiency.</p> <p><i>Noted the conclusion and that, in addition to the Asia and Pacific Regions, all the remaining regions have also initiated a similar survey with a target date of completion by the end of March 2006.</i></p>	<p>State Letter Ref.: T3/9.4 – AP128/05 (ATM) transmitted on 7 December 2005.</p> <p>Regional Office conducted survey during early 2006, results forwarded to ICAO HQ for consideration by ANC during June 2006.</p>	Completed
C16/22		<p>Recommendations of the ICAO SAR Seminar and SAREX held at Chennai, India</p> <p>That, the recommendations made by the ICAO SAR Seminar and SAREX held at Chennai, India on 7-11 March 2005, as shown in Appendix D to the report on Agenda Item 2.1, be disseminated by ICAO Regional Office to the States and International Organizations of the Asia and Pacific Region.</p>	<p>State Letter Ref.: T3/10.0, T3/11.6 : AP062/06 (ATM) transmitted on 23 June 2006.</p>	Completed
C16/23		<p>Special Implementation Project International Seminar and SAREX</p> <p>That, ICAO consider a proposal for an Asia/Pacific Special Implementation Project to be established with the primary objective to improve search and rescue services, coordination and cooperation between island States of the Pacific.</p>	<p>SIP proposal prepared by Regional Office and approved by Council of ICAO. SIP proposed for deferral to first quarter 2007 to align with other SAR activities planned for Pacific involving other international agencies.</p>	On-going
C16/36		<p>ADS-B Implementation and Operational Guidance Document (AIGD)</p> <p>That, the ADS-B Implementation and Operational Guidance Document as provided in Appendix G to the Report on Agenda Item 2.2 be adopted and circulated to States in the Asia/Pacific Region and International Organizations.</p>	<p>State Letter Ref: T8/9.1:AP-0053/06 (CNS) transmitted, the AIGD was published on the website.</p>	Completed

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Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
C16/57	C	<p>Workshop on Fuel Savings Measures</p> <p>That, ICAO consider arranging a workshop for Asia/Pacific States in 2006 that focuses on best practices for achieving fuel efficiencies in airport, TMA and en-route environment.</p> <p><i>Noted the conclusion and requested the Secretary General to call upon all regional planning groups to accord priority to the revision of procedures and ATS route structures in order to achieve maximum efficiency.</i></p>	Difficulties experienced in scheduling this workshop, overtaken by events as “Workshop on Aviation Operational Measures for Fuel and Emissions Reductions” will be held at ICAO HQ from 21-22 September 2006.	Closed
D16/58		<p>Amendment to the Regional Plan for the CNS/ATM System to include ADS-B</p> <p>That the ASIA/PAC Regional Plan for the New CNS/ATM System be amended to include ADS-B element for the surveillance systems as indicated in the Appendix C to the Report on Agenda Item 3.</p>		Completed
D16/59		<p>Review of the Regional Plan for the New CNS/ATM System</p> <p>That, the CNS/MET, ATM/AIS /SAR Sub-groups and RASMAG be tasked to review the Global Air Navigation Plan for the CNS/ATM System and the ASIA/PAC Regional Plan for the New CNS/ATM system with a view to avoiding any duplication with the updated Global Plan. The work should commence immediately after issuance of new edition of the Global Plan.</p>	<p>Second Amendment to the Global Plan not yet published, expected late 2006.</p> <p>APANPIRG/17 established a task force to conduct this review</p>	On-going

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Report Reference ----- Conc/No	Action by ANC/ Council	Decision/Conclusion Title & ANC/Council Action, if any	Action by States/ICAO	Status
D16/60		Correlation of Aircraft Identification That, ATM/AIS/SAR and CNS/MET Sub-groups study the use of “aircraft identification” as an unique ‘key’ for correlation between flight plan data and surveillance information considering operational and technical aspects for implementation. The result of study be presented for consideration by APANPIRG/17.	ADS-B Task Force conducted the study and concluded that the alternative of flight ID as contained in ADS-B messages can be used as an additional unique key for direct correlation with flight plan data.	Completed
C16/61		UAV Operation That, ICAO develop, as a priority, appropriate provisions and guidance material for the operation of UAV.	UAV Exploratory meeting held at ICAO HQ in May 2006. ATM/AIS/SAR/SG/16 did not consider intent of C16/61 had been met and raised additional draft Conclusion re UAV for consideration.	On-going
C16/62		State focal point for safety-related activities That, Asia/Pacific States notify to the Regional Office by the first quarter of 2006 a responsible contact officer or position to act as a focal point for safety related activities and in particular for the submission and coordination of ATS incident reports.	State Letter Ref.: T3/10.0 – AP129/05 (ATM) transmitted on 12 December 2005 List prepared and maintained by Regional Office. ATM/AIS/SAR/SG/16 made editorial amendments to the List.	Completed

— END —

STATUS OF ACTIONS TAKEN ON DECISIONS/CONCLUSIONS OF APANPIRG/16 IN THE CNS AND MET FIELDS
(REVIEWED AND UPDATED BY CNS/MET SG/10 MEETING – July 2006)

Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/24	ANC <i>Noted the conclusions and requested the Secretary General to monitor related developments in other regions</i>	Conclusion 16/24 - ATN Documents That, the following ATN documents be adopted and published in the ICAO web site under CNS Documents 1) ASIA/PAC System Integrity Policy 2) ASIA/PAC System Management Policy 3) Communication Performance Document 4) First edition of ASIA/PAC ICD for ISO/IEC 8208 5) Second edition of ASIA/PAC ICD for ATN ground-to-ground Router Internet Communication Service (ICS) 6) ASIA/PAC technical document on the use of ATN Directory Service and 7) AMHS/MTA Routing Policy	The documents were published in the APAC website and States were advised accordingly.	Completed
C 16/25	ANC <i>Noted the conclusions and requested the Secretary General to monitor related developments in other regions</i>	Conclusion 16/25 - ASIA/PAC AMHS Naming Plan That, 1) the updated ASIA/PAC AMHS Naming Plan provided in Appendix A to the Report on Agenda Item 2.2 be adopted; and 2) ICAO issue a State letter requesting States to reconsider and adopt the proposed AMHS Address Scheme and PRMD name values described in the Plan.	A State Letter was issued requesting States to review the AMHS Address Scheme and PRMD name value as described in the AMHS naming Plan.	Completed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/26	ANC <i>Noted the conclusions and requested the Secretary General to monitor related developments in other regions</i>	Conclusion 16/26 - ASIA/PAC AMHS Naming Registration Table and Contact List That, a) the Table for registering AMHS MTA/UA and a Contact List for use in the Asia/Pacific Region provided in Appendix B to the Report on Agenda Item 2.2 be adopted; and b) the registration Table be circulated to States by ICAO with a request to commence the registration process.	A State letter was issued and the adopted registration Table and a sample List of Contact addresses were forwarded to States concerned.	Completed
C 16/27	-	Conclusion 16/27 - Amendment to the ASIA/ PAC CNS FASID Table CNS-1D-AIDC That, the Table CNS-1D-ATS Inter-facility Data Communication (AIDC) Plan reflected in Part IV CNS of the ASIA/PAC FASID be amended by replacing the existing Table CNS-1D with an updated Table in accordance with established procedure.	Amendment proposal APAC 05/27 was processed. States were notified of approval on 24 February 2006. The amendment will be incorporated in the next consolidated amendment to be issued to ASIA/PAC FASID.	Completed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/28	-	<p>Conclusion 16/28 - AFTN performance reports</p> <p>That, States operating AFTN circuits;</p> <p>a) may discontinue the practice of exchanging AFTN circuit performance charts, transit time statistics and circuit loading statistics where performance requirements are satisfied consistently; and</p> <p>b) exchange circuit loading statistics only for those circuits where occupancy level exceed permissible levels specified in the Manual on Planning and Engineering of AFTN, Doc 8259.</p>	State Letter was issued advising States to take action in accordance with the Conclusion.	Completed
C 16/29	<p>ANC</p> <p><i>Noted the conclusions and requested the Secretary General to monitor related developments in other regions</i></p>	<p>Conclusion 16/29 - Strategy for implementation of ATN in the Asia/Pacific Region</p> <p>That, the Strategy for Implementation of ATN in the Asia/Pacific Region provided in Appendix C to the Report on Agenda Item 2.2 be adopted and States be notified.</p>	Posted in the website and States advised accordingly.	Completed
D 16/30	-	<p>Decision 16/30 - Dissolution of the ATN Transition Task Force</p> <p>That, the ATN Transition Task Force be dissolved as it has completed major tasks and the residual work would be absorbed by the proposed ATN Implementation Co-ordination Group.</p>	The ATN Transition Task Force was dissolved and the First meeting of the ATN Implementation Coordination Group noted the Decision.	Completed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
DC 16/31	-	<p>Decision 16/31 - Establishment of an ATN Implementation Co-ordination Group</p> <p>That, an ATN Implementation Co-ordination Group be established composed of membership of the ATN Transition Task Force and any other State or organization willing to contribute to the activities of the Group with the Terms of Reference and Tasks List provided in Appendix D to the Report on Agenda Item 2.2.</p>	The first meeting of the ATN Implementation coordination Group was held in Seoul from 22 to 26 May 2006.	Completed
C 16/32	-	<p>Conclusion 16/32 - Strategy for implementation of the air-ground data link in the Asia/Pacific region</p> <p>That, the Strategy for implementation of the air-ground data link in the Asia/Pacific Region provided in the Appendix E to the Report on Agenda Item 2.2 be adopted and Asia/Pacific States be informed.</p>	Posted in the website and States advised accordingly.	Completed
C 16/33	-	<p>Conclusion 16/33 - Revision of the Strategy for the implementation of GNSS Navigation Capability in the Asia/Pacific Region</p> <p>That, the updated Strategy for the Implementation of GNSS Navigation Capability in the Asia/Pacific region provided in Appendix F to the Report on Agenda Item 2.2 be adopted and provided to States.</p>	Posted in the website and States advised accordingly.	Completed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/34	-	<p>Conclusion 16/34 -Amendment Table CNS-3 - Radio Navigation Aids</p> <p>That, the Table CNS-3, Radio Navigation Aids, provided in ASIA/PAC FASID, Part IV CNS, be replaced with the updated Table CNS-3 in accordance with the established procedure.</p>	The Amendment proposal APAC 05/26 CNS was circulated to States on 16 November 2005. Subsequently States were notified of the approval of the proposal on 17 April 2006. The amendment will be incorporated in the next consolidated amendment to be issued to the ASIA/PAC FASID	Completed
C 16/35	<p>ANC</p> <p><i>Noted the conclusion and called upon the Secretary General to</i> <i>a) seek agreement from EUROCONTROL for use of ASTERIX Cat I version 0.23 or later message format for ADS-B data exchange in the Asia/Pacific Region as well as other regions;</i> <i>and b) through all ICAO Regional Offices, stress the need for a uniform format of surveillance data exchange between different regions.</i></p>	<p>Conclusion 16/35 - ADS-B Data Exchange format</p> <p>That,</p> <p>1) the Eurocontrol Cat 21 version 0.23 or later message format be adopted for ADS-B data exchange in the Asia/Pacific Region.</p> <p>2) ICAO be requested to seek agreement from Eurocontrol to use the Eurocontrol Asterix Cat 21 document in the Asia/Pacific Region as was done for radar data exchange in the region.</p>	Coordination was carried out with EUROCONTROL. States were informed accordingly	Completed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
Paragraph 2.2.108	C <i>Noted the paragraph and requested the Secretary General to continue encouraging States to participate at various levels in different fora to provide support for the ICAO position at the forthcoming WRC-2007.</i>	Preparatory group meeting for WRC-2007 The regional preparatory activities undertaken by the APT including its organization for the preparatory work for WRC 2007 was noted. APT had planned to convene five APG meetings for WRC-2007. ICAO participated at the first meeting (APG2007-1) held in Bangkok from 11 to 12 November 2003. ICAO presented an information paper on the draft ICAO Position for WRC 2007 at the second meeting (APG2007-2) held in Bangkok from 28 February to 3 March 2005. . The third meeting (APG 2007-3) was held in February 2006 in Malaysia. The meeting updated APT provisional views and draft proposals on WRC-2007 agenda items.	Meetings attended.	Completed
C 16/37	-	Conclusion 16/37 –Amendment to Table CNS-4– Surveillance System That, the existing Table CNS-4 – Surveillance System provided in ASIA/PAC FASID, Part IV CNS be replaced with an updated Table in accordance with established procedure.	Amendment proposal APAC 05/29-CNS was processed. States were notified of approval on 24 February 2006. The amendments have been incorporated in the ASIA/PAC FASID - First Edition 2006.	Completed
D 16/38	-	Decision 16/38 - ADS-B Study and Implementation Task Force Subject/Tasks List That, the updated subject/Tasks list for ADS-B Task Force as provided in Appendix H to the Report on Agenda Item 2.2 be adopted.	The fifth meeting of the ADS-B Study and implementation Task Force noted the updated Subject/Tasks List.	Completed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/39	<p style="text-align: center;"><i>C</i></p> <p><i>Noted the conclusion and requested the Secretary General to invite the SADIS Provider State, in coordination with WMO, to organize a SADIS 2G Seminar for the ASIA/PAC Regions.</i></p>	<p>Conclusion 16/39 - Fostering transition to SADIS 2G service in the Asia/Pacific Region</p> <p>That,</p> <p>1) ICAO urges the Asia/Pacific SADIS user States to plan for the replacement of their SADIS 1G receiving systems well in advance to the planned discontinuation of SADIS 1G by 31 December 2008; and</p> <p>2) the SADIS Provider State, in coordination with ICAO and WMO, be invited to organize a SADIS 2G seminar for the Asia/Pacific States to be held back-to-back with the CNS/MET SG/10 meeting in July 2006.</p> <p><i>Notes: 1) Updated guidelines on the transition from SADIS 1G to SADIS 2G is provided in Appendix I to the Report on Agenda Item 2.2</i></p> <p><i>2) It is expected that the SADIS 2G seminar will cover also the visualization software for GRIB and BUFR coded WAFS forecasts.</i></p>	<p>State letter issued; Seminar conducted, 14-15 July 2006.</p>	Completed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/40	-	<p>Conclusion 16/40 - Long-term planning of SADIS development</p> <p>That, in order to facilitate SADIS user States' planning for maintaining and upgrading their SADIS receiving systems, the SADISOPSG be invited to consider development of a long-term plan for the SADIS development, including the life expectancy of the related services and systems.</p> <p><i>Note: To ensure harmonized development of the two satellite broadcasts, the ISCS Provider State would be consulted in the development of the SADIS long-term plan.</i></p>	Referred to SADISOPSG.	Closed
C 16/41	-	<p>Conclusion 16/41 - Long-term planning of the WAFS implementation</p> <p>That, WAFSOPSG be invited to consider development of a long-term plan for the WAFS, establishing a schedule for the changes, which require upgrade/update of the users' systems. In order to minimize the frequency of changes and the corresponding operational and financial implications to the users, the schedule of changes should adhere to the ICAO Annex 3 amendment cycle.</p>	Referred to WAFSOPSG.	Closed

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C 16/42	-	<p>Conclusion 16/42 - Guidance on the use of WAFS products in the flight documentation</p> <p>That, WAFSOPSG be invited to consider development of additional guidance on the harmonized use of the fixed time WAFS forecasts in the flight documentation, with reference to the time and duration of the flight.</p>	Referred to WAFSOPSG.	Closed
C 16/43	<p>ANC</p> <p><i>Noted the conclusion and requested the Secretary General to invite IATA to encourage their Member Airlines to improve the availability of special air-reports issued for safety-critical MET phenomena.</i></p>	<p>Conclusion 16/43 - Special air-reports</p> <p>That, ICAO be invited to:</p> <p>1) urge the Asia/Pacific States to implement the requirements for the reception and exchange of the special air-reports received via voice communication, as specified in the Annex 3; and</p> <p>2) request IATA to encourage airlines to improve the availability of the special air-reports for safety critical meteorological phenomena, such as volcanic ash clouds.</p> <p><i>Note: The requirements in p. 1) above are to be addressed by both the States' MET and ATS authorities/providers.</i></p>	<p>State letter and letter to IATA issued by ICAO Regional Office.</p> <p>IATA issued letter to their members.</p>	Completed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/44	-	<p>Conclusion 16/44 - Amendment of the OPMET related regional procedures in ASIA/PAC Basic ANP and FASID, Doc 9673</p> <p>That, the ASIA/PAC Basic ANP and FASID (Doc 9673) be amended as indicated in Appendix J to the Report on Agenda Item 2.2.</p>	<p>Basic ANP amendment proposal pending coordination with other ICAO regions</p> <p>Amendment proposal APAC 05/30 was processed. States were notified of approval on 3 May 2006. The amendment will be incorporated in the next consolidated amendment to be issued to ASIA/PAC FASID.</p>	<p>On-going</p> <p>Completed</p>
D 16/45	-	<p>Decision 16/45 - Terms of reference and work programme of OPMET/M TF</p> <p>That, the terms of reference, work programme and composition of the OPMET Management Task Force be amended as shown in Appendix K to the Report on Agenda Item 2.2.</p>	<p>TOR and work programme updated by CNS/MET SG/10 meeting</p>	<p>Completed</p>

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/46	<p style="text-align: center;"><i>ANC</i></p> <p><i>Noted the conclusions and called upon the Secretary General to address these issues of improvement of SIGMET provisions and revising the template for aerodrome warnings in Annex 3, with the assistance of METLINKSG.</i></p>	<p>Conclusion 16/46 - Facilitating the implementation of SIGMET provisions</p> <p>That, ICAO be invited to consider further improvements of the SIGMET provisions, by providing additional guidance and/or amendments to the SIGMET related SARPs, as necessary, in order to resolve identified difficulties in implementing SIGMET, as shown in the Appendix L to the Report on Agenda Item 2.2.</p>	Referred to HQ, METLINK SG	Closed
C 16/47	<p style="text-align: center;"><i>C</i></p> <p><i>Noted the conclusion and requested the Secretary General to invite Australia and Hong Kong, China, to develop posters describing SIGMET procedures to be used by MWOs.</i></p>	<p>Conclusion 16/47 - Production of SIGMET posters</p> <p>That, in order to enhance the availability and quality of the SIGMET information, Australia and Hong Kong, China be invited to produce in 2006, in coordination with the VA/TC Implementation TF, and in consultation with ICAO, WMO and the TCAC and VAAC Provider States in Asia/Pacific Region, SIGMET posters describing the SIGMET procedures for volcanic ash clouds, tropical cyclones and other hazardous meteorological phenomena, to be used as training material and quick reference tools by the MWOs.</p>	It was decided to postpone the production of the SIGMET posters until the approval of Amendment 74 to Annex 3 due to changes in SIGMET format.	On-going

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/48	-	<p>Conclusion 16/48 - Amendment of the regional procedures related to SIGMET and advisories in ASIA/PAC FASID</p> <p>That, the ASIA/PAC FASID (Doc 9673) be amended as indicated in Appendix M to the Report on Agenda Item 2.2</p>	Amendment proposal APAC 05/30 was processed. States were notified of approval on 3 May 2006. The amendment will be incorporated in the next consolidated amendment to be issued to ASIA/PAC FASID.	Completed
C 16/49	<p>ANC</p> <p><i>Noted the conclusions and called upon the Secretary General to address these issues of improvement of SIGMET provisions and revising the template for aerodrome warnings in Annex 3, with the assistance of METLINKSG.</i></p>	<p>Conclusion 16/49 - Revision to the Annex 3 Template for Aerodrome Warnings</p> <p>That, ICAO be invited to consider including the surface wind direction, in addition to the surface wind speed and gusts, under the phenomenon section of the template for aerodrome warnings in Table A6-2 of Annex 3, as indicated in Appendix N to the Report on Agenda Item 2.2</p> <p><i>Note: a possible way to include the surface wind direction information is in the form of “SFC WIND n[n] nn [n] KMH MAX nn[n]”.</i></p>	Referred to HQ, METLINK SG	Closed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/50	<p>ANC</p> <p><i>Noted the conclusion and requested the Secretary General to develop requisite provisions, with the assistance of WISTSG.</i></p>	<p>Conclusion 16/50 - Extending the Provision of Automated Aircraft Observations for Wind Shear Warning Application</p> <p>That, ICAO be invited to consider, for low-level wind shear warning application, extending the provision of automated aircraft observations to:</p> <p>a) cover the approach phase of flight; and</p> <p>b) increase the resolution during the climb-out and approach phases when the aircraft is between runway level and 500 m above that level.</p>	Referred to HQ, WIST SG	Closed
C 16/51	<p>ANC</p> <p><i>Noted the conclusion and called upon the Secretary General for the expeditious publication of the guidance material on the format of D-ATIS messages.</i></p>	<p>Conclusion 16/51 - Guidance on implementation of D-ATIS</p> <p>That, ICAO be invited to expedite the publication of the guidance material on the format of D-ATIS messages.</p> <p><i>Note: The guidance material on the format of D-ATIS messages forms part of the ATS Planning Manual (Doc 9426).</i></p>	Referred to HQ	Closed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/52	ANC <i>Noted the conclusion and requested the Secretary General to identify a data link to support future uplinking of graphical meteorology information and develop relevant provisions and guidance to facilitate its implementation.</i>	Conclusion 16/52 – Air-Ground Data Link Supporting Graphical Meteorological Information Uplink That, ICAO be invited to identify a data link to support future uplinking of graphical meteorological information and to develop relevant SARPs and guidance to facilitate implementation.	Referred to HQ, METLINK SG	Closed

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/53	-	<p>Conclusion 16/53 - Regional Contingency Arrangement in support to continuity of aviation operations in the events of natural disasters or other crisis situations</p> <p>That,</p> <p>a) Asia/Pacific States be invited to provide data to the ICAO Regional Office regarding availability of resources and services which could be readily made available in the event of natural disaster and other crisis situations to the States in need and to support international humanitarian relief operations involving aviation;</p> <p>b) Based on the data received from the States, ICAO Regional Office develop a catalogue and act as a facilitator and coordinator of the international aviation operations in response to disasters and other crises. The catalogue would provide details regarding contact points, general description of facilities and services available and arrangements under which services would be provided (i.e. government to government, commercial, humanitarian, etc.); and</p> <p>c) States consider implementing RNAV (GNSS) approaches procedures as an alternate to ground-based radio navaids in particular for areas prone to natural disasters, such as tsunamis, tropical cyclones, volcanic eruptions, etc.</p>	<p>State letter AP0058/06 (MET) issued to ASIA/PAC States on 22 June 2006. Responses from 10 States have been received.</p> <p>The work on cataloguing the information has been initiated.</p> <p>RNAV (GNSS) approach procedures are being implemented by Indonesia, Maldives, Republic of Korea, Thailand</p>	On-going

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Report Ref. D/C APANPIRG/ 16	Action Taken by ANC/ Council	Decision/Conclusion	Action Taken by States/ICAO	Status
C 16/54		<p>Decision 16/54 - Updated Subject/Tasks List of the CNS/MET Sub -Group</p> <p>That, the Subject/Tasks List of the CNS/MET Sub-group presented in Appendix P to the Report on Agenda Item 2.2 be adopted.</p>	Subject/Tasks List updated	Completed
D 16/55		<p>Decision 16/55 – Revised Statement of BORPC for regional air navigation planning and implementation</p> <p>That, the revised Statement of BORPC for regional air navigation planning and implementation be incorporated into the Asia/Pacific Basic ANOP (Doc 9673).</p>	The BORPC was included in the 2006 edition of Doc 9673	Completed
C 16/56		<p>Conclusion 16/56 – Amendment to the Surveillance Part of the revised BORPC</p> <p>That, paragraph 7.2 of the revised BORPC be amended in the next cycle of update as follows:</p> <p><i>7.2 Surveillance should be provided as an integral part of air traffic control where practicable and desirable or necessary in the interest of safety, efficiency and economy of operations, in particular for those areas where traffic density and/or the multiplicity or complexity of ATS routes creates constraints. Primary and/or secondary surveillance radar systems may be used to fulfill this requirement. Subject to availability and cost effectiveness and provided that the required level of safety is maintained, ADS and ADS-B may be used in airspace where surveillance by radar is impracticable or cannot be justified.</i></p>	The proposed text will be considered for inclusion in the next consolidated amendment to the BORPC.	Closed

AGENDA ITEM 1.2: REVIEW OF GLOBAL
DEVELOPMENTS

1.2 Review Global Developments

Results of the ALLPIRG/5 Meeting – Follow-up actions to be taken by the APANPIRG

1.2.1 APANPIRG was informed of the results of the ALLPIRG/5 Meeting that was held in Montreal, Canada from 23 to 24 March 2006 to address interregional issues in planning and implementation of air navigation systems including CNS/ATM systems in ICAO regions and to advise the ICAO Council on related matters as appropriate. APANPIRG noted that ALLPIRG/5 meeting had developed eighteen conclusions encompassing a wide range of issues, which are detailed in **Appendix A** to the Report on Agenda item 1.2.

1.2.2 It was noted that the ICAO Council had reviewed the ALLPIRG/5 report on 13 June 2006, taking into account the comments of the Air Navigation Commission, and approved the ALLPIRG/5 report. As a follow-up, APANPIRG, as well as other planning and implementation regional groups (PIRGs), were to take certain follow-up actions on the conclusions of ALLPIRG/5.

1.2.3 The meeting noted those conclusions or parts thereof that did not require any specific action by APANPIRG. As a result of analysis of the conclusions of ALLPIRG/5, the meeting identified those conclusions which required follow-up by APANPIRG and assigned the task to the relevant Sub-groups. Also, the meeting called upon States and International Organizations to take follow-up action on conclusions that were relevant to them. Accordingly, the following actions were formulated:

Decision 17/1 - Implementation of ALLPIRG/5 conclusions by APANPIRG

That the following conclusions of ALLPIRG/5 be studied by the concerned subgroups, that action be taken to implement them and that the outcome be presented to ensuing APANPIRG meetings:

- Conclusions 5/2, 5/4, 5/5, 5/7, 5/8, 5/9, 5/11, and 5/13: ATS/AIS/SAR/SG
- Conclusions 5/2, 5/4, 5/5, 5/13, 5/16, and 5/17: CNS/MET/SG
- Conclusions 5/14, 5/15: DRTF

Conclusion 17/2 - Implementation of ALLPIRG/5 conclusions by States

That States of the Asia/Pacific Region take action to implement the following conclusions of ALLPIRG/5:

Conclusions 5/1, 5/4, 5/5, 5/7, 5/8, 5/9, 5/11, 5/13 and 5/16

Conclusion 17/3 - Implementation of ALLPIRG/5 conclusions by international organizations

That international organizations take action to implement the following conclusions of ALLPIRG/5:

Conclusions 5/2, 5/4, 5/5, 5/7, 5/13 and 5/16

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Appendix A to the Report on Agenda Item 1.2

FOLLOW-UP BY APANPIRG ON CONCLUSIONS OF ALLPIRG/5

ALLPIRG/5 Conclusions	Relationship with Strategic Objective & Global Plan Initiatives (GPIs)	Follow-up task	Follow-up to be initiated by
Conclusion 5/1 — Workshops on the Global Plan for Regional Offices			
That, in support of the Global Plan, ICAO conduct workshops in the Regional Offices to provide training on planning tools and methodologies as well as strengthening the interaction between technical officers at Headquarters and Regional Offices.	Increases efficiency (Strategic objective D) Relates to all GPIs	Conduct workshops in the Regional Offices to provide training on planning tools and methodologies through the SIP mechanism	ICAO Headquarters
Conclusion 5.2 — Implementation of Global Plan Initiatives (GPIs)			
That, recognizing that the evolution continues from a systems-based to a performance-based approach to planning and implementation of the air navigation infrastructure, the regional planning groups:	Increases efficiency (Strategic objective D) Relates to all GPIs	Note that the Global Plan is a significant component in the development of regional and national plans	APANPIRG, States and international organizations
a) note that the Global Plan is a significant component in the development of regional and national plans and that, together with the global ATM operational concept, provide an effective architecture for achieving a harmonized and seamless Global ATM system;			
b) identify GPIs that most closely align with the well established implementation plans of their respective regions;		Identify GPIs that most closely align with the implementation plans of their respective regions	APANPIRG, States and international organizations
c) select GPIs that would be most effective in achieving the objectives of the region while ensuring continuation of the work already accomplished;		Select GPIs that would be most effective in achieving the objectives of the region	APANPIRG, States and international organizations
d) implement GPIs that take into account the Initiatives across regions, to align work programmes and to develop national and regional plans that facilitate achieving a Global ATM system;		Implement GPIs in the development of national and regional plans	APANPIRG, States and international organizations
e) utilize the planning tools as the common planning and implementation mechanism, thereby ensuring proper coordination and global integration; and		Utilize the planning tools as the common planning and implementation mechanism	APANPIRG, States and international organizations
f) review, at each PIRG meeting as a part of its regular agenda, the progress achieved and challenges identified in the implementation of GPIs using a common template.		Review, at each PIRG meeting as a part of its regular agenda, the progress achieved and challenges identified in the implementation of GPIs	APANPIRG

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ALLPIRG/5 Conclusions	Relationship with Strategic Objective & Global Plan Initiatives (GPIs)	Follow-up task	Follow-up to be initiated by
Conclusion 5/3 — Workshop on the business case model for communications, navigation, and surveillance/air traffic management (CNS/ATM) Systems			
That, in support of the development of business cases for the implementation of CNS/ATM systems, ICAO convene a training workshop for States at the Regional Offices through an appropriate mechanism, such as Special Implementation Projects (SIPs).	Increases efficiency (Strategic objective D) Relates to all GPIs	ICAO to convene a training workshop for States at the Regional Offices through the SIPs mechanism	ICAO Headquarters
Conclusion 5/4 — Application of the business case model for CNS/ATM systems implementation			
That PIRGs, States and airspace users:	Increases efficiency (Strategic objective D) Relates to all GPIs		
a) note that business cases for the implementation of CNS/ATM systems leading to a global ATM system is a key element in the development of regional, subregional and national plans;		Note that business cases for the implementation of CNS/ATM systems is a key element in the development of regional, subregional and national plans	APANPIRG, States and international organizations
b) consider the application of the model for the development of business cases in the formulation of national and subregional plans with a view to facilitating the achievement of a global ATM system; and		Apply the model for the development of business cases in the formulation of national and subregional plans	APANPIRG, States and international organizations
c) establish, with ICAO's assistance and within the limits of the programme budget, a network of experts on cost-effectiveness, cost-benefit analyses and business cases for the implementation of CNS/ATM systems in order to share expertise and to provide assistance to the Regional Offices.		Establish a network of experts on cost-effectiveness, cost-benefit analyses and business cases for the implementation of CNS/ATM systems	ICAO Headquarters

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ALLPIRG/5 Conclusions	Relationship with Strategic Objective & Global Plan Initiatives (GPIs)	Follow-up task	Follow-up to be initiated by
Conclusion 5/5 — ICAO Global air navigation plan (ANP) database and geographic information system (GIS) portal			
Recognizing that access to an ICAO Global ANP database and associated planning services through an web-based ICAO GIS portal would constitute an invaluable tool in supporting, integrating and monitoring the planning and implementation of harmonized regional, interregional and global air navigation infrastructures, the regional planning groups: a) note the progress made by the Secretariat in accordance with Recommendation 1/14 of AN-Conf/11 and the ICAO Global ANP database;	Increases efficiency (Strategic objective D) Relates to all GPIs	Note the progress made in the development of ICAO Global ANP database	APANPIRG, States and international organizations
b) note the ongoing efforts by the Secretariat in harmonizing formats of all the ANP tables together with the inclusion of temporal information in the tables that would assist the regional planning groups in monitoring and analysing the implementation progress;		Harmonize formats of all the ANP tables	ICAO Headquarters
c) note the intent to expand the ANP tables to include Global Plan Initiatives (GPIs), as appropriate; and		Include GPIs in the ANP tables	ICAO Headquarters
d) utilize, through the ICAO GIS portal, the ICAO Global ANP database and associated planning services so as to ensure the currency, coordination and implementation of regional air navigation planning and to contribute to the further development of air navigation plans as the framework for the efficient implementation of new air navigation systems and services at the national, regional, interregional and global levels.		Utilize the ICAO Global ANP database and associated planning service	APANPIRG, States and international organizations
Conclusion 5/6 — Development of planning tools			
That ICAO, in the development of planning tools and services, should accommodate requirements established by the Regional Offices, as well as to take into account similar tools developed by other organizations such as EUROCONTROL.	Increases efficiency (Strategic objective D) Relates to all GPIs	Develop planning tools by taking into account regional requirements and experience gained by other organizations	ICAO Headquarters

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ALLPIRG/5 Conclusions	Relationship with Strategic Objective & Global Plan Initiatives (GPIs)	Follow-up task	Follow-up to be initiated by
Conclusion 5/7 — Environmental benefits of CNS/ATM systems			
That PIRGs and States:	Minimizes environmental impact (Strategic objective C)		
a) use the Committee on Aviation Environmental Protection (CAEP) provided CO ₂ conversion factor in the analysis of environmental benefits of implementing CNS/ATM systems;		Use the CAEP provided CO ₂ conversion factor in the analysis of environmental benefits of implementing CNS/ATM systems	APANPIRG, States and international organizations
b) prioritize the implementation of voluntary, operationally-based improvements in their air traffic management systems, with emphasis on fuel savings, emissions reductions and noise benefits, and also to mitigate costs to the industry;		Prioritize the implementation of voluntary, operationally-based improvements in their air traffic management systems	APANPIRG, and States
c) provide feedback to ICAO on studies conducted on the environmental benefits of implementing CNS/ATM systems; and		Provide feedback to ICAO on studies conducted on the environmental benefits of implementing CNS/ATM systems	APANPIRG, States and international organizations
d) share air traffic data to improve future CAEP assessments, in line with State letter AN 1/17-03/86.		Share traffic data with CAEP	APANPIRG, States and international organizations
Conclusion 5/8 — Globally coordinated air traffic services (ATS) routes			
That PIRGs:	Increases efficiency (Strategic objective D) Relates to GPI 7		
a) establish a global consolidated, prioritized list of routes and terminal area (TMA) improvements in close coordination with airspace users; and		Establish a global consolidated, prioritized list of routes and terminal area (TMA) improvements	APANPIRG and States
b) work with neighbouring PIRGs/States/air navigation service providers (ANSPs) to accelerate international route improvements.		Work with neighbouring PIRGs/States/ANSPs to accelerate international route improvements	APANPIRG and States

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ALLPIRG/5 Conclusions	Relationship with Strategic Objective & Global Plan Initiatives (GPIs)	Follow-up task	Follow-up to be initiated by
Conclusion 5/9 — Terminal area (TMA) structure and area navigation			
That States:	Increases efficiency (Strategic objective D) Relates to GPI 5		
a) employ area navigation in all TMAs, including appropriate arrival and departure procedures, to improve efficiency and reduce emissions in the vicinity of airports; and that, in special cases where there are particularly challenging obstacles and where air traffic density is very high and additional approach paths are possible, the more precise and contained required navigation performance (RNP) procedures be employed; and		Employ area navigation in all TMAs, including appropriate arrival and departure procedures	States
b) review operations, procedures and training of controllers to ensure the optimum management of air traffic services.		Review operations, procedures and training of controllers to ensure the optimum management of air traffic services	States
Conclusion 5/10 — Environmental benefits of RVSM introduction and regional expertise			
That ICAO:	Minimizes environmental impact (Strategic objective C) Relates to GPI 2		
a) undertake a study on the environmental benefits of the introduction of RVSM and to ensure that this information is transmitted to policy makers; and		Study the environmental benefits of the introduction of RVSM	ICAO Headquarters
b) seek appropriate support from recognized expert organizations in its work on quantifying the environmental benefits of RVSM, noting the support offered by EUROCONTROL in this regard.		Seek support from recognized expert organizations in its work on quantifying the environmental benefits of RVSM	ICAO Headquarters

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ALLPIRG/5 Conclusions	Relationship with Strategic Objective & Global Plan Initiatives (GPIs)	Follow-up task	Follow-up to be initiated by
Conclusion 5/11 — Air traffic management (ATM) safety management			
That ICAO:	Increases safety (Strategic objective A)		
a) urge States to give priority to the establishment and effective operation of their ATM safety management and safety regulatory functions;		Give priority to the establishment and effective operation of their ATM safety management and safety regulatory functions	States
b) support the development of sufficient expertise levels in the industry through formal training in ATM safety issues and, by cooperation through regional bodies, promote collective means to optimize the effectiveness of training provision; and		Develop formal training in ATM safety issues	States
c) develop further measures to enable the implementation of a “just-culture” reporting environment to facilitate the reporting of ATM occurrences.		Implement a “just-culture” reporting environment to facilitate the reporting of ATM occurrences	States
Conclusion 5/12 — Coordination between regional monitoring agencies (RMAs)			
That the ICAO EUR/NAT Office act as the initial focal point for the required coordination between RMAs in order to:	Increases efficiency (Strategic objective D) Relates to GPI 2		
a) facilitate the exchange of monitoring and operational data between RMAs;		Facilitate the exchange of monitoring and operational data between RMAs	ICAO EUR/NAT Office
b) facilitate the exchange information about best practices between RMAs;		Facilitate the exchange information about best practices between RMAs	ICAO EUR/NAT Office
c) ensure that incident reports are correctly disseminated to the appropriate RMA;		Ensure that incident reports are correctly disseminated to the appropriate RMA	ICAO EUR/NAT Office
d) provide a forum to manage changes to monitoring requirements; and		Provide a forum to manage changes to monitoring requirements	ICAO EUR/NAT Office
e) ensure the maintenance of the RMA Handbook.		Ensure the maintenance of the RMA Handbook	ICAO EUR/NAT Office

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ALLPIRG/5 Conclusions	Relationship with Strategic Objective & Global Plan Initiatives (GPIs)	Follow-up task	Follow-up to be initiated by
Conclusion 5/13 — Implementation of performance-based navigation concept			
That, to increase awareness and understanding of the performance-based navigation concept and its elements:	Increases efficiency (Strategic Objective D) Relates to GPI 5		
a) ICAO organize workshops and training activities; and		Organize workshops and training activities through the SIP mechanism	ICAO Headquarters
b) where area navigation (RNAV) or required navigation performance (RNP) implementations are required, these will be implemented by PIRGs and States according to the performance-based navigation concept.		Implement performance-based navigation concept	APANPIRG, States and international organizations
Conclusion 5/14 — A regional online database of air navigation deficiencies			
That, PIRGs consider establishing and maintaining a regional online database of air navigation deficiencies that ensures transparency and provides a secure access to authorized users.	Increases safety (Strategic objective A)	Establish and maintain a regional online database of air navigation deficiencies	APANPIRG
Conclusion 5/15 — Last resort action to resolve regional air navigation deficiencies			
That, when efforts to eliminate deficiencies prove unsuccessful after exhausting all alternatives, PIRGs adopt the following last resort action, which consists of the two parts:	Increases safety (Strategic objective A)	Implement last resort action when efforts to eliminate deficiencies prove unsuccessful after exhausting all alternatives	APANPIRG
a) propose the inclusion of an alternate facility/procedure in the air navigation plan (ANP); or		Indicate the safety impact for every deficiency as soon as it is identified and publish in the table of deficiencies as well as in the regional on-line database	
b) when a corrective action as a) above cannot be recommended, provide the State(s)/Territory(ies)/users and ICAO with an analysis concerning risk associated with such a deficiency.			
Conclusion 5/16 — Implementation of very small aperture terminals (VSATs)			
That PIRGs:	Increases efficiency (Strategic Objective D) Relates to GPI 22		

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ALLPIRG/5 Conclusions	Relationship with Strategic Objective & Global Plan Initiatives (GPIs)	Follow-up task	Follow-up to be initiated by
a) discourage the proliferation of VSAT networks where one/some of the existing ones can be expanded to serve the new areas of interest;		Discourage the proliferation of VSAT networks	APANPIRG, States and international organizations
b) work towards integrated regional/interregional digital communication networks with a single (centralized) operational control and preferably based on the Internet Protocol (IP); and		Work towards integrated regional/interregional digital communication networks	APANPIRG, States and international organizations
c) give due consideration to managed network services (e.g. a virtual private network (VPN)), subject to availability and cost-effectiveness.		Give due consideration to managed network services	APANPIRG, States and international organizations
Conclusion 5/17 — Provisions for digital communication networks			
That ICAO:	Increases efficiency (Strategic Objective D) Relates to GPI 22		
a) expedite the development of provisions relating to the use of the Internet Protocol Suite (IPS) in the aeronautical telecommunication infrastructure; and		Expedite the development of provisions relating to the IPS in the aeronautical telecommunication infrastructure	ICAO Headquarters
b) initiate the development of provisions governing the end-to-end performance of digital communication networks, irrespective of the technologies and protocols utilized therein.		Develop provisions governing the end-to-end performance of digital communication networks	ICAO Headquarters
Conclusion 5/18 — Changes to the Regional Supplementary Procedures (SUPPs) (Doc 7030)			
That ICAO	Increases efficiency (Strategic Objective D) Relates to all GPIs		
a) restructure the SUPPs (Doc 7030) by the complete reordering and reorganization of the material;		Restructure the SUPPs by the complete reordering and reorganization of the material	ICAO Headquarters
b) align the area of application of the SUPPs with the area of application of the regional air navigation plans (ANPs); and		Align the area of application of the SUPPs with the area of application of the ANPs	ICAO Headquarters
c) make SUPPs available on a CD as well as on the ICAO website.		Make SUPPs available on ICAO website	ICAO Headquarters

— END —

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

AGENDA ITEM 2.1: ATM/AIS/SAR MATTERS

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

2.1 ATM/AIS/SAR Matters

2.1.1 The meeting reviewed a consolidated report of the Fourth and Fifth Meetings of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/4 & 5), held in October 2005 and June 2006 respectively, and the report of the Sixteenth Meeting of the Air Traffic Management/Aeronautical Information Services/Search and Rescue Sub-Group of APANPIRG (ATM/AIS/SAR/SG/16), which was held from 26-30 June 2006. Full copies of the meeting reports are available on the web site of the ICAO Asia/Pacific Office under the 'Meetings' menu - <http://www.icao.int/apac/>. The meeting expressed its appreciation for the many tasks that had been addressed by RASMAG and the ATM/AIS/SAR Sub-Group since reporting to APANPIRG/16 last year.

Regional Airspace Safety Monitoring Advisory Group (RASMAG)

2.1.2 The meeting recalled that the establishment of RASMAG resulted from the initiatives of APANPIRG under Decision 14/48 in addressing the inclusion by ICAO of safety management provisions in Annex 11 – *Air Traffic Services* and the extensive implementation of reduced separation applications like RVSM that had necessitated increased safety planning and monitoring activities by States of the Asia/Pacific Region.

2.1.3 RASMAG had identified two safety matters that required urgent attention. These were the overdue horizontal safety assessment for the South China Sea Route Network and the high number of Large Height Deviations (LHD) occurring in the Western Pacific/South China Sea area which had led to the RVSM Target Level of Safety (TLS) for this area not being satisfied.

2.1.4 Also of concern to RASMAG was the RVSM TLS also not being satisfied in the Australian FIR due to a small number of operational errors with high 'error times' driving the total risk calculation, delay in implementation of the changes identified by the RVSM/TF in respect to operational safety concerns associated with the Western Pacific/South China Sea flight level orientation scheme (FLOS) arrangements and, although the situation had improved markedly since last year, the non provision of safety data by some States which was impeding the accuracy of regional safety assessments. Additionally, progress in relation to the establishment of robust and reliable mechanisms for the funding of airspace safety monitoring was still very slow.

Non-Provision of Safety Data

2.1.5 The meeting noted the very positive response from States in respect of the provision of Traffic Sample Data (TSD) for December 2005. The situation had improved significantly compared with previous years as a result of the Conclusions raised by APANPIRG/16 in this respect and it was expected that this situation could be sustained.

2.1.6 However, RASMAG/5 identified that a few States had still not provided December 2005 TSD or ongoing large height deviation data in accordance with APANPIRG Conclusion 16/4. In this context Bangladesh, Lao PDR, Myanmar and Papua New Guinea would be included in the APANPIRG List of Deficiencies in the ATM/AIS/SAR Fields in accordance with APANPIRG Conclusion 16/6.

Long Term Monitoring of RVSM Height Keeping Performance

2.1.7 RASMAG had been informed that in the late 1990's the NAT Central Monitoring Agency (NAT CMA), the RMA for the North Atlantic Region, began to report analysis of NAT results showing that the altimetry system error (ASE) of some airframes monitored over several years exhibited changes over time that could be characterized as an undesirable linear trend. In 2003, the European RMA, EUROCONTROL, began to report similar results to the NAT OPS/AIR Sub-Group.

2.1.8 Further studies had been undertaken and it became evident that faults in altimetry system components were a major cause of observed ASE trends. The NAT OPS/AIR Sub-Group had affirmed at several of its recent meetings that monitoring was highly valuable and should continue. The Sub-Group was in the process of developing changes to the State RVSM approval process, which would strengthen maintenance requirements, expecting that monitoring would play a role in confirming that such changes had a beneficial effect on ASE stability.

2.1.9 The results of the monitoring of ASE were being study by the ICAO Separation and Airspace Safety Panel (SASP). Representatives from the Asia/Pacific RMAs would be invited to its WG/WHL/10 meeting in Australia in November 2006.

2.1.10 IATA reminded the meeting that the current requirements for on-going height keeping performance monitoring differed from region to region. This meant that operators were required to meet different requirements simply because of their geographical area of operation. IATA requested that any long term monitoring requirements, which may be developed by the ICAO Separation and Airspace Safety Panel (SASP), be globally harmonized as opposed to the current regional approach.

2.1.11 In recognition of the need for global harmonization the meeting developed the following Conclusion:

Conclusion 17/4 – Long Term Monitoring of RVSM Height Keeping Performance

That, in recognition of the desirability of global harmonization and interoperability, ICAO be invited to consider appropriate measures to ensure that any requirements for long term monitoring of RVSM height keeping performance be standardized and applied on a global basis.

Reports from regional RMAs

2.1.12 Reports from the 3 regional RMAs, the Monitoring Agency for Asia Region (MAAR), Pacific Approvals Registry and Monitoring Organization (PARMO) and Airservices Australia RMA were considered by RASMAG. This reporting demonstrated that:

- The RVSM target level of safety was being satisfied in the:
 - a) Bay of Bengal area,
 - b) Pacific area, and
 - c) North-East Asia area.
- However, the RVSM target level of safety was NOT being satisfied in the:
 - a) Australian FIR (including Indian Ocean), due a small number of operational errors with high 'error times', and

- b) The Western Pacific/South China Sea area, due to the high number of large height deviations being reported, and an adverse trend was evident.

LHD & ATC-to-ATC Coordination

2.1.13 In reviewing the reports of the three regional RMAs, RASMAG/5 recognized that performance in terms of technical error was meeting a good standard throughout all areas regionally. In no case had the technical TLS been exceeded and in general, the technical TLS was achieved easily. This result suggested good airframe performance and was a credit to regional operators.

2.1.14 However, in terms of operational error the TLS was not being achieved in some areas. A consistent theme in the analysis of these errors was that of difficulties in ATC-to-ATC coordination, which accounted for a large proportion of LHD. The meeting encouraged all States to be aware that this ground-ground communication interface exhibited weaknesses in all the regional examples examined. Accordingly, undertaking investigations in this respect would be a logical point to start in attempting to reduce the instances of LHD.

Exceeding Target Levels of Safety

2.1.15 In noting that the RVSM TLS was being exceeded in both the WPAC/SCS and Indian Ocean airspaces, RASMAG reviewed related ICAO documentation in respect to the derivation and application of TLS. RASMAG agreed that a single event in which airspace safety monitoring identified that the TLS had been exceeded was not sufficient cause to cease the application of the reduced separation minimum. RASMAG highlighted that fluctuations about the TLS should serve as a warning bell to prompt intensive investigation of the circumstances, not as an on-off switch to suddenly continue or discontinue RVSM operations. However, it would be extremely important to continue intensive monitoring and re-assess the safety performance on a regular basis to ensure that there was not an unsafe trend.

Safety Concerns in WPAC/SCS area

2.1.16 The meeting recognized that there were three very significant safety matters outstanding in relation to WPAC/SCS operations that needed to be urgently addressed, as follows:

- a) The target level of safety for WPAC/SCS RVSM operations was not being satisfied and was showing an adverse trend;
- b) Concerns originally raised by RVSM/TF/22 (September 2004) in relation to the use of a modified alternate FLOS in the WPAC/SCS and the consequential RVSM interface arrangements with the single alternate FLOS used in areas surrounding the WPAC/SCS area had still not been addressed; and
- c) Although the South China Sea parallel route structure had been implemented in November 2001, no updated horizontal safety assessment had been undertaken in the four and a half years since implementation. Additionally, data used in the implementation safety assessment had necessarily been based on the “old” route structure; as such no horizontal safety assessment had been made based on data from the “new” route structure.

2.1.17 The meeting agreed that the RVSM related safety issues in a) and b) above should be urgently scrutinized by a dedicated working group that would specifically address matters relating to WPAC/SCS RVSM operations and adopted the following Decision and associated terms of reference for such a working group:

Decision 17/5 – Establishment of WPAC/SCS RVSM Scrutiny Working Group

Recognizing that:

- a) incompatibilities exist between the modified single alternate flight level orientation scheme (FLOS) in use in the Western Pacific/South China Sea (WPAC/SCS) area and the single alternate FLOS in use in areas adjacent to the WPAC/SCS area, and
- b) the RVSM Target Level of Safety in the WPAC/SCS area was not being satisfied and exhibited an adverse trend,

a Scrutiny Working Group be established to identify, study and address problems in the safety, efficiency and harmonization of WPAC/SCS RVSM operations in accordance with the Terms of Reference in **Appendix A** to the Report on Agenda Item 2.1.

2.1.18 The meeting fully supported the establishment of the dedicated Scrutiny Working Group and accepted a kind offer from Singapore to host the first meeting. Arrangements would be made for an initial meeting of the Scrutiny Group in January/February 2007, however the meeting urged affected States to commence work on rectifying these matters immediately.

Outstanding horizontal Safety Assessment

2.1.19 The meeting recognized that the lack of current horizontal safety assessment for the South China Sea route structure as referred to in paragraph 2.1.16 c) above should also be urgently addressed and adopted the following Conclusion:

Conclusion 17/6 – Completion of the horizontal safety assessment for the South China Sea route structure

That, recognizing that no horizontal safety assessment for the South China Sea parallel route structure had been conducted since implementation in 2001, the ICAO Regional Office urges concerned States to complete, by 30 June 2007, a horizontal safety assessment in accordance with ICAO ATS safety management provisions.

2.1.20 The meeting took into account that the lack of expertise as a result of the non-availability of a suitable horizontal safety assessment agency in the Asia/Pacific Region had contributed to the delays in undertaking the South China Sea safety assessment. Although Thailand was working towards establishing an SMA capability, this was unlikely to be operational for some time. Japan offered to assist in setting up capability for horizontal safety assessment subject to notification by Thailand.

2.1.21 In this context, the meeting noted the submission from the United States in respect of a private sector company, CSSI Incorporated. CSSI had an established track record of supporting U.S. Federal Aviation Administration (FAA) work to reduce separation minima within international airspace, including support of RVSM implementation activities within the Asia/Pacific, North

American, Caribbean/South American and North Atlantic Regions. In addition, CSSI had assisted the FAA in the application of the 50NM lateral separation minimum in the Pacific and introduction of 30NM lateral and longitudinal separation standards in a portion of the Oakland Flight Information Region.

2.1.22 The United States advised the meeting that the current capabilities and prior experience of CSSI would allow them to immediately fulfill the roles and responsibilities of the SMA, and CSSI was willing to start work as soon as Asia/Pacific States may require. However, the funding of these services was not within the scope of such facilitation. As CSSI was a private sector company, it would be necessary to charge for its services and, if the FAA was to act as a payment agent, it would be necessary to provide the funds for the work in advance.

RVSM Implementation

2.1.23 The meeting reviewed the work of the RVSM Task Force (RVSM/TF) established by APANPIRG to implement and follow-up on implementation of RVSM in the Asia/Pacific Region. The RVSM/TF continued its work programme to implement RVSM in the Incheon, Naha and Tokyo FIRs on 29 September 2005, and to follow-up on implementation of RVSM in the Western Pacific/South China Sea (WPAC/SCS) areas. The Naha and Tokyo FIRs were subsequently combined to form the Fukuoka FIR. Two Task Force meetings and one Special ATS Coordination meeting had been held since the activities of the RVSM/TF were reported to APANPIRG/16 (August 2005), as shown below:

- a) Special Coordination Meeting: 20 September 2005, Bangkok, Thailand
(SCM RVSM FLOS - arrangements for the RVSM/TF review of the Western Pacific/South China Sea Flight Level Orientation Scheme)
- b) RVSM/TF/27: 27 February - 1 March 2006, Bangkok, Thailand
(90-day Review of RVSM Implementation in the Incheon FIR, and Naha & Tokyo FIRs [now Fukuoka FIR])
- c) RVSM/TF/28: 24 – 28 April 2006, Bangkok, Thailand
(Review of the Flight Level Orientation Scheme in the Western Pacific/South China Sea area)

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

2.1.24 SCM RVSM FLOS was convened to review the revised Flight Level Orientation Scheme (FLOS) scheme for the WPAC/SCS area that had been proposed by RVSM/TF/22 (September 2004) in order to enable RVSM/TF/28 scheduled in April 2006 to finalize the new FLOS arrangements.

2.1.25 The Monitoring Agency for the Asia Region (MAAR) presented three scenarios for flight level allocation that had been used as the basis for conducting the safety assessments for the FLOS review. The base scenario was the current FLOS used in the WPAC/SCS area. Scenario 1 was the FLOS change proposed at RVSM/TF/22 and Scenario 2 was essentially the same as Scenario 1, but with minor changes for ATS routes A1 and P901 to modify passing frequency. Safety assessment outcomes in respect of the three scenarios would be made available to the RVSM/TF/28 meeting for consideration.

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

2.1.26 RVSM/TF/27 was informed that since implementation in the Japanese domestic airspace on 29 September 2005, RVSM had been operating safely and efficiently. Republic of Korea reported that following implementation, although traffic volume in specific time periods had increased as the result of RVSM implementation, the operational environment between Incheon and South-East Asia/United States/Japan had significantly improved and delays had been noticeably reduced.

2.1.27 RVSM/TF/27 was updated with the results of the 90-day airspace safety oversight provided by MAAR as the interim RMA. The overall vertical risk (i.e. technical and operational) of 3.60×10^{-9} was calculated to satisfy the established regional RVSM target level of safety (TLS) of 5×10^{-9} fatal accidents per flight hour.

2.1.28 In thanking MAAR for the interim RMA support, RVSM/TF/27 agreed that the responsibilities for RMA services should revert to the Pacific Approvals Registry and Monitoring Organization (PARMO) in accordance with previous arrangements.

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

2.1.29 RVSM/TF/28 reviewed progress to date in addressing the issues arising from the use of modified single alternate FLOS in WPAC/SCS area and the impact on the single alternate FLOS in adjacent airspaces. RVSM/TF/28 recognized the efforts of RVSM/TF/22 in developing alternate flight level allocation system (FLAS) scenarios in an attempt to reduce transition tasks and harmonize the flow of RVSM traffic between the WPAC/SCS area and the Bay of Bengal and Beyond area, as well as the Pacific area.

2.1.30 RVSM/TF/28 recalled that, as a result of the non provision of RVSM safety related data to MAAR by involved States, MAAR had been unable to carry out a safety assessment in relation to the FLOS arrangements. As a result, this FLOS review meeting had been delayed by more than 12 months over the date that had originally been proposed. Recent provision of safety related data by States in accordance with APANPIRG Conclusion 16/6 had enabled MAAR to conduct appropriate safety assessments for review by RVSM/TF/28.

2.1.31 After deliberation on the current and proposed FLOS scenarios in terms of safety, capacity, regularity, transition workload, operations and harmonization, RVSM/TF/28 could not reach a consensus in respect to an appropriate FLOS for implementation in the WPAC/SCS area. In recognising the concerns raised by some affected States and RASMAG, RVSM/TF/28 agreed that work should continue under the auspices of the SEACG and ATM/AIS/SAR Sub-Group to address the concerns in relation to the existing FLOS.

Future of RVSM/TF

2.1.32 The meeting was informed that the last remaining scheduled meeting of the RVSM/TF was the one-year-review of the Japan and the Republic of Korea RVSM implementation (RVSM/TF/29), to be conducted in November 2006. In this context, the meeting considered whether the Task Force could be disbanded.

2.1.33 The terms of reference of the RVSM/TF included a responsibility for developing strategic, benefit-driven implementation plans, in concert with airspace users, for RVSM operations within selected areas and airspace of the Asia/Pacific Region in order to ensure inter-regional harmonization.

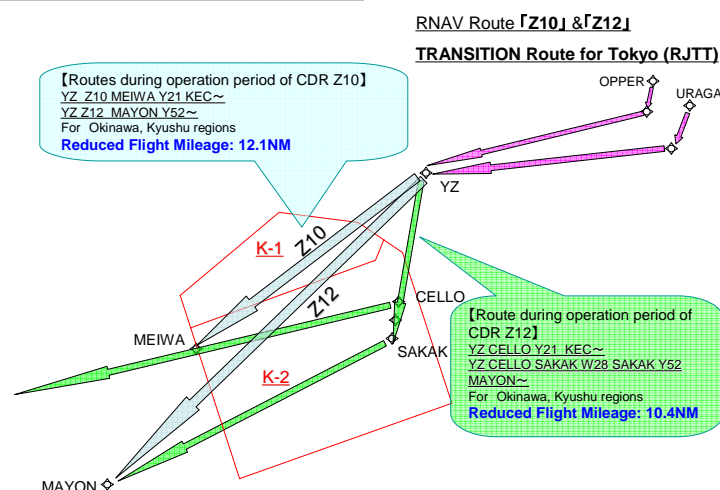
2.1.34 China informed the meeting that they acknowledged the benefits available from RVSM and had commenced active research in relation to implementing RVSM in China's sovereign airspace. As China shared its borders with about 10 neighbouring FIRs which would be affected by RVSM implementation in China, including transition arrangements between flight levels defined in feet and meters, the meeting considered that the knowledge and experience that had been gained by the RVSM/TF would be useful to China and surrounding States and would assist in inter-regional harmonization when China proceeded with RVSM implementation.

2.1.35 Accordingly, the meeting agreed that the issue of whether to disband the RVSM/TF would be raised during the next meeting of APANPIRG and if China wished to avail of the assistance of the RVSM/TF this would comprise part of the discussions at that time.

Implementation of Conditional Routes (CDRs)

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

Operation of CDRs Z10 & Z12



3

2.1.37 India had also been proactive in implementing conditional routes in a number of areas. India had implemented 3 new route segments to be available for civil operations over a six hour night time period in restricted flight level bands, thereby facilitating additional independent traffic flow into Pakistan/Afghanistan FIRs.

2.1.38 Republic of Korea informed the meeting that as a result of coordination with military authorities commencing in 2003, agreement had been reached for a number of CDRs passing through military airspace that were usable when military special use areas were not active. Nine CDRs had been operational from November 2004, with an additional 4 CDRs implemented during 2005. Two of the CDRs had been established as ATS routes. Savings in track distance varied from 1 NM to 33 NM.

2.1.39 The meeting confirmed that the implementation of CDRs by India, Japan and Republic of Korea addressed the intent of the fuel savings measures initiated under APANPIRG Conclusion 16/57 and the subsequent call by the Secretary General for all PIRGs to accord priority to the revision of procedures and ATS route structures in order to achieve maximum efficiency. The

meeting noted that the benefits derived from CDRs were not only reduced flight mileage and time, fuel saving, and reduced CO₂ emission but also enhanced ATS safety. This work also addressed APANPIRG Conclusion 16/17 in terms of the adoption of the equitable sharing of both convenience and inconvenience in the use of airspace and facilities by civil and military users.

2.1.40 The meeting recognized that the establishment of the CDRs demonstrated effective civil-military coordination and congratulated all parties involved in these implementations. In addition, the meeting was informed that these types of conditional route implementations directly addressed Global Planning Initiative # 1 (GPI-1 *Flexible use of airspace*) from the Global Plan. The meeting considered that the conditional route implementations undertaken by India, Japan and Republic of Korea provided valuable, practical every day experiences and examples of what was intended by the related APANPIRG Conclusions and GPI-1. In order to ensure a wide dissemination of these practical examples amongst States regionally, the meeting formulated the following Conclusion:

Conclusion 17/7 – Implementation of Conditional ATS Routes

That, recognizing the valuable practical examples established by recent regional implementations of enhanced ATS route segments in which the hours of operation, flight levels available and other parameters were subject to operating conditions, the ICAO Regional Office urges States to implement conditional ATS routes and route segments.

Note: Related to Global Planning Initiative # 1 (GPI-1) Flexible use of airspace

2.1.41 However, the meeting was not aware of any definition of an “ATS Conditional Route” in ICAO documentation. Additionally, no specific ATS route designator was identified by ICAO for use in naming conditional routes, so States had adopted a variety of different route names. In light of this, the meeting adopted the following Conclusion:

Conclusion 17/8 – Definition of Conditional ATS Route and ATS Designator

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

Implementation of ATS Routes in the Asia/Pacific Region

ATS Route Catalogue

2.1.42 The meeting recalled that Decision 16/9 had accepted the *Asia/Pacific ATS Route Catalogue* as a regional planning tool, to be maintained and updated on a regular basis. The Catalogue was first published in August 2005 and a current copy (Version 3, June 2006) was now available from the ICAO Asia/Pacific web site (<http://www.icao.int/apac/>) under the menu “eDocuments”.

2.1.43 APANPIRG/16 considered that the ongoing work to implement routes was a high priority for States and users and therefore developed Conclusion 16/10 requiring that States study the

ATS Route Catalogue in respect to the feasibility of the route requirements, in order to consider their implementation with appropriate priorities.

RNAV Implementation Plan for Japan

2.1.44 The meeting noted that the ICAO Required Navigation Performance and Special Operational Requirements Study Group (RNPSORSG) had agreed on the need for specifying future applications of the Performance Based Navigation (PBN) concept, and specified that operations with on board self contained performance monitoring and alerting were designated as RNP, while operations without on board self contained performance monitoring and alerting were designated as RNAV.

2.1.45 JCAB developed the RNAV Roadmap for Japan and released it in April 2005. The JCAB RNAV Roadmap details each RNAV application for enroute, terminal and approach domains. RNAV applications detailed in the JCAB Roadmap fully conform to the ICAO Performance Based Navigation Concept.

2.1.46 The meeting was informed that 53 RNAV routes have currently been implemented in Japan to support enroute operation. The operational requirement for the current enroute RNAV routes is to certify aircraft system to FAA AC 90-45A. JCAB will upgrade the current 53 RNAV routes to **RNAV5** routes in mid 2007. With the introduction of RNAV5, track-to-track spacing for the current RNAV routes will be reduced from 20NM to 10-15NM. RNAV5 routes will continue to be established within radar airspace, and radar monitoring will be provided.

2.1.47 FMS arrival routes have been established at four airports in Japan. These arrival routes will be upgraded to **RNAV1** routes in early 2007, and opened for foreign air carriers. RNAV1 SIDs and STARs will be evolutionally implemented for busy 20 radar-equipped airports in Japan in 2007-2009. RNAV1 SIDs/STARs will continue being established within radar airspace, and radar monitoring will be provided.

2.1.48 RNAV5 routes and RNAV1 SIDs/STARs will be implemented by a city-pair basis giving priority to busy city-pairs. A simple comparison on the route between Tokyo (Haneda) and Fukuoka has indicated a potential reduction of flight mileage by 26NM (from Tokyo to Fukuoka) and 23NM (from Fukuoka to Tokyo), and the estimated total reduced mileage of 49NM (equivalent to flight time of 6 minutes) per flight is considered. Approximately 100 flights currently operate daily on the Tokyo - Fukuoka pair, and more than 90% aircraft operating on this city pair will meet the RNAV5 and RNAV1 requirements and will obtain benefits. Japan advised the meeting that users who plan to fly on RNAV5 routes and RNAV/1 SID/STARs would be required to obtain operational approvals from State of Registry/Operator.

2.1.49 The meeting noted that ICAO guidance for operational approvals for each RNAV and RNP application will be detailed in the ICAO PBN Manual which was expected to be available in early 2007. The meeting encouraged States in the Asia/Pacific Region to plan and implement RNAV routes in a harmonized manner, taking into account the information detailed in the ICAO PBN Manual, which will provide practical guidance for to States for RNAV implementation.

IATA ATS Route Matters

2.1.50 IATA informed the meeting that they considered that the *Asia/Pacific ATS Route Catalogue* was the result of the excellent work of the ICAO ATS Route Network Review Task Force and the ICAO Regional Office. IATA reported that, to date, nine routes in Chapter 5 (User Requests) of the Route Catalogue had been successfully implemented. Several routes contained in Chapter 4 (States Requirements) have also been implemented. IATA placed on record its appreciation to all

affected States and the ICAO Asia Pacific Regional Office for their respective roles in the route planning and implementation.

Unmanned Aerial Vehicles (UAV)

2.1.51 In reviewing Conclusion 16/61 relating to 'Unmanned Aerial Vehicles' (UAV), which required that ICAO develop appropriate provisions and guidance material for the operation of UAV, the meeting was informed that the ICAO Exploratory Meeting on Unmanned Aerial Vehicles, (hereinafter 'UAV meeting'), was held in Montreal, Canada during May 2006.

2.1.52 The UAV meeting had reviewed the results of a questionnaire sent out by ICAO to selected States and international organizations, and the current status of ICAO work concerning UAVs. Consequently, the UAV meeting identified the following critical issues related to UAV activity that had to be addressed and resolved:

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

2.1.53 The UAV meeting agreed that ICAO should coordinate the development of a strategic document that would guide the regulatory evolution and that, even though non-binding, would be used as the basis for development of regulations by the various organizations and States. The UAV meeting agreed to form the *Informal ICAO Working Group on UAVs* to continue work in this regard.

2.1.54 The meeting was informed that during the ATM/AIS/SAR/SG/16 meeting, many States present and IFALPA had expressed misgivings at the pending implementation of mixed operations in which UAV operations occurred in the same airspace as 'normal' passenger transport operations, considering that until appropriate regulatory mechanisms were in place mixed operations should not occur. ATM/AIS/SAR/SG/16 expressed strong and serious concerns at the lack of suitable SARPs and guidance materials to regulate the wide proliferation of UAV activities across the region, particularly in sovereign airspaces.

2.1.55 ATM/AIS/SAR/SG/16 considered that the intent of APANPIRG Conclusion 16/61 had not yet been met and requested that mechanisms be put in place to ensure that affected States of the region were kept fully informed of progress in these matters and were given opportunity to provide input to discussions. In recognizing the concerns raised by the ATM/AIS/SAR/SG, the meeting adopted the following Conclusion:

Conclusion 17/9 – Coordination of UAV Procedures Development

That, noting the serious concerns held by some States of the Asia/Pacific Region in respect of Unmanned Aerial Vehicle (UAV) operations in mixed environments, ICAO invite Australia, India, Japan, Malaysia, New Zealand and Singapore to participate in the Informal ICAO Working Group on UAVs.

Review of the Global and Regional Plans

2.1.56 The meeting recalled that APANPIRG/16 had noted that the Regional Plan was in need of significant revision. Considering the need to achieve alignment with the *Global Air Navigation Plan for CNS/ATM Systems*, which was being renamed as the *Global Air Navigation Plan*, (hereinafter “Global Plan”), and that the information provided in the Regional Plan was being transferred into the FASID, APANPIRG/16 considered an extensive revision of the Regional Plan was necessary and raised Decision 16/59 accordingly.

2.1.57 The meeting was informed that the Second Amendment to the Global Plan was now expected to be finalised late in 2006. The twenty three Global Planning Initiatives (GPIs) contained in the Global Plan were developed as a means to ensure global harmonization, interoperability and seamlessness of the global air navigation system and should be seen as supporting “tools” for the PIRGs and Regional Office as they worked towards their regional performance objectives.

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

2.1.59 Consequently, the work of APANPIRG would need to be transitioned to the new processes described above. The meeting considered that the first step should be to study the issues concerned and make recommendations to APANPIRG in respect to incorporating the Global Plan Initiatives in the regional planning process and to revise regional planning documents as appropriate. The meeting considered that forming a Task Force under APANPIRG would be the most effective way to comprehensively undertake this work, adopting the following Conclusion and associated terms of reference:

Decision 17/10 – Establish APANPIRG Regional Performance Framework Task Force

That, recognizing the new regional planning methodologies precipitated by the second amendment to the Global Air Navigation Plan and the new ICAO business planning requirements, a Task Force be established to develop a proposal/framework for consideration by APANPIRG/18 for incorporating the performance based approach into the work programme of APANPIRG and its contributory bodies. The Terms of Reference of the Task Force are provided in **Appendix B** to the Report on Agenda Item 2.1.

Note: The composition of the Task Force would initially include the Chairpersons (or suitable delegates) of the CNS/MET and ATM/AIS/SAR Sub-Groups and the respective Secretaries from the ICAO Regional Office.

Review of State Contingency Planning

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

2.1.61 The survey of contingency plans called for under Conclusion 12/6 was initiated by the Regional Office in March 2005, using Attachment D to Annex 11 as the primary reference. A summary of the survey outcomes to date has been included as **Appendix C** to the report on Agenda Item 2.1.

State Contingency Planning – Indonesia

2.1.62 In light of the longstanding difficulties in contingency planning, APANPIRG/16 considered that an ICAO Special Implementation Project (SIP) would be a suitable means for facilitating the development of contingency plans. APANPIRG/16 considered that the SIP should develop contingency plans for a selected State which could then also be used as a model for other States. In addition to addressing the contingency provisions of Annex 11, the SIP would be used to identify and prioritize other contingency factors that could impact the continuity of civil aviation operations, with a view to using the output of the SIP in a workshop or seminar format to assist other States of the region.

2.1.63 Indonesia was selected to receive the SIP. The SIP concentrated on addressing the provisions of Annex 11 – *Air Traffic Services*, Attachment D, primarily in the context of operations in international airspace. The SIP also addressed the relevant APANPIRG Conclusions, particularly in respect of continuity of operations following acts of terrorism, industrial action, natural disaster and presence of volcanic ash.

2.1.64 Field visits were conducted in Indonesia during July 2006 by the SIP Officer, along with initial coordination with Indonesia's neighbouring States. Early draft contingency planning documents were prepared for the Jakarta and Ujung Pandang FIRs and forwarded to Indonesia in mid-August 2006 for review and comment. Finalization of ATS contingency plans would be accomplished by Indonesia in coordination with the Regional Office and would include feedback from neighbouring States, airspace users and concerned parties. The draft National ATM Contingency Plan for the Jakarta FIR is at **Appendix D** to the Report on Agenda Item 2.1. A similar plan has been prepared for the Ujung Pandang FIR.

2.1.65 The main points arising from the Indonesian SIP project are summarized below.

- a) the National ATM Contingency Plans for Jakarta and Ujung Pandang FIRs were developed with the full support of the DGCA and ATS providers, and included visits to their operational facilities;
- b) the contingency planning adopted a project management approach and a core team of ATS specialists drawn from the three ATS organizations in Indonesia was formed and other personnel co-opted to assist as required;
- c) a Task List for ongoing action to complete the contingency plan was prepared and follow-up action was detailed;
- d) a debrief was provided at the end of the mission to the DGCA and ATS providers pointing out relevant matters identified during the course of the mission;
- e) coordination was initiated with ATS authorities for some of the neighboring States and site visits undertaken. They gave their full support for the establishment of the Indonesia Contingency Plan.

2.1.66 In reviewing the draft National ATM Contingency Plan for the Jakarta FIR, the meeting recognized that the final version of the Plan would serve as a useful model for other States of the region in preparing contingency plans and formulated the following Conclusion:

Conclusion 17/11 – Adoption of Model National ATM Contingency Plan

That the National ATM Contingency Plans of Jakarta and Ujung Pandang FIRs, which were prepared as a result of the 2006 ICAO Special Implementation Project be adopted as a model for Asia/Pacific States in the preparation of national ATM contingency plans.

Air Traffic Flow Management Operational Trial – Bay of Bengal

2.1.67 As a result of a Special ATS Coordination Meeting (SCM) held in February 2005, the Air Traffic Flow Management Task Force (ATFM/TF) was convened under the auspices of the Bay of Bengal ATS Coordination Group (BBACG) with the main focus towards the operational trial of an automated flow management tool for regulating the flow of traffic across the Bay of Bengal transiting the Kabul FIR during the night time peak traffic period (2000-2359UTC).

2.1.68 During a Go/No Go meeting in June 2006 in respect of the Bay of Bengal ATFM Operational Trial (SCM GO BOB ATFM, 14 – 16 June 2006) the ATFM/TF took a ‘Go’ decision to commence a ghosting phase of the ATFM Operational Trial on 29 June 2006, using the automated Bay of Bengal Cooperative ATFM Advisory System (BOBCAT) developed by Aeronautical Radio of Thailand Limited (AEROTHAI).

2.1.69 As a result of satisfactory ghosting performance, the trial advanced to the operational phase on 24 July 2006 and, pursuant to a comprehensive review, the ATFM/TF/7 meeting (31 July – 3 August 2006) extended the operational phase of the trial until further notice. A copy of the full report of ATFM/TF/7 is available on the website of the ICAO Asia/Pacific Regional Office.

Operational Trial Feedback - Afghanistan

2.1.70 The Kabul ACC Manager informed ATFM/TF/7 that, even in its early stages the ATFM operational trial had a direct and measurable safety benefit by increasing the numbers of overflights that were separated in accordance with PANS-ATM provisions from about 72% to about 95% of total overflying traffic. Additionally, the ATFM operational trial had made the management of existing traffic levels more efficient and would enhance the capability of Afghanistan to manage the increased traffic growth forecast in the near future.

Operational Trial Shortcomings

2.1.71 The meeting was informed that ATFM/TF/7 had reviewed the ATFM operational trials and highlighted a number of shortcomings which had become evident during the first six days of the trials, including:

- a) The impact of crossing traffic on ATS routes P762, and L301 on westbound traffic;
- b) The impact of bunching traffic on westbound routes and the inability of ATC to apply tactical solutions;
- c) Impact of non - participating traffic;

- d) Impact of aircraft missing allocated wheels up times (AWUTs);
- e) Importance of ANSPs understanding their role in giving effect to the slots allocated by the ATFM system;
- f) Unused slots resulting from slot cancellations are wasted unless they are caught by dispatchers after they fall vacant, i.e. the machine does not make any adjustments to improve slots which are already allocated; and
- g) Priority in slot allocations.

2.1.72 ATFM/TF/7 recognized that the shortcomings were not related to the performance of BOBCAT, however the application of BOBCAT metering had highlighted inefficiencies in the current ATS coordination arrangements between States that could lead to traffic bunching and the need for tactical intervention at the expense of efficiency.

2.1.73 ATFM/TF/7 addressed a number of the issues raised above, developing enhanced coordination arrangements amongst States concerned which would allow the use of existing flight levels within the area more flexibly and would ease traffic bunching problems and other related issues. Additional proposals were developed in terms of software enhancements to BOBCAT, for further consideration by ATFM/TF members.

2.1.74 However, in terms of issues with non-participating flights and the importance of ANSPs understanding their role in giving effect to the slots allocated by the ATFM system, further assistance and involvement from affected ANSPs was required. In particular, the AIP Supplement issued for the trial provided clear advice that *“Flights departing without an allocated slot will be accommodated after participating flights have been processed and should expect delays for requested routes and flight levels”*. ANSPs were requested to strictly adhere to this procedure in order that flights not participating in the trial do not displace an existing flight with a slot allocation or gain reward by non-participation

2.1.75 ATFM/TF/7 had identified occasions where a flight had been allocated a slot at into Kabul FIR at a higher level but was actually assigned a much lower and less fuel efficient level to enter Kabul FIR. In some cases flights had been rerouted as well. The meeting recognised that these issues were a significant disincentive for airlines to participate in the trial, as taking a delay prior to departure based on expected route and flight level parameters and subsequently receiving an adverse level or reroute after departure meant that there was no benefit taking the ground delay in the first place. For example, if the flight will get FL280 anyway, why accept a ground delay that falsely promises FL350?

2.1.76 The meeting recognised that it was critical that enroute ANSPs monitor the nightly output of BOBCAT and ensure that flights are positioned to enter Kabul FIR in accordance with the slot parameters (Flight Level, entry fix time and ATS route) promulgated by BOBCAT for the particular flight.

2.1.77 India clarified that the BOBCAT slot allocation process took into consideration the Kabul FIR entry points only and not the conflict/convergence points in the enroute airspace. Due to a mismatch in Minimum Enroute Altitudes (MEA) between States on some routes, termination of certain route segments at intermediate points and taking into consideration the safety requirements and enroute restrictions at converging points, in some cases a level change or rerouting was inevitable.

2.1.78 The meeting agreed that the States and airspace users should ensure full compliance with the ATFM operational trial procedures and adopted the following Conclusion in this respect:

Conclusion 17/12 – Compliance with ATFM Operational Trial procedures

That, recognizing the safety and efficiency benefits resulting from the implementation of effective air traffic flow management across the Bay of Bengal, South Asia and Pakistan through the Kabul FIR, the ICAO Regional Office request States and airspace users concerned, subject to safety considerations/enroute restrictions, to ensure:

- a) full compliance with the current ATFM Operational Trial procedures, and
- b) affected ANSPs take action so that flights enter Kabul FIR in accordance with the slot parameters (flight level, ATS route and entry fix time) allocated to each flight.

SIP for ATS Safety Management Systems training

2.1.79 The meeting was advised that, based on a proposal from the Regional Office to assist in addressing APANPIRG Conclusions 16/18 and 16/19, the Council of ICAO had approved a SIP for the purposes of ATS Safety Management Systems training. The original SIP proposal required that the SIP be supported by least one State ATS safety management system expert who would be fully funded by the State, including travel, subsistence and miscellaneous expenses. The State official would assist the ICAO SIP official to prepare a suitable training programme and materials, then travel to up to 3 States to deliver the training on-site.

2.1.80 Unfortunately, a State official had not yet been made available to the Regional Office to support the SIP. Accordingly, the Regional Office had restructured the SIP proposal and was seeking to contract a SIP official to prepare and deliver the training in one State only. At this stage it was the intention of the Regional Office to arrange for the delivery of this training in late September, however coordination arrangements with a suitable SIP official and host State still needed to be finalised.

Reconvening the AIDC Task Force

2.1.81 The meeting was informed in relation to a request raised by ISPACG/20 (January 2006) and supported by the ATM/AIS/SAR/SG/16 meeting, whereby the Asia/Pacific AIDC Review Task Force be reconvened for the purpose of completing an outstanding task within the current Asia/Pacific ATS Interfacility Data Communications Interface Control Document (AIDC ICD).

2.1.82 The meeting recalled that, in recognition that the Asia/Pacific Region had a great need for a data interchange infrastructure that would significantly reduce the need for verbal co-ordination between Oceanic ACCs, APANPIRG/5 (October 1994) had established an AIDC Task Force. As result of the AIDC Task Force, the Asia/Pacific Regional Interface Control Document for ATS Inter-Facility Ground/Ground Data Communications Version 1.0 was issued on 1 June 1995.

2.1.83 APANPIRG/13 had reconvened the Task Force to examine difficulties experienced in adjacent FIRs implementing AIDC exchanges which had resulted in ad hoc agreements about how adjacent systems should communicate via AIDC. The AIDC Review Task Force meeting (March

2003) proposed a number of amendments to the AIDC ICD, and Version 2.0 (V2.0) was adopted by APANPIRG/14 (August 2003) under Conclusion 14/3.

2.1.84 Recently, as States have commenced software enhancements in order to implement AIDC V2.0 functionality, several areas requiring either clarification or further work have been identified within the AIDC ICD. Accordingly, the meeting agreed to reconvene the AIDC Review Task Force, on the basis that a single meeting of the Task Force would be held to address a very focused agenda comprising the matters and material included in the ATM/AIS/SAR/SG/16 Report on Agenda Item 7. In this respect, the meeting adopted the following Decision:

Decision 17/13 – Reconvening of the AIDC Task Force

That the AIDC Task Force be reconvened for a single meeting to complete the outstanding task of defining the format of the FAN message and addressing other outstanding issues identified in the Asia/Pacific Regional Interface Control Document for ATS Inter-Facility Ground/Ground Data Communications Version 2.0.

Review of ALLPIRG/5 Outcomes

Meeting of Global RMAs

2.1.85 The meeting was informed that in reviewing ALLPIRG/5 Conclusion 5/12, RASMAG/5 had given in-principle support to a meeting of all RMAs globally under the auspices of the EUR/NAT Office of ICAO but considered that there were a number of issues to be considered in deciding the arrangements for such a meeting. Of paramount importance was choosing a venue and timing for the meeting that would enable maximum attendance by as many RMAs as possible and a suitable agenda for the meeting would need to be agreed well in advance.

Global Central Reporting Agency (CRA) proposal not endorsed

2.1.86 The meeting was also informed that ALLPIRG/5 had considered a working paper presented by SITA titled “Establishment of a FANS Global Central Reporting Agency”, a copy of which was reviewed by ATM/AIS/SAR/SG/16. The SITA working paper noted that recent satellite data link performance issues caused in part by increases in data link traffic had shown that since all FANS users across different ICAO regions depend on a common global satellite data link network, the traffic generated by users in one region impacted on the network performance delivered to users other regions, thereby making it impossible to manage or plan the performance of the satellite communications network on a regional basis.

2.1.87 The SITA paper considered that regional CRA functions could not independently manage the use of a global network and that having many different CRA functions would probably delay identification and resolution of performance issues. SITA had concluded that the management of a global satellite data link network which cannot be tailored to meet the needs of specific ICAO regions or sub-regions called for a global CRA function that would serve all regional FANS Interoperability/Implementation Teams (FITs). SITA saw the primary advantages of a global CRA function as the promotion of consistent approaches to FANS implementation across all ICAO regions and an increased awareness and information sharing between the regional FITs.

2.1.88 In reviewing the SITA proposal, ALLPIRG/5 had recognized the benefits of adopting the concept of establishing a global CRA function to support the regional FITs across all ICAO regions, but considered that, at this stage, it would be premature to endorse such a proposal and that a business case would be needed before endorsing it. A subsequent review of the ALLPIRG/5 report by

the Air Navigation Commission (C-WP/12694 refers) clarified that it was necessary for this issue to be examined by APANPIRG before ICAO Headquarters initiated any action.

2.1.89 The meeting recalled the history of regional datalink implementation, noting that the ISPACG first established FIT following discussions at ISPACG/11 (December 1996), which identified the need for such a group to provide quality control and monitoring of the FANS-1/A system integrity and performance. In this context, the ISPACG FIT established a CRA in 1997 in accordance with the APANPIRG CNS/ATM Guidance Material. Other areas in the Asia/Pacific Region have progressively implemented similar measures based on the ISPACG planning and implementation model.

2.1.90 In considering the increasing implementation of data link capability and reduced horizontal and vertical separation minima throughout the Asia/Pacific Region, APANPIRG/14 (August 2003) addressed the need for a transparent airspace safety oversight capability, to which all States could contribute and participate, by establishing the Regional Airspace Safety Monitoring and Advisory Group (RASMAG). Under the oversight of RASMAG all safety related activities in the Asia/Pacific Region are reviewed and reports of all monitoring agencies including FITS and associated CRAs are submitted to RASMAG for review.

2.1.91 Using this information RASMAG gains an overview picture of the safety of international airspaces in the region subject to ICAO safety monitoring requirements. The process also ensures that all regional monitoring agencies share their lessons learnt and facilitates harmonization of their operating procedures and practices. Arising from the results of these activities, ICAO Headquarters and other regional planning groups are kept up to date on developments in the Asia/Pacific Region.

2.1.92 The meeting noted that the regionally authored FANS Operations Manual (FOM) had been adopted by APANPIRG (Conclusion 15/7 refers), and all States in the Asia/Pacific Region were advised to use this document as a basis for operating ADS-C and CPDLC in conjunction with relevant ICAO documentation, in particular for FANS-1/A operations. ICAO Headquarters had now initiated development of the International Data Link Manual to harmonize the FOM and other regional and international material in the expectation of eventually producing a global document for data link operations.

2.1.93 The meeting considered that it was evident from the above history that the advantages identified to ALLPIRG/5 by SITA i.e. the promotion of consistent approaches to FANS implementation across all ICAO regions and an increased awareness and information sharing between the regional FITs were already being realized in the Asia/Pacific Region.

2.1.94 The meeting was disappointed that this information had not been available to ALLPIRG/5 during the discussions in relation to a Global CRA and felt that it was possible that ALLPIRG/5 had not been fully informed as a result. There were many issues to be resolved if a Global CRA was to be implemented, including State sovereignty, legal and funding issues as well as the commercial competition issues between data services providers (e.g. SITA & ARINC) and CRA services providers (e.g. Boeing, Japan CRA & Airbus). Also, regional experiences had demonstrated instances where local peculiarities in data link operations had required local solutions, rather than global fixes.

2.1.95 In concluding that there were many issues to be addressed, the meeting agreed with ATM/AIS/SAR/SG/16 and ALLPIRG/5 that it was premature for such a proposal to be considered for endorsement.

ICAO Language proficiency survey

2.1.96 The meeting was informed by the Secretariat of the results of the ICAO Headquarters global survey to ascertain the status of implementation of language proficiency provisions. State letter Ref.: T3/9.4 – AP128/05 (ATM) was issued by the Regional Office in December 2005 in response to APANPIRG Conclusion 16/21, requesting the participation of States in the conduct of the survey. The results of the survey were consolidated for review by the Air Navigation Commission (ANC).

2.1.97 The ANC, in undertaking its review of the ICAO language provisions, had selected a June 2006 date as it was the last opportunity to make an amendment to the provisions before their applicability in March 2008.

2.1.98 The meeting noted that as a result of the review, the ANC had agreed to the following action:

- The 5 March 2008 applicability date was retained;
- No other changes to the language proficiency provisions of Annex 1 would be made. In particular, a proposal from the International Council of Aircraft Owner and Pilot Associations to relax testing requirement for VFR flights in uncontrolled airspace was not accepted,
- A new progress report on the status of implementation of the provisions will be presented to the Commission in March 2007 (i.e. one year before the applicability date); and
- The Headquarters Secretariat together with an ad-hoc group of the ANC would develop a strategy to support the timely and effective implementation of the language proficiency requirements. It was expected that this strategy would formalize many of the activities that were taking place (seminars, improvement of the guidance material, etc).

Language proficiency testing in the Fiji Islands

2.1.99 Fiji informed the meeting that before March 2008, some 300 pilots, 40 air traffic services and 100 aviation personnel in the relevant fields would need to be tested, rated, trained and verified, to meet the language proficiency provisions. It was estimated that the testing would take six months, therefore a satisfactory system was expected to be in place by August 2007.

2.1.100 However, Fiji advised the meeting that they did not have the personnel available or trained to manage the full implementation. Whilst the numbers to be examined may seem small, for an island nation such as Fiji this puts a serious strain on financial and human resource capabilities of organizations required to comply.

2.1.101 The meeting recognized that as a developing island nation with limited resources, the implementation of the ICAO Language Proficiency Requirements without the assistance of more developed nations in terms of sharing resource development would be quite a challenge. The meeting noted that Fiji would consider any viable solutions from ICAO Member States on this matter at a reasonable cost.

State ATS Safety Contact Officers

2.1.102 ICAO placed considerable priority on identifying and rectifying deficiencies and strongly supported the sharing of safety data. This was also a high priority item of APANPIRG/16, which was concerned about the persistence of ATS operational deficiencies. Conclusion 16/62 requested States to provide a safety contact point for ATS matters, in particular the submission and coordination of ATS incident reports.

2.1.103 The Regional Office had established a suitable list of “State ATS Safety Contact Officers” and urged States who had not already done so to identify a responsible contact officer and submit contact details to the Regional Office for inclusion in the list. A copy of the list is included as **Appendix E** to the Report on Agenda Item 2.1.

Aeronautical Information Service Matters

Survey of Quality Systems in AIS

2.1.104 The meeting recalled that Paragraph 3.2.1 of Annex 15 – *Aeronautical Information Services* required each Contracting State to introduce quality systems in AIS and Paragraph 3.2.2 of Annex 15 further recommended that quality systems be compatible with the International Organization for Standardization (ISO) 9000 series.

2.1.105 The Regional Office had recently conducted a survey to establish how many States had introduced quality systems in accordance with Annex 15 and whether the established quality systems were in accordance with the ISO 9000 series. The updated survey result as of 24 March 2006 is at **Appendix F** to the Report on Agenda Item 2.1.

AIS Seminar and First Meeting of the ICAO AIS Implementation Task Force

2.1.106 APANPIRG/14 (August 2003), in considering the future of the then inactive AIS Automation Task Force, agreed under Decision 14/8 that it should be reactivated and renamed the AIS Implementation Task Force (AITF) to ensure that regional AIS matters continued to be progressed. However, ongoing resource limitations at the Regional Office meant that the AITF could not be immediately reactivated. During March 2006, as a result of significant assistance from Australia and Japan, the combined Aeronautical Information Conceptual Model (AICM) and Aeronautical Information Exchange Model (AIXM) Management Seminar and First Meeting of the AIS Implementation Task Force (AITF/1) were held at the Regional Office.

AICM and AIXM Management Seminar

2.1.107 The purpose of the seminar was to exchange information on AICM and AIXM, electronic publication of aeronautical information publications and aeronautical information management issues and trends.

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

Outcomes of Global AIS Congress

2.1.109 The meeting noted that ICAO/Eurocontrol Global AIS Congress was held in Madrid, Spain in June 2006. The Congress recognized the critical role of aeronautical information in the ICAO ATM Concept by linking available, timely, high integrity aeronautical information with safety and efficiency. For navigation high integrity waypoint data and terrain information is vitally important. The meeting noted the comment that traditionally collated and distributed AIS information is considered to have an error rate of 1 in 1000 entries and this was unsatisfactory for GNSS and RNAV navigation. The meeting supported the conclusions and recommendations of the AIS Congress and, to promote the development and implementation of data system that provide timely, accurate and high integrity data, the meeting adopted the following Conclusion:

Conclusion 17/14 – Improvement of aeronautical information exchange and management

That, in order to increase the reliability and integrity of the aeronautical information in support of navigation functions, ICAO be invited to establish, as a matter of urgency, a standard model for the electronic exchange of aeronautical information.

AITF/1

2.1.110 A review of the Terms of Reference of the AITF identified that it was more efficient for the AITF to report to APANPIRG via the ATM/AIS/SAR Sub Group, rather than directly to APANPIRG and the text “*The Task Force will report to the ATM/AIS/SAR Sub-Group of APANPIRG*” was suggested for inclusion in the Terms of Reference. The following Decision was adopted:

Decision 17/15 – Terms of Reference of the AIS Implementation Task Force

That, the AIS Implementation Task Force (AITF) be directed to report to the ATM/AIS/SAR Sub-group and the Terms of Reference of the AITF be amended accordingly .

2.1.111 AITF/1 reviewed the details of potential deficiencies applicable to AIS that were reported at ATM/AIS/SAR/SG/15. The meeting agreed that the Task Force would maintain continuous watch on the following list of AIS-related potential deficiencies:

- a) Implementation of Digital Terrain data;
- b) Implementation of Digital aeronautical charts;
- c) Implementation of AIS Quality Systems (including training of AIS staff);
- d) AIRAC adherence; and
- e) AIS Automation.

2.1.112 AITF/1 noted that a previous survey in relation to AIS-related matters such as automation, quality systems and AIS databases was conducted to investigate how the requirements in the regional *Guidance Material for AIS Common Operation* could be met. AITF/1 recommended that

an updated survey be carried out, particularly in relation to new Aeronautical Data requirements in Annex 15 and electronic Terrain/Obstacle Data.

2.1.113 APANPIRG/17 supported the initiative of AITF/1 in this respect, formulating the following Conclusion:

Conclusion 17/16 – Conduct of Comprehensive AIS Survey

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

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

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

- a) A work group of the Task Force to draft an improvement plan to address the deficiencies in the AIS field; and
- b) A work group of the Task Force to investigate the differences between EUROCONTROL OPADD (Operating Procedures for AIS Dynamic Data) and the current Asia/Pacific Region OPADD.

Non-compliance with AIS AIRAC

2.1.116 The meeting was informed of the continuing examples of implementations occurring without sufficient notice and not in alignment with the 28 day AIRAC cycles. States present at the ATM/AIS/SAR/SG/16 meeting had highlighted that in many instances, matters were outside the control of AIS officials as they were driven by political and institutional agendas that lacked knowledge of AIS matters. The meeting reviewed previous APANPIRG Conclusion 14/9 in this respect.

2.1.117 The Regional Office would ensure the matter was highlighted to the next meeting of the AITF, scheduled in February 2007, with a view to identifying a solution to this persistent problem. The meeting agreed that the text of Conclusion 14/9 continued to adequately describe the long standing regional concerns in this respect and should be further promulgated. The meeting elected to adopt the following Conclusion, incorporating and superseding Conclusion 14/9:

Conclusion 17/17 – Non Compliance with Annex 15 Provisions

That, noting the regular and ongoing non-compliance with Annex 15 – *Aeronautical Information Services* provisions in respect to AIRAC notification periods, the ICAO Regional Office be requested to reinforce to States the critical safety nature of AIS and adherence to Annex 15 provisions, in particular those

relating to AIRAC, as well as the need to ensure accurate and timely publication of AIS data.

Search and Rescue (SAR) Matters

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

2.1.118 The meeting reviewed and updated the APANPIRG list of SAR Agreements and the SAR Capability Matrix Table as presented in **Appendices G and H** respectively to the Report on Agenda Item 2.1.

2.1.119 In this regard, it was noted that Australia had informed the Regional Office of a SAR Arrangement signed with the Republic of the Maldives in April 2006 for the coordination of Search and Rescue services between the States. The Civil Aviation Administration of Viet Nam (CAAV) had also been actively coordinating with other Civil Aviation Administrations in developing and signing Letters of Agreement (LOAs) for provision of assistance in SAR activities.

Special Implementation Project (SIP) for SAR

2.1.120 APANPIRG/16, in recognizing the success of the Chennai SAR Seminar and SAREX held in March 2005, raised Conclusion 16/25 calling for a similar event for Pacific Island States. The meeting was informed that planning had commenced for the SIP addressing the Pacific Islands International SAR Seminar and SAREX, however difficulties had been experienced in identifying a suitable host State for the event.

2.1.121 Subsequent coordination had identified that the United States Coast Guard (USCG) had commenced planning for a maritime SAR project to be conducted in the Pacific in April 2007, with Vanuatu preferred as a base for this project. Consequently ICAO, in recognition that a joint aviation/marine SAREX made good sense in terms of the Pacific Islands, had focused coordination on such a joint SAREX with the USCG agreeing that such a joint SAREX would enhance the outcomes of their maritime SAR project.

2.1.122 In this context, planning was proceeding on a proposal that the joint aviation/marine SAREX would involve Vanuatu, Fiji, New Caledonia and other surrounding States, with the maritime coordination to be effected from Vanuatu RCC and the aeronautical coordination from neighbouring State RCCs. The SAREX and Seminar were expected to be conducted during April 2007. States were encouraged to forward information to the Regional Office in regard to the availability of State officials to participate in the SAREX/Seminar arrangements.

Search and Rescue Coordination between Maritime and Aviation Authorities

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

2.1.124 The meeting was further informed that APHMSA/9 (April 2006) discussed a paper which provided an overview of the search and rescue extracts from a previous APANPIRG report. The senior maritime safety officials agreed that there were several SAR topics in common, noting that

with the common interest between APHMSA and APANPIRG there were potential benefits in exchanging appropriate information regarding their meetings.

Regional Office Staff Resources

2.1.125 The meeting noted the resource situation of the Regional Office and acknowledged with appreciation that Thailand had positively responded to ICAO's request for States to support ICAO's work at a time of reduced resources by providing a suitably qualified ATM officer from AEROTHAI to be assigned to ICAO duties for a three year term, commencing in late 2005.

2.1.126 Although there had been this improvement in ATM staffing, the increasing ATM work programme continued to over-stretch the Office's capability to support all the ATM activities required in the region. Additionally, mid year 2006 retirements of two senior officers from other disciplines at the Regional Office further reduced the overall Regional Office capability. This situation needed to be taken into account when determining additional work required of the Regional Office. Consequently, during the coming year it was highly likely that the ATM Section would not be able to organize and attend all the ATM forums that were required to be supported by ICAO.

2.1.127 The meeting noted with regret that ICAO continued to experience diminishing resources at a time of significant change, placing increasing demand on remaining ICAO resources. This was particularly felt in this region where a high priority was placed on accelerating implementation of the CNS/ATM plan and the introduction of improvements to the operational environment in international airspaces.

2.1.128 In acknowledging the technical and leadership requirements that needed to be met by the Regional Office in addressing the needs of the many States of the Asia Pacific Region, the meeting recognized that ATM/AIS/SAR/SG/16 had considered it particularly problematic that the ATM resource limitations at the Regional Office resulted in reduction of capability for a holistic oversight of regional activities. This was expected to potentially result in unproductive efforts as States, acting in good-will, went in different and potentially non-ICAO compliant directions in the regional implementations. In light of the concerns expressed, the meeting formulated the following Conclusion:

Conclusion 17/18 – Additional Asia/Pacific Office ATM Resources

That, in consideration of the significant actual and forecasted traffic growth in Asia/Pacific Region and the benefits to be gained from the APANPIRG CNS/ATM work programme through implementing the Global Plan Initiatives:

- a) ICAO be requested to urgently address the inadequacy of ATM resources at the Regional Office; and
- b) ASIA/PAC States be requested to consider possibilities of further supporting the Regional Office ATM programme.

Task List for ATM/AIS/SAR/ Sub-Group

2.1.129 The meeting reviewed the updated Task List for the ATM/AIS/SAR Sub-Group, as approved by APANPIRG/16 and reviewed and updated by the ATM/AIS/SAR/SG/16 meeting. Additional task list entries were necessary resulting from Decision 17/1 requiring that the ALLPIRG/5 Conclusions 5/2, 5/4, 5/5, 5/7, 5/8, 5/9, 5/11, and 5/13 be studied by the ATM/AIS/SAR Sub-Group and action be taken to implement them.

2.1.130 A copy of the task list has been included as Appendix I to the Report on Agenda Item 2.1 and the meeting adopted the following Decision in this regard:

Decision 17/19 – ATM/AIS/SAR Subject/Task List

That the ATM/AIS/SAR Subject/Task List as contained in **Appendix I** to the Report on Agenda Item 2.1 be adopted as the current work programme for the ATM/AIS/SAR Sub-Group.

Additional information

2.1.131 The meeting noted additional information in relation to the following:

- a) Environmental Benefits of CNS/ATM Systems;
- b) Developments and Implementation in ATM/AIS in Indian Airspace;
- c) Capacity Enhancement Initiatives in Indian Airports;
- d) Upgrading of ILS to CAT IIIB at Delhi Airport, India; and
- e) Implementation of ICAO Language Proficiency Requirements on Pilots and Air Traffic Controllers in China.

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TERMS OF REFERENCE

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

Objective

To identify, study and address problems in the safety, efficiency and harmonization of RVSM operations in the Western Pacific/ South China Sea area.

Terms of Reference

- a) To assemble subject matter experts from affected States and international organizations, including those experienced in air traffic control, data analysis and risk modeling;
- b) To analyze and evaluate problems in air traffic operations in the RVSM airspace of the WPAC/SCS area regarding RVSM transition activities;
- c) To promote the minimization of transition activities and enhance the harmonization of flight level assignment with the adjacent regions where RVSM was implemented;
- d) To analyze and evaluate problems in air traffic operations in the RVSM airspace of the WPAC/SCS area regarding large height deviation (LHD) occurrences;
- e) To identify any other problems associated with RVSM operations in WPAC/SCS airspace;
- f) To recommend remedial actions to improve safety and reduce risk in RVSM operations; to identify beneficial trends in system performance and promote practices that ensure continued safe operations;
- g) To report to the ATM/AIS/SAR Subgroup in order to assist in determining the safety, efficiency, and harmonization of RVSM implementation in the WPAC/SCS area; and
- h) To keep the Regional Airspace Safety Monitoring Advisory Group of APANPIRG (RASMAG) up to date with developments.

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TERMS OF REFERENCE

Regional Performance Framework Task Force

(RPF/TF)

Objective

To conduct a comprehensive review of regional planning documentation and arrangements in order to ensure alignment with the *Global Air Navigation Plan* (the “Global Plan”) and ICAO business planning methodologies. As a result of the review, produce relevant planning documentation and, if necessary, procedures to ensure an ongoing alignment with the Global Plan and ICAO business planning methodologies.

Terms of Reference

- a) to address the intention of APANPIRG Decision 16/59, taking into account the ICAO Global Plan Initiatives described in Amendment 2 to the Global Plan and the new ICAO business planning processes;
- b) to review all existing regional planning material, including the *Asia Pacific BANP and FASID*, *Asia/Pacific Regional Plan for the New CNS/ATM Systems*, the *CNS/ATM Implementation Planning Matrix for the Asia/Pacific Region* and the APANPIRG list of *Key Priorities for CNS/ATM Implementation in the Asia/Pacific Region*;
- c) in conducting the review in b) above, to ensure that appropriate material is retained, duplication removed and redundant material discarded;
- d) endeavour, insofar as possible, to package the regional work programme into discrete projects in accordance with ICAO business planning methodologies;
- e) complete the review of all matters by end of May 2007 and report to APANPIRG/18 through the APANPIRG Sub-Groups; and
- f) prepare submissions and recommendations to APANPIRG/18 on the results of the review.

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Survey on National Contingency Plans

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

Survey on National Contingency Plans

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

Note: Blank indicates that no information has been provided.

DRAFT

CONTINGENCY PLAN

JAKARTA FIR – PART I

Version 1.4

PREPARED BY

Indonesian Contingency Plan Project Team

AIR TRAFFIC SERVICES DIVISION
DIRECTORATE GENERAL OF AIR COMMUNICATIONS, INDONESIA

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FOREWORD

This is the first edition of the Indonesian Air Traffic Management (ATM) Contingency Plan for Air Traffic Services (ATS) for the Upper Airspace of the Jakarta Flight Information Region (FIR). The Contingency Plan will come into effect as determined by the Director General of the Directorate General Air Communications (DGAC), who is the authority for civil aviation operations in Indonesia.

This Contingency Plan (the Plan) is presented in two Parts: Part I for the Jakarta FIR, and Part II for the Ujung Pandang FIR. Part I of the Plan provides for the contingency arrangements to be introduced to permit the continuance of international flights to transit the Jakarta FIR, in the event that the air traffic and support services normally undertaken by the Jakarta Area Control Centre (ACC) should become partially or totally unavailable due to any occurrence that restricts flight operations. Similarly, Part II provides for the contingency procedures for the Makassar ACC. In the event of both ACCs becoming inoperative, Parts I and II will be activated catering for the worst case scenario of a total disruption in ATS for the Upper Airspace of the Jakarta and Ujung Pandang FIRs.

The Indonesian territory, which comprises an archipelago of some 17,500 islands extending about 5000 kms mainly in an east/west direction, is located in a major earthquake zone with many active volcanoes. A major earthquake could strike at any time causing serious damage to civil aviation and air navigation services, facilities and infrastructure. With two major ACCs located at Jakarta for the west region and Makassar for eastern region, it is considered highly unlikely that both facilities would be out of service simultaneously. However, in the event that one ACC becomes inoperative, and ATS became unavailable, it would take several days to relocate and operate ATS from the remaining ACC and restore a more normal level of service. During this interim period, flight operations in Indonesia would be severely restricted.

This Plan has been developed in close co-operation and collaboration with the civil aviation authorities responsible for the adjacent FIRs and representatives of the users of the airspace. The Indonesian military authorities also have been consulted and recognize the requirement for the Plan and the civil aviation procedures that apply thereto.

The Plan will be activated by promulgation of a NOTAM issued by the Indonesian International NOTAM Office (INO) as far in advance as is practicable. However, when such prior notification is impracticable for any reason, the Plan will be put into effect on notification by the designated authority, as authorized by the DGAC. It is expected that the civil aviation authorities concerned, and the airline operators will fully cooperate to implement the Plan as soon as possible.

This Plan has been prepared in coordination with the International Civil Aviation Organization (ICAO) to meet the requirements in ICAO Annex 11 — *Air Traffic Services* to provide for the safe and orderly continuation of international flights through Indonesian airspace.

Any proposed amendments to this plan shall be forwarded to:

Director General
Directorate General of Air Communications
Jl. Medan Merdeka Barat No. 8
Gedung Karya Lt. 5
Jakarta, 10110, Indonesia
Tel: (62-21) 3505137
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RECORD OF AMENDMENTS

Amendment Number	Effective Date	Date Entered	Entered By	Paragraph/ Reference

PART I

ATM CONTINGENCY PLAN FOR INTERNATIONAL FLIGHTS TO TRANSIT THE UPPER AIRSPACE OF THE JAKARTA FIR

Effective: day/month/year/time(UTC)

1. OBJECTIVE

1.1 The Air Traffic Management (ATM) Contingency Plan, Part I contains arrangements to ensure the continued safety of air navigation in the event of partial or total disruption of air traffic services in the Jakarta FIR in accordance with ICAO Annex 11 — *Air Traffic Services*, Chapter 2, paragraph 2.29. The Contingency Plan provides the ATS procedures and contingency route structure using existing airways in most cases that will allow aircraft operators to transit the Jakarta FIR.

1.2 This Contingency Plan does not address arrangements for aircraft arriving and departing at Indonesian airports or for domestic flight operations within the territory of Indonesia.

2. STATES AND FIRS AFFECTED

2.1 In the event that the Director General, DGAC activates this Contingency Plan, the civil aviation authorities of the adjacent FIRs will be notified in accordance with the Letter of Agreement (LOA) established between the States concerned. The adjacent States, FIRs and ACCs directly affected by this Contingency Plan are as follows:

- a) Australia
Melbourne FIR (ACC)
Brisbane FIR (ACC)
- b) India
Chennai FIR (ACC)
- c) Malaysia
Kota Kinabalu FIR (ACC)
Kuala Lumpur FIR (ACC)
- d) Singapore
Singapore FIR (ACC)
- e) Sri Lanka
Colombo FIR (ACC)
- f) United States of America
Oakland FIR (ACC)

2.2 The contact details of the civil aviation authorities and organizations concerned are contained in **Appendix 1A**. These details should be kept up to date and relevant information provided to the DGAC as soon as practicable.

3. MANAGEMENT OF THE CONTINGENCY PLAN

3.1 The contingency measures set out in this Plan are applicable in cases of foreseeable events caused by unexpected interruptions in ATS caused by natural occurrences or other circumstances, which, in one way or another, may impair or totally disrupt the provision of ATS and/or of the related support services in the Jakarta FIR.

3.2 The following arrangements have been put in place to ensure that the management of the Contingency Plan provides for international flights to proceed in a safe and orderly fashion through the Upper Airspace of the Jakarta FIR.

Central Coordinating Committee

3.3 As soon as practicable in advance of, or after a contingency event has occurred, the Director General, DGAC shall convene the Central Coordinating Committee (CCC) comprised of representatives from:

- 1) Directorate General Air Communication
- 2) PT (Persero) Angkasa Pura I (ATS provider for the Ujung Pandang FIR and operator of major airports in the eastern region)
- 3) PT (Persero) Angkasa Pura II (ATS provider for the Jakarta FIR and operator of major airports in the western region)
- 4) Indonesian military authority
- 5) National Security Council / State Security Committee
- 6) Representative from the airlines committee
- 7) Meteorological service
- 8) Other participants as required

3.4 The CCC shall oversee the conduct of the Contingency Plan and in the event that the Jakarta ACC premises are out of service for an extended period, make arrangements for and facilitate the temporary relocation of the Jakarta ACC at the Makassar ACC and the restoration of ATS services. The terms of reference for the CCC will be determined by the DGAC.

3.5 Contact details of the members of the CCC are provided in **Appendix 1B**.

ATM Operational Contingency Group

3.6 The ATM Operational Contingency Group (AOCG) will be convened by the CCC with a primary responsibility to oversee the day to day operations under the contingency arrangements, and coordinate operational ATS activities, 24 hours a day, throughout the contingency period. The terms of reference of the AOCG will be determined by the CCC. The AOCG will include specialized personnel from the following disciplines:

-
- Air traffic services (ATS)
 - Aeronautical telecommunication (COM)
 - Aeronautical meteorology (MET)
 - Aeronautical information services (AIS)
 - ATS equipment maintenance service provider

The mission of the AOCG shall include taking the following action:

- i) review and update of the Contingency Plan as required;
- ii) keep up to date at all times of the contingency situation;
- iii) organize contingency teams in each of the specialized areas;
- iv) keep in contact with and update the ICAO Asia and Pacific Regional Office, operators and the IATA Regional Office;
- v) exchange up-to-date information with the adjacent ATS authorities concerned to coordinate contingency activities;
- vi) notify the designated organizations in Indonesia of the contingency situation sufficiently in advance and/or as soon as possible thereafter; and
- vii) issue NOTAMs according to the corresponding contingency situation, this plan or as otherwise needed (example NOTAMS are provided in **Appendix 1C**). If the situation is foreseeable sufficiently in advance, a NOTAM will be issued 48 hours in advance.

4. CONTINGENCY ROUTE STRUCTURE

4.1 In the event of disruption of the ATC services provided by Jakarta ACC, contingency routes will be introduced to ensure safety of flight and to facilitate limited flight operations commensurate with the prevailing conditions. Existing ATS routes form the basis of the contingency routes to be used, and a flight level assignment scheme introduced to minimize potential points of conflict and to limit the number of aircraft operating simultaneously in the system under reduced air traffic services.

4.2 The contingency route structure for international flights is detailed in **Appendix 1D**. Additional contingency routes will be introduced as and when circumstances require, such as in the case of volcanic ash clouds forming.

4.3 In regard to domestic operations, if circumstances dictate, all flights shall be temporarily suspended until a full assessment of the prevailing conditions has been determined and sufficient air traffic services restored. A decision to curtail or restart domestic operations will be made by the CCC.

4.4 Aircraft on long-haul international flights and special operations (e.g. Search and Rescue (SAR), State aircraft, humanitarian flights, etc), shall be afforded priority for levels at FL290 and above. For flight planning purposes, domestic and regional operators should plan on the basis that FL290 and above may not be available.

4.5 International operators affected by the suspension of all operations from Indonesian airports will be notified by the relevant airport authority when operations may be resumed, and flight planning information will be made available pertaining to that airport. International flights who have received such approval may be required to flight plan via domestic routes to join international contingency routes.

4.6 International operators may elect to avoid the Indonesian airspace and route to the west around the Jakarta FIR via the Melbourne and Colombo FIRs to the Chennai and Kuala Lumpur FIRs and vice versa. Also, operators may avoid the Ujung Pandang FIR to the east routing via the Brisbane and Oakland FIRs to the Manila and Kota Kinabalu FIRs and vice versa. The contingency routes to be used in this scenario will be provided by the ATS authorities concerned.

5. AIR TRAFFIC MANAGEMENT AND CONTINGENCY PROCEDURES

Reduced ATS and provision of flight information services (FIS)

5.1 During the contingency critical period, ATS including ATC may not be available, particularly with regard to availability of communications and radar services. In cases where service are not available, a NOTAM will be issued providing the relevant information, including an expected date and time of resumption of service. The contingency plan provides for limited flight information and alerting services to be provided by adjacent ACCs.

5.2 The Indonesian airspace will be divided into two parts, North and South along latitude 05 00 00S then along the existing FIR boundary of the Jakarta and Makassar FIRs. FIS and flight monitoring will be provided by the designated ATS authorities for the adjacent FIRs on the contingency routes that enter their respective FIRs. A chart depicting the airspace arrangement is provided in **Appendix 1E**.

5.3 The primary means of communication will be by VHF or HF radio except for aircraft operating automatic dependent surveillance (ADS) and controller/pilot data link communication (CPDLC) systems. When CPDLC has been authorized for use by the relevant ATC authority, this will become the primary means of communication with HF as secondary. In the case of ADS automatic position reporting, this replaces voice position reporting and CPDLC or HF will become the secondary means. Details of the communication requirements are provided in **Appendix 1F**.

ATS Responsibilities

5.4 During the early stages of a contingency event, ATC may be overloaded and tactical action taken to reroute aircraft on alternative routes not included in this Plan.

5.5 In the event that ATS cannot be provided in the Jakarta FIR a NOTAM shall be issued indicating the following:

- a) time and date of the beginning of the contingency measures;
- b) airspace available for landing and overflying traffic and airspace to be avoided;
- c) details of the facilities and services available or not available and any limits on ATS provision (e.g. ACC, APPROACH, TOWER and FIS), including an expected date of restoration of services if available;
- d) information on the provisions made for alternative services;

-
- e) any changes to the ATS contingency routes contained in this Plan;
 - f) any special procedures to be followed by neighbouring ATS units not covered by this Plan;
 - g) any special procedures to be followed by pilots; and
 - h) any other details with respect to the disruption and actions being taken that aircraft operators may find useful.

5.6 In the event that the Indonesian International NOTAM Office is unable to issue the NOTAM, the (alternate) International NOTAM Office at Singapore and/or Brisbane will take action to issue the NOTAM of closure airspace upon notification by the DGAC or its designated authority, e.g. the ICAO Asia and Pacific Regional Office.

Aircraft Separation

5.7 Aircraft separation criteria will be applied in accordance with the *Procedures for Air Navigation Services-Air Traffic Management* (PANS-ATM, Doc 4444) and the *Regional Supplementary Procedures* (Doc 7030).

5.8 The longitudinal separation will be 15 minutes. However, this may be reduced to 10 minutes in conjunction with application of the Mach number technique in light of developments and as authorized by the DGAC by the appropriate LOA.

5.9 The route structure provides for lateral separation of 100 NM and in cases where this is less, and for crossing routes, a minimum vertical separation of 2000 ft will be applied.

5.10 In the event that Indonesian ATC services are terminated, RVSM operations will be suspended and 2000 ft vertical separation minimum provided within Indonesian airspace using the RVSM flight levels contained in the table of cruising levels in ICAO Annex 2, Appendix 3. Details of the flight level assignment on the contingency routes are contained in Appendix 1D.

Flight level restrictions

5.11 Where possible, aircraft on long-haul international flights shall be given priority with respect to cruising levels.

Airspace Classifications

5.12 If ATC services become unavailable during the interruption of air traffic services, and depending on the level of service and anticipated outage of facilities, airspace classifications may be changed to reflect the reduced level of services. Changes to airspace classification will be notified by NOTAM.

Aircraft position reporting

5.13 Pilots will continue to make routine position reports in line with normal ATC reporting procedures.

VFR operations

5.14 VFR flights shall not operate in the Jakarta FIR if there are extensive disruptions to ATC facilities, except in special cases such as State aircraft, Medivac flights, and any other essential flights authorized by the DGAC.

Procedures for ATS Units

5.15 The ATS units providing ATC services will follow their unit emergency operating procedures and activate the appropriate level of contingency procedures in line with the operational Letter of Agreement. These procedures include the following:

- a) the Jakarta ACC on determining that ATS may be reduced due to a contingency event, will inform pilots by the controller responsible of the emergency condition and advise if it is likely that the ACC will be evacuated and ATS suspended. In the event of it becoming necessary to evacuate the ACC building, the unit evacuation procedures will be activated, and time permitting, controllers will make an emergency evacuation transmission on the radio frequency in use providing pilots with alternate means of communication;
- b) during the period the contingency procedures are in effect, flight plan messages must continue to be transmitted by operators to the Jakarta ACC and to the Makassar ACC via the AFTN using normal procedures;

Note: Depending on the phase of emergency and circumstances, the Indonesian INO may be suspended and alternative AFTN service introduced, e.g. at the Jakarta Airport Tower and Makassar ACC. Also, the INO of adjacent ATS authorities may be used to issue Indonesian NOTAMs.

- c) on notification by DGAC, Indonesia, the ATS authorities operating the ACCs of the adjacent FIRs, viz. Brisbane, Chennai, Colombo, Kota Kinabalu, Kuala Lumpur, Melbourne, Oakland, Manila and Singapore will activate the contingency procedures in accordance with their respective operational Letter of Agreement;
- d) prior to entry to the Jakarta FIR under the contingency arrangement, prior authorization must be obtained by operators to overfly the Jakarta FIR, and ATC approval granted by the adjacent ATC authority (ACC);
- e) the adjacent ACC responsible for aircraft entering for transit of the Jakarta FIR must communicate via ATS coordination circuits, and not less than 30 minutes beforehand, the estimated time over the reporting point for entry into the next FIR after the Jakarta FIR;
- f) the ACC responsible for aircraft entering the Jakarta FIR will instruct pilots to maintain the last flight level assigned and speed (MACH number if applicable) while overflying the Jakarta FIR;
- g) the ACC responsible will not authorize any change in flight level or speed (MACH number, if applicable) later than 10 minutes before the aircraft enters the Jakarta FIR, except in the case specified in h) below;

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- h) to facilitate arrival and departures at Singapore on the following route sectors, aircraft may climb and descend under the control of Singapore ACC in line with normal operating procedures:
- R469 - From Pekan Baru (PKU) to TAROS;
 - G579 - From Palembang (PLB) to PARDI; and
 - B470 - From ANITO to Pangkal Pinang (PKP)
- i) the ACC responsible prior to aircraft entering the Jakarta FIR will inform aircraft that they must communicate with the next (downstream) ATC unit 10 minutes before the estimated time of entry into the next FIR; and
- j) operators may also chose to avoid the Indonesia airspace, and the controlling authorities of the FIRs concerned will provide alternative contingency routes as appropriate and these will be published by NOTAM.

Transition to contingency scheme

5.16 During times of uncertainty when airspace closures seem possible, aircraft operators should be prepared for a possible change in routing while en-route, familiarization of the alternative routes outlined in this Contingency Plan, as well as those which may be promulgated by a State (s) via NOTAM or AIP.

5.17 In the event of airspace closure that has not been promulgated, ATC should, if possible, broadcast to all aircraft in their airspace, what airspace is being closed and to stand by for further instructions.

5.18 ATS providers should recognize that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternative routings. ATC should be alert to respond to any request by aircraft and react commensurate with safety.

Transfer of control and coordination

5.19 The transfer of control and communication should be at the common FIR boundary between ATS units unless there is mutual agreement between adjacent ATS units and authorization given to use alternative transfer of control points. These will be specified in the respective LOAs.

5.20 The ATS providers concerned should review the effectiveness of current coordination requirements and procedures in light of contingency operations or short notice of airspace closure, and make any necessary adjustments to the Contingency Plan and LOAs.

6. PILOTS AND OPERATOR PROCEDURES

Filing of flight plans

6.1 Flight planning requirements for the Jakarta FIR are to be followed in respect to normal flight planning requirements contained in the Indonesia Aeronautical Information Publication (AIP) and as detailed at **Appendix 1G**.

Overflight approval

6.2 Aircraft operators must obtain overflight approval from the DGAC, Indonesia prior to operating flights through the Jakarta FIR. During the period of activation of this Contingency Plan,

when ATS is not being provided by Indonesia, the adjacent ATS authority will approve aircraft to enter the Jakarta FIR on the basis that operators have obtained prior approval, and the responsibility remains with the operator to ensure such approval has been obtained.

Pilot operating procedures

6.3 Aircraft overflying the Jakarta FIR shall follow the following procedures:

- a) all aircraft proceeding along the ATS routes established in this Contingency Plan will comply with the instrument flight rules (IFR) and will be assigned a flight level in accordance with the flight level allocation scheme applicable to the route(s) being flown as specified in **Appendix 1D**;
- b) flights are to light plan using the Contingency Routes specified in **Appendix 1D**, according to their airport of origin and destination;
- c) aircraft are to operate as close as possible to the centre line of the assigned contingency route;
- d) pilots are to keep a continuous watch on the specified contingency frequency as specified in **Appendix 1F** and transmit the aircraft's position in line with normal ATC position reporting procedures;
- e) keep navigation and anti-collision lights on while overflying the Jakarta FIR;
- f) pilots are to maintain during their entire flight time within Jakarta FIR, the flight level last assigned by the last ACC responsible prior to the aircraft entering the Jakarta FIR, and under no circumstances change this level and Mach Number, except in cases of emergency and for flight safety reasons. In addition, the last SSR transponder assigned shall be maintained or, if no transponder has been assigned, transmit on SSR code 2000;
- g) aircraft are to reach the flight level last assigned by the responsible ACC at least 10 minutes before entering the Jakarta FIR or as otherwise instructed by the ATC unit in accordance with the LOA with Indonesia;
- h) pilots are to include in their last position report prior to entering the Jakarta FIR, the estimated time over the entry point of the Jakarta FIR and the estimated time of arrival over the relevant exit point of the Jakarta FIR;
- i) pilots are to contact the next adjacent ACC as soon as possible, and at the latest, ten (10) minutes before the estimated time of arrival over the relevant exit point of Jakarta FIR;
- j) pilots are to strictly adhere to the ICAO Traffic Information Broadcasts by Aircraft (TIBA) (reproduced in **Appendix 1H**), and maintain a continuous listening watch on the international air to air VHF frequency 123.45 MHz, as well as on the specified VHF and HF frequencies listed in Appendix 1F. When necessitated by emergency conditions, pilots are to transmit blind on these frequencies, their current circumstances and the commencement and completion of any climb and descent or deviation from the cleared contingency route;

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- k) whenever emergencies and/or flight safety reasons make it impossible to maintain the flight level assigned for transit of Jakarta FIR, pilots are to climb or descend well to the right of the centerline of the contingency route, and if deviating outside the Jakarta FIR, to inform immediately the ACC responsible for that airspace. Pilots are to make blind broadcast on the IFBP VHF frequency 123.45 MHz of the relevant emergency level change message (comprising the aircraft call sign, the aircraft position, the flight levels being vacated and crossed, etc);
 - l) pilots are to maintain own longitudinal separation of 15 minutes from preceding aircraft at the same cruising level; and
 - m) not all operational circumstances can be addressed by this Contingency Plan and pilots are to maintain a high level of alertness when operating in the contingency airspace and take appropriate action to ensure safety of flight.

Interception of civil aircraft

6.4 Pilots need to be aware that in light of current international circumstances, a contingency routing requiring aircraft to operate off normal traffic flows, could result in an intercept by military aircraft. Aircraft operators must therefore be familiar with international intercept procedures contained in ICAO Annex 2 –*Rules of the Air*, paragraph 3.8 and Appendix 2, Sections 2 and 3.

6.5 The Indonesian military authority in the interest of national security and safety may intercept civil aircraft over the territory of Indonesia in the event that a flight may not be known to and identified by the military authority. In such cases, the ICAO intercept procedures contained in Annex 11, Attachment C (reproduced in **Appendix I**) will be followed by the military authority, and pilots are to comply with instructions given by the pilot of the intercepting aircraft. In such circumstances, the pilot of the aircraft being intercepted shall broadcast information on the situation.

6.6 If circumstances lead to the closure of the Indonesian airspace and no contingency routes are available through the Jakarta and Ujung Pandang FIRs, aircraft will be required to route around the Indonesian airspace. As much warning as possible will be provided by the appropriate ATS authorities in the event of the complete closure of Indonesian airspace.

6.7 Pilots need to continuously guard the VHF emergency frequency 121.5 MHz and should operate their transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where secondary surveillance radar (SSR) is used for ATS purposes. Transponders should be set on a discrete code assigned by ATC or select code 2000 if ATC has not assigned a code.

7. COMMUNICATION PROCEDURES

Degradation of Communication - Pilot Radio Procedures

7.1 When operating within the contingency airspace of the Jakarta FIR, pilots should use normal radio communication procedures where ATS services are available. These will be in accordance with the communication procedures in this Plan or as otherwise notified by NOTAM.

7.2 If communications are lost unexpectedly on the normal ATS frequencies, pilots should try the next applicable frequency, e.g. if en-route contact is lost then try the next appropriate frequency, that is, the next normal handover frequency. Pilots should also consider attempting to contact ATC on the last frequency where two-way communication had been established. In the

absence of no communication with ATC, the pilot should continue to make routine position reports on the assigned frequency, and also broadcast positions in accordance with the ICAO TIBA.

Communication frequencies

7.3 A list of frequencies to be used for the contingency routes and the ATS units providing FIS and air-ground communication monitoring for the Jakarta FIR is detailed at **Appendix 1F**.

8. AERONAUTICAL SUPPORT SERVICES

Aeronautical Information Services (AIS)

8.1 A NOTAM contingency plan will be developed to ensure continuation of the NOTAM service for the Jakarta FIR in support of contingency operations. The NOTAMs will establish the actions to be taken in order to reduce the impact of the failures in the air traffic services. The NOTAMs will also establish the necessary coordination and operational procedures that would be established before, during and after any Contingency phase.

8.2 It is not anticipated that there would be any major disruption to the NOTAM service for the Jakarta FIR, as NOTAM services could be readily provided by neighboring AIS authorities.

Meteorological Services (MET)

8.3 The Indonesian Meteorological Service (Badan Meteorologi & Geofisika – BMG) is the designated meteorological authority of Indonesia. BMG is also the provider of meteorological services for the international and domestic air navigation. In order to comply with the ICAO requirements on aeronautical meteorology specified in Annex 3, Meteorological Service for International Air Navigation and the ASIA/PAC Air Navigation Plan – Doc 9673, BMG should ensure regular provision of the following products and services:

- a) aerodrome observations and reports – local MET REPORT and SPECIAL, as well as WMO-coded METAR and SPECI; METAR and SPECI should be provided for all international aerodromes listed in the AOP Table of ASIA/PAC Basic ANP and FASID Table MET 1A;
- b) terminal aerodrome forecast - TAF as per the requirements indicated in FASID Table MET 1A;
- c) SIGMET for the two Indonesian FIRs – Jakarta and Ujung Pandang; SIGMET should be issued by the meteorological watch offices (MWO) designated in FASID Table MET 1B – WIII and WAAA;
- d) information for the ATS units (TWR, APP, ACC) as agreed between the meteorological authority and the ATS units concerned;
- e) Flight briefing and documentation as per Annex 3, Chapter 9.

8.4 It is expected that the Indonesia MET services would continue to be available in the event of an ATS contingency situation. However, should ATS services for the Jakarta FIR be withdrawn, timely MET information may not be immediately available to pilots in flight. Alternative means of obtaining up to date MET information concerning the Jakarta FIR will be provided to the extent possible through the adjacent ATS authorities. In addition, alternative means of OPMET information transmission to the regional OPMET data bank Singapore and both WAFCs (London and Washington), which offers available contingency for the global dissemination of OPMET information will be attempted, e.g. making use of the communication networks of communication service providers (ARINC and SITA).

9. SEARCH AND RESCUE

Notification and Coordination

9.1 ACCs involved in this Contingency Plan are required to assist as necessary to ensure that the proper Search and Rescue (SAR) authorities are provided with the information necessary to support downed aircraft or aircraft with an in-flight emergency in respect to the Jakarta FIR.

9.2 The SAR authority responsible for the Jakarta FIR is the Jakarta Rescue Coordination Centre (RCC)

IDD	62-21-550211 AND 5507152
Fax	62-21- 5501512
AFTN	WIIYKYX

9.3 Each ACC shall assist as necessary in the dissemination of INCERF, ALERFA and DETYRESFA in respect to incidents in the Jakarta FIR.

9.4 In the event that the Jakarta ACC is not available, the responsibility for coordinating with the Jakarta RCC for aircraft emergencies and incidents involving the Jakarta FIR will be undertaken by the Makassar ACC. The CCC will take appropriate steps to ensure that SAR information is made available to the Jakarta RCC. The AOCG will also oversee SAR coordination and disseminate relevant contact information.

**CONTACT DETAILS OF ADJACENT STATES AND INTERNATIONAL ORGANIZATIONS
PARTICIPATING IN THE INDONESIAN CONTINGENCY PLAN**

NO	ADDRESS	TEL NO.	FAX. NO.	E-MAIL	AFTN
	Australia				
1	Airservices Australia				
2	Brisbane ACC				
3	Melbourne ACC				
	India				
4	Director of Civil Aviation				
5	Airports Authority of India				
6	Chennai ACC				
	Malaysia				
7	Director of Civil Aviation				
8	Kuala Lumpur ACC				
	Philippines				
9	Air Transportation Office				
10	Manila ACC				

APPENDIX 1A

	Singapore				
11	Director of Civil Aviation				
12	Singapore ACC				
	Sri Lanka				
13	Director of Civil Aviation				
14	Colombo ACC				
	United States of America				
15	Federal Aviation Administration				
16	Oakland ACC				
	ICAO				
17	Mr. Lalit B Shah Regional Director Asia/Pacific Regional Office 252/1 Vibhavadi Rangsit Rd, Chatuchak, Bangkok, 10110, Thailand	61 2 5378189 Ext 37	61 2 537 8199	icao_bkk@bangkok.icao.int	
18	Mr. Andrew Tiede Regional Officer ATM Asia/Pacific Regional Office 252/1 Vibhavadi Rangsit Rd, Chatuchak, Bangkok, 10110, Thailand	61 2 5378189 Ext 152	61 2 537 8199 Mob: 61	atiede@bangkok.icao.int	
	IATA				
19	Singapore Office				
	IFALPA				
20	Southeast Asia Regional Director				

CENTRAL COORDINATING GROUP

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Directorate General Air Communication
JL. Medan Merdeka Barat No.8
Gedung karya Dephub
Jakarta, Indonesia, 10110

Tel: 62 811 9
Fax: 6-03-88891541
AFTN:
E-mail:

2. Director Operations
PT Angkasa Pura II

Tel:
Fax:
AFTN:

3. Director Operations
PT Angkasa Pura I

Tel:
Fax:
AFTN:

4. Indonesian Meteorological Service

Tel:
Fax:
E-mail:

JAKARTA FIR OPERATIONAL CONTINGENCY UNIT

1. Directorate General Air Communication

Director Aviation Safety (Chairperson)

Tel:

Fax:

AFTN:

E-mail:

Deputy Director of Systems and Procedures Air Navigation

Tel:

Fax:

AFTN:

E-mail:

Deputy Director of ATS

Manager Aeronautical Information Service

Tel:

Fax:

AFTN:

E-mail:

2. PT Angkasa Pura II

ATS

Tel:

Fax:

AFTN:

E-mail:

ATS Regional Coordinator Jakarta ACC

Tel:

Fax:

AFTN:

E-mail:

ATS Manager

Tel:

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AFTN:

E-mail:

Manager Aeronautical Information Service

Tel:

Fax:

AFTN:

E-mail:

Airport Management Soekarno Hatta International Airport

Tel:

Fax:

AFTN:

E-mail:

3. PT Angkasa Pura I

Deputy Director Operations

Tel:

Fax:

E-mail:

4. Meteorological Service

Tel:

Fax:

E-mail:

SAMPLE NOTAMS**a) Avoidance of airspace**

NOTAM.....DUE TO DISRUPTION OF ATS IN THE JAKARTA AND UJUNG PANDANG FIRs ALL ACFT ARE ADVISED TO AVOID THE FIRs.

b) Airspace available Limited ATS

NOTAMDUE TO ANTICIPATED DISRUPTION OF ATS IN THE JAKARTA FIR ALL ACFT ARE ADVISED THAT THERE WILL BE LIMITED ATS. PILOTS MAY EXPERIENCE DLA AND OVERFLIGHTS MAY CONSIDER AVOIDING THE AIRSPACE.

c) Contingency plan activated

NOTAMDUE TO DISRUPTION OF ATS IN JAKARTA AND UJUNG PANDANG FIRs ALL ACT ARE ADVISED THAT THE INDONESIAN INTERNATIONAL CONTINGENCY PLAN FOR ACFT INTENDING TO OVERFLY THESE FIRs IS IN EFFECT. FLIGHT PLANNING MUST BE IN ACCORDANCE WITH THE CONTINGENCY ROUTES LISTED AND FL ASSIGNMENT. PILOTS MUST STRICKLY ADHERE TO THE CONTINGENCY PROCEDURES. ONLY APPROVED INTERNATIONAL FLIGHTS ARE PERMITTED TO OVERFLY INDONESIAN AIRSPACE.

d) Non adherence to the Contingency Plan

NOTAMOPERATORS NOT ABLE TO ADHERE TO THE CONTINGENCY PLAN SHALL AVOID THE JAKARTA AND UJUNG PANDANG FIRs.

**INTERNATIONAL ROUTE STRUCTURE AND COMMUNICATIONS FOR TRANSIT OF THE JAKARTA FIR
WHEN NO ATS AVAILABLE IN INDONESIAN AIRSPACE**

VHF Air to Air Frequency

123.45MHz

Contingency Routes Jakarta (CRJ)	ATS Route	Direction	FL Assignment	ACCs	COM (Frequency Details in Appendix X)
CRJ-1	A464 Darwin-KIKEM-KIKOR-TPG- SINJON	Northbound (One-way)	380, 320	Brisbane Singapore	HF, ADS, CPDLC HF, VHF, ADS, CPDLC
CRJ-2	A576-G462 SINJON-TPG-SANOS-BLI- SATNA-Darwin	Southbound (One-way to BLI then two-way)	410, 350 410, 350, 290 380, 320	Singapore Brisbane	HF, VHF, ADS, CPDLC HF, ADS, CPDLC
CRJ-3	A576 SINJON-TPG-SANOS-BLI- ATMAP-Alice Springs	Southbound (One-way to BLI then two-way)	410, 350 410, 350, 290 380, 320, 280	Singapore Brisbane	HF, VHF, ADS, CPDLC HF, ADS, CPDLC
CRJ-4	B470-L511/L895-A585 SINJON-S00 02.4 E104 042.1- ANITO-PKP(L511/L895)- MIMIX(L895)-SAPDA	Southbound (One-way)	410, 350, 290	Singapore Brisbane	HF, VHF, ADS, CPDLC HF, ADS, CPDLC
CRJ-5 ²	B469-G579 LAMOB-DCT-PLB(G579)- PARDI-S00 16.1 E104 09.3- SINJON	Northbound (One-way)	380, 320, 280	Brisbane Singapore	HF, ADS, CPDLC HF, VHF, ADS, CPDLC
CRJ-6	R469-B335 SINGAPORE-SAMKO-TAROS- PKU(B335)-POSOD	Two-way	290 280	Singapore Melbourne+	HF, VHF, ADS, CPDLC HF, ADS, CPDLC

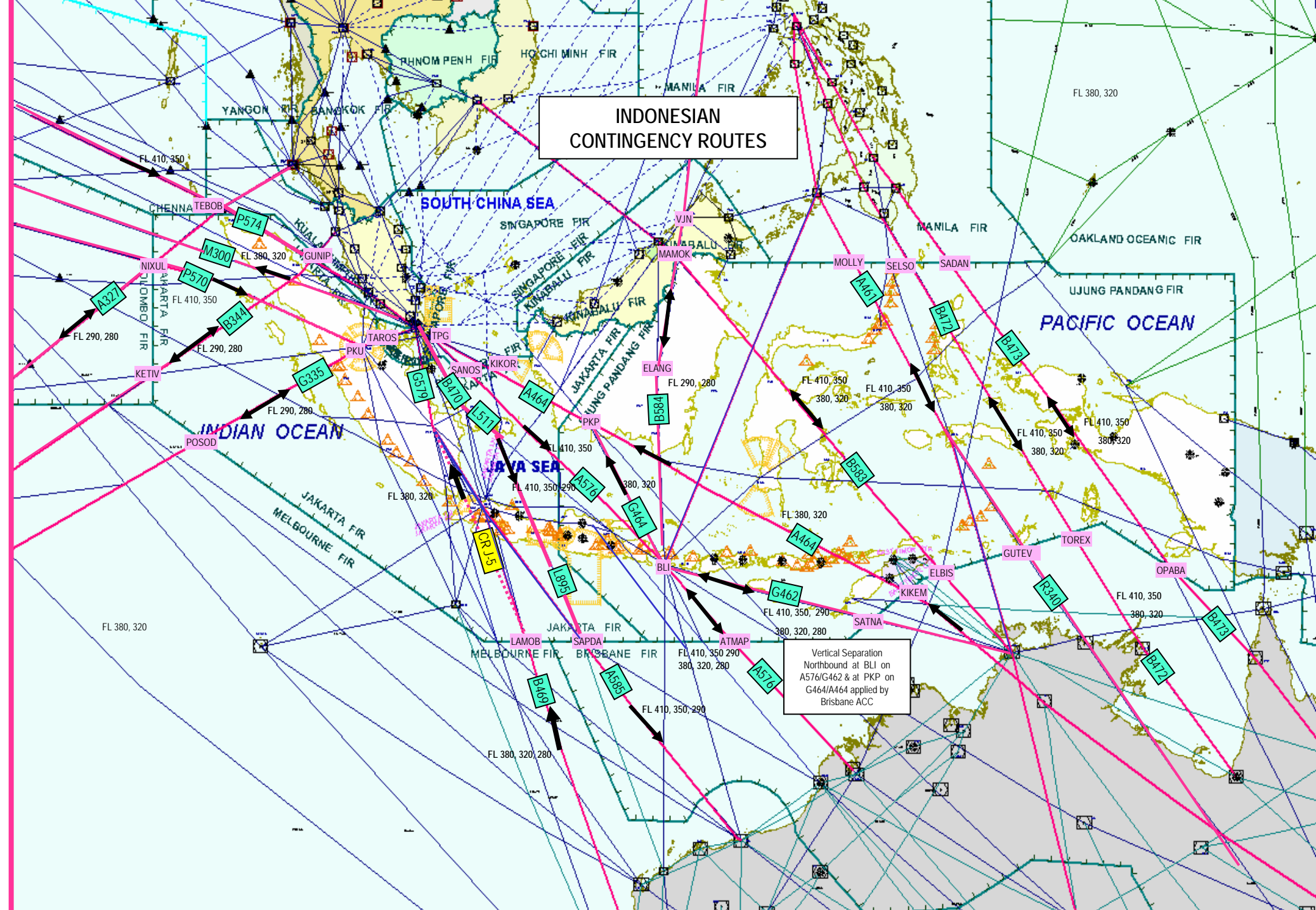
CONTINGENCY ROUTES JAKARTA (CRJ)	ATS ROUTES	DIRECTION	FL ASSIGNMENT	ACCS PROVIDING FIS	COM (DETAILS OF FREQUENCIES ARE IN APPENDIX X)
CRJ-7	B344-G468 VPG-GOTLA-MDN(B334)- KETIV-ELATI	Two-way	290	Kuala Lumpur	VHF
			280	Colombo+	HF, ADS, CPDLC
CRJ-8	A327 VIROT-PAMTO	Two-way	290	Kuala Lumpur	VHF
			280	Colombo+	HF, ADS, CPDLC
CRJ-9	P570-R469 PAMTO-MABIX-PKU(R469)- TARO-SINJON	Eastbound (One-way)	410, 350	Colombo+	HF, ADS, CPDLC
				Kuala Lumpur	VHF
				Singapore+	VHF
CRJ-10	A576-M300 SINJON-DUMOK(M300)-SALAX- TOPIN	Westbound (One-way)	380, 320	Singapore+	VHF
				Kuala Lumpur	VHF
CRJ-11	P574-R461 ANSAX-PUGER(R461)-VKL	Eastbound (One-way)	410, 350	Chennai+	HF, ADS, CPDLC
				Kuala Lumpur	VHF

+ ACCs not providing FIS in the Jakarta FIR for these routes

Note 1: In the event that the Jakarta and Makassar ACCs are out of service and no ATS available for the Jakarta and Ujung Pandang FIRs, flight information service (FIS) for the upper airspace will be delegated to the designated ATS authority specified above with the airspace divided north/south at latitude 05 00 00S then along the existing Jakarta FIR boundary. FIS will be provided by the adjacent ACCs in accordance with the LOAs with Indonesia.

Note 2: On the CRJ-5 sector LAMOB-PLB a direct track is established between the positions.

INDONESIAN CONTINGENCY ROUTES



**CONTINGENCY FREQUENCIES FOR CONTROL AND/ OR
FLIGHT MONITORING SERVICES**

CONTINGENCY ROUTE JAKARTA (CRJ)	ATS ROUTE	ACC	COM
CRJ-1	A464	Brisbane Singapore	HF, VHF, ADS/CPDLC: Logon YBBB HF SEA-3, VHF: Primary 134.4 Mhz/ Secondary 128.1 Mhz, ADS/CPDLC: Logon WSJC
CRJ-2	A576-G462	Singapore Brisbane	HF SEA-3, VHF: Primary 134.4 Mhz/ Secondary 128.1 Mhz, ADS/CPDLC: Logon WSJC HF, ADS and CPDLC: Logon YBBB
CRJ-3	A576	Singapore Brisbane	HF-SEA-3, VHF: Primary 134.4 Mhz/ Secondary 128.1 Mhz, ADS/CPDLC: Logon WSJC HF, ADS/CPDLC: Logon YBBB
CRJ-4	B470-L511/L895- A585	Singapore Brisbane	HF SEA-3, Primary 134.4 Mhz/Secondary 128.1 Mhz, ADS/CPDLC: Logon WSJC HF, ADS/CPDLC: Logon YBBB
CRJ-5	B469-G579	Brisbane Singapore	HF, ADS and CPDLC: Logon YBBB HF-SEA-3, VHF: Primary 134.4 Mhz/ Secondary 128.1 Mhz, ADS/CPDLC: Logon WSJC
CRJ-6	R469-B335	Singapore Melbourne*	HF SEA-3, VHF: Primary 133.25 Mhz/ Secondary 135.8 Mhz. HF, ADS/CPDLC: Logon YMMM
CRJ-7	B334-G468	Kuala Lumpur Colombo*	VHF HF
CRJ-8	A327	Kuala Lumpur Colombo*	VHF HF
CRJ-9	P570/R469	Colombo* Kuala Lumpur	HF HF, VHF

CONTINGENCY ROUTE JAKARTA (CRJ)	ATS ROUTE	ACC	COM
CRJ-10	A576-M300	Kuala Lumpur	VHF
		Colombo*	HF
CRJ-11	P574-R461	Chennai*	HF, ADS, CPDLC
		Kuala Lumpur	VHF

* Next ACC not providing FIS in the Jakarta FIR for these routes

The adjacent ATS provider HF primary and secondary are interchangeable subject to climatic conditions. When CPDLC is being used, this will be the primary means of communication and HF will be secondary. When ADS is being used for automatic position reporting, pilots are not required to report position on CPDLC or HF unless requested by ATC. The frequencies to be used are contained in Appendix xx

FLIGHT PLANNING REQUIREMENT

Airline operators are expected to familiarize themselves with the Regional Contingency Plan as well as Contingency Plans of Jakarta FIR and the activation times. For aircraft intending to operate in areas during periods when the contingency plans are activated, the operators shall plan the flight to conform with the activation times of the Contingency Plans. Airline operators shall ensure that flights are established on contingency routes prior to entering an area which is under Contingency Plan procedure.

The flight planning requirements during the contingency period will be in accordance to ICAO Annex 2 Chapter 3 and Doc 4444 Part II. Additional information, will, however, be required, to indicate that the flight will operate in airspace where the contingency plan is active. This information is to be indicated in the 'RMK/' field of item 18 of the ICAO flight plan, for example 'RMK/Contingency routes WIIIA/VTs' **or** WAAAA/VTs in the event that Makassar ACC has taken over the air traffic services for Jakarta ACC. (Remarks/aircraft will be operating on contingency routes in the Jakarta and Ujung Pandang FIRs),

Repetitive Flight Plans (RPLs/Bulk Stored) will not be accepted during the time that the contingency plan is activated. Airline operators are required to file flight plans in accordance with the contingency flight planning procedures. Flight plans should be filed at least 12 hours in advance in order to allow sufficient time for manual processing.

ICAO TRAFFIC INFORMATION BROADCASTS BY AIRCRAFT (TIBA) PROCEDURES

Changes to In-Flight Procedures

Introduction of ICAO TIBA Procedures

TIBA Procedures.

1. Special procedures have been developed for pilot use in active contingency zones if communications are significantly degraded or unavailable. These TIBA procedures supercede and take the place of lost communication procedures that are outlined in Annex 2 to the Chicago Convention (Para 3.6.5.2.2 a) and PANS-RAC (DOC 4444, Part III, para. 17) and will enable traffic information broadcasts by aircraft (TIBA) to be made as well as providing collision hazard information. When aircraft will enter designated airspace in which it is known in advance that normal communication is not available, pilots should maintain a listening watch on the TIBA frequency 10 minutes prior to entering that airspace.

Times of Broadcast.

2. When a loss of normal communications requires TIBA procedures to be implemented, pilots shall make broadcasts **in English** on 126.9 MHz as follows:
 - a) At the time the loss of normal communications is recognized;
 - b) 10 minutes before entering a designated airspace when it is known in advance that normal communications will not be available within that airspace or, for a pilot taking off from an aerodrome located within the lateral limits of the designated airspace, as soon as appropriate after take-off;
 - c) 10 minutes prior to crossing a reporting point;
 - d) 10 minutes prior to crossing or joining an ATS route;
 - e) at 20-minute intervals between distant reporting points;
 - f) 2 to 5 minutes, where possible, before a change in flight level;
 - g) at the time of a change in flight level; and
 - h) at any other time considered necessary by the pilot.

Note: Normal position reporting procedures should be continued at all times, regardless of any action taken to initiate or acknowledge a traffic information broadcast.

Broadcast Format.

3. TIBA broadcasts should be made using the following phraseology:

a) **For other than those indicating changes in flight level:**

ALL STATIONS (call sign) FLIGHT LEVEL (number) [or CLIMBING TO FLIGHT LEVEL (number)] (direction) (ATS route) [or DIRECT FROM (position) TO (position) POSITION] (position) AT (time) ESTIMATING (next reporting point, or the point of crossing or joining a designated ATS route) AT (time) (call sign) FLIGHT LEVEL (number) (direction)

Example: “ALL STATIONS WINDAR 671 FLIGHT LEVEL 380 NORTHWEST BOUND A464 POSITION 80 MILES SOUTH EAST OF KEVOK AT 2358 ESTIMATING KOBAS AT 0020 WINDAR 671 FLIGHT LEVEL 380 NORTHWEST BOUND OUT”

Note: For broadcasts made when the aircraft is not near an ATS significant point, the position should be given as accurately as possible and in any case to the nearest 30 minutes of latitude and longitude.

b) **Before a change in flight level:**

ALL STATIONS (call sign) (direction) (ATS route) [or DIRECT FROM (position) TO (position)] LEAVING FLIGHT LEVEL (number) FOR FLIGHT LEVEL (number) AT (position and time)

c) **At the time of a change in flight level:**

ALL STATIONS (call sign) (direction) (ATS route) [or DIRECT FROM (position) TO (position)] LEAVING FLIGHT LEVEL (number) NOW FOR FLIGHT LEVEL (number)
followed by:

ALL STATIONS (call sign) MAINTAINING FLIGHT LEVEL (number)

d) **When reporting a temporary flight level change to avoid an imminent collision risk:**

ALL STATIONS (call sign) LEAVING FLIGHT LEVEL (number) NOW FOR FLIGHT LEVEL (number)

followed as soon as practicable by:

ALL STATIONS (call sign) RETURNING TO FLIGHT LEVEL (number) NOW

-
4. TIBA broadcasts should not be acknowledged unless a potential collision risk is perceived.

Cruising level changes.

5. Cruising level changes should not be made within the designated airspace, unless considered necessary by pilots to avoid traffic conflicts, to climb to minimum en route or safe altitudes, to overcome operational limitations, to avoid adverse weather, or in response to an operational emergency.
6. When cruising level changes are unavoidable, all available aircraft lighting which would improve the visual detection of the aircraft should be displayed while changing levels.

Collision avoidance.

7. If, on receipt of a traffic information broadcast from another aircraft, a pilot decides that immediate action is necessary to avoid an imminent collision risk, and this cannot be achieved in accordance with the right-of-way provisions of Annex 2 to the Chicago Convention, the pilot should:
- a) unless an alternative manoeuvre appears more appropriate, immediately descend 150 m (500 ft), or 300 m (1 000 ft) if above FL 290 in an area where a vertical separation minimum of 600 m (2 000 ft) is applied;
 - b) display all available aircraft lighting which would improve the visual detection of the aircraft;
 - c) as soon as possible, reply to the broadcast advising action being taken;
 - d) notify the action taken on the appropriate ATS frequency; and
 - e) as soon as practicable, resume normal flight level, notifying the action on the appropriate ATS frequency.

Operation of Transponders.

8. When implementing TIBA procedures, pilots shall operate aircraft transponders on Modes A and C at all times. In the absence of alternative instructions from the appropriate ATS unit, aircraft not assigned a discrete code should squawk code 2000.

Operation of TCAS.

9. Unless otherwise directed by an appropriate authority, pilots should operate TCAS in TA/RA Mode at maximum range setting during the cruise phase of flight and at a range setting appropriate to the traffic situation when in the departure or terminal phases of flight.

Special Operations

10. Specific aircraft may need to be involved in special operations during the period when a FIR is an activated contingency zone. These aircraft may therefore be unable to utilize the contingency route structure for a significant period of their flights. Aircraft that will be classified as special operations are as follows:
- a) Special operations of State aircraft

-
- b) Aircraft in emergency situations or operating with significant reduction in operating efficiency
 - c) Mercy flights and aircraft engaged in search and rescue, medical evacuation, and coastal surveillance operations.

Activation and Cancellation of TIBA Procedures

- 11. This procedure shall be included in State AIP Supplements or NOTAM on TIBA procedures and will be cancelled by NOTAM.

Contingency Scheme

ICAO INTERCEPTION PROCEDURES

Article 3 bis*

- a) The contracting States recognize that every State must refrain from resorting to the use of weapons against civil aircraft in flight and that, in case of interception, the lives of persons on board and the safety of aircraft must not be endangered. This provision shall not be interpreted as modifying in any way the rights and obligations of States set forth in the Charter of the United Nations.

(Extract from ICAO Annex 2 — *Rules of the Air*)

3.8 Interception

Note.— The word “interception” in this context does not include intercept and escort service provided, on request, to an aircraft in distress, in accordance with Volumes II and III of the International Aeronautical and Maritime Search and Rescue Manual (Doc 9731).

3.8.1 Interception of civil aircraft shall be governed by appropriate regulations and administrative directives issued by Contracting States in compliance with the Convention on International Civil Aviation, and in particular Article 3(d) under which Contracting States undertake, when issuing regulations for their State aircraft, to have due regard for the safety of navigation of civil aircraft. Accordingly, in drafting appropriate regulations and administrative directives due regard shall be had to the provisions of Appendix 1, Section 2 and Appendix 2, Section 1.

Note.— Recognizing that it is essential for the safety of flight that any visual signals employed in the event of an interception which should be undertaken only as a last resort be correctly employed and understood by civil and military aircraft throughout the world, the Council of the International Civil Aviation Organization, when adopting the visual signals in Appendix 1 to this Annex, urged Contracting States to ensure that they be strictly adhered to by their State aircraft. As interceptions of civil aircraft are, in all cases, potentially hazardous, the Council has also formulated special recommendations which Contracting States are urged to apply in a uniform manner. These special recommendations are contained in Attachment A.

3.8.2 The pilot-in-command of a civil aircraft, when intercepted, shall comply with the Standards in Appendix 2, Sections 2 and 3, interpreting and responding to visual signals as specified in Appendix 1, Section 2.

Note.— See also 2.1.1 and 3.4.

* On 10 May 1984 the Assembly amended the Convention by adopting the Protocol introducing Article 3 bis. **Under Article 94 a) of the Convention, the amendment came into force on 1 October 1998 in respect of States which have ratified it.**

INTERCEPTION OF CIVIL AIRCRAFT

(Appendix 2 of ICAO Annex 2 — *Rules of the Air*)

(*Note.*— See Chapter 3, 3.8 of the Annex)

1. Principles to be observed by States

1.1 To achieve the uniformity in regulations which is necessary for the safety of navigation of civil aircraft due regard shall be had by Contracting States to the following principles when developing regulations and administrative directives:

- a) interception of civil aircraft will be undertaken only as a last resort;
- b) if undertaken, an interception will be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome;
- c) practice interception of civil aircraft will not be undertaken;
- d) navigational guidance and related information will be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established; and
- e) in the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing is to be suitable for the safe landing of the aircraft type concerned.

Note.— In the unanimous adoption by the 25th Session (Extraordinary) of the ICAO Assembly on 10 May 1984 of Article 3 bis to the Convention on International Civil Aviation, the Contracting States have recognized that “every State must refrain from resorting to the use of weapons against civil aircraft in flight.”

1.2 Contracting States shall publish a standard method that has been established for the manoeuvring of aircraft intercepting a civil aircraft. Such method shall be designed to avoid any hazard for the intercepted aircraft.

Note.— Special recommendations regarding a method for the manoeuvring are contained in Attachment A, Section 3.

1.3 Contracting States shall ensure that provision is made for the use of secondary surveillance radar, where available, to identify civil aircraft in areas where they may be subject to interception.

2. Action by intercepted aircraft

2.1 An aircraft which is intercepted by another aircraft shall immediately:

- a) follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in Appendix 1;

- b) notify, if possible, the appropriate air traffic services unit;
- c) attempt to establish radiocommunication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight; and if no contact has been established and if practicable, repeating this call on the emergency frequency 243 MHz;
- d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit.

2.2 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

2.3 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.

3. Radiocommunication during interception

If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in Table 2.1 and transmitting each phrase twice:

Table 2.1

<i>Phrases for use by INTERCEPTING aircraft</i>			<i>Phrases for use by INTERCEPTED aircraft</i>		
<i>Phrase</i>	<i>Pronunciation¹</i>	<i>Meaning</i>	<i>Phrase</i>	<i>Pronunciation¹</i>	<i>Meaning</i>
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign?	CALL SIGN (call sign) ²	<u>KOL</u> SA-IN (call sign)	My call sign is (call sign)
FOLLOW	<u>FOL</u> -LO	Follow me	WILCO	<u>VILL</u> -KO	Understood Will comply
DESCEND	DEE- <u>SEND</u>	Descend for landing	CAN NOT	<u>KANN</u> NOTT	Unable to comply
YOU LAND	<u>YOU LAAND</u>	Land at this aerodrome	REPEAT	REE- <u>PEET</u>	Repeat your instruction
PROCEED	PRO- <u>SEED</u>	You may proceed	AM LOST	<u>AM LOSST</u>	Position unknown
			MAYDAY	<u>MAYDAY</u>	I am in distress
			HIJACK ³	<u>HI-JACK</u>	I have been hijacked
			LAND (place name)	LAAND (place name)	I request to land at (place name)
			DESCEND	DEE- <u>SEND</u>	I require descent

1. In the second column, syllables to be emphasized are underlined.

2. The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight plan.

3. Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK".

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STATE ATS SAFETY CONTACT OFFICERS

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

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

(Last Updated 30 June 2006)

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12.	INDIA			
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14.	JAPAN			
	Near Collision Report by PIC	Safety and Security Inspector General Japan Civil Aviation Bureau 2-1-3, Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918 Japan	Tel +81-3-5253-8701 Fax +81-3-3580-5233	N/A
	Accident/Serious Report	Flight Standard Division Japan Civil Aviation Bureau 2-1-3, Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918 Japan	Tel +81-3-5253-8731 Fax +81-3-5253-1661	
	ACAS RA Report	Air Traffic Control Division Japan Civil Aviation Bureau 2-1-3, Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918 Japan	Tel +81-3-5253-8749 Fax +81-3-5253-1664	
15.	KIRIBATI			
16.	LAO PDR			
17.	MACAU,CHINA			

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22.	MONGOLIA			

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24.	NAURU			
25.	NEPAL			
26.	NEW CALEDONIA			
27.	NEW ZEALAND			
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	Name	Title/Organization	TEL/FAX Number	E-mail
28.	PAKISTAN			
	Mr. Nusrat Ullah Khan	Director Operations Civil Aviation Authority - Pakistan, HQ Civil Aviation Authority, Terminal 1, Operations Directorate, JIAP Karachi 75200, Pakistan	Tel : 92-21-9248745 Fax : 92-21-9248744	dops@caapakistan.com.pk
29.	PALAU			
	Mr. Cordino Soalablai	Civil Aviation Specialist Koror, Palau/Ministry of Commerce & Trade P.O. Box 1471 Koror, Republic of Palau 96940	Tel : 680 488-2111/587-2115 Fax : 680 488-3207	mincat@palaunet.com c.soalablai@palaunet.com
30.	PAPUA NEW GUINEA			
	Mr. Gabriel Salayau	Assistant Manager ATS Operations(SS&F) Papua New Guinea Civil Aviation Authority P.O. Box 684 Boroko Port Moresby, N.C.D Papua New Guinea	Tel : (675) 324 4643 Fax : (675) 325 0749	gsalayau@caa.com.pg
31.	PHILLIPPINES			
	Capt. Jose R. Saplan	Check Pilot / Chairman, AAIB Air Transportation Office, Philippines Old MIA Road, Pasay City 1301, Philippines	Tel : (632) 8799 225 / 218 Fax : (632) 8799 218	saplan6864@yahoo.com
	Wilfredo S. Borja	Director, Air Traffic Service Air Transportation Office MIA Road, Pasay City 1300, Philippines	Tel : (632) 8799 161 / 259 Fax : (632) 8799 259	

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	Name	Title/Organization	TEL/FAX Number	E-mail
32.	REP. OF KOREA			
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33.	SAMOA			
34.	SOLOMON ISLANDS			
	George Satu	Principal Flight Standard Officer Solomon Island Civil Aviation Division P.O. Box G8 Honiassa , Solomon Islands	Tel : 677 36567/36563 Fax : 677 36220	
35.	SINGAPORE			
	Heng Cher Sian Edmund	Project Officer (Airspace) Civil Aviation Authority of Singapore P.O. Box 1 Singapore Changi Airport Singapore 918141	Tel : 65-6541-2457 Fax : 65-6545-6516	edmund.heng@caas.gov.sg
	Dieu Eng Kwee	ATC Manager (Standard) Civil Aviation Authority of Singapore P.O. Box 1 Singapore 91814	Tel (65) 6541 2456 Fax (65) 6545 6516	dieu_eng_kwee@caas.gov.sg

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	Name	Title/Organization	TEL/FAX Number	E-mail
36.	SRI LANKA			
	Atula Jayawicjrama	Deputy Director, Aerodromes and Navigation Services Sri Lanka Civil Aviation Authority No. 64, Supreme Building Galle Road Colombo - 3 Sri Lanka	Tel 94-11-243 6324, 077 359 6210 Fax 94-11-244 0231	atulacaa@sitnet.lk
37.	THAILAND			
	Mr Aphinun Vannangkura	Safety Director Aeronautical Radio of Thailand LTD	Tel 662 287 8294 Fax 662 287 8609	aerosafety@aerothai.co.th
	Mr. Vutichai Singhamany	Director of Flight Standards Bureau Department of Civil Aviation Flight Standards Bureau 71 Ngarmduplee. RamaIV Rd. Tung Mahamek, Sathorn Bangkok, 10120	Tel : 662 287 4061 Fax : 662 286 2913	svutichai@aviation.go.th
	Mr. Choochart Mainoy	Air Traffic Services Advisor Airport Standards and Air Navigation Facilitating Division	Tel : 662 286 8159 Fax : 662 286 8159	cmainoy@hotmail.com

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	Name	Title/Organization	TEL/FAX Number	E-mail
38.	TONGA			
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39.	UNITED STATES			
40.	VANUATU			
	Max Foon	Assistant Director – Flight Standard Private Mail Bag 9068 Port Vila Republic of Vanuatu	Tel : (678) 22819/23301 Fax: (678) 23783	civav@vanuatu.com.vu
41.	VIET NAM			

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SURVEY RESULT OF THE QUALITY SYSTEM

(as of 24 March 2006)

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

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SURVEY RESULT OF THE QUALITY SYSTEM

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

Note: Blank indicates no information available.

STATE SAR AGREEMENTS

(last updated 30 June 2006)

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

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

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

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

	Training	Alerting	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	C	E
Bangladesh	B	C	D	A	A	C	C	A	D	A	A	C	A	A	C	C	D	A	C
Bhutan																			
Brunei	E	E	E	E	E	E	E	E	E	E	E	E	E	E	D	D	E	E	A
Cambodia	B	B	B	B	B	B	C	A	B	B	A	C	A	A	A	A	B	A	A
China	E	E	E	E	E	E	D	D	E	D	D	C	B	A	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	A
DPR Korea	B	D	B	D	A	B	D	D	D	C	B	A	A	A	B	A	C	C	A
Fiji	B	C	C	C	C	C	C	B	D	C	D	C	A	C	B	A	C	C	A
French Polynesia	C	D	D	D	C	D	E	A	E	C	C	B	A	A	E	D	E	E	A
Hong Kong, China	E	E	E	E	D	E	E	E	E	E	E	E	E	E	E	E	E	E	E
India	D	C	C	B	B	C	C	A	C	C	C	C	C	D	D	D	C	A	E
Indonesia	E	D	E	E	E	D	D	D	E	D	E	D	D	D	C	D	D	D	E
Japan	E	E	E	E	D	E	E	E	E	E	E	E	D	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
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	B
Maldives	B	A	A	A	A	A	A	A	D	A	C	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	B	A
Myanmar	B	A	B	C	A	D	C	C	D	A	A	A	A	A	C	A	D	C	A
Nauru																			
Nepal	D	D	C	B	A	C	C	B	D	B	A	B	A	D	D	C	D	D	B
New Caledonia	C	D	D	D	C	D	E	A	E	C	C	B	A	A	E	D	E	E	E
New Zealand	E	E	E	E	A	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	C	E
Palau																			
Papua New Guinea	D	E	D	C	D	D	C	C	D	C	C	D	C	C	C	A	A	A	A
Philippines	D	C	E	D	D	C	D	D	E	C	C	C	C	C	C	B	C	E	A
Rep. of Korea	C	C	C	C	C	D	E	E	E	E	C	A	D	E	D	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
Sri Lanka	D	A	C	D	B	C	C	D	E	D	B	C	A	A	D	D	C	A	A
Thailand	E	E	E	E	D	E	E	E	E	E	E	D	B	B	E	E	E	E	B
Timor Leste																			
Tonga	C	B	A	A	B	C	C	A	D	A	A	A	A	A	A	A	C	A	A
United States	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Vanuatu																			
Viet Nam	D	D	D	E	D	D	D	C	E	D	C	C	B	C	C	D	D	C	B
Updated 30 June 2006																			
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									

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SUBJECT/TASKS IN THE ATM/AIS/SAR FIELDS

The priorities assigned in the list have the following connotation:

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

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

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

(Updated 30/06/06)

No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
1	RAN/3 C 6/9 R 14/22 APANPIRG C 2/22 C 3/24 C 4/4 C 4/5 C 5/2 C 5/3	Subject: Implementation of RNP Task: Implement RNP into the Asia Pacific Region	A	a) Identify routes and areas where RNP implementation is required; and b) — monitor progress. Note: a) RNP10 (60 NM) implemented South China Sea route network November 2001; b) RNAV EMARSSH Route network implemented November 2002; c) RNP4 implemented January 2005 in Honiara FIR, Nauru FIR and portions of Brisbane FIR, Nadi FIR and Auckland Oceanic FIR; and d) RNP4 Trial in portions of Oakland FIR commenced December 2005	ATM/AIS/SAR/SG Regional Office	On-going
2	APANPIRG C 3/22	Subject: Traffic congestion within the region Task: Suggest ways of reducing this congestion by means of appropriate traffic management	A	a) Identify routes and areas where management of traffic congestion is required; and c) — Monitor r progress. Note: The BBACG established the ATFM/TF to address congestion in the Bay of Bengal and Indian airspace. An operational trial using an automated ATFM system to commence on 22 December 2005 in July 2006	ATM/AIS/SAR/SG Regional Office	On-going

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No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
3	RAN/3 C 13/14 APANPIRG D 2/35	Subject: AIS Automation Task: Develop a Regional AIS Automation Plan Note: To progress this task, the AIS/TF/1 meeting is tentatively scheduled on 7-11 November 2005. Due to Regional Office ATM staff reduction, was unlikely to be convened. ATM/AIS/SAR/SG/15 agreed (Decision 15/8) that the Task Force must commence. States (Japan) would convene and run the Task Force, Regional Office to assist if able.		Develop AIS automation plan and introduction of AIS quality systems and AIS databases and consider issues arising from the use of public internet for AIS Note: APANPIRG Decision 14/8 reactivated the AIS Automation Task Force and changed the name and role of the task force to the AIS Implementation Task Force (AITF). First meeting expected November 2004 First meeting of the AIS Task Force and associated AIS Seminar was held 20-24 March 2006	AITF ATM/AIS/SAR/SG	On-going
4	APANPIRG C 2/34	Subject: Provision of AIS within the Region Task: Examine and comment on the provision of AIS and develop a programme to improve the provision of AIS within the region Note: AIS/MAP and one ATM Regional Officer posts removed from Regional Office establishment, effective 2005. No ability of Regional Office to assist with AIS matters. States will convene AIS Implementation Task Force in November 2005 to consider AIS matters, as described under Task list Item 3 above.	B	a) Increase AIS support from the ICAO APAC Office b) Regional AIS seminars to be conducted periodically c) Review the use of Internet for aeronautical information taking into account results of the ICAO AUPJ Study Group and update Chapter 4 to the AIS Guidance Manual	APANPIRG ICAO ICAO AATF ATM/AIS/SAR/SG	On going On going Dec. 2002 No update avbl to ATM/AIS/ SAR/SG/14 re internet
5	APANPIRG C 3/24 C 9/3 D 9/4	Subject: Implementation of RVSM in the Asia Pacific Region Task: Plan for and facilitate implementation of RVSM, as appropriate, in the Asia Pacific Region	A	a) Plan schedule and facilitate implementation of RVSM in the Asia Pacific Region b) RVSM implementation for the international airspace in the APAC Region is in its final stage has been completed with implementation in the Incheon, Naha and Tokyo FIRs on 29 September 2005. c) Follow up meetings required for b); 90 day review and one year review; 90 Day review of Japan/ Republic of Korea implementation conducted 27 Feb- 1 Mar 2006. One year review scheduled November 2006. d) The South China Sea/West Pacific RVSM FLOS review to be completed and a meeting scheduled in January/February 2006 was held 24-28 April 2006 however no result. ATM/AIS/SAR/SG/16 (June 2006) recommended establishing a RVSM Scrutiny Group with TOR also addressing FLOS	RVSM/TF	On-going North Asia 2005

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No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
6	APANPIRG D 3/12 D 3/2 C 4/2	Subject: Inappropriate provision of SAR facilities, services and procedures within the Asia Pacific Region Task: a) Review SAR facilities, services and procedures in the region e) Assist States without SAR services to provide SAR coverage	A	a) Encourage States to delegate or negotiate SAR services b) Identify deficiencies Note: Future ICAO SAR activities in the APAC Region constrained due to Regional Office ATM staffing levels.	ICAO ATM/AIS/SAR/SG	On-going On-going
7	APANPIRG D 3/21 C 9/2	Subject: Transition to WGS 84 in the Asia Pacific Region Task: Monitor and facilitate the transition to WGS 84	A	a) Maintain status report of WGS 84 implementation within the Asia Pacific Region b) Identify States requiring assistance and where possible assist those States e) Identify deficiencies Note: Substantially complete, remaining issues being managed by the APANPIRG Deficiencies List	ATM/AIS/SAR/SG States ICAO ATM/AIS/SAR/SG ATM/AIS/SAR/SG	On-going On-going On-going
8	RAN/3 R 14/13 APANPIRG C 5/12 D 6/21 C 9/8	Subject: Implementation of ATS route requirements	B	a) -Identify ATS route requirements b) Monitor progress of route implementation in APAC Region c) Identify deficiencies Note: APANPIRG Decision 14/4 created the ATS Route Network Review Task Force (ARNR/TF). ATM/AIS/SAR/SG/14 referred matters on the deficiencies list relating to ATS routes to the ARNR/TF for study. First meeting of ARNR/TF expected September 2004. The ARNR/TF held its first meeting on 6-10 September 2004 and completed its work at ARNR/TF/3 on 2-3 May 2005. Note: Asia/Pacific ATS Route Catalogue established, maintained by Regional Office, Version 3 (June 2006) on ICAO website, ATS Routes included as standing agenda item on ATS Coordination Group agendas	ATM/AIS/SAR/SG	On-going On-going On-going

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No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
9	C 11/8	SAR Capability Matrix That, a) the "SAR Capability Matrix" be distributed to States for information and action as appropriate; and b) States provide information to ICAO by 30 April each year to permit the periodic update of the Matrix.	C	a) The SAR Matrix is reviewed by States at all ATM/AIS/SAR/SG Meetings b) States to update the Matrix by providing information to ICAO by 30 April each year Note: Matrix routinely updated during meetings of ATM/AIS/SAR/SG	ATM/ASI/SAR/SG States ICAO	On-going On-going
10	RAN/3 R 7/18 APANPIRG C 8/9	Subject: SAR training and exercises Task: Facilitate SAR training and exercises	B	a) Co-ordinate SAR training available in the region b) Facilitate international participation in SAR exercises e) Day of Bengal Seminar and SAREX was held at Chennai on 7-11 March 2005 Note: APANPIRG/16 raised Conclusion 16/23 in respect of SAR SIP for Pacific Island States, SIP is approved by Council, scheduled last quarter 2006	ICAO States India	On-going 2003-On-going 2005 Completed
11	APANPIRG C 6/13 C 11/9	Subject: Appropriate SAR legislation, National SAR Plans and Amendments Task: Establish appropriate documentation and National SAR Committee	A	a) Implement appropriate legislation, establish National SAR Committees and Plans to support SAR operations b) Monitor developments of SAR Agreements between SAR organizations c) Establish and maintain a Register of SAR Agreements Note: Register of SAR Agreements routinely updated during meetings of ATM/AIS/SAR/SG	States ATM/AIS/SAR/SG ICAO	On-going On-going On-going
12	APANPIRG C 9/9	Subject: Lack of consideration of Human Factors in the provision of ATS Task: Consider ways by which Human Factors aspects in the provision of ATS within the region could be improved	B	a) States to Provide input including lessons learned (ICAO to encourage States to submit reports) b) ICAO to conduct seminars Note: ATM/AIS/SAR/SG/15 noted limited ATM resources remaining at the Regional Office and that presently ICAO Headquarters taking primary carriage of Human Factors activities.	States ICAO ICAO	On going 2004 On going Closed as ICAO HQ has primary carriage of these matters

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No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
13	APANPIRG D 8/	Subject: Maintenance of the CNS/ATM/GM for the Region	B	Note: ATM/AIS/SAR/SG/15 noted that ICAO Headquarters has taken over development of global guidance material and the status of the APAC Regional Guidance to be reviewed subsequent to provisions of global material under development. ATM/ASI/SAR/SG/16 raised draft Decision 16/3 in company with CNS/MET/SG/10 to establish APANPIRG Regional Planning Review Task Force to conduct this work	ATM/AIS/SAR/SG States	Ongoing
14	APANPIRG C 9/48 C 10/39 C 10/40	Subject: Deficiencies in the field of air navigation Task: Develop and maintain Deficiencies list	A	a) Identify unimplemented items in the BANP b) Review mission reports c) Analyze differences from SARPs d) Review accidents / incidents Note: ALLPIRG/5 (March 2006) raised Conclusion 5/15 in respect of "Last Resort" action to resolve deficiencies.	ATM/AIS/SAR/SG ICAO	On-going On-going On-going On-going
15	APANPIRG/12	Subject: Lateral Offset Procedures	A	a) Identify issues regarding route structures where offsets could be applied b) Implement 2 NM right of route offsets in accordance with ICAO guidelines Note: Significant implementations of 2 NM lateral offset procedures occurred on 20 January 2005 and 17 March 2005 in Asia/Pacific.	ATM/AIS/SAR/SG States	On going 2004 2005/2006 Completed

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No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
16	APANPIRG/13 C12/6	Subject: Regional Contingency Planning Survey Task: That, ICAO survey States in the Asia/Pacific Region to determine the status of contingency planning and the extent to which contingency plans are exchanged between neighboring States.	C	a) States to complete their State Contingency Plans, using framework supplied in their Y2K CP b) Coordinate with neighboring States c) Send copy of their Contingency Plan to ICAO d) Regional Office initiated survey in March 2005 with results submitted by States by 30 June 2005, and results being studied Updated survey results will be reviewed by APANPIRG/17 Note: APANPIRG/16 raised Conclusion 16/15 in respect of SIP for APAC State. SIP will be conducted in Indonesia during July 2006	ICAO/States	On-going On-going On-going On-going
17	C 15/52	Review key priorities for implementation of CNS/ATM systems for the ASIA/PAC region, identify new items as required and monitor implementation	A	Review key priorities and recommend appropriate actions	ATM/AIS/SAR/SG ICAO/States	On-going
18	Decision 1/3 APANPIRG/15 C 15/49	Make recommendation aimed at improving ATM and CNS support for Terminal Area and Airport Operations, respectively.	B	a) Study operational problems being experienced; b) identify requirements/areas for improvement from States	ATM/AIS/SAR/SG States	On-going Ongoing
19	APANPIRG/15 C 15/46	That recommendations 1/1, 1/10, 1/13, 4/1, 4/2, 6/11 and 7/1 of AN-Conf/11 be studied by the ATM/AIS/SAR/SG, and action be taken to implement them.	B	Review recommendations and take appropriate action to implement	ATM/AIS/SAR/SG ICAO/States	On-going
20	APANPIRG/15 Paragraph 2.1.151	To monitor environmental issues relating to the implementation of CNS/ATM systems, in particular the work of ICAO's Committee on Aviation Environmental Protection (CAEP), to disseminate relevant information to contracting States, and to carry out appropriate coordination with Contracting States.	B	Monitor the work of the ARNR/TF in this respect	ATM/AIS/SAR/SG ICAO/States	On-going
21	APANPIRG/15 Paragraph 2.1.151	Develop a framework for regional training plans for the introduction of CNS/ATM systems and to include this material in the "Asia/Pacific Regional Plan for the New CNS/ATM Systems".	B	Review regional training plans and requirements	ATM/AIS/SAR/SG ICAO/States	On-going

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No.	Reference	Subject/Task	Priority	Action Proposed / In Progress	Action By	Target Date
22	APANPIRG/15 Paragraph 2.1.151	Develop business cases for various options of CNS/ATM implementation taking into account environmental benefits.	B	Coordinate with Regional Officer Air Transport in respect of business case activities	ATM/AIS/SAR/SG ICAO/States	On-going
16/1	ATM/AIS/SAR/SG/16 (June 2006)	Overhaul Task List of ATM/AIS/SAR Sub-Group of APANPIRG and present to ATM/AIS/SAR/SG/17 for adoption	A	ATM/AIS/SAR/SG/16 recognized that the task list was in need of a complete overhaul as it carried large number of out of date references, inappropriate task items and was not presented in a "user-friendly" format. Overhaul of Task List should ensure that all actions arising from ATM/AIS/SAR/SGs 15 & 16 and APANPIRGs 16 & 17 were captured	Regional Office	June/July 2007
16/2	ATM/AIS/SAR/SG/16 (June 2006) & DGCA/06	Subject to advice from ICAO Headquarters and APANPIRG, implement actions arising from the Conclusions of DGCA/06 (March 2006), including Conclusion and Recommendation 2/2 a) and b) in relation to the implementation of safety management systems by States.	A	Outcomes of DGCA/06 will be reviewed by APANPIRG/17 and subsidiary tasks for action by ATM/AIS/SAR/SG are expected to be identified	ATM/AIS/SAR/SG ICAO/States	On-going
16/3	ATM/AIS/SAR/SG/16 (June 2006) & DGCA/06	Take action in respect of APANPIRG/17 Decision 17/1 in relation to implementation of actions arising from the Conclusions of ALLPIRG/5 (March 2006)	A	APANPIRG/17 identified ALLPIRG/5 Conclusions 5/2, 5/4, 5/5, 5/7, 5/8, 5/9, 5/11 and 5/13 for study by ATM/AIS/SAR/SG.	ATM/AIS/SAR/SG ICAO/States	On-going

AGENDA ITEM 2.2: CNS/MET MATTERS

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

2.2 CNS/MET matters

2.2.1 The meeting reviewed the outcome of the Tenth meeting of the CNS/MET Sub-group held in Bangkok from 17 to 21 July 2006. The meeting noted with appreciation the work done by the Sub-group and took the following actions on the report of the CNS/MET SG/10.

Aeronautical Fixed Service (AFS)

Review Report of the First Meeting of the ATN Implementation Coordination Group

2.2.2 The meeting noted the tasks accomplished by the First Meeting of the ATN Implementation Coordination Group (ATNICG) held in Seoul, Republic of Korea, from 22 to 26 May 2006.

2.2.3 The meeting noted that the work programme was developed with a view to enhance safety and efficiency in accordance with the ICAO strategic objective. The meeting also noted the time frame established for implementation to achieve the objectives. In view of the above, the meeting adopted the following Decision:

Decision 17/20 - Revision to the Terms of Reference and the Subject/Tasks List of ATNICG

That, Terms of Reference and the Subject/Task List of the ATNICG be amended as provided in **Appendix A** to the Report on Agenda Item 2.2

2.2.4 The meeting noted the activities of the Aeronautical Communication Panel Working Group N and its Sub-Working Groups. It was noted that in order to protect investments already made by States in implementing the ATN, the introduction of IPS (based on IP version 6) should be introduced in such a manner that already implemented or planned ATN systems can continue to operate.

AMHS Address Database

2.2.5 The meeting noted the offer made by Eurocontrol for a global database service to be provided to all ICAO Regions. The meeting agreed and supported the proposal. At the same time it was also agreed that the work on the proposed establishment of ASIA/PAC database in Bangkok should also progress. The ASIA/PAC database could share data and synchronize data between databases. A need for a coordination procedure between two databases was identified, lack of which may disrupt the operation. It was agreed that Thailand would proceed with the work of establishment of database for regional AMHS address look-up service pending the availability of directory service in the region to be introduced.

Strategy for ATN Implementation in the ASIA/PAC Region

2.2.6 Taking note of the work in progress in the ACP for development of SARPs for Internet Protocol Suite (IPS) and considering the need to ensure harmonization of procedure and protocol, the meeting adopted the revised Strategy to permit deployment of network approach for the provision of dual stack ISO/OSI and IPS protocols, accordingly, the meeting adopted the following Conclusion:

Conclusion 17/21 - Updating of the Strategy for Implementation of ATN

That, the Strategy for implementation of ATN in the ASIA/PAC Region be amended as shown in the **Appendix B** to the Report of on Agenda Item 2.2

ATN Implementation Activities in States

2.2.7 The meeting noted the following progress in ATN implementation

- China - The dual stack ATN router/AMHS solution developed by Aero-Info Technologies Co., Ltd. for the ATN Research Project of CAAC supports both ATN provisions compliant protocol and the TCP/IP protocol. This type ATN BBIS router and AFTN/AMHS gateway will be used in China for connecting in 2007.
- Fiji - The ATN BBIS and AFTN/AMHS Gateway will be implemented by 2007 for international use. Domestic operation is planned for 2009 and full ATN/AMHS will be implemented in 2010.
- Malaysia - The Implementation activities of ATN BIS Route and AFTN/AMHS will start in September 2006 and are expected to be completed in December 2006.
- Singapore - A basic ATS Message Handling Service will be implemented to support the initial start of ATN/AMHS by December 2006. An extended AMHS will be implemented in the middle of 2007.
- Republic of Korea - AFTN/AMHS installed at Gimpo airport had been operational since 2001 to cope up with increasing volume of message traffic. ROK has a plan to upgrade the existing systems to establish ATN links with China and Japan in accordance with the requirements established in the FASID.
- Sri Lanka - By the end of 2007, ATS Message Server plus AFTN/AMHS Gateway, AMHS User Agents and Domestic AMHS Network Infrastructure will be implemented.
- U.S.A - Since March 2005, AMHS service has been implemented between Salt Lake City and Tokyo utilizing ATN routers on X.25 sub-network protocol. It supported both Translated Form (XF) and Common AMHS Addressing Scheme (CAAS) addresses. The US FAA can support AMHS service with Australia, Fiji and New Zealand.
- First international AMHS connection in Europe, between Madrid and Frankfurt, has been carrying operational ATS traffic since 7 February 2006.

Message and networking services by SITA

2.2.8 The meeting noted the messaging and networking services provided by SITA including type B gateway with AFTN; X.400 services; proposed AMHS services including Relay and mail box services.

Proposal for establishment of the Seoul/Pyongyang AFTN circuit

2.2.9 The meeting noted a proposal from the Republic of Korea for the establishment of an AFTN circuit between Seoul and Pyongyang using a satellite link. It was recognized that the proposed circuit would provide alternate routing capability to DPRK in the event of breakdown of the Beijing/Pyongyang AFTN circuit. This proposal was supported by China. However, in absence of a representative from DPRK at the CNS/MET Sub-group, it was not able to make any recommendation in this regard. Further coordination for establishment of this circuit was required to be carried out by the ICAO Regional Office.

South Pacific Aeronautical Fixed Service Network Operation

2.2.10 It was noted that the South Pacific Aeronautical Fixed Service (AFS) Network for data and voice communications between Australia, Fiji, New Zealand, Papua New Guinea and the United States of America was completed and the network was operational. It was further noted that with the proposed implementation of the ATN in the region it was essential that these types of activities be identified to assure continued effective and efficient network operation. The Pacific Network was a demonstration on a much smaller scale of a global switched network.

Aeronautical Mobile Service (AMS)

Implementation of Data link based Applications-DFIS

2.2.11 It was recalled that implementation of Data Link Flight Information Service (DFIS) applications including D-ATIS, D-VOLMET, DCL and PDC were identified by APANPIRG as one of the key priorities for CNS/ATM implementation with the target date of implementation by 2008. The status of implementation in States was as follows:

- China - Trials of D-PDC were being conducted at Beijing Capital airport. A plan has been in place to provide D-PDC and D-ATIS at 14 major airports and D-VOLMET service in 2007. China will conduct VDL Mode 2 trials after setting five VDL Mode 2 stations in Beijing, Guangzhou, Pudong, Shenzhen and Hong Kong in 2007.
- India - D-VOLMET will be provided at Mumbai in 2007 and D-ATIS and PDC were under consideration for implementation
- Japan - ACARS based D-ATIS had been provided. Other DFIS applications were being considered. Japan Meteorology Agency – JMA would consider providing D-VOLMET service
- New Zealand – The requirement for providing D-VOLMET will be reviewed by the end of 2007. ACARS based D-PDC would be implemented in 2007.
- Republic of Korea (ROK) - Data Link applications system developed by ROK have been implemented for several years. D-PDC is provided at Gimpo, Jeju, Ulsan and Gimhae airports. D-ATIS is provided at Gimpo, Gimhae, Jeju, Daegu, Gwangju and Ulsan airports. D-PDC and D-ATIS being provided through a data service provider since 2001 at Incheon airport will be replaced with a system developed by Republic of Korea by end of 2006.
- Singapore - The need to provide Data Link VOLMET service had been identified. Request for tender was issued for D-VOLMET with target date of implementation in 2008.

Integration of HF Aeronautical Radio Stations in Japan

2.2.12 It was noted that Japan had decided to integrate two aeronautical radio stations Tokyo and Naha into one aeronautical radio station Tokyo from April 2007. Further information will be published by AIC and consequential AIP Amendment by 18 January 2007. Transfer of communication between Naha and Manila/San Francisco will be conducted between Tokyo and Manila/San Francisco from April 2007. It was proposed to remove Naha from both MWARA CWP1 and CWP2 networks and to amend the FASID Table CNS 2 and Chart CNS 2 accordingly. The meeting agreed that this amendment proposal will form a part of a comprehensive amendment of Table CNS 2.

ATS Data link Operations and 50 NM Longitudinal Separation Minimum

2.2.13 Japan informed the meeting that full ATS data link operations and consequential application of 50 NM longitudinal separation minimum had been implemented in the oceanic area within Fukuoka FIR from 6 July 2006. Result of an overall assessment indicated that system performance criteria described in the FOM were met. Details of ATS data link operations and reduction of longitudinal separation minimum from time-based 15 minute separation to distance-based 50 NM separations using ATS data link were provided in AIP-Japan (GEN3.3-29 – 36 and ENR3.6-32) which was published on 11 May 2006.

Review FASID Table CNS 2 – AMS AND AMSS

2.2.14 Considering that the FIRs in some States have been changed and the modernization and rationalization of HF and VHF communication infrastructure that had been initiated by some States, the need to completely update FASID Table CNS 2, *Aeronautical mobile service (AMS) and aeronautical mobile satellite service (AMSS)*, was identified. It was agreed to propose removing abbreviation GPS from explanation of the Table for Column 2. It was also agreed to add “nautical miles” into the explanation to the Column 3. The Table was updated with information provided by several States. ICAO Regional Office will issue a letter asking States to provide their comments for amendments to the planning document. States will be requested to review their AMS requirements and provide updates to the ICAO Regional Office by end of October 2006. An amendment proposal to the regional air navigation plan FASID Table CNS 2 will be processed by the end of 2006 in accordance with the established procedure. In light of the foregoing, the meeting adopted the following Conclusion:

Conclusion 17/22 - Amendment to FASID Table CNS 2

That, FASID Table CNS 2, *Aeronautical mobile service (AMS) and aeronautical mobile satellite service (AMSS)*, be replaced with an updated Table in accordance with the established procedure.

Navigation systems

GBAS CAT-1 and GRAS Development

2.2.15 The meeting noted that in January 2006 Airservices Australia approved a project to develop and certify GBAS Cat-I and GRAS. On 10 April 2006, Airservices Australia signed a contract with Honeywell International Inc. to develop GBAS Cat-I and GRAS. Australia was funding the software development of the Honeywell SLS-4000 to bring the system up to a certifiable level in mid calendar year 2008. The US FAA was planning to provide approval for a non-federal system GBAS when it becomes available for test and evaluation. Sydney International Airport has a beta GBAS Cat-I installed and supporting test flights by Qantas B-737-800 aircraft fitted with certified GBAS Cat-I avionics. Approval by the Civil Aviation Safety Authority to operate passenger carrying

flights is expected in third quarter of 2006. It was noted that the full operational benefits of GBAS Cat-I are hindered by the ICAO PANS-OPS procedures designs. Airservices Australia was also funding the development of a certifiable operational GRAS. The programme is 2 years long and will deliver a certifiable GRAS in mid 2008. The system would meet all the ICAO SARPs requirements with an availability of 0.999 in remote areas and 0.9999 in high-density areas.

Australian GNSS Transition

2.2.16 Australia provided an update on transition from ground based radio navigation to GNSS based Area navigation and its intentions to maintain a backup network of conventional nav aids through to the year 2020. Under the auspices of the ASTRA GNSS Implementation Team (GIT), a group comprising Qantas, Virgin, CASA and AsA staff had identified and was working through issues associated with allowing full use of area navigation equipment on modern jet aircraft. Recently, these aircraft were authorized to use the existing (more than) 550 GPS approach procedures. Replacement projects are underway to renew nav aids required in the Backup Network to ensure continuity of service as transition to GNSS/Area navigation proceeds. A total of 41 VOR/DMEs are to be retained and replaced and a total of 106 NDBs are to be retained and replaced forming the ground nav aids backup network. A project to replace 14 ILS is also in progress.

Status of the U.S. Wide Area Augmentation System (WAAS)

2.2.17 The meeting noted the updated information on the WAAS provides users with the capability to fly approaches with vertical guidance throughout the U.S. NAS. Presently, over 900 LNAV/VNAV published procedures are available which WAAS capable aircraft can fly. FAA improved the precision approach capability provided by WAAS through terminal approach procedures (TERPS) optimization. This improvement took full advantage of the capabilities of the WAAS Signal-in-Space and provided a new approach procedure with vertical guidance called LPV. LPV provides higher lateral precision over LNAV/VNAV resulting in lower approach minima for most runways. LPV procedures have nominal minima of a 250 foot decision height, ¾ mile visibility without proper lighting (½ mile visibility with proper lighting). Currently, there are over 400 LPV procedures published. LPV and LNAV/VNAV approaches do not require any equipment beyond standard WAAS Technical Standard Order (TSO) avionics. The completion of WAAS full LPV was expected in the late 2008 time frame.

WAAS Improvements

2.2.18 It was noted that new reference stations in Alaska, Canada, and Mexico were being installed. Four new Alaskan sites were installed in Fairbanks, Bethel, Kotzebue, and Barrow. These stations became operational on 12 July 2006. New Canadian sites in Gander, Goose Bay, Iqaluit, and Winnipeg were being installed and integrated into the operational WAAS. Once these sites become operational, it will have the effect of expanding the WAAS coverage in the North-eastern United States and a majority of the Canadian airspace. New sites in Mexico were installed in Mexico City, Puerto Vallarta and Merida in 2005. Two more sites in Tapachula and San Jose del Cabo will be installed by September 2006. These installations will provide WAAS coverage to the entire southern United States as well as much of Mexico. The U.S. FAA also sought to improve WAAS system availability and overall system coverage through more optimized GEO orbital locations. Two new satellite communications payloads have been acquired to replace the aging INMARSAT satellites. PanAmSat, located at 133°W, launched October 2005 is scheduled to become operational October 2006. Telesat, located at 107°W, was launched in September 2005 with an anticipated operational date of April 2007.

MTSAT Satellite-Based Augmentation System (MSAS)

2.2.19 Japan provided an update on the current status of MSAS. The MTSAT-2 was successfully launched on 18 February 2006. JCAB was integrating MTSAT-2 into MSAS with MTSAT-1R which was launched on 26 February 2005. MSAS signal was being broadcasted

intermittently for system integration and optimization test. MSAS is assigned with two PRN codes. PRN129 is uplinked by Kobe Aeronautical Satellite Center and PRN137 is uplinked by Hitachi-Ohta Aeronautical Satellite Center respectively. The test signal contains the message (Message Type 0) indicating that the transmission is under test. JCAB was continuing the study on some of technical issue to improve system performance including the effect of ionosphere in southern part of Japan. Japan indicated that MSAS service will be provided for Fukuoka FIR in early 2007.

Performance Based Navigation

2.2.20 Based on an introductory brief on Performance Based Navigation (PBN) presented by an expert from Australia, the meeting considered necessary for ICAO to continue organizing appropriate workshops/seminars to facilitate the orderly adoption of the Performance Based Navigation (PBN) concept. In view of this, the meeting adopted the following Conclusion:

Conclusion 17/23 - Performance Based Navigation Seminar/Workshop

That, ICAO be invited to organize appropriate Workshop/Seminar for ASIA/PAC Region to facilitate the orderly adoption of the Performance Based Navigation (PBN) concept.

Regional Strategies

2.2.21 The meeting reviewed strategies for implementation of GNSS air navigation capability and the provision of precision approach and landing guidance systems based on new information available. The Regional Strategy for Precision Approach and Landing Guidance Systems was considered and re-titled as the Regional Strategy for the Provision of Approach, Landing and Departure Guidance Systems. The strategy was revised to include the new performance based navigation concept and recognized the value of departure guidance. The Strategy for the Implementation of GNSS Navigation Capability in the ASIA/PAC Region was also revised taking into account the information provided in working and information papers and to include the performance based navigation concept. The revised strategies are presented in **Appendices C and D** to the Report of on Agenda Item 2.2. In view of this, the meeting adopted the following Conclusion:

Conclusion 17/24 - Revision of the Strategies for Approach Landing and Departure Guidance Systems and Implementation of GNSS Navigation Capability in the ASIA/PAC Region

That, the updated Strategies for the Provision of Approach, Landing and Departure Guidance Systems and for the Implementation of GNSS Navigation Capability in the ASIA/PAC Region provided in **Appendices C and D** to the report of on Agenda Item 2.2 be adopted and provided to States.

RNP Approach Flight Validation Requirements

2.2.22 Australia presented information on Low RNP (<0.3 NM) approaches, flown by new generation airliners such the Boeing 737-800. These approaches offer significant safety and operational benefits but work in a number of areas is required to allow these approvals to transition from the 'special' status to those based on generally accepted ICAO standards. Part of these approvals is the need for amendments to Doc 8071 "Manual on the Testing of Radio Navigation Aids" to provide guidance on the flight validation requirements for RNP based approach operations. These designs cannot be adequately verified using the 'visual' observation and track/distance comparison methods use to flight validation RNAV (GNSS) approaches. The requirement to update Doc 8071 has been identified to the Navigation Systems Panel.

New Australian GNSS Approvals

2.2.23 Information was provided on new (March 2006) GNSS approvals recently introduced in Australia. Primary means 'stand alone' GNSS IFR navigation is now approved in Australia using TSO C145/6 GPS receivers and the Fault Detection and Exclusion RAIM Prediction Service (FDE RPS). This is considerable benefits to civil aviation and is an important step towards a GNSS based infrastructure. However, considerable further work is required to further develop and deploy the augmentation systems necessary to complete the transition. The rules can be found in the Civil Aviation Advisory Publication (CAAP) 179A on the web site at www.casa.gov.au. The Airservices RAIM predictions can be found on their web site at www.airservices.gov.au.

Use of SBASs Outside the Service Area

2.2.24 The meeting noted that the US SBAS, WAAS, is now certified and in operational use using a number of geostationary satellites. The SBAS will be utilized by the SBAS enabled receivers both within and without of the WAAS designed Service Area. Often the receivers will utilize a differential solution even when located outside the Service Area. In the next few years at least two more SBAS systems are expected to become operational. These include EGNOS and MSAS that like WAAS, the signals of which will be visible outside their Service Areas. The present Annex 10 and the GNSS Manual do not provide direct advice on this issue but do make the apparent assumption that use of the SBAS signals by an IFR rated receiver outside the Service Area will not result in inaccuracies outside RNAV (GNSS) tolerances. The increasing availability of SBAS signals outside their design Service Areas is raising questions of their use by both aviation and non aviation users. Some clearer ICAO or provider guidance on the use of these signals would provide regulators (and users) improved confidence in their use.

Report on Aircraft Accident

2.2.25 A Piper PA-31T Cheyenne PA-31 with one pilot and five passengers, on a private, instrument flight rules flight in south east Australia collided with terrain 34 km south east of the destination aerodrome with the loss of all onboard. The aircraft was navigating by the GPS with the autopilot engaged, was seen by radar to deviate some 4 degrees off its planned track over a distance of some 200 NM. It then appeared to carry out a GPS non precision approach but in a location that was some 11 NM from the correct approach path. Despite extensive research both within Australia and overseas the investigation was unable to determine the direct cause of the accident. While there have been other reports of track deviation while using GPS navigation these could not be directly related to the accident flight. The investigation report of the accident is available at www.atsb.gov.au. Australia invited the meeting to provide details of similar navigation deviation experienced with GPS navigated aircraft.

APEC GNSS Test Bed

2.2.26 Thailand informed the meeting of the progress with the Asia Pacific Economic Cooperation (APEC) GNSS Test Bed. The system involves various Economies providing reference stations that contribute to a master control station in Thailand to simulate a regional wide area augmentation system based on the SBAS concept. In the test facility the final link to the aircraft is simulated using a VHF transmission in place of a geostationary satellite. Thailand indicated that other Economies could join the programme with additional Economies funding their own involvement. As part of the trial, significant training has been delivered to the engineers of the participating Economies.

Surveillance systems*Review Reports of the Fourth and Fifth Meetings of ADS-B Study and Implementation Task Force*

2.2.27 The meeting reviewed the work carried out by the Fourth and Fifth Meetings of ADS-B Study and Implementation Task Force. The ADS-B SITF/4 was held from 26 to 28 October 2005 in Fiji Islands and ADS-B SITF/5 was held from 5-7 April 2006 in India. ADS-B Seminars were held in conjunction with the Meetings.

2.2.28 The meeting reviewed comments made by the Sixteenth Meeting of the ATM/AIS/SAR Sub-group and Tenth Meeting of the CNS/MET Sub-group on ADS-B.

ADS-B related Development by ICAO Panels

2.2.29 It was noted that relevant amendments to ICAO documents that allow the application of a 5 NM ADS-B Separation Standard comprising the Comparative Assessment, amendments to Doc 4444 and the ICAO Annexes were reviewed by the ANC in February 2006. The applicable date for these amendments and changes will be likely in November 2007.

ADS-B Trials, Planning and Implementation Activities

2.2.30 The meeting noted that ADS-B related trials, validation/monitoring programme, initial implementation projects and implementation planning were presented to and reviewed by the meetings of ADS-B Study and Implementation Task Forces. These activities included but not limited to those conducted and initiated by Australia, Fiji, Hong Kong China, India, Indonesia, Mongolia, Thailand and USA. Status of ADS-B related projects conducted in Europe was also reviewed by the Task Force. ADS-B related developments by Industry including information from Airbus, Boeing, manufacturers for avionics and vendors for ground stations were also noted by the Task Force. The details of these activities are provided in the reports of ADS-B Study and Implementation Task Force.

ADS-B Implementation Planning

2.2.31 It was noted that the Regional Plan for CNS/ATM systems regarding ADS-B was updated and the updated regional Air Navigation Plan FASID Table CNS 4 including ADS-B related planning information was processed and approved in February 2006. Australia – Singapore city pair had made progress with joint efforts made by Airservices Australia, DGAC, Indonesia and SITA. ADS-B air-ground surveillance trials will be conducted with ground stations to be installed at several locations in Indonesia. The potential area for using ADS-B in North Asia was identified.

Multilateration Trials

2.2.32 Several States and administrations including Australia, Hong Kong China, Mongolia and New Zealand were conducting multilateration trials and/or evaluation programme including Wide Area Multilateration Project. Multilateration is a technology that can supplement SSR and ADS-B. Multilateration system with multiple ground stations use triangulation to work out the position of an aircraft. The signal used is the 1 090 MHz ATC transponder signal (Mode S squitter, ADS-B transmission or mode A/C reply). Multilateration can provide surveillance for aircraft not equipped with ADS-B. In the short term, before ADS-B equipage, multilateration is an alternative to radar. The multilateration system is also able to receive and process ADS-B messages. Recent trials and implementations of multilateration systems have been promising.

2.2.33 The Secretariat informed the meeting that multilateration is addressed by the Aeronautical Surveillance Panel. The relevant provisions would likely be available in 2008.

Study of the Use of ADS-B for Correlation of Aircraft Identification

2.2.34 In response to the Decision 16/60 of APANPIRG/16 regarding study of the use of “aircraft identification” as *an unique ‘key’ for correlation between flight plan data and surveillance information*. The Task Force concluded that the alternative of flight ID as contained in the ADS-B messages can be used as an additional unique key for direct correlation with flight plan data.

Aircraft ADS-B Data Report Form

2.2.35 The meeting noted that Aircraft ADS-B Data Report Form and collection procedure for ADS-B implementation monitoring and ADS-B data collection was developed by the ADS-B Task Force.

Amendment of ADS-B Implementation and Operations Guidance Document (AIGD)

2.2.36 The meeting reviewed and adopted a draft amendment to the ADS-B Implementation and Operations Guidance Document (AIGD) proposed by the ADS-B Study and Implementation Task Force. The meeting accordingly adopted following Conclusion:

Conclusion 17/25 - The First Amendment to the AIGD

That, the amended ADS-B Implementation and Operations Guidance Document (AIGD) as provided in the **Appendix E** to the Report of on Agenda Item 2.2 be adopted.

ACAS and ADS-B

2.2.37 It was noted that some ADS-B applications could be deployed if ADS-B data could be displayed on ACAS traffic display as ADS-B data could improve the interpretation of ACAS information. In particular, the presentation of ADS-B based flight identity, velocity vector and more accurate position could improve the situational awareness of the pilot. Limited cockpit space makes the traffic display an ideal candidate for ADS-B applications in some aircraft. The use of existing hardware in the aircraft could reduce overall installation and maintenance costs of ADS-B IN - and hence the business case of ADS-B overall. In light of foregoing considerations, it was recommended that ICAO consider these issues and expedite work to define and support the use of ACAS hardware and traffic displays to present ADS-B based data especially flight identity and velocity vector. Accordingly, the meeting adopted the following Conclusion:

Conclusion 17/26 - Investigation and expedition of way to present ADS-B Data using ACAS hardware

That, ICAO be requested to:

- a) take into account the importance and benefit of ADS-B IN applications and the role it will have in the final business case; and
- b) define and support the use of ACAS hardware and traffic displays to present ADS-B based flight identity and velocity vector.

Regional surveillance strategy

2.2.38 The meeting discussed the draft strategy for the implementation of surveillance systems in the ASIA/PAC Region presented by CNS/MET Sub-group. It was noted that the Sixteenth meeting of ATM/AIS/SAR Sub-group had not endorsed the draft strategy formulated by the ADS-B Study and Implementation Task Force. The meeting also noted that the CNS/MET Sub-group had

undertaken a thorough review of the draft strategy taking into account comments from the ATM/AIS/SAR Sub-group. It was considered useful and desirable to develop a regional strategy for implementation of surveillance system as it would provide guidance to States. Considering comments by both groups and necessary amendments that may be needed, the meeting decided to refer it back to CNS/MET Sub-group for further refinement. In light of foregoing the meeting formulated the following Decision:

Decision 17/27 - Development of Strategy for the implementation of surveillance systems in the ASIA/PAC Region

That, the strategy for the implementation of surveillance systems as contained by the CNS/MET Sub-group in the **Appendix F** to the report of Agenda Item 2.2 be further refined for consideration by APANPIRG/18.

Challenges faced for regional cost and benefits study

2.2.39 The cost/benefit study for the near-term use of ADS-B conducted by the Task Force included: sample template provided by New Zealand and Singapore and cross industry business case study in Australia. However, city pair coordinators reported several difficulties that were hampering their attempts to establish more complete business cases including lack of resources and appropriate skills to perform complex business case and uncertainty regarding allocation of costs, especially costs of ADS-B avionics fitment. The business case study conducted by Japan identified that different surveillance systems need to be retained in dense/important airspace.

IATA perspective of ADS-B and position for mandating ADS-B-OUT

2.2.40 IATA presented the airlines' perspective of ADS-B in the Asia and Pacific region and highlighted achievements by States and the ADS-B Study and Implementation Task Force and challenges faced by the Task Force. IATA was of the opinion that the Asia/Pacific Region should focus on near term use and implementation of "ADS-B OUT". IATA supported holding educational seminars on what is required to implement ADS-B OUT and supported multilateral study including a detailed analysis. IATA noted that much of the business case is complicated by the problems of quantifying the cost of ADS-B avionics fitment by airlines. In this regard, IATA recommended that APANPIRG should simply assume that all aircraft will be equipped as a consequence of the worldwide move towards ADS-B OUT and Mode S Enhanced Surveillance. It was also informed that as indicated in its CNS/ATM road map published in 2005, IATA supported to mandate the use of ADS-B OUT from 2010 and simultaneously avoid the installation of new or replacement ATC radar facilities where there are demonstrated operational and cost benefits.

Revised TORs of the ADS-B Study and Implementation Task Force

2.2.41 The meeting reviewed the revised Terms of Reference as proposed by the ADS-B Study and Implementation Task Force. The meeting noted the challenges faced by the Task Force in completing the task of region wide ADS-B cost/benefits study as indicated in its report. It was also noted that many tasks in the Subject/Tasks list have been completed. The meeting considered the comments in this regard made by the ATM/AIS/SAR Sub-group, CNS/MET Sub-group and IATA. The meeting established an ad-hoc working group to develop revised TOR for ADS-B SITF. Considering that air to air application of ADS-B study would require additional experts and efforts, adding this study into TOR of the Task Force was not adopted by the meeting. It was considered necessary for the ADS-B Task Force to further develop implementation plans for the near term ADS-B applications and compare alternative technology/solutions for surveillance. The meeting supported to study multilateral with specific considerations. The meeting encouraged member States of the ADS-B SITF to make necessary arrangements for more participants with ATM and operational background to attend the Task Force meetings. In light of foregoing, the meeting adopted the following Decision:

Decision 17/28 - Revised Terms of Reference for ADS-B Study and Implementation Task Force.

That, the Revised Terms of Reference for the ADS-B Study and Implementation Task Force as provided in the **Appendix G** to the report under Agenda Item 2.2. be adopted.

Regional ADS-B service concept

2.2.42 The meeting noted the Regional ADS-B Service concept developed by Airservices Australia and SITA Alliance. The ADS-B regional service concept would enable States to adopt ADS-B technology in the most cost effective. By installing the ADS-B ground stations on existing SITA sites that are currently used for air to ground communications, ANSPs can within the shortest possible time receive ADS-B data via SITA's worldwide network with a stand alone ADS-B display. ANSPs can also have this ADS-B data integrated into their existing ADS-B capable ATM automation systems. Alternatively, the ADS-B ground stations can be installed at ANSP sites and connected to the nearest SITA node. This ADS-B regional service concept would accelerate implementation by States and ensure uniform implementation of cross FIR data sharing in the ASIA/PAC Region.

Cross FIR ADS-B data sharing

2.2.43 Surveillance capability can be enhanced through surveillance data sharing between States particularly at FIR boundaries. By having neighbouring States to adopt FIR data sharing collaboration with deployment of ADS-B ground stations at sites near FIR boundaries, effective surveillance can be developed at a lower cost as compared to installing ADS-B independently by each State. Examples of possible sites from which such sharing could readily be achieved, include Norfolk Island, Christmas Island, and Port Blair.

ADS-B Trial and Radar Modernization in New Zealand

2.2.44 The meeting noted that a three month ADS-B trial was successfully conducted by New Zealand This trial provided the opportunity to develop skills and knowledge across the spectrum from installation and setup of ADS-B ground-station equipment, to configuration, and integration of this surveillance technology into its ATM system. The trial confirmed that due to the low number of functional ADS-B transponders currently operating in the New Zealand domestic FIR and a number of other business factors that wide scale deployment of this surveillance technology in the New Zealand domestic FIR was not appropriate at this time. However, New Zealand will continue to monitor the situation and activity consider this technology whenever it has surveillance issues address.

2.2.45 It was also noted that New Zealand had recently completed its radar modernization programme. This programme resulted in the decommissioning of one PSR and an electronics upgrade to the three remaining PSR and six SSR. The SSR were upgraded to Mode S which will provide some added benefits to ATC in terms of improved aircraft identification, improved situation display and tracking, and improved safety nets.

SSR Mode S operations

2.2.46 The meeting noted that four en-route SSR Mode S ground stations and one terminal SSR Mode S ground station had been operational in Japan. It was observed several times that aircraft equipped with certain type of Mode S transponder could not be correctly detected by SSR Mode S ground stations. The phenomenon of partial detection seems to be caused by performance degradation with aging avionics in terms of transmitter pulse width, pulse amplitude, sensitivity. There is also possibility caused by problems of receiver DPSK (Differential Phase Shift Keying), power supply, aircraft antenna (VSWR) and connection with squat switch. Another phenomenon of no response

from on-board transponders had more serious impact to the ATC operation. Several remedial actions had been taken by including closely monitoring, issuance of Aeronautical Information Circular (AIC) and letters sent to all air transport operators flying to/from Japan. It was clarified that Japan had not mandated equipage of Mode S transponder for aircraft flying in Fukuoka FIR. However, it was considered necessary to invite States to be aware of this seriousness of this safety related issue. Accordingly, the meeting adopted the following Conclusion:

Conclusion 17/29 - Mode S transponder inspection

That, recognizing more Mode S Radar ground stations being introduced in the region, States in the Asia and Pacific Region be urged to have aircraft registered having Mode S transponder regularly inspected to ensure correct operation of the Mode S transponders.

Spectrum Management

Preparatory Activities for WRC-2007

2.2.47 The meeting noted that ICAO Position for WRC-2007 approved by the ICAO Council on 14 June 2005 was transmitted to States by State Letter E3/5-05/85 dated 12 August 2005.

Result of the Third APT Regional Preparatory Group Meeting

2.2.48 The Third APT Meeting (APG 2007-3) was held in Kuala Lumpur, Malaysia from 13 to 16 February 2006. The meeting was attended by 360 participants. The meeting updated APT Preliminary Views on each agenda item of WRC-2007. The ICAO Position for WRC-2007 as approved by the Council was presented to the meeting. In addition, ICAO submitted an information paper on the future use of the frequency band 5 000-5 150 MHz. There was a general support to the ICAO Position. The APG 2007-3 Meeting decided that the Fourth APG Meeting (APG 2007-4) is scheduled to be held in Bangkok from 8 to 12 January 2007 to further update the APT Preliminary Views on WRC-2007 Agenda Items. The APT position will be finalized at the Fifth meeting to be held in May/June 2007 in Republic of Korea. The Second RPG Meeting for WRC is tentatively planned after the APG 2007-4 to provide needed support to States to finalize their proposals to be submitted to the APT APG and ITU through respective telecommunication regulators. In view of the foregoing the meeting adopted the following Conclusion:

Conclusion 17/30 - Preparation for World Radiocommunication Conference - 2007 (WRC-2007)

That, ICAO consider convening Regional Preparatory Group Meeting for WRC-2007 in Bangkok during early 2007.

Preparatory activities

2.2.49 The meeting noted preparatory activities for WRC-2007 provided by Australia, Japan, New Zealand, and USA.

2.2.50 IATA strongly emphasized the need for stronger participation by States to represent aviation interests and to provide protection to the aviation spectrum at national level discussions and at the regional preparatory meetings for WRC-2007. It was further stated that the main concern is to protect the 5 GHz band which is identified for use by the aviation community to support the emerging services. States were urged to take note of the outcome of ITU CPM meeting, finalize their position in support of the ICAO position and take timely actions to have the aviation position included in the States position paper.

Frequency Interference Problem

2.2.51 Australia presented a paper informing the meeting of a report on RF interference on the protected frequency from illegal CCTV Camera that impacted DME and SSR services in the United Kingdom. The meeting was of the view that in order to avoid such illegal usage of the frequency, States regulatory authorities should be notified and the aviation authorities should work closely with respective States regulatory authorities to enforce regulation to check such illegal use of the protected spectrum. Accordingly, the meeting adopted the following Conclusion:

Conclusion 17/31 - RF interference on the protected DME frequency

That, States' civil aviation administrations be encouraged to work closely with the respective regulatory authorities and undertake all necessary action to ensure that DME and SSR service are not interfered by devices such as wireless CCTV cameras.

2.2.52 IATA pointed out that HF interferences had been one of continuous problem impacted the normal operation of air ground communication on High Frequencies. States were urged to take necessary action to eliminate such interfaces. The meeting recognized a need to address this problem and adopted the following Conclusion:

Conclusion 17/32 - HF Interference

That, States where aeronautical stations are experiencing HF radio interference, take necessary actions in coordination with respective radio regulators to identify the source of interference and to eliminate problem.

Implementation of the World Area Forecast System (WAFS)

Review Implementation of ISCS and SADIS

2.2.53 CNS/MET SG/10 Meeting reviewed the current status of implementation of the Satellite Distribution System for information relating to air navigation (SADIS) provided by the United Kingdom and the International Satellite Communication System (ISCS/2) provided by the United States of America as integral part of the ICAO aeronautical fixed service (AFS).

2.2.54 The meeting agreed that the annual ISCS/2 operational efficacy survey should be continued as an important tool aimed at providing feed-back for improvement of the quality of service, and that the survey questionnaire should be enhanced. Noting the importance of harmonizing the operational efficacy survey questionnaires for ISCS/2 and for SADIS, the meeting adopted the following Conclusion:

Conclusion 17/33 – Enhancement of ISCS/2 Operational Efficacy Survey

That, the ISCS Provider State, in coordination with the SADIS Provider State and the ICAO Secretariat, be invited to enhance the survey questionnaire on the operational efficacy of ISCS/2, for consideration by the WAFSOPSG and SADISOPSG.

Review Implementation and Utilization of the WAFS Products

2.2.55 A survey in May 2006 was conducted to verify the implementation of the reception and utilization of BUFR-coded SIGWX forecasts by States. The results of this consultation would be presented for consideration and future action by WAFSOPSG/3 to be held in September 2006. Based on the survey results, the meeting strongly supported the continuation of the transmission of SIGWX

charts in PNG (Portable Network Graphics) format after the target date of cessation of the T.4 SIGWX charts, 30 November 2006, and adopted the following Conclusion:

Conclusion 17/34 – Continuation of PNG-formatted SIGWX Charts

That, the WAFSOPSG be invited to consider continuation of the provision of PNG-formatted SIGWX charts by both WAFCs beyond 30 November 2006.

2.2.56 The meeting was informed that the ASIA/PAC Seminar on SADIS 2nd Generation and WAFS Processing Systems, organized by the UK Met Office and ICAO, was held at the ASIA/PAC Office during 14-15 July 2006. SADIS User States were urged to plan for replacing of the existing SADIS 1G with the SADIS 2G receiving systems before the termination of the SADIS 1G service on 1 January 2009. In view of the deadline for transition to the SADIS 2G service in about 2½ years time, the meeting agreed that a regional survey should be undertaken in 2007 to monitor the progress of States in the transition to SADIS 2G, and adopted the following Conclusion:

Conclusion 17/35 – Survey on the transition from SADIS 1G to SADIS 2G in ASIA/PAC

That, a survey to evaluate the States' progress in replacing the existing SADIS 1G receiving systems with SADIS 2G receiving systems in the ASIA/PAC Region be conducted in 2007 by the WAFS Implementation Task Force (WAFS/I TF) with assistance of the ICAO Regional Office.

Note: The survey should preferably be conducted together with the annual survey of SADIS operational efficacy.

2.2.57 The meeting identified some gaps in the current WAFS output performance indicators and agreed that these performance indicators needed to be further developed by the WAFSOPSG and adopted the following Conclusion:

Conclusion 17/36 – Further development of WAFS Output Performance Indicators

That, the WAFSOPSG be invited to:

- a) include performance indicators for wind and temperature for the WMO defined verification area covering Australia and New Zealand, in their suite of existing output performance indicators;
- b) investigate the feasibility of producing wind and temperature performance indicators for all standard forecast levels;
- c) investigate the feasibility of providing wind and temperature performance indicators in a global gridded and chart format; and
- d) consider evaluating the SIGWX forecasts, in particular TC and VA symbols, in order to measure the harmonization of these forecasts issued by the two WAFCs.

Exchange of OPMET Information

2.2.58 The meeting expressed concern of the continuing shortfalls of OPMET information from the South-West Pacific Island States. The ICAO MET SIP for the South Pacific conducted in September 2005 had identified factors causing the shortfalls and proposed solutions aimed at improving the availability of METAR and TAF from the South-West Pacific aerodromes as required by the ASIA/PAC ANP. New ROBEX bulletins to be compiled by the Nadi ROBEX centre were proposed. Since AFTN was not available at the meteorological offices it was proposed to use e-mail for sending METAR and SPECI to the Nadi ROBEX centre, where the e-mail messages could automatically be converted to AFTN messages.

2.2.59 The meeting reviewed and agreed on new quality control procedures and procedures for updating the ROBEX bulletins for inclusion in the ROBEX Handbook. The following Conclusion was adopted in this regard:

Conclusion 17/37 – Update of ROBEX Handbook

That, the ROBEX Handbook be updated with the additional material on the quality control (QC) and regional bulletin update procedure, as shown in **Appendix H** to the Report on Agenda Item 2.2

2.2.60 CNS/MET SG/10 meeting agreed on a performance indicator in regard to the OPMET exchange formulated as: to achieve 95% availability of OPMET information (METAR and TAF) from the ASIA/PAC AOP aerodromes within the ROBEX exchange scheme. The meeting further agreed that the improvement of the availability of OPMET information should be considered as one of the regional performance objectives in the MET field in support to ICAO Strategic Objectives A and D (Safety and Efficiency). The OPMET/M Task Force would be tasked to develop a detailed project proposal related to the above performance objective after its endorsement by APANPIRG/17 meeting.

Amendment to FASID Table MET 1A

2.2.61 The meeting reviewed a draft proposal for amendment of the ASIA/PAC FASID Table MET 1A presented by the Secretariat. One of the important changes proposed was to simplify the table format by deleting obsolete information contained in Column 6, area(s) of coverage of charts and Column 7, AFTN routing areas of destination. The meeting agreed that the information contained in the two columns was not required for regional planning and the following Conclusion was adopted:

Conclusion 17/38 – Amendment to ASIA/PAC FASID Table MET 1A, Meteorological services required at aerodromes

That, the ASIA/PAC FASID Table MET 1A be amended as shown in **Appendix I** to the Report on Agenda Item 2.2.

Transition to BUFR coded OPMET information

2.2.62 The Project Team on the transition to BUFR-coded OPMET messages composed by experts from the OPMET/M TF and ATN IC Group conducted a meeting on 18 July 2006 in order to coordinate COM and MET issues related to the transition. Detailed information on the discussion is available in the CNS/MET SG/10 report.

2.2.63 While recognizing that the use of the BUFR-coded OPMET data would become technically possible with the implementation of the AMHS, CNS/MET SG/10 meeting expressed concerns regarding the transition to BUFR, related to:

- the expected cost of the transition for the meteorological services;
- the lack of obvious benefits from the transition;
- uncertainties regarding the end-user products/messages, etc.

2.2.64 The meeting felt that all uncertainties related to the BUFR transition should be resolved as soon as possible in order to expedite the regional planning. Moreover, the planning for BUFR transition was directly related to the planning of the transition to AMHS where a number of States were already in procurement stage and any future changes in the planning for the BUFR transition would result in significant cost.

2.2.65 In regard to the expected discussions on the subject of BUFR transition for OPMET information within the WMO bodies, the meeting adopted the following Conclusion:

Conclusion 17/39 – Coordination of plan for transition to BUFR-coded OPMET information

That, in order to expedite the finalization of the regional plan for transition to BUFR-coded OPMET information and related planning for AMHS, the appropriate WMO bodies be invited to confirm, as a matter of urgency, their plan for the use of BUFR code for OPMET information.

ICAO Advisory & Warning Systems

Review implementation of International Airways Volcano Watch (IAVW)

2.2.66 The meeting agreed that, in view of the inclusion of States' volcano observatories in the Regional ANP, it was necessary to develop a standard message format to be used by volcano observatories in communicating information to ACC, MWO, and VAAC. The following Conclusion was adopted in this regard:

Conclusion 17/40 - Standard message format for volcano observatories participating in IAVW

That, IAVWOPSG be invited to develop a standard message format to be used by the States' volcano observatories designated in the Regional ANP to provide information to the associated ACC, MWO and VAAC.

2.2.67 The meeting was informed of recent developments and improvements of the advisory services provided by VAAC Darwin. The VBAAC implemented the Volcanic Ash Graphic format recommended by the IAVWOPSG/2 meeting in 2005 and advisories in graphic format could be accessed on <http://www.bom.gov.au/info/vaac/advisories.shtml>. Australia has been working within the IAVWOPSG process to further refine the product format.

2.2.68 Views were expressed that, following the 2004 Asian tsunami, there was greater world recognition of the need for integrated natural hazard mitigation. In this context, and in the context of the International Strategy for Disaster Reduction and related policies such as the South Pacific Framework for Action 2005-2015, it was important for States to view the IAVW as a valued part of a developing global volcanic hazard mitigation network. For example, any opportunity for the aviation and meteorological communities to provide remote sensing or pilot observation data back to the volcanological community would be important for strengthening the linkages between the communities and improving the effectiveness of the IAVW.

Improvement of SIGMET availability and reliability

2.2.69 The meeting was informed of the results of the second series of regional SIGMET tests conducted in January and February 2006 by the Task Force on Implementation of VA/TC advisories and warnings and the OPMET/M Task Force in coordination with the ICAO Regional Office.

2.2.70 The need for improvement of SIGMET availability and quality was obvious and the meeting agreed that a performance objective should be established in this regard. It should be pursued by the States with the assistance of the VA/TC/I TF and OPMET/M TF. Achieving full participation of the ASIA/PAC MWOs in the SIGMET tests and eliminating formatting and dissemination discrepancies should be the goal of the future SIGMET tests.

2.2.71 The meeting agreed that appropriate target levels (performance indicators) should be developed allowing for measurement of the progress towards the region-wide uniform implementation of the SIGMET provisions. A target of 95% availability of SIGMET test bulletins from all MWOs listed in FASID Table MET 1B to be achieved in a two-year time frame was considered as a proper performance indicator.

2.2.72 The meeting reviewed a proposal for development of a web tool for monitoring the SIGMET availability by the RODBs, ROBEX centres and MWOs. The task of developing such a web tool was undertaken by Hong Kong, China in coordination with the Singapore OPMET Data Bank. It was agreed that the proposed web-based monitoring tool would be useful for real-time analysis of SIGMET and advisories availability, in particular, when the SIGMET tests are conducted. The meeting adopted the following Conclusion:

**Conclusion 17/41- Development of web page for monitoring
SIGMET availability in the ROBEX scheme**

That, Hong Kong, China be invited to develop, in coordination with Singapore, a web page on the Hong Kong Observatory web site, providing real-time information on the valid SIGMETs and advisories issued by the MWOs and advisory centres in the ASIA/PAC Region for monitoring purposes within the ROBEX scheme.

Note: Authorized access to the web application to be provided to the RODBs, ROBEX centres, MWOs and the ICAO Regional Office.

Regional training seminar for SIGMET Focal Points

2.2.73 The meeting expressed concern that the deficiencies, related to SIGMET availability and quality, had persisted for long time in the Region. It was agreed that the States concerned should undertake effective measures in order to resolve these deficiencies. One important measure in this regard was to keep active network of SIGMET Focal Points representing all MWOs in the Region.

2.2.74 The meeting further considered a proposal for organizing a training seminar for the SIGMET Focal Points in 2007. It was agreed that such seminar would be a very good opportunity for the representatives of States' MWOs to receive up-to-date information on the ICAO provisions related to SIGMET issuance and dissemination. The seminar programme should be coordinated with the WMO and the VAAC and TCAC Provider States in order to cover all aspects of the safety-related SIGMET service. The meeting adopted the following Conclusion:

Conclusion 17/42 – ASIA/PAC SIGMET Seminar

That,

- a) ICAO, in coordination with WMO and the VAAC and TCAC Provider States in the ASIA/PAC Region, be invited to organize in 2007 a regional training seminar for the States' SIGMET Focal Points; and
- b) States' CAAs and meteorological authorities be strongly encouraged to ensure participation of the designated SIGMET Focal Points or other appropriate personnel in the above Seminar.

Other MET Issues*Quality Management Systems (QMS) seminar - 2005*

2.2.75 The meeting was informed of the outcome of the QMS seminar, which was organized by the WMO in coordination with ICAO and Hong Kong, China, as a follow up of APANPIRG Conclusion 13/32. The seminar was held in November 2005 at the Hong Kong Observatory and covered the principles of the QMS and the ISO 9001:2000 standards and their application by the meteorological services serving aviation.

MET/ATM coordination seminar – February 2006

2.2.76 The MET/ATM coordination seminar was held at the Regional Office in February 2006 as a follow-up of Conclusion 14/45 of APANPIRG. The Seminar was attended by 50 participants from 16 ASIA/PAC States, the Russian Federation, the United Kingdom, the United States, and IATA.

2.2.77 The seminar was very well attended by both MET and ATM experts, which ensured a very useful discussion and exchange of information. The importance of the meteorological information for the current and future air navigation systems was emphasized. A number of new MET products tailored made to fit to the new ATM requirements were presented. The seminar formulated recommendations for consideration by the ATM/AIS/SAR SG/16 and CNS/MET SG/10 meetings. In response to these recommendations the meeting adopted the following Conclusion:

Conclusion 17/43 – Development of provisions on MET/ATM coordination

That, in recognizing the importance of the meteorological support for the air traffic management,

- a) ICAO Regional Office conduct a survey of the evolving requirements for meteorological information and services in support of air traffic management; and
- b) the results of the survey above, be referred to the appropriate ICAO body in view of potential extension of the existing provisions on the meteorological services for ATS, to cover the other ATM fields.

Windshear poster

2.2.78 The meeting was informed about an initiative of the Hong Kong Observatory (HKO) to produce a set of windshear posters jointly with IFALPA and WMO. The objective of the posters was to promulgate the current knowledge of low-level windshear/turbulence hazards and their alerting techniques to pilots and meteorologists, for training and educational purposes. The meeting supported

that ICAO should participate in the preparation and distribution of the new posters and adopted the following Conclusion:

Conclusion 17/44 – Development of new windshear posters

That, ICAO be invited to consider updating the windshear posters for training and educational purposes, based on the posters being developed by Hong Kong, China in collaboration with WMO and IFALPA.

Turbulence reporting metrics

2.2.79 After considering issues presented on the current turbulence metric based on EDR, the meeting agreed that ICAO should consider the applicability of the EDR metric for reporting of turbulence for approach/take-off and supported that more guidance would be required to facilitate States' implementation of automatic aircraft turbulence reporting, and adopted the following Conclusion:

Conclusion 17/45 – Applicability of the turbulence metric based on EDR for approach/take-off

That, ICAO be invited to consider:

- a) the applicability of the EDR metric for reporting of turbulence for approach/take-off; and
- b) developing guidance to States for implementation of automatic aircraft turbulence reporting for all phases of flight.

Future Work Programme

TOR and Subject/Tasks List of CNS/MET Sub-group

2.2.80 The meeting reviewed the TOR and Subject/Tasks List of the CNS/MET Sub-group in light of the work accomplished and the revised Key Priority items in the CNS/MET fields. The meeting did not see the need to any change to the TOR. The meeting noted that the Subject/Tasks List was slightly modified to include a new column to reflect the associated Strategic Objective and the GPI. Accordingly, the meeting adopted a Decision as follows:

Decision 17/46 - Updated Subject/Tasks List of the CNS/MET Sub-group

That, the Subject/Tasks List of the CNS/MET Sub-group presented in **Appendix J** to the report of on Agenda Item 2.2 be adopted.

2.2.81 In view of the changes towards performance based approach to the air navigation planning and implementation, focused on the ICAO Strategic Objectives and the Global Plan Initiatives, the meeting noted the initial proposals from the CNS/MET SG for performance objectives. The meeting considered it appropriate to refer the developed performance objectives to the Regional Performance Objective Task Force for coordination and prioritization with the other performance objectives to be developed.

2.2.82 The meeting noted following regional performance objectives (PO) in the CNS and MET fields related to the ICAO Strategic Objectives and the Global Plan Initiatives (GPI) drafted by the CNS/MET SG:

CNS

- | | |
|----------|---|
| PO-CNS-1 | Establishment of ground-to-ground Aeronautical Telecommunication Network (ATN) Infrastructure |
| PO-CNS-2 | Implementation of ATS Inter-Facility Data Communication (AIDC) |
| PO-CNS-3 | Implementation of Data Link Flight Information Services (DFIS) applications |
| PO-CNS-4 | Protection of Aeronautical Spectrum |

MET

- | | |
|----------|---|
| PO-MET-1 | Improvement of the availability of OPMET data from the ASIA/PAC States |
| PO-MET-2 | Improvement of the availability and reliability of ASIA/PAC advisory and warning services |

Next Meeting

2.2.83 The meeting agreed that the Eleventh Meeting of the CNS/MET Sub-group will be held in Bangkok from 16 to 20 July 2007.

Any other business*Civil/Military ATM Conference*

2.2.84 The meeting was informed that a Civil and Military Air Traffic Management Conference 2007 will be held in Bangkok from 26 February to 1 March 2007. The main topic will be “The Global Air Transportation System-Harmonizing Civil and Military Operations”.

Retirement of Regional Officer CNS

2.2.85 The meeting noted that Mr. K.P. Rimal, Secretary of the CNS/MET Sub-group retired on 31 July 2006 after almost 26 years of service with ICAO. The meeting recorded its appreciation and gratitude to Mr. Rimal for his dedication and achievements.

Information Paper

2.2.86 The meeting noted the information by India on its ATN/AMHS Transition Plan.

TITLE AND TERMS OF REFERENCE

- Title:** Aeronautical Telecommunication Network Implementation Co-ordination Group (ATNICG)
- Terms of Reference:** Coordinate implementation of ATN in the Asia and Pacific Regions to satisfy performance requirements and address relevant implementation issues.
- Composition:** The Group will be composed of experts nominated by:

Australia, China, Hong Kong-China, Fiji, India, Indonesia, Japan, New Zealand, Republic of Korea, Singapore, Thailand and United States
- Reporting:** The Group will present its report to APANPIRG through the CNS/MET Sub-group.
- Remarks:** The ATNICG, while undertaking the tasks, should take into account of the work being undertaken by Aeronautical Communication Panel and other related regional groups in other ICAO regions with a view to avoid duplication.

APANPIRG/17
Appendix A to the Report on Agenda Item 2.2

No.	Contributing Task	ICAO Strategic Objective	Associated GPI	Tasks/Strategy	Benefits	Deliverables	Target Date	Leader	Supporting Members
1	ATN Implementation Coordination	D - 1 Efficiency	GPI-17 GPI-19 GPI-22	(1) Review of implementation problems and develop co-ordinated solutions	Expedite implementation activities, ensure system compatibility through out the region	Co-ordination Report	Ongoing/Semi-annually until (2010)	Ken Morris (Australia)	All members
2	ATN Operational Procedures	D - 1 Efficiency	GPI-17 GPI-19 GPI-22	(1) Development of Interim Database for Director Services	Make available real time and quality assurance addresses for ATN message delivery	(1) Interim Database	(1) (2007)	Robert Hallman (USA)	Hong Kong, China Japan Thailand
				(2) Develop the operational database management procedures		(2) Operational Procedures	(2) (2007)		
3	ATN Certification & Validation Process	D - 1 Efficiency	GPI-17 GPI-19 GPI-22	(1) Develop conformance procedures and checklist for AMHS and ATN routers	Expedite implementation activities, ensure global system compatibility	(1) Checklist	(1) (2007)	Victor, Lee (Singapore)	China, Hong Kong, China Indonesia ROK USA
				(2) Develop validation process document		(2) Conformance Document	(2) (2007)		

APANPIRG/17
Appendix A to the Report on Agenda Item 2.2

No.	Contributing Task	ICAO Strategic Objective	Associated GPI	Tasks/Strategy	Benefits	Deliverables	Target Date	Leader	Supporting Members
4	ATN Documentation	D - 1 Efficiency	GPI-17 GPI-19 GPI-22	(1) Study DIR objects/attributes proposed in ACP and follow development within other groups	Expedite implementation activities, ensure global system compatibility	(1) Directory Report	(1) Annually until (2010)	Chonlawit B. (Thailand)	
				(2) Development of AIDC documentation (including ICD) and follow development within other groups		(2) AIDC ICD	(2) (2007) (ACP-dependent)	Thailand	
				(3) Update of AMHS ICD to comply with SARPs 3 rd Edition		(3) Updated AMHS ICD	(3) (2007)	Japan	
5	ATN Performance	D - 1 Efficiency	GPI-17 GPI-19 GPI-22	(1) Develop/establish/adapt/monitor/identify/analyze/performance indicators	Assure QOS, service continuity, timely delivery of services	(1) AMHS Performance Report	(1) Annually until (2010)	Japan	India ROK
6	ATN Service Enhancements	D - 1 Efficiency	GPI-17 GPI-19 GPI-22	(1) Review the impact of the implementation of Directory Services in the Region	Enhancing the service	(1) Report on directory	(1) Annually until (2010)	Fiji	Australia Japan New Zealand Thailand USA
				(2) Development of profiles for the directory access and exchange protocols (Ref. Decision 7/9)	Enhancing the operation	(2) Report on profiles	(2) (2008)	Fiji	

APANPIRG/17
Appendix A to the Report on Agenda Item 2.2

No.	Contributing Task	ICAO Strategic Objective	Associated GPI	Tasks/Strategy	Benefits	Deliverables	Target Date	Leader	Supporting Members
				(3) Study the use of IP	Lowering the operating cost	(3) Report on the use of IP	(3) (2008)	Singapore	China
				(4) Study for transition to BUFR code	Enhancing the service	(4) Report on the impact of BUFR code to ATN	(4) (2007)	Japan	New Zealand USA
				(5) Study for transition of AFTN-based AIDC to ATN environment	Improving the service and lowering the operating cost	(5) Report on the impact of transition of AFTN-AIDC to ATN-AIDC	(5) (2008)	Thailand	India Indonesia New Zealand
				(6) Update the AMHS ICD to comply with Doc 9705 3 rd Edition		(6) Updated AMHS ICD	(6) (2007)	Japan	Comsoft ONS
7	Security	B. Security	GPI-17 GPI-19 GPI-22	(1) Develop Information Security Policy	Safe and Secure Inter and Intra Regional Communication and service infrastructure	(1) Policy Document	(1) Annually until (2010)	Vidyut Patel (USA)	
				(2) Develop Information Security Guidance		(2) Guidance Document	(2) (2008)		

APANPIRG/17
Appendix A to the Report on Agenda Item 2.2

No.	Contributing Task	ICAO Strategic Objective	Associated GPI	Tasks/Strategy	Benefits	Deliverables	Target Date	Leader	Supporting Members
				(3) Develop Information Security Solution for Initial and Enhanced Services		(3) Security, Technical , Management and Operational Control	(3) (2008)		Australia Hong Kong-China
				(4) Co-ordinate and monitor ACP Working Group and other regions		(4) Report	(4) Semi-Annually until (2010)		Thailand

THE ATN PERFORMANCE OBJECTIVE

The APAC ATN ground-to-ground infrastructure will be fully operational 53 percent at 23 locations by 31 December 2007.

RELATED GPI ARE AS FOLLOWS:

(GPI-22) COMMUNICATION NETWORK INFRASTRUCTURE

Related ATM Objective: AMSS; HF data; VHF data; SSR Mode S; ATN

Scope: To evolve the aeronautical mobile and fixed communication infrastructure, supporting both voice and data communication, accommodating new functions as well as providing the adequate capacity and quality of service to support ATM requirements.

(GPI-19) METEOROLOGICAL SYSTEMS

Objective: To improve the availability of meteorological information in support of a seamless global ATM system.

(GPI-17) IMPLEMENTATION OF DATA LINK APPLICATIONS

Scope: Increase the use of data link applications

Related ATM Objective: Application of data link; Functional integration of ground systems; with airborne systems; ATS inter-facility data communication (AIDC)

**UPDATED STRATEGY FOR IMPLEMENTATION OF THE AERONAUTICAL
TELECOMMUNICATION NETWORK (ATN) IN THE ASIA/PAC REGION**

Considering that:

- a) the requirement for a robust ground-to-ground Aeronautical Telecommunication Network (ATN) to meet growing need for a digital data communications to support the Air Traffic Management Operational Concept;
- b) the availability of ICAO SARPs and Technical Manuals for implementation of ATN;
- c) the awareness generated in States for replacement of the present AFTN with digital data network by conducting various seminars and meetings;
- d) the availability of several guidance materials, interface control documents (ICDs) required to assist States to ensure harmonization of procedures and protocol to assure inter-operability within the region;
- e) the agreement in EUR region and North American region to provide gateways to support ATN protocol suites implemented in adjacent region;
- f) the feasibility of introducing SARPs compliment air-ground application in a secured network without prolonged delay;
- g) work in progress in ACP of IPS SARPs development for ground-to-ground communications and study undertaken on the feasibility of air-ground IPS;
- h) the need to migrate to Binary Universal form of representation of meteorological data (BUFR) coded OPMET messages; the emerging need to use lower case letters in NOTAM messages;
- i) the trial and demonstrations conducted by several States in the ASIA/PAC region for implementation of ATN/AMHS and actions taken by States for introduction of ATN/AMHS; and
- j) availability of equipment and readiness of vendors to support provisions of equipment for both OSI/IPS ground- to- ground and OSI air-ground communications.

THE GENERAL STRATEGY FOR THE IMPLEMENTATION OF THE ATN INFRASTRUCTURE AND ASSOCIATED ATN APPLICATIONS IN THE ASIA/PAC REGION IS AS FOLLOWS:

- a) Implementation be in full compliance with Annex 10 SARPs, PANS, ICDs and guidance materials adopted by APANPIRG;
- b) in the ASIA/PAC region ground-to-ground ATN will initially support the implementation of ATS Message Handling System (AMHS) to replace AFTN;
- c) Strategically deploy backbone ATN routers to provide a reliable infrastructure to initially support ground-to-ground applications and eventually support air –ground applications;

- d) during the transition phase, some AFTN system may remain in operation. A reasonable time frame should be established for their replacement with AMHS;
- e) MTA sites should provide AFTN/AMHS gateways during the transition phase;
- f) States should work co-operatively to assist each other on a multinational basis to implement the ATN expeditiously and to ensure system inter-operability;
- g) States should organize training of personnel to provide necessary capability to maintain and operate the ground-to-ground ATN infrastructure and applications;
- h) upon successful deployment of ground-to-ground ATN infrastructures and applications within the region, States gradually introduce ATN air-ground infrastructures and applications; and
- i) Strategically deploy network approach that permits dual stacks protocols (OSI/IPS) operations.

**UPDATED STRATEGY FOR THE PROVISION OF APPROACH,
LANDING & DEPARTURE GUIDANCE SYSTEMS**

Considering:

- a) in the Asia/Pacific region, ILS is capable of meeting the majority of requirements for precision approach and landing;
- b) 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 SARPs and guidance material for GNSS with augmentation to support Cat I precision approach and approach and landing with vertical guidance (APV);
- d) the evolution of Required Navigation Performance for approach, landing and departure operations;
- e) the knowledge that APV operations may be conducted using GNSS with augmentation as required or barometric vertical guidance and GNSS or DME/DME RNAV lateral guidance;
- f) APV operations provide enhanced safety and generally lower operational minima as compared to non-precision approaches;
- g) the knowledge that GNSS without augmentation can support non-precision approaches and that augmented GNSS-based systems support Category I operations;
- h) GNSS with augmentation to support category II and III operations is projected to be available in 2010-2015 time frame;
- i) MLS Cat I is operational and ground and airborne CAT III B certification is in progress;
- j) the material contained in the draft Performance Based Navigation for approach, landing and departure operations;
- k) the need to maintain aircraft interoperability both within the region and between the Asia/Pacific region and other ICAO regions and to provide flexibility for future aircraft equipment;
- l) operators will equip aircraft to support RNP and GNSS operations.

THE STRATEGY FOR ASIA/PACIFIC REGION IN THE PROVISION OF APPROACH, LANDING AND DEPARTURE GUIDANCE IS:

- a) retain ILS as an ICAO standard system for as long as it is operationally acceptable and economically beneficial;
- b) implement GNSS operations;
- c) introduce applicable Required Navigation Performance (RNP) operations;

- d) implement GNSS with augmentation as required for APV and Category I operations where operationally required and economically beneficial;
- e) promote the use of APV operations, particularly those using GNSS vertical guidance, to enhance safety and accessibility;
- f) to support contingency operations, provide RNAV (GNSS) procedures for approach, landing and departure guidance;
- g) conduct necessary on-going GNSS and RNP studies, education and training;
- h) consider the implementation of MLS where operational requirements cannot be satisfied by ILS or GNSS; and
- i) 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.

**STRATEGY FOR THE IMPLEMENTATION OF
GNSS NAVIGATION CAPABILITY IN THE ASIA/PACIFIC 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, their capabilities and the level of user equipage;
- 5) Development of GNSS including satellite constellations and improvement in system performance;
- 6) Airworthiness and operational approvals allowing the current GNSS to be used for en-route operations, and non-precision and APV approaches without the need for augmentation services external to the aircraft;
- 7) Development status of GNSS augmentation systems;
- 8) Human, environmental and economic factors will affect the implementation of GNSS;
- 9) The need to protect GNSS frequencies;
- 10) The effects of the ionosphere on GNSS;
- 11) Integrity, accuracy and distribution of aeronautical information; and
- 12) The importance for ICAO to implement the Aeronautical Information Management Concept and provide States with guidance and training on its implementation;
- 13) The regional navigation requirements are:
 - (a) RNP10/RNP4 for en-route;
 - (b) RNP4 for transition to terminal phase of flight;
 - (c) RNP1 or less for terminal phase of flight;
 - (d) RNP/RNAV based arrivals and departures;
 - (e) APV (with interim RNAV (GNSS) for approaches); and
 - (f) Precision approaches at selected runways.

THE GENERAL STRATEGY FOR THE IMPLEMENTATION OF GNSS IN THE ASIA/PACIFIC REGION IS DETAILED BELOW:

- 1) Introduction of GNSS Navigation Capability should be consistent with the Global Air Navigation Plan;
- 2) 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. States should approach removal of existing ground infrastructure with caution to ensure that safety is not compromised, such as by performance of safety assessment,, consultation with users through regional air navigation planning process;

- 3) Implementation shall be in full compliance with ICAO SARPs and PANS and support the new ICAO Global Plan Initiatives;
- 4) Introduction of GNSS for en-route, terminal, approach and departure navigation. States should coordinate to ensure that harmonized separation standards and procedures are developed and introduced concurrently in all flight information regions along major traffic flows to allow for a seamless transition to GNSS-based navigation;
- 5) States are encouraged to implement future GNSS approvals based on TSO 145/6a receiver standards or equivalents;
- 6) States should work co-operatively on a multinational basis to implement GNSS in order to facilitate seamless and inter-operable systems and undertake coordinated R & D programmes on GNSS implementation and operation;
- 7) States consider segregating traffic according to navigation capability and granting preferred routes to aircraft with better navigation performance, taking due consideration of the need of State aircraft;
- 8) ICAO and States should undertake education and training to provide necessary knowledge in Performance Based Navigation (PBN), GNSS theory, AIM concept and operational application; and
- 9) States establish multidisciplinary GNSS implementation teams, using Attachment A to Appendix C of Doc 9849 AN/457, the Global Navigation Satellite System (GNSS) Manual, as a guide.

Note 1: Identified SBAS systems are EGNOS, MSAS, GAGAN and WAAS. The MSAS is expected to be available by early 2007 for provision of augmentation to the Asia/Pacific region while GAGAN is expected to be available by 2009.

PROPOSED AIGD AMENDMENTS

1.4 CHANGES TO THE AIGD

Proposal: Amend the procedure as shown.

Whenever a user identifies a need for a change to this document, a request Request for Change (RFC) Form (see Section 1.6 below) should be completed and submitted to the ICAO Asia and Pacific Regional Office. The Regional Office will collate RFCs for consideration by the ADS-B Study and Implementation Task Force.

When an amendment has been agreed by a meeting of the ADS-B Study and Implementation Task Force then a new version of the AIGD will be prepared, with the changes marked by an “|” in the margin, and an endnote indicating the relevant RFC, so a reader can see the origin of the change. If the change is in a table cell, the outside edges of the table will be highlighted; e.g.:

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Final approval for publication of an amendment to the AIGD will be the responsibility of APANPIRG.

2.1 ACRONYM LIST

Proposal: Add the following acronyms to support their use in section 5.4.

ADS-C Automatic Dependent Surveillance - Contract
MSAW Minimum Safe Altitude Warning

3.1 INTRODUCTION

Proposal: Delete the word “is” as shown.

The Communications, Navigation, Surveillance and Air Traffic Management (CNS/ATM) environment is an integrated system including physical systems (hardware, software, and communication networks), human elements (pilots and controllers), and the procedures for use by pilots and controllers. ADS-B is a surveillance system that may be integrated with other surveillance technologies or may also operate as an independent source for surveillance monitoring within the CNS/ATM system.

3.3 REFERENCE DOCUMENTS

Proposal: Add the following documents to the table (currently empty).

Annex 2
Annex 4
Annex 10 Vol IV
Annex 11
Annex 15
PANS-ATM (Doc 4444)
Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689)

3.5.1 Safety Assessment Guidelines

Proposal: Replace “.” with “;” as shown.

- a) A system safety assessment for new implementations is the basis for definitions of system performance requirements. Where existing systems are being modified to utilize additional services, the assessment demonstrates that the ATS Provider’s system will meet safety objectives.
-

3.5.2 System safety assessment

Proposal: Amend formatting of list as shown.

- a) Identifying failure conditions;
b) Assigning levels of criticality;
c) Determining risks/ probabilities for occurrence;
d) Identifying mitigating measures;
e) Categorising the degree of acceptability of risks; and
f) Operational hazard ID process.
-

3.5.3 Integration test

Proposal: Move words from beginning of second sentence to end of first sentence as shown.

Proposal: Reformat reference as shown.

States should conduct trials with suitably equipped aircraft to ensure they meet the operational and technical requirements to provide an ATS. Alternatively, they may be satisfied by test results and analysis conducted by another State or organisation deemed competent to provide such service. Where this process is followed, the tests conducted by another State or organisation should be comparable (i.e. using similar equipment under similar conditions). Refer also to the *Manual on Airspace Planning Methodology for the Determination of Separation Minima* (Doc 9689).

3.9.2 Description of Fields

Proposal: Add bullet points to the list in the “Description” row as shown.

Description	<p>This should provide as complete a description of the situation leading up to the problem as is possible. Where the organization reporting the problem is not able to provide all the information (e.g. the controller may not know everything that happens on the aircraft), it would be helpful if they would coordinate with the other parties to obtain the necessary information.</p> <p>The description should include:</p> <ul style="list-style-type: none">• A complete description of the problem that is being reported• The route contained in the FMS and flight plan• Any flight deck indications• Any indications provided to the controller when the problem occurred• Any additional information that the originator of the problem report considers might be helpful but is not included on the list above <p>If necessary to contain all the information, additional pages may be added. If the originator considers it might be helpful, diagrams and other additional information (such as printouts of message logs) may be appended to the report.</p>
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5.4.2 Identification Methods

Proposal: Add text for clarity of meaning as shown.

Some of the methods approved by ICAO for establishing identification with radar, may be employed with ADS-B (see PANS-ATM chapter 8). One or more of the following identification procedures are suggested:

- a) direct recognition of the aircraft identification in an ADS-B label on a situation display;
 - b) transfer of ADS-B identification;
 - c) observation of compliance with an instruction to TRANSMIT ADS-B IDENT.
-

5.4.3 ADS-B Separation

Proposal: Replace “,” with “.” as shown.

ADS-B Separation minima will be promulgated by ICAO in PANS-ATM (Doc 4444), or in Regional Supplementary Procedures (Doc 7030).

6. EMERGENCY PROCEDURES

Proposal: Remove extra square bracket.

ATC surveillance systems should provide for the display of safety-related alerts and warnings, including conflict alert, minimum safe altitude warning, conflict prediction and unintentionally duplicated SSR codes and aircraft identifications.

**STRATEGY FOR THE IMPLEMENTATION OF
SURVEILLANCE SYSTEMS IN THE ASIA/PACIFIC REGION**

Considering that:

1. States are implementing CNS/ATM systems to gain safety and efficiency benefits, and have endorsed the move toward satellite and data link technologies;
2. Regional planning is key to timely and successful implementation of a seamless global air traffic management system;
3. Safety and efficiency will be increased through harmonisation of technology and applications;
4. The 11th Air Navigation Conference endorsed the use of ADS-B as an enabler of the global air traffic management concept and encouraged states to support cost-effective early implementation of ADS-B applications;
5. APANPIRG has decided to use the 1090MHz Extended Squitter data link for ADS-B air-ground and air-air applications in the Asia/Pacific Region, noting that in the longer term an additional link type may be required;
6. SSR and ADS-C will continue to meet many critical surveillance needs for the foreseeable future ;
7. ACAS acts as situational awareness tool and last resort for safety conflict resolution;
8. Initial SARPs, PANS and guidance material for the use of ADS-B have been developed;
9. ADS-B avionics and ground systems are available;
10. ADS-B aircraft-based surveillance applications are under study in the region;
11. Multilateration is a technology that can supplement SSR and ADS-B;
12. The future air traffic environment will require increased use of aircraft derived surveillance information for the implementation of a seamless automated air traffic flow management system; and
13. The process of achieving civil-military interoperability in the surveillance domain is to consider the requirements, identify existing capabilities and harmonize surveillance strategies.

THE GENERAL STRATEGY FOR THE IMPLEMENTATION OF SURVEILLANCE SYSTEMS IN THE ASIA/PACIFIC REGION IS TO:

1. Minimise the reliance upon pilot position reporting, particularly voice position reporting, for surveillance of aircraft;
2. Provide maximum contiguous ATS surveillance coverage of international air routes using 1090MHz Extended Squitter ADS-B and Mode S SSR;

3. Make use of ADS-C where technical constraint or cost benefit analysis does not support the use of ADS-B, SSR or Multilateration;
4. Maximise the use of ADS-B on major air routes and in terminal areas, giving consideration to the mandatory carriage and use of ADS-B transmitters in selected airspace;
5. Make full use of SSR Mode S capabilities where radar surveillance is used and reduce reliance on 4 digit octal codes;
6. Make use of Multilateration for surface, terminal and area surveillance where appropriate as an alternative or supplement to other surveillance systems;
7. Increase the effectiveness of surveillance and collision avoidance systems through mandatory use of pressure altitude reporting transponders;
8. Increase pilot situational awareness by encouraging the carriage of ADS-B receivers and cockpit display systems;
9. Improve safety through sharing of ATS surveillance data across FIR boundaries;
10. Ensure provision of communication, navigation, and data management capabilities necessary to make optimal use of surveillance systems;
11. Enhance ATM automation tools and safety nets through the use of aircraft derived data such as flight identification, trajectories and intentions; and
12. Closely monitor the implementation of ADS-B and multilateration in order to verify their impact on civil-military interoperability.

Associated GPI 19 and GPI 17

**TERMS OF REFERENCE OF
ADS-B STUDY AND IMPLEMENTATION TASK FORCE**

1. Develop concept of operations, relative costing, performance and maturity of alternative technology/solutions (compare primary, secondary SSR including Mode-S, ADS-B, multilateration, ADS-C).
2. Develop an implementation plan for near term ADS-B applications in the Asia Pacific Region including implementation target dates taking into account:
 - available equipment standards;
 - readiness of airspace users and ATS providers;
 - identifying sub-regional areas (FIRs) where there is a positive cost/benefit for near-term implementation of ADS-B OUT;
 - developing a standardised and systematic task-list approach to ADS-B OUT implementation; and
 - holding educational seminars and provide guidance material to educate States and airspace users on what is required to implement ADS-B OUT.
3. Study and identify applicable multilateration applications in the Asia and Pacific Region considering:
 - Concept of use/operation
 - Required site and network architecture,
 - Expected surveillance coverage,
 - Cost of system,
 - Recommended separation minimums, and
 - If multilateration can be successfully integrated into an ADS-B OUT system for air traffic control

Note: The Task Force should report to the APANPIRG/18, through the CNS/MET/SG/11 with a preliminary report and provide briefing to the ATM/AIS/SAR SG/17 and CNS/MET SG/11.

Material for inclusion in Chapter 12 of ROBEX Handbook

12 MANAGEMENT OF OPMET EXCHANGE UNDER THE ROBEX SCHEME

12.1 OPMET BULLETINS UPDATE PROCEDURE

- 12.1.1 Information for changes to the content of ROBEX bulletins, introduction of new bulletins or deletion of existing bulletins, should be sent to all ROBEX centres and national OPMET centres (NOC) concerned well in advance of the change in order to allow the centres to do the necessary modifications of their message handling systems. In this regard, a lead time period of two months (or two AIRAC cycles) is considered appropriate.
- 12.1.2 The ROBEX centre planning the change, should send a notification by e-mail or fax to the ICAO Office, Bangkok with copy to all ROBEX Focal Points. The notification should include detailed information of the changes and the proposed time schedule. The Regional Office should inform all other ICAO Regional Offices of the changes to be introduced and the effective date of implementation.
- 12.1.3 Notification via AFTN should be done by means of a standard METNO message, which is to be sent by the originating ROBEX centre to all other ROBEX centres and to the respective IROGs in the other ICAO regions two weeks prior to the implementation date. The format of the METNO message is given in Appendix XX.
- 12.1.4 All requests by users for changes to ROBEX bulletins should be addressed to the ICAO Regional Office. The Regional Office should carry out the necessary coordination with the States and ROBEX centres concerned. The duration of the coordination process should be minimized so that the period between the user request and the implementation of the change (if agreed) should normally be less than 3 months.

12.2 QUALITY MANAGEMENT OF OPMET EXCHANGE UNDER THE ROBEX SCHEME

12.2.1 Objectives and Scope

- 12.2.1.1 **Objectives:** Develop a management system that provides general guidance on procedures applied to OPMET exchange, which includes quality control aspects and introduces a non-real-time monitoring for OPMET exchange.
- 12.2.1.2 **Scope:** Management of OPMET data exchange will be organized in the following sections:

Quality Control	Data quality control applies to OPMET validation and correction during data processing and during preparation of messages.
OPMET Monitoring	Monitor and evaluate the performance indicators for the scheduled OPMET.

12.2.2 Quality Control

12.2.2.1 Quality control (QC) consists of examination of OPMET data at MWOs, ROBEX Centres and RODBs to check for message format, coding errors and time and space consistency.

12.2.2.2 OPMET should be checked in real time or as close to it as possible, at the first point, i.e., the originator, which may be: meteorological station, aerodrome meteorological office or meteorological watch office. Errors may occur during coding or transcription of meteorological messages by the observer or forecaster. The originating office should apply quality control procedures during data processing and preparation of messages, in order to eliminate the main sources errors.

12.2.2.3 The national OPMET centre (NOC) should apply QC procedures on the incoming messages from national sources and on the compiled national bulletins.

12.2.2.4 It is also advisable to apply QC checks at the ROBEX Centre, where the ROBEX bulletins are received or compiled. If automation is available it should be used, or partly assisted by computing facilities. The principle is that every message should be checked, preferably at the various points along the data chain.

12.2.2.5 The checks that have already been performed by originating offices and ROBEX Centres are usually repeated at the OPMET data banks. Erroneous messages found by the RODB should be either rejected or corrected by reference back to the source or by the data bank itself. Data corrected by the data banks should be flagged in the database for record purpose.

12.2.2.6 As a result of the quality control process described above, OPMET data of established quality will be used in the exchange and stored in the data banks. The RODBs should compile information with regard to errors that were found and compile records, such as the numbers and types of errors detected during quality control. Such non-conformities should be reported to ICAO Regional Office, Bangkok for follow-up action.

12.2.3 Quality Control Procedures

12.2.3.1 General guidance on the quality control procedures for each type of OPMET is outlined as follows:

12.2.3.2 OPMET Data Validation

12.2.3.2.1 The ROBEX Centres and RODBs should not modify the content of the meteorological data, e.g. visibility, QNH etc., but only items contained in the WMO bulletin headings, such as, location indicators or observation times.

12.2.3.2.2 WMO Abbreviated Heading (TTAAii CCCC YYGGgg BBB) Validation:

TT	Message Type, shall comprise two alphabetical characters
AA	Location Indicator, shall comprise two alphabetical characters
ii	comprise two digits, from 01 to 99
CCCC	A 4-letter ICAO location indicator shall comprise 4 alphabetical characters.
YYGGgg	The date time group of the bulletin, shall be configured to validate it with the current time

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BBB	BBB is an optional group. The use of BBB group shall comply with the rules in the WMO abbreviated heading, in regard to delayed, corrected and amended bulletins.
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Examples:	After QC check
METAR with incorrect YYGGgg: SABM31 VYMD 100830 UTC VYMD 100830Z 18005KT 8000 FEW025 31/18 Q1000 =	SABM31 VYMD 100830 VYMD 100830Z 18005KT 8000 FEW025 31/18 Q1000 =
TAF without AHL: 112324 WIDDYMYX TAF WIDD 112324Z 120024 00000KT 4000 RA BKNT017 BECMG 0305 20010KT 9000 SCT017=	FTID31 WIDD 112300 TAF WIDD 112324Z 120024 00000KT 4000 RA BKNT017 BECMG 0305 20010KT 9000 SCT017=
TAF with invalid BBB: FTBN31 OBBI 030525 AMD OBBI 030606 16010KT CAVOAK BECMG 0812 33017KT 5000 PROB30 TEMPO 0814 0800 DU=	FTBN31 OBBI 030525 AAA OBBI 030606 16010KT CAVOAK BECMG 0812 33017KT 5000 PROB30 TEMPO 0814 0800 DU=

12.2.3.2.3 METAR/SPECI Validation

For each individual METAR or SPECI within a bulletin the following additional fields shall be validated:

Prefix checks	METAR METAR COR SPECI SPECI COR	SA SA SP SP
Observation Time YYGGggZ	The report shall have a valid date and time of observation, including the character 'Z'. In a SPECI bulletin, this group will be as same as the YYGGgg, part of the Abbreviated Bulletin Heading.	
End-of-Message format “=”	Each METAR or SPECI report shall be terminated by the "=" character.	

Examples:	After QC check
METAR with Observation Time error: SAPK31 OPKC 030159 RRA OPKC 030200 26004 8000 BKN020 27/23 Q1007 NOSIG=	SAPK31 OPKC 030200 RRA OPKC 030200 26004 8000 BKN020 27/23 Q1007 NOSIG=
METAR with mistyped Observation Time: SAID31 WADD 120100 METAR WADD 121000Z 17004KT 9999	SAXX31 WADD 120100 METAR WADD 120100Z 17004KT

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FEW018CB SCT120 BKN300 28/26 Q1005 CB SE-E RERA=	9999 FEW018CB SCT120 BKN300 28/26 Q1005 CB SE-E RERA=
SPECI with incorrect Message Type, TT: SANZ31 NZKL 040000 AAA SPECI NZWP 040000Z 17005KT 010V240 25KM FEW020 FEW020CB SCT035 BKN050 18/15 Q1018 NOSIG RMK SPECI CEASES AAA=	SPNZ31 NZKL 040000 AAA SPECI NZWP 040000Z 17005KT 010V240 25KM FEW020 FEW020CB SCT035 BKN050 18/15 Q1018 NOSIG RMK SPECI CEASES AAA=

12.2.3.2.4 TAF Validation

For each individual TAF within a bulletin, the following additional items shall be validated:

Prefix checks	TAF TAF COR TAF AMD	FT or FC FT or FC FT or FC
Issue Time YYGGggZ	If the field is included, it shall have a valid date and time of origin of forecast including 'Z'.	
Validity Y ₁ Y ₁ G ₁ G ₁ G ₂ G ₂	Some TAFs are still produced with a 4-digit validity period. These shall be corrected by inserting a date consistent with the current date and the date time group of the bulletin header. If a TAF is received without a validity period it shall be discarded.	
End-of-Message format “=”	Each forecast shall be terminated by the “=” character.	

Examples:	After QC check
TAF with issue time error (wrong date): FCID31 WIII 181630 TAF WIII 041630Z 041803 00000KT 9000 FEW025 BECMG 2224 16005KT=	FCID31 WIII 181630 TAF WIII 181630Z 041803 00000KT 9000 FEW025 BECMG 2224 16005KT=
TAF with mistyped Validity Period: FTPH31 RPLL 132200 TAF RPLC 132200Z 140028 04006KT 9999 SCT036 BKN300 TEMPO 0006 02010KT 5000 -SHRA FEW020 BKN270 TX32.05Z TN22/21Z=	FTPH31 RPLL 132200 TAF RPLC 132200Z 140024 04006KT 9999 SCT036 BKN300 TEMPO 0006 02010KT 5000 -SHRA FEW020 BKN270 TX32.05Z TN22/21Z=
TAF with Validity error (wrong date): FCMS33 WMKK 170748 TAF WMKK 170700Z 300918 30005KT 9999 FEW017CB SCT140 BKN270=	FCMS33 WMKK 170748 TAF WMKK 170700Z 170918 30005KT 9999 FEW017CB SCT140 BKN270=
TAF with 4-digit Validity period:	

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FTXX31 WIDD 170121 TAF WIDD 0618 06010G20KT 9999 SCT018 BECMG 1214 00000KT 7000=	FTXX31 WIDD 170121 TAF WIDD 170618 06010G20KT 9999 SCT018 BECMG 1214 00000KT 7000=
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12.2.3.2.5 SIGMET Validation

CCCC on the AHL	A valid 4-letter ICAO location indicator indicating the FIR for which the SIGMET was.	
Prefix checks	SIGMET for TS, CB, TURB, ICE, MTW, DS and SS SIGMET for VA SIGMET for TC	WS WV WC
Validity Period DDHHMM/DDHHMM	Shall have a valid period of validity. Validity periods may be corrected if <ul style="list-style-type: none">• Missing VALID string• Incorrect SIGMET Number format• Incorrect formatted Validity Period	
Note: For SIGMET validation, please refer to the format described in the ASIA/PAC Regional SIGMET Guide.		

Examples:	After QC check
SIGMET without TTAAii: SIGMET OYSN 121525Z OYSC SIGMET 1 VALID 121530/122130 OYSN- SANAA FIR EMBD TS OBS/FCST OVER WESTERN AND SOUTHWESTERN MOUNTAINS AND COASTAL AREAS CB TOPS FL36 NC=	WSXX31 OYSN 121525Z OYSC SIGMET 1 VALID 121530/122130 OYSN- SANAA FIR EMBD TS OBS/FCST OVER WESTERN AND SOUTHWESTERN MOUNTAINS AND COASTAL AREAS CB TOPS FL36 NC=
SIGMET with incorrect number format WCPH30 RPLL 210445 SIGMET NO 01 VALID 210000/210600 RPLL TD OBS N0830 E12900 AT 0000Z FL470 WI250 MOV WNW 19KMH TD TYP CENTER N0930 E12718 OTLK 211200Z TD N1018 E12730 211800Z 1042N 12636E=	WCPH30 RPLL 210445 SIGMET 01 VALID 210000/210600 RPLL TD OBS N0830 E12900 AT 0000Z FL470 WI250 MOV WNW 19KMH TD TYP CENTER N0930 E12718 OTLK 211200Z TD N1018 E12730 211800Z 1042N 12636E=
SIGMET with incorrect formatted validity period: WSIN90 VIDP 181800 VIDP SIGMET 06 VALID 18/1600 TO 18/2000 UTC VIDP DELHI FIR ISOL TS EMBDED C.B. FCST NORTH OF 30 DEG. NORTH=	WSIN90 VIDP 181800 VIDP SIGMET 06 VALID 181600/182000 VIDP DELHI FIR ISOL TS EMBDED C.B. FCST NORTH OF 30 DEG. NORTH=
WSSD20 OEJD 220503 OEJD SIGMET 01 VALID 220500 TO 220900 OEJN-JEDDAH FIR DU/BLDU OBS/FCST N OF 24.0N E OF 40.0E=	WSSD20 OEJD 220503 OEJD SIGMET 01 VALID 220500/220900 OEJN- JEDDAH FIR DU/BLDU OBS/FCST N OF 24.0N E OF 40.0E=

12.2.4

Quality Control Methods

OPMET Data	Elements Defining	Control Methods
METAR METAR COR SPECI (SA,SP)	<ul style="list-style-type: none"> • AHL • Code name • Observation date/time 	Software verification Manual validate Periodic Quality Control & PI Monitoring
TAF TAF AMD TAF COR (FT,FC)	<ul style="list-style-type: none"> • AHL • Code name • Originating station ICAO location indicator • Date/time of issue • Date, time of starting, time of end of the period the forecast refers to 	Software verification Manual validate Periodic Quality Control & PI Monitoring
SIGMET (WS, WC, WV)	<ul style="list-style-type: none"> • AHL • SIGMET Sequence No • Date/time groups indicating the period of validity Additional Checks (recommended): <ul style="list-style-type: none"> • Name of the FIR or the CTA the message is issued for • Location indicator of the MWO originating the message 	Software verification Manual validate Periodic SIGMET Quality Control Monitoring
Volcanic Ash Advisory FV	<ul style="list-style-type: none"> • Type of message • Issue date and time Additional Checks (recommended): <ul style="list-style-type: none"> • Location indicator or name of the VAAC centre originating the message 	Software verification Manual validate Periodic VA Quality Control Monitoring
Tropical Cyclone Advisory FK	<ul style="list-style-type: none"> • Type of message • Issue date and time Additional Checks (recommended): <ul style="list-style-type: none"> • Location indicator or name of the TCAC centre originating the message 	Software verification Manual validate Periodic TC Quality Control Monitoring

12.2.5 **OPMET Monitoring**

12.2.5.1 **Monitoring of Scheduled OPMET data**

12.2.5.1.1 The monitoring shall focus on the measurement of three performance indicators (PIs), viz., Compliance, Availability and Regularity indices of the scheduled, routine OPMET data (SA, FT, FC) exchanged in the region.

12.2.5.1.2 Monitoring Reference

The monitoring shall involve the recording and analysis of data provided by the AFTN circuit. The three PIs should be monitored against ROBEX Tables.

12.2.5.1.3 Methodology

Data is monitored with reference to the procedures defined in the EUR OPMET Data Monitoring Procedures as produced by EANPG METG BMG (Bulletin Management Group).

12.2.5.1.4 Performance Indicators (PIs)

(i) *Compliance Index*

The ROBEX Compliance index can be calculated from:

$$V_{\text{bulletin compliance}} = \frac{\text{No of reports received for a bulletin}}{\text{No of reports required for the bulletin}}$$

The Compliance Index is to assess the level of compliance to the ROBEX scheme. The determination of the compliance index is performed as follows:

- Total number of reports received for ROBEX bulletin during the monitoring period, include reports in the retard bulletins.
- Weed out correction and amendment bulletins, as these are re-transmitted messages, can be disregarded.

(ii) *Availability Index*

The availability index measures the current coverage of the OPMET distribution against the ROBEX exchange requirements. The determination of the availability index is performed on a daily basis from the data captured during the monitoring period. At least one non-NIL report is received from the aerodrome during the 24-hour period, that aerodrome is considered to have been available. The daily availability index of a particular bulletin can be calculated as:

$$V_{\text{bulletin availability}} = \frac{\text{No of aerodromes for which 1 or more non-NIL data type are received}}{\text{No of aerodromes required in the bulletins}}$$

(iii) *Regularity Index*

The regularity index measures the consistency in number of reports provided by an aerodrome. The computation of Regularity Index assumes that the number of report follows a normal distribution and attempts to ascertain the distribution characteristics

(mean and standard deviation) from a set of data. These characteristics are used to determine if subsequent number of reports from an aerodrome is “regular”

Denoting mean and standard deviation by μ and σ , a threshold report numbers (τ) can be established as:

$$\tau = \mu - \sigma$$

The threshold is a reporting characteristic of an aerodrome. If the subsequent daily number of reports meets or exceeds the threshold, it is considered “regular”. The daily regularity index for a bulletin can be expressed as:

$$V_{\text{bulletin regularity}} = \frac{\text{No of aerodromes for which the no of reports equals or exceeds the threshold}}{\text{No of aerodromes required in the bulletin}}$$

12.2.5.2 Monitoring of Non-Scheduled OPMET data

12.2.5.2.1 Monitoring of non-routine OPMET data shall be executed for FK, FV, WC, WS, and WV.

12.2.5.2.2 The monitoring results shall be presented in bulletin-oriented format, one line per bulletin indicating the abbreviated header (TTAAii CCCC YGGgg), the FIR/UIR where applicable, receipt time and originator.

Example Non-routine OPMET monitoring result file formats:

TT	AAii	CCCC	YYGGgg	FIR/UIR	Rx Time	Origin
WS	PF21	NTAA	271004	NTTT	271004	NTAAYMYX
WS	IN90	VIDP	271000	VIDP	271007	VECCYMYX
WS	BW20	VGZR	271100	VGZR	271030	VGZRYMYX
WS	CI31	RCTP	271150	RCTP	271150	RCTPYMYX
WS	MS31	WMKK	272013	WBFC	272013	WMKKYMYX
WS	CI35	ZGGG	272225	ZGZU	272228	ZGGGYZYX
FV	AU01	ADRM	270323		270330	YMMCYMYX
FK	PQ30	RJTD	270500		270504	RJTDYMYX

File format:

- TT: Type of bulletin FK, FV, WC, WS, WV
- AAii: Bulletin
- CCCC: Compiling Station
- YYGGgg: Standard time of report
- FIR/UIR: ICAO Location indicator of the FIR/UIR or blank (4 spaces) as applicable
- RxTime: Time of receipt
- Origin: Originator address.

12.2.5.3 Analysis of Monitoring Results

12.2.5.3.1 Each RODB collects and analyses the relevant result in order to determine the effectiveness and suitability of the quality management system and to highlight any possible improvement to ICAO Regional Office, Bangkok.

12.2.5.4 Examples of Monitoring Results – PI Measurements

The following tables show values of Compliance, Availability and Regularity Index for ASIA/PAC OPMET bulletins compiled by Singapore RODB in March 05:

TABLE A	ROBEX Compliance Index		
	SA	FT	FC
AE31 VECC	0.81	--	
AS31 VABB	---	0.99	
AS31 VTBB	0.96	0.99	
SA32 VABB	--	0.98	
AS32 VTBB	--	0.85	
AU31 YBBN	1.00	0.99	0.97
AU32 YBBN	0.98	0.94	
BN31 OBBI	0.96	0.92	
BN32 OBBI	0.94	0.95	
CI31 ZBBB	0.99	0.99	
CI32 ZBBB	0.99	0.99	
CI41 ZBBB	0.93	0.99	
EG31 HECA	--	0.85	
HK31 VHHH	0.99	0.99	1.00
ID31 WIH	0.74	--	
IN31 VIDP	--	0.97	
IN31 VABB	0.74	--	0.97
IN32 VIDP	0.73	--	
IR31 OIHI	0.84	0.93	
JP31 RJTD	1.00	1.00	1.00
JP32 RJTD	1.00	1.00	1.00
KO31 RKSI	1.00	0.96	
ME31 OLBA	--	0.86	
MS31 WMKK	1.00	--	
NZ31 NZKL	0.95	1.00	
PK31 OPKC	0.91	0.80	
SB31 VCCC	0.97	--	
SD31 OEJD	0.95	--	
SR31 WSSS	--	0.98	0.99
SR32 WSSS	--	1.00	
TH31 VTBB	0.67	1.00	
TH32 VTBB	0.76	0.91	
TH33 VTBB	0.75	0.94	

Note: Entry dashed out (--) means no reports of this type (SA or FT) are required

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TABLE B	Availability Index		
	SA	FT	FC
AE31 VECC	0.98	--	
AS31 VABB	--	1.00	
AS31 VTBB	0.99	1.00	
SA32 VABB	--	0.99	
AS32 VTBB	--	0.96	
AU31 YBBN	1.00	1.00	1.00
AU32 YBBN	1.00	1.00	
BN31 OBBI	1.00	1.00	
BN32 OBBI	1.00	0.99	
CI31 ZBBB	1.00	1.00	
CI32 ZBBB	1.00	1.00	
CI41 ZBBB	1.00	1.00	
EG31 HECA	--	1.00	
HK31 VHHH	1.00	1.00	1.00
ID31 WIII	0.98	--	
IN31 VIDP	--	1.00	
IN31 VABB	1.00	--	1.00
IN32 VIDP	0.98	--	
IR31 OIII	1.00	1.00	
JP31 RJTD	1.00	1.00	1.00
JP32 RJTD	1.00	1.00	1.00
KO31 RKSI	1.00	1.00	
ME31 OLBA	--	0.99	
MS31 WMKK	1.00	--	
NZ31 NZKL	--	1.00	
PK31 OPKC	1.00	0.99	
SB31 VCCC	1.00	--	
SD31 OEJD	1.00	--	
SR31 WSSS	--	1.00	1.00
SR32 WSSS	--	1.00	
TH31 VTBB	0.97	1.00	
TH32 VTBB	0.88	1.00	
TH33 VTBB	0.83	1.00	

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TABLE C	Regularity Index		
	SA	FT	FC
AE31 VECC	0.86	--	
AS31 VABB	--	0.96	
AS31 VTBB	0.93	0.96	
AS32 VABB	--	0.96	
AS32 VTBB	--	0.96	
AU31 YBBN	0.90	0.90	0.96
AU32 YBBN	0.93	0.91	
BN31 OBBI	0.93	0.94	
BN32 OBBI	0.82	0.89	
CI31 ZBBB	0.96	0.94	
CI32 ZBBB	0.93	0.91	
CI41 ZBBB	0.94	0.97	
EG31 HECA	--	0.77	
HK31 VHHH	0.93	0.97	0.85
ID31 WIII	0.92	--	
IN31 VIDP	--	0.84	
IN31 VABB	0.84	--	0.97
IN32 VIDP	0.88	--	
IR31 OIII	0.71	1.00	
JP31 RJTD	1.00	1.00	1.00
JP32 RJTD	1.00	1.00	1.00
KO31 RKSI	0.84	1.00	
ME31 OLBA	--	0.97	
MS31 WMKK	0.98	--	
NZ31 NZKL	0.82	1.00	
PK31 OPKC	0.84	0.97	
SB31 VCCC	0.96	--	
SD31 OEJD	0.89	--	
SR31 WSSS	--	0.99	0.95
SR32 WSSS	--	0.99	
TH31 VTBB	0.92	1.00	
TH32 VTBB	0.85	0.96	
TH33 VTBB	0.89	0.94	

TABLE MET 1A
METEOROLOGICAL SERVICE REQUIRED AT AERODROMES

EXPLANATION OF THE TABLE

Column

- 1 Name of the aerodrome or location where meteorological service is required
- 2 Designation of the aerodrome:

RS = international scheduled air transport, regular use
RNS = international non-scheduled air transport, regular use
AS = international scheduled air transport, alternate use
~~ANS = international non-scheduled air transport, alternate use~~
- 3 ICAO location indicator of the aerodrome:
- 4 Name of the meteorological office responsible for the provision of meteorological service at the aerodrome indicated in Column 1
- 5 ICAO location indicator of the responsible meteorological office
- ~~6 Areas of coverage of charts required for flight documentation~~

~~*Note. Areas of coverage denoted by B, C etc. are shown in Charts MET2, MET 3 and MET 4.*~~
- ~~7 AFTN routing areas containing destinations to which flight documentation is required to be prepared~~

~~*Note. The AFTN routing areas are shown on Chart MET 1*~~
- ~~8~~⁶ Requirement for trend type forecasts
- ~~9~~⁷ Requirement for 18-hour validity aerodrome forecasts in TAF code
- ~~10~~⁸ Requirement for 24-hour validity aerodrome forecasts in TAF code

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Table MET 1A – Meteorological Service Required at Aerodromes

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	G	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6												7	86	97	108
	AMERICAN SAMOA (United States)										X										
1	PAGO PAGO/Pago Pago Intl	RS	NSTU	Wellington Honolulu	NZWN PHFO												A, N, P			X	
	AUSTRALIA					X				X	X					J, K					
2	ADELAIDE/Adelaide	RS	YPAD	Adelaide	YPAD												A, N, V, W	X		X	
3	ALICE SPRINGS/Alice Springs	AS	YBAS	Darwin	YPDN																
4	BRISBANE/Brisbane	RS	YBBN	Brisbane	YBBN												A, N, P, R, V, W, Z	X		X	
	BROOME/Broome	AS	YBRM	Perth	YPPH																
5	CAIRNS/Cairns	RS	YBCS	Townsville	YBTL												A, N, P, R, W	X	X		
6	CHRISTMAS I./Christmas I.	RS	YPXM	Perth	YPPH												A, W				
7	COCOS I./Cocos I.	RS	YPCC	Perth	YPPH												A, W,				
8	DARWIN/Darwin	RS	YPDN	Darwin	YPDN												A, R, V, W, Z	X		X	
	DUBBO/Dubbo	AS	YSDU	Sydney	YSSY																
9	HOBART/Hobart	RS	YMHB	Hobart	YMHB												A, N		X		
	LEARMONTH/Learmonth	AS	YPLM	Perth	YPPH																
10	MELBOURNE/Melbourne Intl	RS	YMML	Melbourne	YMML												A, N, P, R, V, Z	X		X	
11	NORFOLK I./Norfolk I.	RS	YSNF	Sydney	YSSY												A, N				
12	PERTH/Perth Intl	RS	YPPH	Perth	YPPH												A, F, N, R, V, W, Z	X		X	
13	PORT HEDLAND/Port Hedland	RS	YPPD	Perth	YPPH												A, W				
14	ROCKHAMPTON/Rockhampton	AS	YBRK	Brisbane	YBBN																
15	SYDNEY/Kingsford Smith Intl	RS	YSSY	Sydney	YSSY												A, K, N, P, R, V, W, Z	X		X	
16	TINDAL/Tindal	AS	YPTN	Darwin	YPDN																
17	TOWNSVILLE/Townsville	RS	YBTL	Townsville	YBTL												A, N, P, V, W	X		X	

Table MET 1A – Meteorological Service Required at Aerodromes

6-1A-3

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
	BANGLADESH								X												
18	CHITTAGONG/M. A. Hannan Intl	RS	VGEG	Dhaka	VGZR												ψ	X	X		
19	DHAKA/Zia Intl	RS	VGZR	Dhaka	VGZR												E, H, L, O, V, W	X	X		
	BHUTAN																				
20	PARO/Paro Intl	RS	VQPR						X								ψ				
	BRUNEI DARUSSALAM								X												
21	BRUNEI/ Brunei Intl	RS	WBSB	Brunei	WBSB												A, R, V, W			X	
	CAMBODIA																				
22	PHNOM-PENH/Phnom Penh	RS	VDPP	Phnom Penh	VDPP				X								V, W	X	X		
23	SIEM-REAP/Angkor	AS	VDSR	Phnom Penh	VDPP																
	CANADA					X	X						X	X							
24	ABBOTSFORD/Abbotsford	AS	CYXX																		
25	CALGARY/Calgary Intl	RS	CYYC																		
26	COMOX/Comox	AS	CYQQ																		
27	EDMONTON/Edmonton Intl	RS	CYEG														E, L, P				
28	VANCOUVER/Vancouver Intl	RS	CYVR														P, R, S				
29	VICTORIA/Victoria Intl	RNS	CYYJ																		
	CHINA									X		X		X							

6-1A-4

Table MET 1A – Meteorological Service Required at Aerodromes

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
30	BEIJING/Capital	RS	ZBAA	Beijing	ZBAA												A, C, E, H, K, L, O, P, R, U, V, W, Y, Z	X		X	
31	CHANGSHA/Huanghua	RS	ZGHA	Guangzhou	ZGGG												R, V, Z			X	
32	CHENGDU/Shuangliu	AS	ZUUU	Chengdu	ZUUU												O, R, V, Z			X	
33	CHONGQING/Jiangbei	RS	ZUCK	Chengdu	ZUUU												R, V, Z	X		X	
34	DALIAN/Zhoushuizi	RS	ZYTL	Shenyang	ZYTX												R, U, Z			X	
35	FUZHOU/Changle	RS	ZSFZ	Shanghai	ZSSS												R, V, Z				
36	GAOXIONG/Gaoxiong	RS	RCKH	Taibei	RCTP												R, V, W	X		X	
37	GUANGZHOU/Baiyun	RS	ZGGG	Guangzhou	ZGGG												A, R, V, W, Y, Z	X		X	
38	GUILIN/Liangjiang	RS	ZGKL	Guangzhou	ZGGG												R, V, Z				
39	HANGZHOU/Jianqiao	RS	ZSHC	Shanghai	ZSSS												R, Z			X	
40	HARBIN/Yanjiagang	RS	ZYHB	Shenyang	ZYTX												U, Z			X	
41	HEFEI/Luogang	AS	ZSOF	Shanghai	ZSSS												R, Z			X	
42	HOHHOT/Baita	RS	ZBHH	Beijing	ZBAA												U, Z			X	
43	JINAN/Yaoqiang	RS	ZSJN	Shanghai	ZSSS												R, U, Z				
44	KASHI/Kashi	RS	ZWAK	Urumqi	ZWWW												U, Z				
45	KUNMING/Wujiaba	RS	ZPPP	Chengdu	ZUUU												O, V, Z			X	
46	LANZHOU/Zhongchua	AS	ZLLL	Xi'an	ZLXY												U, Z			X	
47	NANJING/Lukou	RS	ZSNJ	Shanghai	ZSSS												R, V, Z			X	
48	NANNING/Wuxu	AS	ZGNN	Guangzhou	ZGGG												V, Z			X	
49	QINGDAO/Liuting	RS	ZSQD	Shanghai	ZSSS												R, V, Z			X	
50	SANYA/Phoenix	RS	ZGSA	Guangzhou	ZGGG												V, W, Z			X	
51	SHANGHAI/Hongqiao	RS	ZSSS	Shanghai	ZSSS												A, C, K, P, R, U, V, W, Y, Z	X		X	
52	SHANGHAI/Pudong	RS	ZSPD	Shanghai	ZSSS													X		X	
53	SHENYANG/Taoxian	RS	ZYTX	Shenyang	ZYTX												R, U, Z	X		X	

Table MET 1A – Meteorological Service Required at Aerodromes

6-1A-5

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
54	SHENZHEN/Bao'an	RS	ZGSZ	Guangzhou	ZGGG												R, V, Z			X	
55	TAIBEI/Songshan	AS	RCSS	Taibei	RCTP															X	
56	TAIBEI CITY/Taibei Intl	RS	RCTP	Taibei	RCTP												F, K, P, R, V, W	X		X	
57	TAIYUAN/Wusu	AS	ZBYN	Beijing	ZBAA												U, Z			X	
58	TIANJIN/Binhai	RS	ZBTJ	Beijing	ZBAA												R, U, Z			X	
59	URUMQI/Diwopu	RS	ZWWW	Urumqi	ZWWW												O, U, Z			X	
60	WUHAN/Tianhe	RS	ZHHH	Guangzhou	ZGGG												R, V, Z	X		X	
61	XIAMEN/Gaoqi	RS	ZSAM	Shanghai	ZSSS												R, V, W, Z	X		X	
62	XI'AN/Xianyang	RS	ZLXY	Xi'an	ZLXY												R, U, Z	X		X	
63	XICHANG/Qingshan	RNS	ZUXC	Chengdu	ZUUU												Z			X	
	COOK ISLANDS										X										
64	RAROTONGA/Rarotonga Intl	RS	NCRG	Nadi	NFFN												A, K, N, P			X	
	DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA								X												
65	SUNAN/Sunan	RS	ZKPY	Sunan	ZKPY												U, Z	X	X		
	EASTER I. (Chile)																				
66	ISLA DE PASCUA/Mataveri	RS	SCIP														N				
	FIJI										X										
67	NADI/Nadi Intl	RS	NFFN	Nadi	NFFN												A, N, P, R	X		X	
68	SUVA/Nausori	RS	NFSU	Nadi	NFFN											A	N				

6-1A-6
Table MET 1A – Meteorological Service Required at Aerodromes

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
	FRENCH POLYNESIA										X										
69	RANGIROA/Rangiroa	AS	NTTG	Tahiti	NTAA																
70	TAHITI/Faaa	RS	NTAA	Tahiti	NTAA												A, K, M, N, P, R, S	X		X	
	GUAM (United States)										X										
71	GUAM I./Anderson AFB	AS	PGUA	Guam	PGUM												A, P, R			X	
72	GUAM I./Guam Intl	RS	PGUM	Guam	PGUM												A, P, R			X	
	HONG KONG, China																				
73	HONG KONG/Hong Kong Intl	RS	VHHH	Hong Kong	VHHH												A, C, E, F, K, L, N, O, P, R, U, V, W, Z	X		X	
	INDIA								X	X											
74	AHMADABAD/Ahmadabad	AS	VAAH	Mumbai	VABB															X	
75	AMRITSAR/Amritsar	RS	VIAR	Delhi	VIDP												Q		X		
76	CALICUT/Calicut	RS	VOCL	Chennai	VOMM												Q, V			X	
77	CHENNAI/Chennai	RS	VOMM	Chennai	VOMM												Q, E, U, V, W	X		X	
78	DELHI/Indira Gandhi Intl	RS	VIDP	Delhi	VIDP												E, L, O, R, U, V, W, Z	X		X	
79	KOLKATA/Netaji Subhash Chandra Bose	RS	VECC	Kolkata	VECC												Q, U, V, W	X		X	
80	MUMBAI/Chhatrapati Shivaji Intl	RS	VABB	Mumbai	VABB												E, F, H, L, O, R, U, V, W, Z	X		X	
81	NAGPUR/Nagpur	AS	VANP	Mumbai	VABB													X		X	
82	PATNA/Patna	RS	VEPT	Kolkata	VECC												Ψ		X	X	
83	TIRUCHCHIRAPPALLI/ Tiruchchirappalli	RS	VOTR	Chennai	VOMM												Ψ			X	

Table MET 1A – Meteorological Service Required at Aerodromes

6-1A-7

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
84	TRIVANDRUM/Trivandrum	RS	VOTV	Chennai	VOMM												O, V			X	
85	VARANASI/Varanasi	RS	VIBN	Delhi	VIDP												V		X		
	INDONESIA									X	X										
86	AMBON/Pattimura	RNS	WAPP	Ujung Pandang	WAAA																
87	BALI/Ngurah Rai	RS	WADD	Bali	WADD																
88	BALIKAPAPAN/Sepinggan	RS	WRLL																		
89	BANJARMASIN/Syamsuddin Noor	AS	WAOO																		
90	BATAM/Hang Nadim	AS	WIDD	Jakarta	WIII																
91	BIAK/Frans Kaisieppo	RS	WABB	Biak	WABB												P	X		X	
92	JAKARTA/Halim Perdanakusuma	RNS	WIIH	Jakarta	WIIH												A, N, R, V, W	X		X	
93	JAKARTA/Soekarno Hatta	RS	WIII	Jakarta	WIII												A, N, O, R, V, W	X		X	
94	JAYAPURA/Sentani	RS	WAJJ	Biak	WABB												A, W				
95	KUPANG/EI Tari	RS	WATT	Bali	WADD												A, W				
96	MANADO/Sam Ratulangi	RS	WAMM	Ujung Pandang	WAAA												R, W				
97	MEDAN/Polonia	RS	WIMM	Medan	WIMM												R, W	X		X	
98	MERAUKE/Mopah	RNS	WAKK	Biak	WABB																
99	PADANG/Tabing	RS	WIMG														A, W				
100	PALEMBANG/Sultan Mahmud Badaruddin II	RNS	WIPP																		
101	PEKANBARU/Sultan Syarif Kasim II	RS	WIBB	Medan	WIMM												A, W				
102	PONTIANAK/Supadio	RS	WIOO	Jakarta	WIII												A, W				
103	SURABAYA/Juanda	RS	WRSJ	Jakarta	WIII												A, W				
104	TANJUNG PINANG/Kijang	RS	WIKN	Jakarta	WIII												A, W				

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Table MET 1A – Meteorological Service Required at Aerodromes

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts													AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H		
	1	2	3	4	5	6											7	86	97	108		
105	TARAKAN/Tarakan	RS	WALR	Bali	WADD												A, W					
106	TIMIKA/Tembagapura	RNS	WABP														A, W					
107	UJUNG PANDANG/Hasanuddin	RNS	WAAA	Ujung Pandang	WAAA												R, W	X		X		
	JAPAN									✕	✕	✕		✕								
108	FUKUOKA/Fukuoka	RS	RJFF	Narita	RJAA												P, R, V, W, Z		X			
109	HAKODATE/Hakodate	AS	RJCH	Narita	RJAA														X			
110	HIROSHIMA/Hiroshima	RS	RJOA	Narita	RJAA												R, V		X			
111	KAGOSHIMA/Kagoshima	RS	RJFK	Narita	RJAA												P, R, V		X			
112	KANSAI/Kansai Intl	RS	RJBB	Narita	RJAA												A, C, H, K, L, M, N, O, P, R, S, U, V, W, Z					
113	KUMAMOTO/Kumamoto	RS	RJFT	Narita	RJAA												R		X			
114	NAGASAKI/Nagasaki	RS	RJFU	Narita	RJAA												R, Z		X			
115	NAGOYA/Chubu Centrair Intl	RS	RJGG	Narita	RJAA												P, R, V, W, Z		X			
116	NAHA/Naha	RS	ROAH	Naha	ROAH												P, R, V		X			
117	NARITA/Narita Intl	RS	RJAA	Narita	RJAA																	
118	NIIGATA/Niigata	RS	RJSN	Narita	RJAA												R, U, V		X			
119	OITA/Oita	RS	RJFO	Narita	RJAA												R		X			
129	OKAYAMA/Okayama	RS	RJOB	Narita	RJAA												R		X			
121	OSAKA/Osaka Intl	RS	RJOO	Narita	RJAA												P, R, V, W, Z		X			
122	SAPPORO/New Chitose	RS	RJCC	Narita	RJAA												P, R, V		X			
123	SENDAI/Sendai	RNS	RJSS	Narita	RJAA												P, R		X			
124	TAKAMATSU/Takamatsu	RS	RJOT	Narita	RJAA												P, R		X			
125	TOKYO/Tokyo Intl	AS	RJTT	Narita	RJAA												K, P, R		X			

Table MET 1A – Meteorological Service Required at Aerodromes

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	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
	JOHNSTON I. (United States)										X										
	JOHNSTON I./Johnston Atoll	RS	PJON	Honolulu	PHFO												P		X		
	KIRIBATI										X										
126	KIRITIMATI/Christmas I.	RS	PLCH	Nadi	NFFN												N, P		X		
127	TARAWA/Bonriki Intl	RS	NGTA	Nadi	NFFN												A, N, P			X	
	LAO PEOPLE'S DEMOCRATIC REPUBLIC								X												
128	VIENTIANE/Wattay	RS	VLVT	Vientiane	VLVT												V, Z	X	X		
	MACAO, China																				
129	MACAO/MACAO Intl	RS	VMMC	Macao	VMMC												A, K, E, R, W, O, L, V, Z	X		X	
	MALAYSIA								X	X	X	X									
130	JOHOR BAHRU/Sultan Ismail	RS	WMKJ	Selangor	WMKK												V, W				
131	KOTA KINABALU/Kota Kinabalu Intl	RS	WBKK	Kota Kinabalu	WBKK												R, V, W	X		X	
133	KUANTAN/Kuantan (RMAF)	RS	WMKD	Selangor	WMKK												W				
134	KUCHING/Kuching	RS	WBGG	Kota Kinabalu	WBKK												W			X	
135	MALACCA/Malacca	RS	WMKM	Selangor	WMKK												W				
136	PENANG/Penang Intl	RS	WMKP	Selangor	WMKK												O, V, W			X	
137	PULAU LANGKAWI/Pulau Langkawi	RS	WMKL	Selangor	WMKK												O, V, W				
138	SEPANG/KL Intl	RS	WMKK	Selangor	WMKK												A, F, O, R, V, W, Z	X		X	

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Table MET 1A – Meteorological Service Required at Aerodromes

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
139	TAWAU/Tawau	RS	WBKW	Kota Kinabalu	WBKK												W				
	MALDIVES								X												
140	GAN/Gan	AS	VRGN	Male	VRMM															X	
141	MALE/Male Intl	RS	VRMM	Male	VRMM												E, L, O, V, W			X	
	MARSHALL ISLANDS									X											
142	MAJURO ATOLL/Marshall I. Intl	RS	PKMJ	Honolulu	PHNL PHFO												A, N, P			X	
	MICRONESIA (FEDERATED STATES OF)									X											
143	PONAPE I./Ponape	RS	PTPN	Guam	PGUM												A, P			X	
144	WENO/FM Chuuk Intl	RS	PTKK	Guam	PGUM																
145	YAP I./Yap Intl	RS	PTYA	Guam	PGUM																
	MONGOLIA									X		X									
146	ULAANBAATAR/Ulaanbaatar	RS	ZMUB	Ulaanbaatar	ZMUB												R, U, Z	X		X	
	MYANMAR								X												
147	YANGON/Yangon Intl	RS	VYYY	Yangon	VYYY												V, W, Z	X		X	
	NAURU									X											
148	NAURU I./Nauru	RS	ANAU	Nauru	ANAU												A, N, P	X		X	
	NEPAL								X												

Table MET 1A – Meteorological Service Required at Aerodromes

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	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
149	KATHMANDU/Kathmandu	RS	VNKT	Kathmandu	VNKT												E, L, O, P, V, W, Z	X	X		
	NEW CALEDONIA (France)										X										
150	NOUMEA/La Tontouta	RS	NWWW	Noumea	NWWW												A, N, R, W	X		X	
	NEW ZEALAND										X					J, K					
151	AUCKLAND/Auckland Intl	RS	NZAA	Wellington	NZWN												A, C, K, N, P, R, S, V, W, Z	X		X	
152	CHRISTCHURCH/Christchurch Intl	RS	NZCH	Wellington	NZWN												A, N, P	X		X	
153	WELLINGTON/Wellington Intl	RS	NZWN	Wellington	NZWN												A, N	X		X	
	NIUE (New Zealand)										X										
154	NIUE/Niue Intl	RS	NIUE	Nadi	NFFN												N		X		
	NORTHERN MARIANA ISLANDS (United States)										X										
155	ROTA I./Rota Intl	RS	PGRO	Guam	PGUM												P			X	
156	OBYAN/Saipan Intl	RS	PGSN	Guam	PGUM												P, R			X	
	PAKISTAN							X	X												
157	GWADAR/Gwadar	RS	OPGD	Karachi	OPKC												Q		X		
158	ISLAMABAD/Chaklala	RS	OPRN	Karachi	OPKC												E, L, O, U, Z	X	X		
159	KARACHI/Jinnah	RS	OPKC	Karachi	OPKC												E, H, L, O, R, U, V, W, Z	X	X		
160	LAHORE/Allama Iqbal Intl	RS	OPLA	Lahore	OPLA												Q, V	X	X		

Table MET 1A – Meteorological Service Required at Aerodromes

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6												7	86	97	108
162	NAWABSHAH/Nawabshah	AS	OPNH	Lahore	OPLA																
163	PESHAWAR/Peshawar	RS	OPPS	Lahore	OPLA												Q			X	
	PALAU									X											
164	BABELTHAUP I./Koror	RS	PTRO	Guam	PGUM												P, R			X	
	PAPUA NEW GUINEA									X											
165	PORT MORESBY/ Port Moresby	RS	AYPY	Port Moresby	AYPY												A, P, R, W			X	
166	VANIMO/Vanimo	RS	AYVN	Port Moresby	AYPY												W				
	PHILIPPINES									X	X										
167	DAVAO/Francisco Bangoy Intl	RNS	RPMD	Manila	RPLL												W				
168	LAOAG/Laoag Intl	AS	RPLI	Manila	RPLL																
169	LAPU-LAPU/Mactan Cebu	RS	RPVM	Manila	RPLL																
170	MANILA/Ninoy Aquino Intl	RS	RPLL	Manila	RPLL												A, L, N, O, P, R, V, W, Z	X		X	
171	SUBIC BAY/Subic Bay Intl	RNS	RPLB	Manila	RPLL																
172	ZAMBOANGA/Zamboanga Intl	RNS	RPMZ	Manila	RPLL																
	REPUBLIC OF KOREA									X		X		X							
173	CHEONGJU/Cheongju Intl	RS	RKTU	Incheon	RKSI												P, R, U, V, Z			X	
174	DAEGU/Deagu Intl	RS	RKTN	Incheon	RKSI												R, V, Z			X	
175	GIMHAE/Gimhae Intl	RS	RKPK	Incheon	RKSI												P, R, U, V, W, Z			X	

Table MET 1A – Meteorological Service Required at Aerodromes

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	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
176	GIMPO/Gimpo	AS	RKSS	Incheon	RKSI												A, C, E, H, K, L, M, N, O, P, R, S, U, V, W, Y, Z	X		X	
177	INCHEON/Incheon	RS	RKSI	Incheon	RKSI												A, C, E, H, K, L, M, N, O, P, R, S, U, V, W, Y, Z	X		X	
178	JEJU/Jeju	RS	RKPC	Incheon	RKSI												R, U, Z			X	
179	YANGYANG/Yangyang	RS	RKNY	Incheon	RKSI												R, Z			X	
	SAMOA										X										
180	APIA/Apia	RS	NSAP	Wellington Nadi	NZWN NFFN												A, K, N, P			X	
	SINGAPORE								X	X	X										
181	PAYA LEBAR/Paya Lebar (RSAF)	AS	WSAP	Singapore	WSSS																
182	SELETAR/Seletar	RS	WSSL	Singapore	WSSS												W				
183	SINGAPORE/Changi	RS	WSSS	Singapore	WSSS												A, E, F, L, N, O, R, V, W, Z	X		X	
	SOLOMON ISLANDS										X										
184	HONIARA/Henderson	RS	AGGH	Honiara Port Moresby	AGGH AYPY												A, N, P	X		X	
	SRI LANKA								X	X											
185	COLOMBO/Bandaranaike Intl	RS	VCBI	Colombo	VCBI												A, E, F, L, O, R, U, V, W	X		X	

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Table MET 1A – Meteorological Service Required at Aerodromes

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts													AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H		
	1	2	3	4	5	6											7	86	97	108		
186	HINGURAKGODA/Minneriya	AS	VCCH																			
	THAILAND								X	X	X	X	X									
187	BANGKOK/Bangkok Intl	RS	VTBD	Bangkok	VTBD												A, E, L, O, R, U, V, W, Z	X		X		
188	CHIANG MAI/Chiang Mai Intl	RS	VTCC	Bangkok	VTBD												V, Z	X		X		
189	CHIANG RAI/Chiang Rai Intl	RS	VTCT	Bangkok	VTBD																	
190	KHON KAEN/Khon Kaen	RS	VTUK	Bangkok	VTBD												Y					
191	PHITSANULOK/Phitsanulok	RS	VTTP	Bangkok	VTBD																	
192	PHUKET/Phuket Intl	RS	VTSP	Bangkok	VTBD												O, V, W	X		X		
193	RAYONG/U-Taphao	RS	VTBU	Bangkok	VTBD																	
194	SONGKHLA/Hat Yai Intl	RS	VTSS	Bangkok	VTBD												W	X		X		
195	SURAT THANI/Surat Thani	RS	VTSB	Bangkok	VTBD												Y					
196	UBON RATCHATHANI	RS	VTUU	Bangkok	VTBD																	
	TONGA										X											
198	FUA'AMOTU/Fua'amotu Intl	RS	NFTF	Wellington Nadi	NZWN NFFN												N, P		X			
199	VAVA'U/Vava'u	RS	NFTV	Wellington Nadi	NZWN NFFN												N		X			
	TUVALU										X											
200	FUNAFUTI/Funafuti Intl	RS	NGFU	Nadi	NFFN												N, P		X			
	UNITED STATES					X					X		X	X								

Table MET 1A – Meteorological Service Required at Aerodromes

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	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
201	ANCHORAGE/ Ted Stevens Anchorage Intl	RS	PANC	Anchorage	PANC PAFC												E, K, L, R, U, V, W			X	
202	ANCHORAGE/Elmendorf AFB	AS	PAED	Anchorage	PAED															X	
203	COLD BAY/Cold Bay	AS	PACD	Anchorage	PANC PAFC															X	
204	EVERETT/Snohomish County- Paine Field	AS	KPAE	Seattle	KSEA KSEW															X	
205	FAIRBANKS/Eielson AFB	AS	PAEI	Fairbanks	PAEI															X	
206	FAIRBANKS/Fairbanks Intl	RS	PAFA	Fairbanks	PAFA PAFG															X	
207	FRESNO/Fresno Air Terminal Yosemite Intl	AS	KFAT	San Francisco Joaquin	KSFO KHNX															X	
208	HILO/Hilo Intl	AS	PHTO	Honolulu	PHNL PHFO															X	
209	HONOLULU/Barbers Points NAS	AS	PHNA	Honolulu	PHNL PHFO																
210	HONOLULU/Honolulu Intl	RS	PHNL	Honolulu	PHNL PHFO												A, C, K, N, P, R, V			X	
211	KAHULUI/Kahului	AS	PHOG	Honolulu	PHNL PHFO															X	
212	KING SALMON/King Salmon	AS	PAKN	Anchorage	PANC PAFC															X	
213	LOS ANGELES/Los Angeles Intl	RS	KLAX	Los Angeles	KLAX KLOX												C, N, P, R			X	

Table MET 1A – Meteorological Service Required at Aerodromes

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
214	OAKLAND/Metropolitan Oakland	AS	KOAK	San Francisco Monterey	KSFO KMTR															X	
215	ONTARIO/Ontario Intl	AS	KONT	Los Angeles	KLAX KLOX															X	
216	PALMDALE/Palmdale P.F.T.I.	AS	KPMD	Los Angeles	KLAX KLOX															X	
217	PORTLAND/Portland Intl	AS	KPDX	Portland	KPDX KPQR															X	
218	SACRAMENTO/Metropolitan	AS	KSMF	San Francisco Sacramento	KSFO KSTO															X	
219	SAN DIEGO/San Diego (AFSS)	AS	KSAN	Los Angeles San Diego	KLAX KSGX															X	
220	SAN FRANCISCO/San Francisco Intl	RS	KSFO	San Francisco Monterey	KSFO KMTR															X	
220	SAN JOSE/ Norman Y. Mineta San Jose Intl	RS	KSJC	San Francisco Monterey	KSFO KMTR															X	
221	SEATTLE BOEING FIELD/King County Intl	AS	KBFI	Seattle	KSEA KSEW															X	
222	SEATTLE/Seattle-Tacoma Intl	RS	KSEA	Seattle	KSEA KSEW															X	
223	SPOKANE/Spokane Intl	AS	KGEG	Seattle Spokane	KSEA KOTX															X	
224	STOCKTON/Metropolitan	AS	KSCK	San Francisco Sacramento	KSFO KSTO															X	

Table MET 1A – Meteorological Service Required at Aerodromes

6-1A-17

	Aerodrome where service is to be provided			Responsible MET Office		Area(s) of coverage of charts												AFTN routing areas of destination/	Forecasts to be provided		
Seq. No.	Name	Use	ICAO loc. ind.	Name	ICAO loc. ind.	A	B ₁	C	D	E	F	G	H	I	EUR	Other		TEN D	TAF 18H	TAF 24H	
	1	2	3	4	5	6											7	86	97	108	
225	WASHINGTON DC/ Washington Dulles Intl	RS	KIAD	Washington	KWBC KLWX															X	
	VANUATU										X										
226	PORT-VILA/Bauerfield	RS	NVTV	Nadi Port-Vila	NFFN NVTV												A, N		X		
227	SANTO/Pekoa	RS	NVSS	Nadi Port-Vila	NFFN NVTV												A		X		
	VIET NAM								X	X											
228	DANANG/Danang	AS	VVDN	Danang	VVDN												O, R, U, V, W,		X		
229	HA NOI/Noi Bai	RS	VVNB	Ha Noi	VVNB												O, R, U, V, W, Z	X	X		
230	HO CHI MINH/Tan Son Nhat	RS	VVTS	Ho Chi Minh	VVTS												O, R, U, V, W, Z	X	X		
231	WALLIS ISLANDS (France) WALLIS/Hihifo	RS	NLWW	Nadi	NFFN						X						N				

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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.	Associated Strategic Objective & GPIs	Task	Priority	Action Proposed/In Progress	Action By	Target Date
1 (30) *	RAN/3 C.11/10 (TOR 1)	D- Efficiency GPI-17 GPI-22	Subject: Ensure effective transition to satellite communications. 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 SG	Closed On going
2 (32)	RAN/3 C.8/14 APANPIRG/14 (TOR 3)	A-Safety E-Continuity GPI-19	Subject: Inadequate implementation of procedures for advising aircraft on volcanic ash and tropical cyclones Task: Monitoring of the implementation of international airways volcano watch (IAVW) and tropical cyclone advisories and SIGMETs	A	Monitor and provide assistance in the implementation of 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 SG Task Force on the implementation of Volcanic Ash and Tropical Cyclone advisories and SIGMETs (VA/TC/I TF)	On going

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No.	Ref.	Associated Strategic Objective & GPIs	Task	Priority	Action Proposed/In Progress	Action By	Target Date
3 (35)	(TOR 3)	D – Efficiency All GPIs	<p>Subject: To facilitate regional implementation of CNS/ATM</p> <p>Tasks:</p> <p>a) coordinate training/workshops to allow States to develop and implement new CNS/ATM procedures;</p> <p>b) encourage States to participate in the evaluation and training of new CNS/ATM systems;</p> <p>c) progress the adoption of WGS-84 co-ordinate system and introduction of high integrity systems for the management of the co-ordinate data.</p>	A	<p>1) Identify topics for training, develop syllabi and plan training programme;</p> <p>2) Encourage States in the evaluation and training of new CNS/ATM systems;</p> <p>3) Co-ordinate with States and monitor progress;</p> <p>4) Collect information and suggest methods of resolving problems commonly faced by States.</p>	<p>CNS/MET SG</p> <p>ATM/AIS/SAR CNS/MET SG</p>	<p>On-going</p> <p>On-going</p> <p>On-going</p> <p>On-going</p>

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No.	Ref.	Associated Strategic Objective & GPIs	Task	Priority	Action Proposed/In Progress	Action By	Target Date
4 (36)	APANPIRG D. 4/46 RAN/3 C.12/3 APANPIRG 5/3 (TOR 3)	D – Efficiency All GPIs	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	1) Encourage States to conduct R&D, trials & demonstrations of new CNS/MET services; 2) Monitor global developments that may have beneficial consequences on regional planning activities; 3) Consolidate information on new capabilities in the CNS/ATM system, for the Sub-Groups review and action; 4) Serve as a focal point for review of ongoing work of Regional formal and informal working groups that is relevant to CNS/MET; 5) Provide for coordinated training/seminars to keep all States informed on developments of trials and demonstrations.	CNS/MET	On-going
5 (37)	C 12/24	D – Efficiency GPI-19	Subject : Transition to the GRIB and BUFR coded WAFS products Task : Implementation of the transition to the GRIB and BUFR coded WAFS products	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 Implementation Task Force (WAFS/ITF)	Completed GRIB: Completed 1 July 2005 BUFR: Nov 2006

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No.	Ref.	Associated Strategic Objective & GPIs	Task	Priority	Action Proposed/In Progress	Action By	Target Date
6 (38)	C12/36 APANPIRG C14/45	D – Efficiency GPI-19	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; 4) MET/ATM Coordination Seminar – February 2006. 5) Conduct survey on ATM requirements for MET information	CNS/MET SG with assistance of MET WG on CNS/ATM Plan CNS/MET SG METATM TF MET/ATM TF	Completed Completed 2006 Completed Completed 2007
7 (39)	APANPIRG/13 D 13/28	A - Safety D – Efficiency GPI-19	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 changes 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 (OPMET/M TF)	Completed Completed on-going on-going on-going

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No.	Ref.	Associated Strategic Objective & GPIs	Task	Priority	Action Proposed/In Progress	Action By	Target Date
8 (41)			Subject: Regional Strategy for air-ground data communication Task: Develop regional strategy for the implementation of air-ground communication data link	B	Development of AMS data link	CNS/MET SG	2005 Completed
9 (42)		A – Safety GPI23	Subject: Radio Spectrum Tasks: Facilitate State preparation for WRC-2007	A	1) Update the list of focal point of contact person; 2) Prepare for presentation of ICAO position at third APT meeting; 3) Inform State aviation contact persons of APT and ITU meeting schedule to assist in representatives participating in State delegation.	CNS/MET SG	2006 Completed 2007
10 (43)		D- Efficiency GPI17,18,19,22	Subject: Implementation of data link Task: Encourage implementation	A	Encourage States to implement CPDLC, D-ATIS, D-VOLMET, PDC and DCL	CNS/MET SG	2008
11 (44)		D-Efficiency GPI22	Subject: FASID Task: Updating of Table CNS-2	A	Seek State revisions of Table CNS-2 prior to May 2006. Review and update Table CNS-2 with the assistance of the Secretariat	CNS/MET SG	2006 2007

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No.	Ref.	Associated Strategic Objective & GPIs	Task	Priority	Action Proposed/In Progress	Action By	Target Date
12 (45)	APANPIRG List of deficiencies	A – Safety GPI - 19	Subject: Implementation of SIGMET Task: Improve regional procedures and availability of SIGMET from ASIA/PAC States	A	1) Assist States in implementing SIGMET requirements; 2) Conduct regular SIGMET tests; 3) Produce training and guidance material; 4) Regular monitoring on the availability and quality of SIGMET and advisories.	CNS/MET SG VA/TC/I TF	2007

* Number in bracket indicates sequential number since establishment of the Sub-group.

**AGENDA ITEM 2.3: ATS CO-ORDINATION
 GROUPS' ACTIVITIES**

2.3 ATS Coordination Groups' Activities

2.3.1 The meeting was updated on the activities since APANPIRG/16 (August 2005) of the ICAO and State ATS Coordination Groups that contribute to the work of APANPIRG. In particular, the meeting was informed in relation to the activities of the ICAO Bay of Bengal ATS Coordination Group (BBACG) and ICAO South-East Asia ATS Coordination Group (SEACG), as well as the task forces, FANS 1/A Implementation Teams (FIT) and Special Coordination Meetings (SCM) associated with both groups.

2.3.2 The meeting was also updated in respect of activities by the Informal Pacific ATC Coordinating Group (IPACG), the Informal South Pacific ATS Coordination Group (ISPACG) and the newly formed Arabian Sea/Indian Ocean ATS Coordination Group (ASIOACG), which are regional ATS Coordination Groups established bi-laterally or multi-laterally by the affected States, users and concerned parties.

2.3.3 As the most recent meeting of the China, Mongolia, Russian Federation and IATA ATS Coordination Group (CMRI/4) was held in Shenzhen, China in March 2003 and the last Russian-American Coordinating Group for Air Traffic Control meeting (RACGAT/13) was held in Vladivostok, Russia in October 2003, of concern for the Asia/Pacific Region had been the lack of multi-lateral airspace planning opportunities in recent years. Accordingly, the Special ATS Coordination Meeting Cross-Polar and Russian Trans-East ATS Routes (SCM POLAR & RTE, November 2005) review the present operational and technical aspects related to the increase in traffic on the cross-Polar and Russian Trans-East routes.

2.3.4 Meeting dates of the regional ATS Coordination Groups and subordinate task forces, FIT, etc. that were currently active in the Asia/Pacific Region are shown in **Appendix A** to Agenda item 2.3. It was noted that the events of ICAO meetings and the vast majority of State meetings are comprehensively recorded in a report of each meeting. Full reports of ICAO meetings are available on the ICAO Asia/Pacific Regional Office website <http://www.icao.int/apac/> under the 'Meetings' menu.

ICAO ATS Coordination Groups

17th Meeting of the Bay of Bengal ATS Coordination Group (BBACG/17)

2.3.5 The BBACG/17 meeting was held in January 2006. BBACG/17 was informed that the Urumqi FIR (China) was non-RVSM airspace while the Lahore FIR (Pakistan) was RVSM airspace. The RVSM transition problems had recently been addressed by Pakistan in coordination with China and a new procedure had been promulgated which would address the issue.

2.3.6 Although the Bay of Bengal and Indian FIRs implemented RVSM on 27 November 2003, which doubled the number of available levels, in respect of A466 and N644 which diverge into Kabul FIR, BBACG/17 noted that Lahore ACC was unable to treat them as separate routes because of anticipated difficulties in transitioning flights from the RVSM to the CVSM levels.

2.3.7 BBACG/17 reviewed the relevant sections of the Report of RASMAG/4 (25-28 October 2005). RASMAG/4 considered the report of the MAAR on its review of airspace safety for the RVSM implementation in the Asia region. In respect to the Bay of Bengal area, MAAR noted that a large majority of States had provided the required Traffic Sample Data (TSD) for analysis, however there were still some States that had not provided LHD data and these were being followed up by MAAR.

2.3.8 BBACG/17 reviewed the ICAO SAR Seminar held in Chennai, India from 7 to 11 March 2005. This was the last ICAO SAR Seminar held in the region as reported to ATM/AIS/SAR/SG/15 and APANPIRG/16.

2.3.9 BBACG/17 discussed in detail issues related to States providing a contingency plan in accordance with Annex 11 that would provide for a variety of circumstances affecting the safety and regularity of international civil aircraft operations.

Air Traffic Flow Management Task Force (ATFM/TF)

2.3.10 The meeting noted that the main focus of the recent work of the ATFM/TF had been towards the operational trial of an automated flow management tool for regulating the flow of traffic across the Bay of Bengal transiting the Kabul FIR during the night time peak traffic period (2000-2359 UTC). Full details of the current work of the ATFM/TF have been included in Agenda Item 2.1.

FANS 1/A Implementation Team for the Bay of Bengal (FIT-BOB)

2.3.11 The meeting recalled that the FANS 1/A Implementation Team - Bay of Bengal (FIT-BOB) had been established under the BBACG and the FANS 1/A Implementation Team - South-East Asia (FIT-SEA) had been established under the SEACG. The combined FIT-BOB/6 and FIT-SEA/3 meeting (November 2005, Bangkok) was subsequently followed by the combined FIT-BOB/7 and FIT-SEA/4 meeting (July 2006, Bangkok).

Review Bay of Bengal ADS/CPDLC Operational Trial

2.3.12 The Chennai and Kolkatta FIRs have been participating in the ADS/CPDLC operational trials since 19 February 2004, and are now operating on a 24 hour basis. The system trials at Delhi and Mumbai started in March 2006 with subsequent commencement of operational trials from 1st July 2006 after system stabilization and completion of ATCO's training. India had adopted the FANS 1/A Operations Manual (FOM) as the operational procedures applicable to the trial.

2.3.13 Mumbai ADS/CPDLC system was now available for trial operations from 0530-0930 & 2200-0300 UTC for aircraft operating within Mumbai FIR. Delhi ADS/CPDLC system was available for trial operations from 1100-2359 UTC for aircraft operating within Delhi FIR.

2.3.14 Additional Bay of Bengal States including Indonesia (Jakarta FIR), Malaysia, Myanmar, Sri Lanka and Thailand were endeavoring to join the trial, or rejoin after equipment outage or upgrade, in due course. In most cases current equipment was stand-alone rather than integrated equipment and States recognized that integrated displays would ultimately be necessary for the implementation of 30/30 reduced separations.

2.3.15 FIT-BOB had recognized that the CRA analysis would comprise a significant and critical component of the safety assessment in the context of implementing ADS/CPDLC. Although two years had passed since the commencement of the BOB operational trial, as funding difficulties had meant that CRA analysis and ongoing CRA monitoring capability was not yet available to the Bay of Bengal trial, the safety assessment could not be completed and, consequently, the implementation of either CPDLC or ADS could not be authorized.

2.3.16 Concerns of this nature had been recognized by APANPIRG/16 (August 2005) (Conclusion 16/5 – No implementation of reduced separation unless compliant with Annex 11 refers) in relation to RVSM and reduced horizontal separation minima implementations, and the FIT-BOB noted that the ICAO safety assessment and ongoing monitoring provisions were equally applicable in the implementation of new communications and surveillance systems like ADS and CPDLC.

2.3.17 India advised that the approval process of signing the agreement between India and IATA for CRA funding is was in the final stages. Problem reports were being forwarded for record and analysis by India to the BOB-CRA (bradly.d.cornell@boeing.com) and responses were being received from BOB-CRA.

2.3.18 The establishment of the CRA was expected to give quick results in correcting outstanding problem reports and would potentially enable the use of CPDLC communications to replace HF in the Mumbai FIR as early as mid 2007. Implementation of ADS would follow, followed by reduced separation applications a few years later.

13th Meeting of the South-East Asia ATS Coordination Group (SEACG/13)

2.3.19 The SEACG/13 meeting was held in May 2006. In respect of standardizing the lower limits of RNP routes in the SCS routes structure and the establishment of RNAV routes beneath, SEACG/13 reviewed the draft AIP Supplement prepared by Hong Kong, China. SEACG/11 had agreed that only RNP 10 approved aircraft could operate in the RNP 10 route structure. In this regard, ATM/AIS/SAR/SG/14 (July 2004, Bangkok) agreed that RNAV routes (non-RNP 10) should be established under the existing RNP 10 routes. SEACG/13 agreed that the operational issues needed to be further addressed, e.g. ATS route designators for the non-RNP routes and RNP routes, before implementing the harmonized lower limit of RNP 10 airspace.

2.3.20 SEACG/13 recognized the intention of Lao PDR to resume the responsibility of the air traffic control on A1 portion between BUTRA and PAPRA and other crossing routes within the Vientiane FIR.

2.3.21 SEACG/13 reviewed the summary report of RNP-SEA/TF/1 (March 2006, Singapore). The meeting noted that RNP-SEA/TF/1 had developed the draft TOR of the Task Force. Consequently, the SEACG/13, as the parent body of the RNP/TF, reviewed and adopted the TOR of the Task Force.

FANS I/A Implementation Team for the South East Asia (FIT-SEA)

2.3.22 FIT-SEA had previously agreed that the South China Sea area ADS/CPDLC operational trial would be carried out by the Philippines, Singapore and Viet Nam, to commence as soon as suitable ground equipment was commissioned. In noting the delay to implementation in the Philippines, FIT/SEA agreed that a phased approach should be adopted in relation to the implementation of ADS and CPDLC in the South China Sea area, with implementations occurring as soon State's operational capability became available.

2.3.23 The CRA-Japan would kindly provide initial CRA services at no cost to States in order to assist the commencement of the trial, however States concerned would be expected to implement appropriate cost recovery arrangements to support an agreed CRA provider in the longer term.

2.3.24 The Philippines advised FIT-SEA/4 (July 2006) that it was anticipated that standalone equipment would be installed by July 2007, and the operational trial would start after satisfactory testing of the equipment. The Philippines would advise the next meeting of their target date for joining the operational trial.

2.3.25 Viet Nam informed FIT-SEA/4 that installation of their new systems at Ho Chi Minh ACC had been completed and the systems had the full capability for CPDLC connections. Viet Nam expected to be ready for the first phase of ADS/CPDLC operational trials in the Ho Chi Minh FIR by March 2007.

2.3.26 Accordingly, it was agreed to proceed with a phased operational trial involving Viet Nam and Singapore initially, as appropriate ground equipment was available. FIT-SEA/4 considered March 2007 as an achievable target to commence the joint operational trial in the Singapore and Ho Chi Minh FIRs, taking into account the progress made so far by Singapore and Viet Nam.

ICAO Special Coordination Meetings

SCM for RVSM/TF Review of Western Pacific/South China Sea Flight Level Orientation Scheme - SCM RVSM FLOS

2.3.27 Details in respect of SCM RVSM FLOS (September 2005) have been included under Agenda Item 2.1.

SCM Cross-Polar and Russian Trans-East ATS Routes - SCM POLAR & RTE

2.3.28 The Russian Federation informed SCM POLAR & RTE that capacity was severely limited due to the variation of longitudinal separation minima from one ACC to the next (30 kilometers to 15 minutes) and the additional 10-minute window imposed by Anchorage ARTCC.

2.3.29 SCM POLAR & RTE was also informed that the current vertical separation standards in use for the Mongolian and Russian airspace were 300 meters below 8100 Metric Standard (MSTD), 500 meters above 8100 MSTD and 1000 meters above 12100 MSTD. On the other hand, China had adopted a different non-ICAO metric flight level standard, which necessitates a flight level transition area at both ends of the airspace, requiring air traffic controller intervention to adjust the levels of every flight prior to entering any FIR outside of China. The meeting noted that even in the best possible circumstances, implementation of RVSM in Mongolia and Russia was at least two years away.

SCM ATS Routes A593 and B576 - SCM A593/B576

2.3.30 SCM A593/B576 (December 2005, Bangkok) reviewed the operational and technical aspects of operations on ATS routes A593 and B576 in the southern portion of the Incheon FIR. SCM A593/B576 acknowledged the cooperative and collaborative approach which had been exhibited by China, Japan and the Republic of Korea, in ensuring the safety and efficiency of operations based on the 1983 Memorandum of Understanding (MOU) arrangements agreed between States under the guidance of the President of the ICAO Council.

2.3.31 SCM A593/B576 was of the view that Letters of Agreement established as a result of the 1983 MOU were in accordance with the provisions of Annex 11, Paragraphs 3.5.1 and 3.5.2, and reconfirmed that the 1983 MOU was valid in overseeing the current operational arrangements. However, although the MOU arrangements had proved robust and had resulted in safe and efficient operations for many years, SCM A593/B576 recognized that it was important to consider current circumstances and future changes and commenced a work programme accordingly.

State ATS Coordination Groups

20th Meeting of the Informal South Pacific ATS Coordination Group (ISPACG/20)

2.3.32 ISPACG/20 (January–February 2006, Honolulu) took place after a joint meeting of the ISPACG and IPACG FITs. During ISPACG/20, the following items relevant to the work of the APANPIRG were addressed:

- Air Traffic Management (ATM) Issues
 - a) Implementation of user preferred routes (UPR).
- Separation Minima
 - a) Application of “Rule of 11” in oceanic airspace;
 - b) Implementation of 50NM lateral/50NM longitudinal separation (50/50);
 - c) Implementation of 30NM lateral/30NM longitudinal separation (30/30); and
 - d) Address the requirement for a 14-minute automatic dependent surveillance (ADS) reporting rate when 30/30 separation is not being applied.
- Communications, Navigation and Surveillance (CNS) Issues
 - a) ATS Interfacility Data Communication (AIDC);
 - b) Identify methods to reduce HF congestion;
 - c) Address problems with SATCOM; and
 - d) Aircraft loss of communications procedures.
- Identify issues for future work
 - a) ISPACG/20 identified several areas requiring future work and agreed that a planning team would establish working groups to take action on several focus areas.

24th Meeting of the Informal Pacific ATS Coordinating Group (IPACG/24)

2.3.33 IPACG/24 (January 2006, Honolulu) was conducted in conjunction with a joint meeting of the IPACG and ISPACG FITs at the same venue.

2.3.34 During IPACG/24, the following action items were addressed:

- Separation Minima:
 - a) Implementation of the application of a 10 minute longitudinal separation minimum without the mandatory application of Mach number within the Oakland FIR;
 - b) Application of 50 NM longitudinal separation between appropriately equipped aircraft; and
 - c) Consider operational testing of in-trail procedure using new technologies.
- Procedural Matters:
 - a) Revision to current lost communications procedures; and
 - b) Development of common traffic management terminology.
- ATS Route/Airspace Matters
 - a) Implementation of flight re-routing between Japan and Hawaii tracks;
 - b) Need for boundary fixes on the Fukuoka/Oakland 25N and 160E control area (CTA) boundary; and

- c) Conduct a study to evaluate the effectiveness of the current airspace/route structures.
- Communications Matters:
 - a) Adoption of Version 2 of the *Asia/Pacific ATS Interfacility Data Communications (AIDC) Interface Control Document (ICD)* as the basis of interfacility data communications between ATMC, Anchorage ARTCC, and Oakland ARTCC.

1st Meeting of the Arabian Sea/Indian Ocean ATS Coordination Group (ASIOACG/1)

2.3.35 The ASIOACG/1 meeting was held in May 2006. The establishment of ASIOACG was the result of a proposal by the Regional Office to establish an annual meeting of the “Whole of Indian Ocean ATS Coordination Group” and by Airservices Australia through its active participation in the existing “Informal Indian Ocean ATS Coordination Group” (IIOACG). Accordingly, Airservices Australia in consultation with ICAO Asia and Pacific Office and Emirates undertook to convene the ASIOACG/1 meeting for the establishment of ASIOACG, to promote the expansion of ADS/CPLDC services across the region as well as the planning and implementation of airline defined optimum routes and related ATM procedures.

2.3.36 The following is a summary of the subjects discussed at ASIOACG/1 and the main points arising:

- HF and data link communications: It was recognised that reliable voice/data link communication services were a pre-requisite for the introduction of reduced separation standards in oceanic airspace.
- Mumbai ADS/CPLDC facilities: The Mumbai ADS/CPDLC facilities were co-located with ATC and data link communications could be operated on a “third-party” basis (similar to the existing arrangements for HF communications) subject to the technical capability requirements described above.
- FIT/CRA arrangements for ASIOACG: Where it was intended to introduce ADS/CPLDC systems to support reduced separation standards (e.g. 50/50 and 30/30 based on RNP10 and RNP4 respectively), then it would be necessary to establish a FIT/CRA to enable States to meet the Annex 11 safety monitoring provisions.
- Update from ANSPs on CNS/ATM initiatives: Updates were provided by Australia, India, Oman and Yemen on the status of their CNS/ATM capability.
- Industry affairs and user requirements: The meeting recognised the importance of ICAO Doc 9750 “Global Air Navigation Plan for CNS/ATM Systems” and agreed to adopt a “Capacity Enhancements Table” for ASIOACG.
- ATS route structures, flex tracks and other airspace capacity enhancements: The meeting agreed to support the implementation of the Connector Routes and other initiatives to support Flex Track operations.
- Data link services (ADS-C/CPDLC), FANS1/A Operations Manual (FOM) and HF communications: It was agreed that ASIOACG would adopt the FOM, in conjunction with appropriate ICAO documentation, as the working document for FANS1/A operations within the ASIOACG area of responsibility.

- ATS Coordination – facilities and procedures (including AIDC): OLDI tests were being conducted between Muscat Oman and Bahrain ACCs during June 2006.
- Air Traffic Flow Management (ATFM): Recognizing the importance of effective ATFM, the meeting agreed that ASIOACG should develop ATFM options for the future, which would be conveyed through the ICAO Regional Offices to both APANPIRG and MIDANPIRG.
- Civil/Military coordination and “Due Regard”: The meeting agreed that “Due Regard” issues should be referred to the ICAO Civil/Military Coordination Meeting, to be hosted by CAMA in Sana’a (Republic of Yemen) on the 18th and 19th of June 2006.
- ADS-B: ASIOACG/1 was advised by India of their ADS-B trials, which was on test at the Chennai ACC.

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List of ATS Coordination Activities (Aug 2005 – Aug 2006)

1. ICAO ATS Coordination Groups

- **Bay of Bengal ATS Coordination Group (BBACG)**
 - BBACG/17 (Bangkok, 16 – 20 January 2006)
 - Air Traffic Flow Management Task Force (ATFM/TF)
 - ATFM/TF/2 (Delhi, 28 June – 1 July 2005)
 - ATFM/TF/3 (Bangkok, 6 – 9 September 2005)
 - ATFM/TF/4 (Bangkok, 7 – 11 November 2005)
 - ATFM/TF/5 (Bangkok, 16 – 20 January 2006)
 - ATFM/TF/6 (Bangkok, 9 – 11 May 2006)
 - ATFM/TF/7 (Bangkok, 31 July – 3 August 2006)
 - SCM ATFM/TF PMT (Singapore, 10 – 11 August 2005)
 - ATFM/TF BOBCAT Paper Trials (Bangkok, 5 – 7 October 2005)
 - BOBCAT workshop (Bangkok, 7 – 11 November 2005)
 - SCM BOB ATFM TRIAL (Bangkok, 16 – 17 February 2006)
 - SCM GO BOB ATFM (Bangkok, 14 – 16 June 2006)
 - FANS 1/A Implementation Team, Bay of Bengal (FIT-BOB)
 - FIT-BOB/6 (Bangkok, 22 – 25 November 2005)
 - FIT-BOB/7 (Bangkok, 25 – 28 July 2006)
- **South-East Asia ATS Coordination Group (SEACG)**
 - SEACG/13 (Bangkok, 16 – 19 May 2006)
 - South East Asia RNP Implementation Task Force (RNP-SEA/TF)
 - RNP/SEA/TF/1 (Singapore, 13 – 15 March 2006)
 - FANS 1/A Implementation Team, South -East Asia (FIT-SEA)
 - FIT-SEA/3 (Bangkok, 22 – 25 November 2005)
 - FIT-SEA/4 (Bangkok, 25 – 28 July 2006)
- **China, Mongolia, Russian Federation, IATA ATS Coordination Group (CMRI)**
 - Did not meet, last meeting CMRI/4 (March 2003, Shenzhen, China)

2. ICAO Special Coordination Meetings

- SCM for RVSM/TF Review of Western Pacific/South China Sea Flight Level Orientation Scheme - SCM RVSM FLOS (Bangkok, 20 September 2005)
- SCM Cross-Polar and Russian Trans-East ATS Routes - SCM POLAR & RTE (Bangkok, 15 & 16 November 2005)
- SCM ATS Routes A593 and B576 - SCM A593/B576 (Bangkok, 13-15 December 2005)

3. State ATS Coordination Groups

- **Informal South Pacific ATS Coordinating Group (ISPACG)**
 - ISPACG/20 and ISPACG-FIT (26 January - 1 February 2006, Hawaii)
(<http://www.faa.gov/ats/ato/ispacg.htm>)
- **Informal Pacific ATS Coordination Group (IPACG)**
 - IPACG/24 and IPACG-FIT (23 - 27 January 2006, Hawaii)
(<http://www.faa.gov/ats/ato/ipacg.htm>)
- **Informal Indian Ocean ATS Coordination Group (IIOACG)**
 - Did not meet, last meeting December 2004, Plaine Magnien, Mauritius
- **Arabian Sea/Indian Ocean ATS Coordination Group (ASIOACG)**
 - ASIOACG/1 (22-23 May 2006, Dubai UAE)
- **Russian-American Coordinating Group for Air Traffic Control (RACGAT)**
 - Did not meet, last meeting RACGAT/13 (October 2003, Vladivostok, Russia)

**AGENDA ITEM 2.4: OTHER AIR NAVIGATION
MATTERS**

2.4 Other Air Navigation Matters

Developments in the modernization of air navigation systems

2.4.1 The meeting was presented with a report on developments in the modernization of air navigation systems including CNS/ATM systems that took place in 2005 and up to June 2006. The meeting among other things noted the following: Development status of Standards and Recommended Practices (SARPs) and guidance material; Work programme of various Air Navigation Commission Panels and Study Groups engaged in CNS/ATM related activities; A summary of the outcome of recent meetings of all the PIRGs; and a comparative picture of regional developments in air navigation systems as well as related fields such as air transport and institutional areas. The meeting agreed to take these developments into account in formulation of the work programme of APANPIRG.

Funding of Regional Safety Monitoring

2.4.2 APANPIRG/16 recognized the urgent need to develop feasible and sustainable funding solutions for regional safety monitoring so that on-going initiatives to carry out trials and to implement CNS/ATM systems in Asia/Pacific would not be delayed and that safety and efficiency were not compromised. It was recalled that APANPIRG's CNS/ATM technical experts had previously found it difficult to resolve the complex legal, financial and organizational issues involved in establishing a regional safety monitoring agency, and that APANPIRG/16 had called for a study group to progress these matters.

2.4.3 Parallel to this, the Council of ICAO had been considering difficulties in establishing sustainable approaches to funding safety monitoring activities in other ICAO Regions and had placed the matter on the agenda for the ALLPIRG/5 meeting. The matter had been referred as well to the Sixth meeting of the Air Navigation Services Economics Panel (ANSEP/6). Both bodies gave their support to an approach developed by the ICAO Secretariat which was based upon existing ICAO guidance and policies. The President of the Council referred the recommended approach and implementation procedure to Members of the Council, seeking their views, prior to consideration of the matter at the 178th Session of the Council.

2.4.4 Subsequently, an Inter Office Memorandum (dated 4 July 2006) from the Director of the ICAO Air Transport Bureau was issued to all ICAO Regional Directors containing a directive from the President of the ICAO Council that "...it is recommended that RMAs be implemented as multinational (ICAO) air navigation facilities/services..." and including a step-by-step procedure for use by Regional Offices and PIRGs as appropriate.

2.4.5 In view of these on-going developments, the ICAO Regional Office did not convene the special study group requested by APANPIRG/16 and instead raised the matter at the earliest suitable opportunity at RASMAG/5 held in Bangkok from 4 to 8 June 2006. RASMAG/5 discussed the global experiences with funding regional safety monitoring activities and evaluated the options. RASMAG/5 also considered the implementation of the global approach in the Asia/Pacific region and prepared suitable advice for consideration by APANPIRG/17.

2.4.6 RASMAG/5 recognized that the approach adopted in the MID Region has the essential elements of the model recommended by ALLPIRG/5 and ANSEP/6. The PIRG played an active role in bringing the States together to establish a multinational facility/service that would ensure the sustained and equitable provision of regional safety monitoring services and the steps that brought it to fruition were along the lines of those recommended.

2.4.7 The meeting noted the global consensus that voluntary funding arrangements are not considered to be sustainable in the long-term, that the most appropriate funding mechanism for RMAs is to establish a multinational (ICAO) facility/service and that this was also an effective mechanism to address additional, recognized safety monitoring requirements for SMAs and CRAs. In this context the meeting took into account the comprehensive proposal from RASMAG/5 that APANPIRG initiate steps to establish a *Regional Safety Monitoring Board – Asia* and a *Regional Safety Monitoring Board – Pacific* developed from the MID RMA model by inviting the States concerned to meet with the aim of preparing acceptable Memoranda of Agreement and taking the necessary follow-up steps to establish the Boards to support their activities.

2.4.8 However, the meeting recognised the genuine concerns expressed in respect to the general complexity of the matters under discussion and specifically in relation to matters of legal liability. Although the MID RMA arrangements were functioning well, it was evident that a direct translation of these arrangements into the Asia/Pacific region was not viable and significant adjustments would need to be made. In any event, it was not reasonable to expect States to commit to the establishment of organisational entities until appropriate organizational documentation, terms of reference etc had been drafted. This would require careful and focused consideration and the meeting agreed that the most appropriate mechanism in this respect was to constitute a task force to study the issues and develop appropriate documentation and implementation plans.

2.4.9 Additionally, the meeting recognised that in matters such as these, each State had individual responsibility and therefore APANPIRG was unable to act for all States regionally in this respect. Progress on these matters would require the concurrence of all States involved, not just those in attendance at the meeting. The meeting also had concerns in respect to the terminology “Boards” as the common usage of the term Boards suggested a high level and substantial entity and undertaking. Although unable to agree on a suitable alternative terminology, the meeting agreed to the interim usage of “Committee” until the matter could be clarified. In order to allow States time to consult within their own administrations and consider the matter thoroughly, the meeting agreed to establish a task force to draft implementation proposals for the regional monitoring “committees”, formulating the following Decision:

Decision 17/47 – Task Force to establish Regional Airspace Safety Monitoring Committees

That a Task Force be established to develop and distribute to States by 30 June 2007 implementation proposals for the establishment of Regional Airspace Safety Monitoring Committees. The Task Force would work in accordance with the terms of reference in **Appendix A** to the Report on Agenda Item 2.4 and use, *inter alia*, recent ICAO guidance materials in relation to the global approach for the funding of airspace safety monitoring.

Note: A summary of the guidance material is available in WP/22 for APANPIRG/17.

Funding Arrangements for Pacific RMA and CRA

2.4.10 The United States provided information to the meeting in relation to the current arrangements for the provision of Regional Monitoring Agency (RMA) and Central Reporting Agency (CRA) services in the Pacific. Since 1995, the United States had provided and fully funded the Pacific Region RMA functions to monitor the safety of reduced vertical separation minimum (RVSM) for the Pacific international airspace delegated to Australia (Brisbane Oceanic), Fiji, Japan, Republic of Korea, New Zealand, Papua New Guinea, Tahiti and the United States. These services

are provided through the Pacific Approvals Registry and Monitoring Organization (PARMO).

2.4.11 The United States was also currently funding the Central Reporting Agency (CRA) services for monitoring the end-to-end system performance of the FANS-1/A systems for the Pacific international airspace delegated to Australia (Brisbane Oceanic), Fiji, New Zealand, Tahiti and the United States. These services are provided through a contract with Boeing.¹

2.4.12 The United States viewed the provision and funding of these services as essential to the expeditious implementation of new capabilities within the region. These services were provided as a gesture of goodwill to the region since 1995 for RMA and 2000 for CRA, fully expecting that in due course partner States would make provisions for equitable reimbursement. Although this situation continued to meet the needs of the affected providers, arrangements for equitable funding amongst the parties receiving these RMA and CRA services had yet to be resolved.

2.4.13 The meeting was informed that, in principle, the United States agreed with the RASMAG proposal to establish a Regional Safety Monitoring Board and the step-by-step approach endorsed by the ALLPIRG/5, ANSEP/6 and RASMAG. Due to the rapid growth in the Asia/Pacific region, the United States requested that regional partners in the Pacific, establish the Regional Safety Monitoring Board – Pacific as soon as possible and conduct the first meeting of the Board no later than 30 January 2007, with a commitment to completing administrative agreements no later than 90 days after the first meeting.

2.4.14 However, the meeting agreed that the challenges of establishing these new arrangements must not divert attention from the immediate problem of sustaining the existing services. Further, the United States considered that the structure and scope of the Board would need to be broad enough to expand these regional services as new technologies and procedures were implemented.

2.4.15 In this context, the United States offered to continue to serve as the multinational RMA/CRA organization for the Pacific Region until such time as the Regional Safety Monitoring Board – Pacific was operational and could permanently nominate the United States or other fully capable and equally cost effective provider through an agreed upon and transparent process.

2.4.16 Over the years, the United States had voluntarily funded over US\$1 million to establish and sustain the RMA and CRA services, and offered to continue to fund 50% of the annual cost of these services in future years as a measure of goodwill toward resolving an equitable funding arrangement. However, the United States requested that the regional partners involved commit to reimbursing the United States 50% of the cost for the CRA and RMA services rendered on behalf of the Pacific region for calendar year 2007 onward, by formalizing administrative agreements or modifying existing bi-lateral agreements in order to equitably distribute the cost of these services.

2.4.17 Japan advised the meeting that they were providing the CRA service for oceanic airspace within the Fukuoka FIR based on the IPACG agreement, and planned to expand the CRA services to South China Sea airspace, as agreed at recent ICAO FIT-SEA meetings. This CRA service is funded by JCAB and provided through a contract with the ATCA-Japan. Japan was also conducting RVSM monitoring for domestic airspace in Fukuoka FIR, and JCAB planned to expand RVSM assessment and monitoring functions to oceanic airspace within the Fukuoka FIR and their neighboring airspace in future, as reported to RASMAG. The FAA proposal would fundamentally change the current financial arrangements in JCAB and the agreed frameworks for CRA services to South China Sea area. Additionally, internal institutional mechanisms were such that it would take a

¹ FAA fully funded Boeing to serve as CRA for all South Pacific ATS providers from 2000-2005. In 2006, Boeing assumed responsibility for half the costs of providing this service for the South Pacific.

long process within JCAB to change the current arrangements.

2.4.18 In addressing the concerns of both the United States and Japan, the meeting formulated the following Conclusion:

Conclusion 17/48 – Funding of Pacific RMA & CRA

In recognizing that the United States/FAA was the current service provider of CRA and RMA services for the Pacific Region (with the exception of CRA services for Japan), it was acknowledged that:

- a) FAA would remain the interim service provider for the Pacific Region until more formal arrangements have been made, and
- b) Pacific States using these FAA services commit to reimburse the FAA for those CRA and RMA services rendered effective 30 June 2007.

Note: The FAA will be formally notifying each of these individual states that if reimbursement agreements are not in place by 30 June 2007, these services are at risk of being suspended.

Fuel Efficiency – the ongoing challenge

2.4.19 The meeting noted with concern that in spite of international passenger and cargo traffic growth exceeding expectations, the extraordinarily high level of oil prices threatened the airline industry with yet another year of losses. Consequently, the meeting discussed the areas where ATS Providers and State ATS Authorities could assist in developing more efficient systems that would contribute to airlines internal fuel efficiency strategies.

2.4.20 At present every \$1 a barrel rise in oil and jet fuel prices increases the fuel bill by \$1.4 billion. Part of this rise in costs is being passed on to customers through fuel surcharges or increased fares. In 2005 airline yields rose 3.1%, which recovered only 42% of the increase in fuel costs last year. The fuel bill rose from \$61 billion in 2004 to \$91 billion last year, 22% of operating costs.

2.4.21 The meeting was aware that many areas, such as route structure, arrival/departure procedures, air traffic control and airport capacity and layout directly impact the fuel consumption. The Meeting, recalling that the issue of fuel savings and consequent environmental benefits was also discussed during ALLPIRG/5, endorsed the need for the States to put in place all possible measures to conserve fuel.

2.4.22 The meeting noted the views of India in relation to their consideration that the full benefits of certain routes could not be achieved as the extension of routes through adjacent FIRs remained to be implemented. For example, significant fuel savings could be achieved by implementing the extension to route segments M875-BUTOP-JHANG and L509 – SAMAR-SITAX. In the interests of increasing fuel efficiency, India appealed to ICAO, IATA and other affected agencies to liaise with all concerned authorities in order to progress these and similar matters.

2.4.23 IATA reminded the meeting that in September 2004 and again in March 2005, IATA had written to every one of the 188 Air Traffic Service providers in the world with an urgent plea to review specific areas that could bring fuel savings to airlines and asked for feedback on actions that

could be considered by States. As a result, last year IATA achieved USD 1.9 billion in savings worldwide through operational improvements, new routes and route/airport enhancements. IATA greatly appreciated the responses and actions that States had taken to date.

2.4.24 With the continuous rise in the cost of fuel, IATA informed the meeting that once again they would write to all States with an urgent plea to work with ICAO, IATA and airlines on finding additional ways to save fuel.

Fuel Savings Workshop - Montreal

2.4.25 APANPIRG/17 recalled that Conclusion 16/57 called for a workshop to be carried out in 2006 for Asia/Pacific States focusing on best practices for achieving fuel efficiencies in airport, TMA and en-route environments. However, although a number of attempts had been made to organize this workshop in company with IATA, difficulties had been experienced in scheduling the workshop and no date had yet been set.

2.4.26 During July 2006, ICAO announced a global “*Workshop on Aviation Operational Measures for Fuel and Emissions Reductions*”, to be held at ICAO Headquarters in Montreal, Canada from 20 to 21 September 2006 and hosted jointly by ICAO and Transport Canada. The goal of the workshop is to highlight information on fuel and emissions reductions contained in ICAO’s guidance in Circular 303, “*Operational Opportunities to Minimize Fuel Use and Reduce Emissions*”, and to share practical experiences and successful programmes that have contributed to emissions reductions in all aspects of the aviation industry. An on-line facility for pre-registration is available at: <http://www.icao.int/icao/en/env/WorkshopFuelEmissions/>. The meeting was requested to take note of this event and agreed to take full advantage of this workshop through strong participation.

Fuel Saving Measures - Intersection take-offs – Republic of Korea

2.4.27 The Republic of Korea reported that recent meetings with experts from regional authorities, airline companies and concerned parties had agreed that use of intersection departures where appropriate was a highly efficient operational method to improve fuel efficiency.

2.4.28 The Republic of Korea considered that intersection takeoff procedure should be included in the pre-flight briefing item for pilots, supported by directives from airline companies under which cockpit crew could request reduced length departures if they were able to safely execute an intersection take-off. Additionally, details of such procedures should be published in AIP.

2.4.29 The meeting was informed that a trial operation will be conducted at Gimpo and Incheon International Airports from 21 Aug 2006 for 3 weeks. Taxi distances could be reduced by 75 seconds at Incheon and by 45 seconds at Gimpo. Although subject to the results of the trial operations, intersection takeoff procedure are expected to be implemented at all civil airports in the Republic of Korea from October 2006.

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TERMS OF REFERENCE

Task Force for establishment of Regional Airspace Safety Monitoring Committees (RASMC/TF)

Objective

To develop proposals and take action to implement Regional Airspace Safety Monitoring Committees for the Asia/Pacific Region.

Terms of Reference

- a) Develop proposals for the establishment of Regional Airspace Safety Monitoring Committees including terms of reference;
- b) Identify the appropriate regional monitoring entities and determine the number and area of responsibility;
- c) Formulate the duties, responsibilities and scope of regional monitoring entities;
- d) Establish a formula for the basis of cost recovery as well as cost recovery mechanism;
- e) Determine a methodology for assigning the responsibility for a regional monitoring entity to a State.
- f) The RASMC/TF will report via RASMAG to the APANPIRG.

Composition

ICAO will facilitate the Task Force, which will consist of designated experts from the following States:

- 1. Australia,
- 2. China,
- 3. Fiji,
- 4. India,
- 5. Japan,
- 6. New Zealand,
- 7. Republic of Korea,
- 8. Singapore,
- 9. Thailand,
- 10. United States of America

**AGENDA ITEM 3: CNS/ATM IMPLEMENTATION AND
RELATED ACTIVITIES**

Agenda Item 3: CNS/ATM Implementation and Related Activities

Key Priorities for CNS/ATM Implementation in the Asia/Pacific Region

3.1 The meeting noted the progress achieved on the listed items of the Key Priorities updated by the Tenth Meeting of CNS/MET Sub-group. It was also noted that the list of Key Priorities would be integrated into the performance based planning initiatives. It was considered that the Key Priorities would be subsumed into the regional performance objectives and related projects, which would become part of the new planning approach. In light of foregoing, the meeting adopted the List of Key Priorities for the CNS/ATM Implementation in the Asia/Pacific Region as shown in **Appendix A** to the Report on Agenda Item 3 as a baseline for transition to the new planning approach.

CNS/ATM Implementation Planning Matrix

3.2 The meeting noted the CNS/ATM Implementation Planning Matrix updated by the CNS/MET Sub-group. The Matrix lists status of implementation of various major CNS/ATM elements within the Region such as ATN, AIDC, CPDLC, GNSS, ADS-C and ADS-B. The Matrix is also used as a planning tool for monitoring the progress of implementation. States were encouraged to provide their updates regularly through the Sub-group meetings. The updated matrix is provided in **Appendix B** to the Report on Agenda Item 3.

Second amendment to Global Plan

3.3 The Meeting recalled that, in 1998, the Council accepted the Global Air Navigation Plan for communications, navigation, and surveillance/air traffic management (CNS/ATM) Systems (Global Plan), which was followed by the first amendment in 2001. In light of the Eleventh Air Navigation Conference (AN-Conf/11) in 2003 and the sixth meeting of the Air Navigation Commission Consultation with Industry in May 2004, the meeting was informed that the second amendment to the Global Plan was prepared in January 2006.

3.4 The Meeting received a comprehensive presentation on the draft second amendment of the Global Air Navigation Plan. The presentation addressed past and future work associated with achieving a global ATM system; the Global Plan Initiatives (GPIs); the performance-based approach to measuring success with implementation; and the process of carrying out regional integration and transition. The revised planning process would be facilitated through planning tools, an electronic air navigation planning database, project and programme management techniques and new reporting methodologies. The revised Global Plan would not cause major changes to the work already in progress in the regions since the objective was to harmonize work programmes, improve reporting processes and help to ensure interoperability and seamlessness between regions. It would also introduce methods to ensure that performance objectives were developed and measured. The Meeting noted that ICAO, at the Headquarters level, was committed to offering the support required to the Regional Offices to ensure success with implementation of the GPIs.

3.5 For effective planning and implementation of GPIs, the Meeting was apprised that the Secretariat would review the data presented in the tables contained in the regional air navigation plans (ANPs) so as to facilitate integration of the GPIs into the planning process and to maximize their usefulness as part of the ANP searchable database. Additionally, in light of the ATM operational concept and the GPIs, the Secretariat will revisit the Statement of Basic Operating Requirements and Planning Criteria (BORPC) contained in the regional ANPs. Furthermore, this second amendment addresses the elements beyond CNS and ATM systems and includes additional systems covering the aeronautical information service (AIS), aerodromes, air routes and ground aids (AGA), meteorological (MET) areas. Therefore, the document has been renamed “Global Air Navigation Plan”, which also allows for a more logical alignment with the regional ANPs.

3.6 Subsequent to the initial review of the amended version of the Global Plan by the Commission, the Meeting noted that the ICAO Secretariat had consulted States through established procedures and also presented the same version to the ALLPIRG/5 Meeting (March 2006) so as to seek the views and obtain support from the members of ALLPIRG. Consequent to this coordination process and taking into account comments received from States as well as ALLPIRG, the revised draft second amendment is scheduled to be presented to the Air Navigation Commission for its final review in October 2006, and subsequently to the Council for final approval in November 2006.

3.7 The Meeting was supportive of the revised Global Plan and the new approach to planning and implementation. In this regard, the Meeting took note of the performance planning activities by the ANC panels as well as proposed ICAO Performance Symposium in March 2007.

Business case for the implementation of CNS/ATM Systems

3.8 The Meeting received a presentation on the business case model for the implementation of CNS/ATM Systems as developed by ICAO. It was noted that the air navigation planning process takes into account the interdependencies between the equipment installed on the ground and the aircraft avionics. Accordingly, this tool, which integrates both the air navigation services providers and the airspace users, will be very useful in the development of various implementation scenarios. Also, this will serve as a basis for the decision-making process by the CNS/ATM partners regarding the implementation of new systems and the investments involved. However, the business case should be used in conjunction with other tools in order to provide more comprehensive and acceptable results. The Meeting noted that, in some regions, the development of business cases in various formats has become a requirement, while other regions lack the necessary resources to perform this type of analysis.

3.9 This interactive model, known as the Database and Financial Analysis Computer System (DFACS), has three main components: establishment of database, developing scenarios, and analysing the reports. The Meeting noted that the soft copy of business case model for the implementation of CNS/ATM Systems will be made available to States on ICAONET by the end of September 2006.

MET-related issues

3.10 The meeting considered that in order to enable implementation in the Region Annex 3 requirement for automatic air-reports, the use of ADS-B 1090 MHz ES should be pursued and formulated the following Conclusion:

Conclusion 17/49 – Use of ADS-B 1 090 MHz Extended Squitter for automatic air-reporting

That, ICAO be invited to develop the necessary SARPs and guidance material to facilitate the implementation of ADS-B 1 090 MHz extended squitter for automatic air-reporting.

3.11 The availability of high-resolution automatic aircraft reports received via ACARS along the approach and take-off paths enabled the detection of low-level windshear affecting aircraft operations and the determination of its intensity in terms of changes in headwind across the affected region. The meeting agreed to invite ICAO to include new abbreviations for “headwind gain” and “headwind loss” in Doc 8400 and to amend Table A6-3 in Annex 3 accordingly. The following Conclusion was formulated:

Conclusion 17/50 - New ICAO abbreviations for windshear warning

That, in order to facilitate inclusion in the windshear warnings of the windshear intensity in terms of headwind changes, ICAO be invited to include new abbreviations for “headwind gain” and “headwind loss” in the ICAO Abbreviations and Codes (Doc 8400) and to amend the windshear warning template (Table A6-3) in Annex 3 accordingly.

- 3.12 The meeting noted under this agenda item information on the following matters:
- Environmental Benefits of CNS/ATM System from ICAO Secretariat;
 - Update on GPS-Aided Geo Augmented Navigation (GAGAN) from India;
 - Upgrade of ILS from CAT IIIA to CAT IIIB at Delhi Airport from India; and
 - ADS-B Programme Office Roadmap from the USA

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

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

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

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
3.	Co-operation in Regional CNS/ATM Planning, Implementation & Training.	The continuation and enhancement of ICAO's co-ordinating role of technical co-operation in CNS/ATM planning and implementation, in close co-operation with all partners and taking into account the regional approach, is required.	Report to APANPIRG	All	Sub-Groups to identify requirements.	<p>Emphasis needs to be on sharing information and training. Title 'Technical Co-operation' is confusing with assistance programs. Need to inform States of opportunities for training well in advance of scheduled date. Training opportunities should include ICAO programs as well as associated organizations programs. ATN Seminar was conducted.</p> <p>Two ADS-B Seminars were conducted</p> <p>QMS Seminar SAIDS-2G MET/ATM Coordination Seminars were conducted</p> <p>PBN Seminar was conducted in Beijing by ICAO</p>

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

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
4.	Preparation for WRC-2007	The co-operative participation of States is required with their respective telecommunications regulatory authorities, regional groups, at the APT forums and at the WRC regional preparatory meetings for WRC-2007 to ensure that aviation spectrum requirements are fulfilled and protected.	WRC-2007 Fourth APT APG Jan 07 2 nd RPG meeting planned early 2007	All	States are designating contact points responsible for preparation for WRC 2007 and are providing contact details for posting on the website to facilitate coordination. ICAO position was presented to APT/APG2007-3 meeting held in 13-16 Feb. 2006	High importance task. Spectrum must be available to enable CNS/ATM implementation. Of the 35 States 31 States have nominated the focal point of contact 4 States participated actively at APG 2007-3 meeting 13-16 Feb 2006
5.	GNSS Implementation <ul style="list-style-type: none"> • GBAS • SBAS 	To implement GNSS in accordance with the Asia Pacific Regional Strategy. Facilitate market available GBAS ground system (<i>CAT I</i>) certified to Annex 10 SARPs.	On-going 2008	CNS/MET	SBAS receivers - (TSO C145/6) now available Lead aircraft with certified GBAS avionics now in service.	Strategy for Approach, Landing and Departure identified GBAS as a preferred CAT I option. No ground equipment is available that is certified to Annex 10 SARPs.
6.	MET support for the new CNS/ATM System.	To identify the ATM requirements for new MET products supporting CNS/ATM systems and update the plan accordingly.	2006	CNS/MET	MET/ATM TF has surveyed the new requirements and is preparing an update for the MET chapter of the ASIA/PAC Regional Plan for the New CNS/ATM Systems.	MET/ATM coordination seminar provided information for updating the Regional Plan

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

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
		Implementation of the transition to GRIB and BUFR coded WAFS products	2006		MET/ATM coordination seminar was conducted 8-10 February 2006. GRIB coded products have been implemented. BUFR coded SIGWX charts are being implemented with the deadline for implementation 30 Nov 2006	
7.	ADS-B	Operational Standards to support proposed separation standards.	2006	ADS-B Task Force	Progressed by Task Force in AIGD and completed by SASP & OPLINK. Doc4444 being amended.	Focus on activities to enable successful ADS-B OUT implementation.
		Airline aircraft certificated to participate in ADS-B operations.	2006	ADS-B Task Force	Lead aircraft certified for initial ADS-B OUT operation	Roll-out of ADS-B considered an on-going activity.
		Avionic packages available to meet GA and low capacity operations.	2006	ADS-B Task Force	Avionics package to meet GA & low capacity operation is available.	
8.	Implementation of APV and RNAV (GNSS) Approaches	Review applicability of APV and RNAV (GNSS) Approach Design Standards, aircraft certification and augmentation system availability for Asia Pacific.	2006	CNS/MET ATM/AIS/SAR	APV and RNAV (GNSS) Design standards now in PANS OPS. Aircraft certified for RNAV (GNSS) and APV approaches.	Completed ATM/AIS/SAR/SG to consider operational issues including charting.

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

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
		Develop implementation strategy.	2007			
9.	Data Link Flight Information Services (DFIS) applications	<p>To implement the following applications via request/response mode of data link in the Asia and Pacific Regions:</p> <p>a) Data link –automatic terminal information services (D-ATIS);</p> <p>b) VOLMET data link service (D-VOLMET);</p> <p>c) Pre-Departure Clearance (PDC) delivery via data-link;</p> <p>d) DCL</p>	2008	ATM/AIS/SAR CNS/MET	Trials and demonstrations are conducted and some operational services are provided by States.	<p>Implementation of D-ATIS is progressing</p> <p>Expected to be implemented at all locations except one by 2008</p> <p>PDC implemented at several locations</p>

No.	KEY PRIORITIES	DESCRIPTION	MILESTONES	SUB-GROUP	STATUS	DISCUSSION/ACTION
10.	Safety Management Systems.	<p>States to establish national safety management systems and effective application of safety programmes which are required for the provision of air traffic services.</p> <p>Required monitoring services available to support operational enhancements.</p>		<p>ATM/AIS/SAR RASMAG</p> <p>RASMAG</p>	<p>Annex 11 provisions effective 27 November 2003.</p> <p>On-going RASMAG activities.</p> <p>Operational enhancements suspended where effective monitoring is not available.</p>	
11.	Air Traffic Flow Management.	<p>States to consider and implement aspects of air traffic flow management (ATFM) including:</p> <ul style="list-style-type: none"> a) centralized ATFM b) inter-regional cooperative ATFM; c) establishment of ATFM databases; d) application of strategic ATFM planning; and e) application of tactical ATFM planning 	2006	ATM/ ATIS/ SAR	On going	

APANPIRG/17
Appendix B to the Report on Agenda Item 3

CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
AUSTRALIA	ATN tests were conducted. BIS Router and Backbone BIS Router and AMHS will be implemented by 2006.	AFTN based AIDC Implemented between Brisbane and Auckland.	Implemented and integrated with ATM systems to support FANS1/A equipped aircraft.	Implemented.	Implemented.	ADS-B trial being conducted. 27 ground stations are expected to be operational during first half of 2006 for upper airspace which is not covered by radar.	FANS 1/A ADS-C implemented.	
BANGLADESH	BIS Router and AMHS planned for 2007.							
BHUTAN	ATN BIS Router and UA service 2008.			Procedures developed for NPA.				
BRUNEI DARUSSALAM	ATN BIS Router and AMSH planned 2007.							
CAMBODIA	BIS Router and AMHS planned for 2007							

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Appendix B to the Report on Agenda Item 3

CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
CHINA	ATN BIS Router AMHS will be implemented from 2006. - Tripartite BBIS trial completed with Bangkok and Hong Kong, China in Jan. 2003. - ATN trial with Hong Kong, China conducted 2003/2004. - AMHS with Hong Kong, China planned to conduct in 2006. - AMHS/ATN trial with Macau is under planning. - AMHS/ATN trial with Kuwait is under planning.	AIDC between ACCs within China are being implemented.	Implemented to support certain AIS Rout. - L888 route, polar routes and Chengdu-Lhasa route. - Trial on HF data link conducted for use in western China.	RNAV (GNSS) implemented in certain airports. - Beijing, Guangzhou, Tianjin and Lhasa airports.	Implemented in certain airspace. - L888, Y1 and Y2 routes.	ADS-B trial will be conducted in 2006.	FANS 1/A ADS-C implemented to support certain routes. - L888 route polar routes and Chengdu-Lhasa route.	

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CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
HONG KONG, CHINA	<p>- Tripartite BBIS trial with Beijing and Bangkok completed in Jan 2003;</p> <p>-64 Kbps ATN Link with Bangkok put into operational use in June 2004.</p> <p>-ATN trials with China and Japan conducted in 2003/04;</p> <p>-AMHS trials with Thailand, China and Japan planned in 2005. Implementation of AMHS with Japan in 2005/2006.</p> <p>- ATN/AMHS trials with Viet Nam, Philippines, Macao China planned in late 2005/2006.</p>	<p>Trial on the AFTN based AIDC with Guangzhou and Sanya, China commenced.</p> <p>Implementation planned for 2005.</p> <p>Operational trial with Sanya from 1 August 2006.</p>	<p>FANS 1/A based CPDLC conducted. D-ATIS D-VOLMET and PDC implemented.</p> <p>VDL Mode-2 technical trial completed in Dec. 2002 and planning on further trials was in progress.</p>	Pilot Programme on RNAV (GNSS) departure procedures implemented in July 2005.	Implemented in certain airspace.	ADS-B trial using “ASMGCS” trial system in 2004/2005.	FANS 1/A Trials for ADS-C conducted.	
MACAO, CHINA	ATN BIS router and AMHS planned for 2007. Trial with China and Hong Kong, China in planning stage.					“A-SMGCS” being planned with ADS-B as option for consideration.		ATZ within Hong Kong and Guangzhou FIRs. In ATZ full VHF coverage exist. Radar coverage for monitoring purposes.

APANPIRG/17
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CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
COOK ISLANDS								
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA								
FIJI	AMHS in-house trials planned for 2003. AMHS trials with USA in 2004. ATN BIS Router and AMHS 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 BBIS router and AMHS planned for implementation at Mumbai in 2007.		FANS-1 implemented at Kolkata and Chennai. Trial in progress in Mumbai and Delhi.		SBAS - Technical developments in 2007. - Implementation planed for 2009.	Trial planned for 2006.	FANS 1/A ADS-C implemented at Kolkata and Chennai. Trial in progress in Delhi and Mumbai.	

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Appendix B to the Report on Agenda Item 3

CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
INDONESIA	ATN BIS Router and AMHS planned for trial in 2006.	AFTN based AIDC planned for implementation between Brisbane and Jakarta in 2006.	FANS-1/A. CPDLC in Jakarta, Ujung Pandang FIRs trial planned for 2005.	Procedure to be completed in 2006 for NPA.		Planning ADS-B ground stations at 5 locations in the eastern part of Indonesia as first stage of phase I.	FANS 1/A ADS-C trial planned at Jakarta and Ujung Pandang ACC in 2005.	
JAPAN	ATN BBIS already implemented. AMHS implemented between Japan and USA in 2005 and between Japan and Hong Kong, China planned for 2005/2006	AIDC based. AFTN procedure implemented with Oakland USA.	FANS1/A system Implemented in Tokyo FIR. Tokyo FIR – Fukuoka FIR	NPA implemented at 4 aerodromes in 2005.	SBAS Operational In 2006 –in early 2007	ADD ADS-B trial using “multilateration trial” system in 2005/2006	FANS 1/A. ADS-C implemented in Tokyo FIR. Tokyo FIR – Fukuoka FIR	
KIRIBATI								
LAO PDR	ATN BIS Router and AMHS planned for implementation with Bangkok in 2006.	AIDC with Bangkok planned for 2007.	FANS-1/A Planned for Bay of Bengal and South China Sea areas. Equipment is under test operation.		Implemented.		FANS-1/A. ADS-C planned for Bay of Bengal and South China Sea areas. Equipment under test operation.	
MALAYSIA	ATN BIS Router and AMHS planned for 2006.		Planned for Bay of Bengal and South China Sea areas in 2006.	NPA at KLIA planned.			FANS 1/A ADS-C planned for Bay of Bengal and South China Sea areas in 2006.	
MALDIVES	BIS Router/AMHS planned for implementation in 2006.	Planned for 2006.	FANS1/A planned for 2006.		Trials planned for 2005-2008. Implementation in 2008.	Trials planned for 2005-2006. Implementation in 2006.		

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Appendix B to the Report on Agenda Item 3

CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
MARSHALL ISLANDS				NPA implemented at Majuro Atoll.				
MICRONESIA FEDERATED STATES OF								
Chuuk				Implemented				
Kosrae				Implemented				
Pohnpei				Implemented				
Yap				Implemented				
MONGOLIA	ATN BIS Router and AMHS planned for 2005 and 2006. Trial with Bangkok conducted		Function available. Regular trials are conducted.	GPS procedures are being developed and implemented at 10 airports.	Implemented.	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 2006. Test with China planned for 2006.		Implemented since August 1998				Implemented since August 1998	
NAURU								
NEPAL	BIS Router and AMHS planned for 2007.			Development of arrival procedure and NPA completed. Departure procedure is being developed.	Implemented.			

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CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
NEW ZEALAND	BIS Router and AMHS implementation planned for 2008.	AFTN based AIDC implemented between New Zealand, Australia and USA. - Tests with Fiji planned. - Test with Tahiti started in 2005.	FANS/1A. Implemented	Implemented.	will be implemented as required.	Trials planned for 2005 will be operational in 2006. National coverage starts in 2008 to be completed by 2020.	FANS 1/A Implemented.	
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 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				Implemented at certain aerodromes.	Implemented.			
PHILIPPINES	ATN BIS Router planned for 2005. Implementation for AMHS in April 2007.		CPDLC Planned for 2008.				FANS 1/A ADS-C planned for 2008.	
REPUBLIC OF KOREA	ATN BIS Router/AMHS planned for 2005-2010.	AFTN based AIDC implemented between Incheon ACC and Seoul APP.	PDC & D-ATIS implemented 2003.			ADS-B trials planned for 2008.	Trial for FANS 1/A ADS-C implemented since 2003.	

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Appendix B to the Report on Agenda Item 3

CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
SINGAPORE	ATN BBIS Router trial with Hong Kong conducted between April and June 2003. Planned for ATN and AMHS implementation in 2006.		Implemented since 1997. Integrated in the ATC system in 1999.	NPA procedure developed. RNAV (SID/STAR) in 2005	Implemented.	Trial planned for 2006.	FANS 1/A ADS-C implemented since 1997. Integrated with ATC system in 1999.	
SRI LANKA	ATN BIS Router Planned for 2006. AMHS planned along with BIS in 2006.		CPDLC in trial operation since November 2000.			2010	FANS 1 /A ADS-C trial since November 2000.	GPS based domestic route structure being developed.
THAILAND	ATN G/G system implemented for domestic services. BBIS/BIS Routers already implemented. Target date for AMHS in 2006.	ATN based AIDC Implemented in Domestic Sector. Trials with adjacent centres planned for 2006.	FANS-1/A Implemented.		Implemented.	Trial planned for 2005.	FANS 1/A ADS-C Implemented.	
TONGA	AMHS planned for 2008.			NPA planned for 2007.		Trial planned for 2010		CPDLC and ADS-C is not considered for lower airspace
UNITED STATES								
Anchorage			FANS1/A based CPDLC implemented.	Implemented.	Implemented.	ADS-B trials continuing.	FANS/1-ADS-C 2006.	
Fairbanks				Implemented.		Trials continuing		

APANPIRG/17
Appendix B to the Report on Agenda Item 3

CNS/ATM Implementation Planning Matrix								
State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				RNAV (GNSS)	En-route			
Oakland		AFTN based AIDC implemented. ATN AIDC planned for 2007.	FANS-1/A based CPDLC implemented.	Implemented.	Implemented.		FANS-1/A ADS-C planned for Oct. 2005.	
Salt Lake City (Network Centre)	AMHS implemented between Japan and USA scheduled in 2005. USA/Fiji AMHS testing to be determined.							
VANUATU								
VIET NAM	ATN trials conducted with Bangkok in March/April 2005 for implementation of ATN BIS Router. AMHS in 2006.	Trial for ATN based AIDC planned in 2005 with Bangkok and implementation in 2006.	Planned for 2006.				FANS 1/A ADS-C planned for 2006.	Most of air space in Hanoi and Ho-Chi- Minh FIRs covered by RADAR.

**AGENDA ITEM 4: DEFICIENCIES IN THE
AIR NAVIGATION FIELDS**

Agenda Item 4: Deficiencies in the Air Navigation Field

Review of Deficiencies in the ATM/AIS/SAR fields

IATA report on non-compliance for SIDs and STARs

4.1 IATA drew the attention of the meeting to Annex 11, Appendix 3, which provided the principles governing the identification of standard departure and arrival routes and associated procedures. Of particular importance to airlines operations was the standardization provided by ICAO for the plain language designators and coding designators. Over recent years more and more ATM service providers in the ASIA/PAC region have been diverging from these ICAO standards.

4.2 IATA informed further that all SID and STAR procedures produced by ATM providers needed to be coded and loaded into aircraft databanks. A few specialist providers of aeronautical data around the world were doing this for airline operators. When ATM providers did not follow the ICAO standards for SID and STAR designators, the coding of the SID and STAR in the aircraft data base did not present a format able to be easily matched to the non-standard AIP designator. IATA also provided some examples of this problem.

4.5 The meeting was invited to note the intention of IATA to write directly to the affected States that had these deficiencies and attempt to assist the ATM provider to standardize the SID and STAR identifiers to ICAO standards. IATA would inform the ICAO Regional Office in each instance of the action taken with each ATM provider.

Review of deficiencies by ATM/AIS/SAR SG/16 meeting

4.6 The sixteenth meeting of the ATM/AIS/SAR Sub-group (June 2006) reviewed and updated the List of Deficiencies in the respective air navigation fields. The updated List of Air Navigation Deficiencies in the ATM/AIS/SAR Fields is in **Appendix A** to the report on agenda item 4. The following information was provided to the meeting by States and IATA:

4.6.1 Airspace classification – Japan

4.6.1.1 Japan informed the meeting of action taken by JCAB to address the item on airspace classification on the APANPIRG List of Deficiencies reporting that JCAB implemented airspace classifications for oceanic airspace within Fukuoka FIR on 29 September 2005. The classifications in oceanic airspace were as follows:

- a) at or above FL200 airspace classified as A;
- b) at or above FL55 as E; and
- c) below FL55 as G.

4.6.1.2 Consequently, the Japanese airspace classification within the Fukuoka FIR has been completed and was published in the AIP-Japan, ENR1.4 et al.

4.6.1.3 The meeting noted the action taken by Japan to address the outstanding deficiency in regard to airspace classification and deleted the entry from the APANPIRG Deficiency List in this respect.

4.7 IATA report of air navigation deficiencies

4.7.1 IATA presented information on air navigation deficiencies in some specific FIRs and was of the view that generally the situation was deteriorating. Some of the deficiencies related to the

provision of ATS in the Asia/Pacific region, had been in existence for a long time and IATA had raised many of these issues in the past, in order that remedial action could be taken.

4.7.2 Developments such as the implementation of new route structures in the South China Sea and the EMARSSH routes, and the introduction of RVSM in the South China Sea, Bay of Bengal and the domestic airspace of Japan/Republic of Korea provided significant benefits to the airline industry at a time when fuel prices were at a record high. However, IATA was of the view that full benefits of the increased capacity of the routes brought about by improved route structures and RVSM implementation were not realized on account of the deficiencies in the provision of ATS.

4.7.3 IATA provided examples of some long-standing deficiencies. These include: air-ground and ground-ground communications, use of non-standard R/T phraseology, unintelligible communications due to poor command of English, poor ATC practices and procedures, noncompliance with Annex 14 requirements and non-compliance with Annex 15 notification requirements, etc. Detailed examples provided by IATA were included in the ATM/AIS/SAR SG/16 report.

4.7.4 The meeting recognized that the safety issues raised by IATA have been frequently reported over a number of years. Some States have made significant efforts to improve their communications and infrastructure, but the pace of implementation by many States in the region had not kept pace with operational requirements. The meeting noted this situation and States were urged to accelerate implementation.

4.7.5 The meeting further noted that there were many institutional difficulties within States resulting in insufficient funding of civil aviation facilities and services. Whilst ICAO has addressed this matter at the highest levels, under-funding of civil aviation activities remains a matter of major concern.

4.7.6 The meeting recognized that ICAO initiatives in the safety field have been given the highest priority and considerable resources and effort were being brought to bear, especially through USOAP, the COSCAP programme, ATM safety management activities and other safety groups. ICAO regional missions in the field had also been highlighting difficulties in the areas reported by IATA.

4.7.7 The meeting, in agreeing that further emphasis should be given to tackling operational safety problems through specific actions, adopted the following Conclusion:

**Conclusion 17/51 — Special Implementation Project to assist
rectification of Deficiencies**

That in order to facilitate mitigating action in relation to identified operational safety deficiencies in a group of States in the Asia/Pacific Region, ICAO undertake a special implementation project during 2007. The SIP would address difficulties with air/ground and ground/ground communications, poor ATC practices and non compliances with Annexes 14 and 15.

Deficiencies in the AOP field

4.8 The meeting was updated by States on the deficiencies in the AOP field as follows.

4.9 New Zealand advised that the construction of a 90 m RESA at the southern end of Wellington International Airport was underway and was expected to be completed by the second quarter of 2007. The construction work of a 90 m RESA on the northern end was expected to

commence before the end of 2006 and be completed at the last quarter of 2007.

4.10 The CAA of Pakistan informed that the runway and taxiway marking at Jinnah International Airport Karachi were repainted and the job was completed on 27th December 2005. Therefore, it was requested that the corresponding deficiency be deleted from the APANPIRG list.

4.11 The updated List of Air Navigation Deficiencies in the AOP field is given in **Appendix B** to the report on this agenda item.

Deficiencies in the CNS field

4.12 CNS/MET SG/10 meeting (July 2006) reviewed and updated the List of Deficiencies in the CNS field. The updated information of the CNS deficiencies is in **Appendix C** to Agenda item 4.

4.13 The meeting noted that there was only one deficiency in the CNS list. The Secretariat informed of the actions taken by Myanmar and ICAO to correct the deficiency. The ACC and the Aeronautical Station were shifted to the new Operations Building. The new VHF systems consisting of 6 RCAG sites including the one at Yangon supported by VSAT link and solar power system were upgraded and were declared operational effective 9 June 2005. Even after full implementation of the system it was reported that reliability had not been fully achieved. IATA advised that reports continued to show communication difficulties and In Flight Broadcast Procedure (IFBP) was still in force in Yangon FIR. Based on the information available, it was assumed that, at some sites, the problems were due to power supply or human errors. The administration was aware of the problem and action was being taken to correct the situation. The Regional Office will continue to monitor the progress closely and the status of this deficiency would be evaluated again at CNS/MET SG/11 Meeting in 2007.

4.14 The meeting further noted reports of communication deficiencies experienced in the Mumbai, Makassar, Colombo, and Kathmandu FIRs which were discussed at the ATM/AIS/SAR SG/16 meeting.

4.15 India informed that measures have been undertaken to improve HF air-ground communication and certain improvement had been made. CPDLC was on operational trial at Mumbai on a 24 hour basis. IATA informed that the HF problem was still experienced particularly during night time and it needed to be resolved urgently.

4.16 Sri Lanka stated that the occasional fading problem experienced on the HF air-ground communication was under investigation. New HF receivers and antenna system were commissioned in early 2006, aimed at enhancing the HF coverage over South-East sector of Colombo FIR.

4.17 It was pointed out to the meeting that before filing the reported problems in the List of deficiencies, they should be brought to the attention of States concerned for validation in accordance with the ASIA/PAC Supplement to the Uniform Methodology.

Deficiencies in the MET field

4.18 The status of deficiencies in the MET field is provided in **Appendix D** to this agenda item. It was noted that most of the States listed had not provided rectification plans, therefore, it was not possible to establish fixed target date. Nevertheless, a number of actions had been undertaken in order to assist States to resolve the deficiencies as detailed in the following paragraphs.

4.19 The provision of volcanic ash SIGMET by Indonesia has improved according to information provided by the Volcanic Ash Advisory Centre (VAAC) Darwin. This information needed to be further validated by the Regional Office before removal of the corresponding deficiency from the list.

4.20 It was appreciated that the MET services provided by Cambodia have been improving in terms of regular availability of TAF for Phnom Penh and Siem Reap airports. This result has been achieved due to bi-lateral agreement with Viet Nam for assistance in operational provision of TAF service and training of MET staff from Cambodia in Viet Nam.

4.21 The meeting was informed of recent ICAO activities focused on assisting the Small Island Developing States (SIDS) in the South-West Pacific to resolve long-standing MET deficiencies.

4.22 The ICAO MET SIP for the South Pacific conducted in 2005 helped in identifying the root causes for the deficiencies in the provision of meteorological services in the sub-region. Most of the South-West Pacific Island States were facing similar difficulties in meeting their obligations as ICAO Contracting States in regard to the provision of meteorological services. These difficulties were caused by the limited human and financial resources available, insufficient training of the meteorological staff and lack of awareness of the ICAO requirements, technical problems, such as, non-reliable communications and lack of automated observing systems.

4.23 It has been recognized that further assistance should be provided to the South Pacific States in order to enable them fulfill their obligations as ICAO Contracting States with regard to the provision of the required meteorological services to international air navigation. A proposal for establishment of an ICAO Technical Cooperation Project entitled *Cooperative Agreement for Enhancement of the Meteorological Service for Aviation in the South Pacific (CAEMSA – SP)* had been submitted for consideration. To maximize the efficiency of such a project that involved capacity building of the meteorological service providers, ICAO requested WMO to consider providing additional financing, in particular, to support the planned training events included in the project. In view of the foregoing, the meeting adopted the following Conclusion:

Conclusion 17/52 - Special assistance for resolution of MET deficiencies in the South-West Pacific Small Island Developing States (SIDS)

That, in recognizing the safety implications of the long-standing MET deficiencies in the South-West Pacific SIDS, ICAO, in coordination with WMO, be invited to consider providing further assistance to these States in order to build their capacity to provide the required services in a sustainable and cost-efficient manner

Note: It is suggested that the appropriate form of providing assistance to the South-Pacific SIDS would include assignment of ICAO expert to the sub-region and provision of training through technical cooperation project and/or extended SIP.

ALLPIRG/5 conclusions on deficiencies

4.24 The meeting was informed that ALLPIRG/5 Meeting reviewed regional proposals for updating the Uniform Methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies.

4.25 ALLPIRG Conclusion 5/14 called for establishment by the PIRGs of regional on-line database of air navigation deficiencies based on the experience of the Caribbean/South American (CAR/SAM) Regions. The Meeting acknowledged that such a methodology carried many benefits and, accordingly, adopted the following conclusion:

Conclusion 17/53 – A regional on-line database of air navigation deficiencies in ASIA/PAC Region

That, in order to ensure transparency and facilitate resolution of deficiencies, ICAO Regional Office be invited to establish a regional on-line database of air navigation deficiencies and provide secure access to States' Administrations and other users concerned.

General discussion on further action to resolve safety related deficiencies

4.26 In the ensuing discussion, the meeting expressed concern on the slow progress in eliminating the safety related deficiencies. It was stressed that the States listed in the APNPIRG List of deficiencies should make firm commitments and undertake decisive actions to resolve the deficiencies as soon as possible. It was strongly recommended that States should apply cooperative efforts and a sub-regional approach to resolution of deficiencies should be undertaken to address typical deficiencies observed in certain areas.

4.27 A number of States expressed strong support to the establishment of regional on-line data base of deficiencies. Transparency and information sharing were considered crucial in dealing with deficiencies, therefore, the availability of up-to-date on-line information was expected to have a very positive impact.

4.28 IATA expressed strong willingness to work together with the States and ICAO in pursuing elimination of safety critical deficiencies. IATA supported strongly the establishment of on-line data base of deficiencies and offered assistance including provision of data from pilot surveys and analyses.

4.29 In response to the user's concerns related to the air-ground communications in Mumbai FIR India informed of some recent improvements due to introduction of additional frequencies and sectorisation of routes. Cooperation of the airlines, IFALPA, is requested for use of allocated frequencies in the different sectors in Mumbai FIR as per the NOTAM issued. India also supported strongly the need for APANPIRG to concentrate efforts on resolving deficiencies including establishment of a regional on-line data base.

4.30 The meeting agreed to put highest priority in its future work programme on the urgent elimination of the safety related deficiencies in the Region. States listed in the APANPIRG List of deficiencies should be urged to establish action plans with fixed target dates as soon as possible and inform the Regional Office accordingly. It was suggested that APANPIRG member States should take lead and endeavor to resolve any safety related deficiencies pertinent to their States within a period of one year with all other ASIA/PAC States included in the List of deficiencies to follow similar actions and timeframe. Also, commitment to the elimination of deficiencies should be pursued through all available mechanisms including the Annual Conference of the Directors General of Civil Aviation.

4.31 In view of the foregoing, the meeting decided to set up a performance objective related to the resolution of deficiencies and adopted the following Conclusion:

Conclusion 17/54 - Deficiency resolution objective for ASIA/PAC States

That,

- a) all ASIA/PAC States listed in the APANPIRG List of deficiencies be urged to establish action plans with fixed target dates for resolution of all safety related deficiencies and inform ICAO Regional Office by mid 2007 of their plans; and
- b) the need for urgent action in resolving safety related deficiencies be brought to the attention of DGCA/43 conference in December 2006.

4.32 The meeting noted that quite a number of the listed deficiencies were in the process of being actioned by the States concerned.

4.33 The meeting further agreed that the Deficiency Review Task Force, established by APANPIRG Conclusion 13/46, should convene one meeting in the first quarter of 2007 to undertake a review of the implementation aspects of the Regional Supplement to the Uniform Methodology. The Task Force should also assist in setting up the regional on-line deficiency data base. The meeting adopted the following Decision:

Decision 17/55 - Third meeting of DRTF

That, the deficiency review task force (DRTF) conduct a meeting in early 2007 with the following tasks:

- a) develop appropriate follow-up action to ALLPIRG Conclusions 5/14 and 5/15;
 - b) review the implementation aspects of the regional supplement to the Uniform Methodology including an assessment of the current List of Deficiencies; and
 - c) report to APANPIRG/18
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APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

(Changes proposed after APANPIRG/16 are shown in strikeout and <u>underlining</u> .)							(last updated 25 August 2006)	
Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
<u>ATS Routes</u>								
Requirements of Part VIII, Table ATS 1 of the Air Navigation Plan	India/Nepal	A473 - Not implemented	16/3/99	A new proposal was submitted in mid 2003 by Nepal. This is being coordinated by AAI with defense authorities.	India/Nepal - implement the route	India/Nepal	Item captured in Chapter 2 of the Route Catalogue. <u>ATM/AIS/SAR/G/16 (June 2006) updated re progress</u>	B
	China	B591 - <u>Partially</u> implemented	22/7/97		China will consider for future imeplementation.	China	Reviewed by ARNR/TF. Item captured in Chapter 2 of the Route Catalogue <u>ATM/AIS/SAR/G/16 (June 2006) updated - route implemented in Shanghai FIR, however implementation is not in accordance with BANP, further implementation TBD</u>	B
	Indonesia	G461 - Implemented with different route specification	24/11/93	ICAO co-ordinated with Indonesia to amend BANP requirement. APAC00/1-ATS was approved on 15 January 2001.	Indonesia-implement the requirement accordingly.	Indonesia	Implemented with different route specification. Amendment Proposal to be submitted. Captured in Chapter 3 of the Route Catalogue.	B
	Cambodia/Philippines/Thailand/Viet Nam	G473 - Partially implemented	24/11/93	Co-ordination is in progress among States and ICAO.	ICAO - continue implementation co-ordination.	Cambodia /Philippines Thailand/Viet Nam/ICAO	Captured in Chapter 2 of the Route Catalogue.	B

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
	China/Kazakhstan	R216 - Not implemented	24/11/93	CAAC advises current route B215 KUQA A460 REVKI to Alma Ata meets the requirements for traffic from Urumqi to Alma Ata and requests deletion of R216 from BANP (14 Apr 03).	CAAC will coordinate with Kazakhstan to delete R216 from BANP.	China/Kazakhstan ICAO	Captured in Chapter 2 of the Route Catalogue.	B
	Cambodia/Lao PDR/Thailand	R345 - Not implemented. <u>Under the coordination process.</u>	24/11/93	Cambodia has advised that the requirement is no longer valid and will propose the deletion of requirement in consultation with Lao PDR and Thailand.	Cambodia- coordinate the deletion with IATA as well as Lao PDR and Thailand	Cambodia/Lao PDR/ Thailand	<u>Item captured</u> in Chapter 2 of the Route Catalogue.	B
	Indonesia	R459 - Implemented as W51 and W36	24/11/93	ICAO has requested Indonesia to implement as R459.	Indonesia, Singapore - consider implementation of the route with designator L504.	Indonesia/Singapore	To be implemented as L504. Target implementation date TBD	B
<u>WGS-84</u>								
Requirements of Paragraph 3.6.4 of Annex	Bhutan	WGS-84 - Not implemented	2/7/1999	Data conversion completed, but not published		Bhutan	TBD	A

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
	Cambodia	WGS-84 - Partially implemented	28/6/2001	Cambodia reported ICAO on 22 June 2004 that the WGS-84 coordinates have been implemented in international airports, airspace and international routing.		Cambodia	TBD	A
	China	WGS-84 - Not implemented * implemented in the Sanya AOR FIR as of 1 Nov 2001	2/7/1999	Differences to Annex 15 - <i>Aeronautical Information Services</i> are notified		China	Planning in progress China promoting actively, coordination with Regulatory Department in progress	A
	DPR Korea	WGS-84 - Not implemented				DPR Korea	2004	A
	Kiribati	WGS-84 - Not implemented				Kiribati	TBD	A
	Nauru	WGS-84 - Not implemented		Conferring with consultant		Nauru	TBD	A
	Philippines	WGS-84 - Implemented at main <u>main international</u> airports		on-going		Philippines	2006	A
	Solomon Islands	WGS-84 - Not implemented				Solomon Islands	1999	A
	Vanuatu	WGS-84 - Implemented at main airports	2/7/1999			Vanuatu	1999	A

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
<u>Type of ATS</u>								
Requirements of Part II, Table ATS 3D of the Air Navigation Plan	India	Some ATS route segments in part of Mumbai FIR are subject to Advisory Services	24/11/93	Co-ordination in progress through BBACG. HF radio being modernized and datalink being installed.	India - implement Area Control Services	India	Modernization of HF radio by the end of 2004, CPDLC by the end of 2005. <u>ATM/AIS/SAR/G/16 (June 2006) updated re CPDLC trial progressing well, CRA to be established soon, implementation of CPDLC will enable update to control services FL290-FL410.</u>	A

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
<u>Airspace Classification</u>								
Requirements of Paragraph 2.6 of Annex 11	China	Airspace Classification - Not implemented	7/7/99		Difference to Annex 11 is published in AIP, China.	China	ATM/AIS/SAR/G/16 (June 2006) updated, planning in progress to divide into 4 classes of airspace, some differences to ICAO airspace classifications	A
	Cook Islands	Airspace Classification - Not implemented	7/7/99			Cook Islands	Airspace classified, described in New Zealand Airspace Register	A
	DPR Korea	Airspace Classification - Not implemented	7/7/99			DPR Korea	2005	A
	Japan	Airspace Classification - Partially implemented	2/19/04		Implementation in oceanic airspace in progress	Japan	Domestic airspace complete, final stage of oceanic airspace classification done on AIRAC 29 September 2005, included in AIP Japan ENR 1.4	A
	Kiribati	Airspace Classification - Not implemented	7/7/99			Kiribati	TBD	A
	Nauru	Airspace Classification - Not implemented	7/7/99			Nauru	TBD	A
	Papua New Guinea	Airspace Classification - Not implemented	7/7/99			Papua New Guinea	Project in place	A
	Samoa	Airspace Classification - Not implemented	7/7/99		CTR C and D Samoa Sector Class G	Samoa	Completed Official confirmation required Airspace classified, described in New Zealand Airspace Register	A

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
	Solomon Islands	Airspace Classification - Not implemented	7/7/99			Solomon Islands	TBD	A
	Viet Nam	Airspace Classificatio - Not implemented	7/7/99			Viet Nam	Some work is being carried out, expected completion 2006. <u>Expected completion 2007</u> <u>(National Assembly adopted Civil Air Law on 29 June 2006, ATS regulations will be re-issued accordingly.)</u>	A

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
<u>AIP Format</u>								
Requirements of Chapter 4 of Annex 15	Cook Islands	AIP Format - Not implemented	7/7/99			Cook Islands	TBD ATM/AIS/SAR/G/16 (June 2006) updated - AIP COOK ISLANDS in new format in progress with assistance of New Zealand, effective date TBD	A
	Kiribati	AIP Format - Not implemented	7/7/99			Kiribati		A
	Lao PDR	AIP Format - Not implemented	7/7/99			Lao PDR	<u>Completed</u>	A
	Nauru	AIP Format - Not implemented	7/7/99			Nauru		A
	Papua New Guinea	AIP Format - Not implemented	7/7/99	under development		Papua New Guinea	TBA	A
	Samoa	AIP Format - Not implemented	7/7/99			Samoa	5/15/2003- (to be confirmed) AIP SAMOA in new format was published effective 4 August 2005. NZ AIP SUPP 91/05 refers	A

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
<u>SAR capability</u>								
Requirements of Annex 12	Cambodia	Annex 12 requirements implemented.	20/2/97		Cambodia - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Cambodia	SAR agreement established with Viet Nam during 2004/05 - Completed	U
	Cook Islands	Annex 12 requirements not implemented. No agreements with adjacent States.	31/1/95	SAR agreement with New Zealand under development	Cook Islands - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Cook Islands	2004	U
	Maldives	Annex 12 requirements not implemented. No agreements with adjacent States.	24/4/97	SAR services and facilities 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

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
<u>Carriage of ACAS II</u>								
Requirement of Chapter 6 of Annex 6	Bhutan	Annex 6 requirement not implemented.	26/8/05		Bhutan - implement Annex 6 as required.	Bhutan	TBD	U
	Cook Islands	Annex 6 requirement not implemented.	26/8/05		Cook Island - implement Annex 6 as required.	Cook Islands	TBD	U
	Fiji	Annex 6 requirement not implemented.	26/8/05		Fiji - implement Annex 6 as required.	Fiji	Air Navigation Regulations no. 25 and Fiji AIC 08/03 effective November 2003	U
	Kiribati	Annex 6 requirement not implemented.	26/8/05		Kiribati - implement Annex 6 as required.	Kiribati	TBD	U
	Marshall Islands	Annex 6 requirement not implemented.	26/8/05		Marshall Islands - implement Annex 6 as required.	Marshall Islands	TBD	U
	Micronesia	Annex 6 requirement not implemented.	26/8/05		Micronesia - implement Annex 6 as required.	Micronesia	TBD	U
	Nauru	Annex 6 requirement not implemented.	26/8/05		Nauru - implement Annex 6 as required.	Nauru	TBD	U
	Palau	Annex 6 requirement not implemented.	26/8/05		Palau - implement Annex 6 as required.	Palau	TBD	U
	Papua New Guinea	Annex 6 requirement not implemented.	26/8/05		Papua New Guinea - implement Annex 6 as required.	Papua New Guinea	TBD	U
	Philippines	Annex 6 requirement not implemented.	26/8/05		Philippines - implement Annex 6 as required.	Philippines	TBD	U

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
	Solomon Islands	Annex 6 requirement not implemented.	26/8/05		Solomon Islands - implement Annex 6 as required.	Solomon Islands	TBD	U
	Tonga	Annex 6 requirement not implemented.	26/8/05		Tonga - implement Annex 6 as required.	Tonga	TBD	U
	Vnuatu	Annex 6 requirement not implemented.	26/8/05	Pressure altitude reporting transponder required in all airspace since 1/1/00.	Vanuatu - implement Annex 6 as required.	Vanuatu	TBD	U

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
<u>Carriage of Pressure Altitude Reporting Transponder</u>								
Requirement of Chapter 6 of Annex 6	Bangladesh	Annex 6 requirement not implemented.	26/8/05	ACAS II required since 1/1/03.	Bangladesh - implement Annex 6 as required.	Bangladesh	TBD	U
	Bhutan	Annex 6 requirement not implemented.	26/8/05		Bhutan - implement Annex 6 as required.	Bhutan	TBD	U
	Cambodia	Annex 6 requirement not implemented.	26/8/05	ACAS II required in all airspace within FIR since 1/1/03.	Cambodia - implement Annex 6 as required.	Cambodia	TBD	U
	Cook Islands	Annex 6 requirement not implemented.	26/8/05		Cook Island - implement Annex 6 as required.	Cook Islands	TBD	U
	DPR Korea	Annex 6 requirement not implemented.	26/8/05	ACAS II required in all airspace within FIR since 1/1/01.	DPR Korea - implement Annex 6 as required.	DPR Korea	TBD	U
	Fiji	Annex 6 requirement not implemented.	26/8/05		Fiji - implement Annex 6 as required.	Fiji	Air Navigation Regulations no. 25 and Fiji AIC 08/03 effective November 2003	U
	New Caledonia	Annex 6 requirement not implemented.	26/8/05	ACAS II required in all airspace within FIR since 23/1/03.	New Caledonia - implement Annex 6 as required.	New Caledonia	TBD	U
	Kiribati	Annex 6 requirement not implemented.	26/8/05		Kiribati - implement Annex 6 as required.	Kiribati	TBD	U
	Lao PDR	Annex 6 requirement not implemented.	26/8/05	ACAS II required in all airspace within FIR since 1/1/03.	Lao PDR - implement Annex 6 as required.	Lao PDR	<u>Completed</u>	U
	Marshall Islands	Annex 6 requirement not implemented.	26/8/05	ACAS II required.	Marshall Islands - implement Annex 6 as required.	Marshall Islands	TBD	U

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
	Micronesia	Annex 6 requirement not implemented.	26/8/05		Micronesia - implement Annex 6 as required.	Micronesia	TBD	U
	Nauru	Annex 6 requirement not implemented.	26/8/05		Nauru - implement Annex 6 as required.	Nauru	TBD	U
	Palau	Annex 6 requirement not implemented.	26/8/05		Palau - implement Annex 6 as required.	Palau	TBD	U
	Papua New Guinea	Annex 6 requirement not implemented.	26/8/05		Papua New Guinea - implement Annex 6 as required.	Papua New Guinea	TBD	U
	Philippines	Annex 6 requirement not implemented. <u>Implemented within TMA only.</u>	26/8/05		Philippines - implement Annex 6 as required.	Philippines	TBD	U
	Solomon Islands	Annex 6 requirement not implemented.	26/8/05		Solomon Islands - implement Annex 6 as required.	Solomon Islands	TBD	U
	Tonga	Annex 6 requirement not implemented.	26/8/05		Tonga - implement Annex 6 as required.	Tonga	TBD	U

APANPIRG REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ATM/AIS/SAR FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action**
<u>Non Provision of Safety-related Data</u>								
Requirement of Paragraph 3.3.4.1 of	Bangladesh	Annex 11 requirement not implemented.	21/8/06		Bangladesh - provide the safety-related data as required.	Bangladesh	TBD	A
	Lao PDR	Annex 11 requirement not implemented.	21/8/06		Lao PDR - provide the safety-related data as required.	Lao PDR	TBD	A
	Myanmar	Annex 11 requirement not implemented.	21/8/06		Myanmar - provide the safety-related data as required.	Myanmar	TBD	U
	Papua New Guinea	Annex 11 requirement not implemented.	21/8/06		Papua New Guinea - provide the safety-related data as required.	Papua New Guinea	TBD	U

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	State/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action
Annex 14 Vol. I § 5.3.1.1	India Madras/ Chennai	Runway 25, potential hazard as runway lighting blends with existing road lights and is difficult to differentiate.	2003	Action has been reported to disconnect electric supply to markings along highway NOTAM action required.	The matter is sub-judice, being taken up separately.	AAI	On-going	“U”
Annex 14 Vol. I § 3.1.22	Myanmar Yangon/ Mingaladon	New runway surface slippery when wet.	2003	Surface of a paved runway shall be so constructed as to provide good friction characteristics when runway is wet.	RWY surface replaced; no new reports from airlines Final RWY layer still to be completed (update 2005)		On-going	“A”
Annex 14 Vol. I Amendment 6 § 10.1 § 10.2				A maintenance programme should be established to maintain facilities in a condition which does not impair safety of air navigation.				“A”
Annex 14 Vol. I § 5.3.4		No approach Lighting RWY 03	1994	PAPI installed in 2002. Approach lights to be installed when funds available.				
Annex 14 Vol. I § 4.2	Nepal Kathmandu	High ground in the vicinity of aerodrome.	2003	Airspace around aerodromes to be free from obstacles as defined by the obstacle	The manoeuvring area is faraway from the obstacles (a small hillock) and a temple being there which is bit	CAAN	Apr. 2005	“U”

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	State/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action
				limitation surfaces for safe aircraft operation.	sentimental. However, verbal negotiations with the stake holders for dismantling the temple subject to replacement to other place has been made.			
Annex 14 Vol. I § 3.4	New Zealand Wellington	Runway-end safety areas RWY 16/34 inadequate.	2000	RESA shall be provided and shall extend from the end of a runway strip for a distance of at least 90 m.	A 90 m RESA at the southern end of RWY under construction – completion estimated April 2007 A 90 m RESA at the northern end of RWY to start before the end of 2006 – completion estimated December 2007	Civil Aviation Authority	2007	“U”

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	State/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action
RAN/3 Rec. 4/10 Annex 14 Vol. I § 5.2.1.7	Pakistan Karachi	Runway and Taxiway markings inadequate and are not clearly visible at night.	2003	All markings on paved areas should be inspected and a schedule of painting be establish.	Runway & Taxiway markings schedule has been developed for the period July 04 to June 05. A programme has been forwarded to the Regional Office.	CAA Pakistan		“A”
				Pavement markings should be made with reflective materials designed to enhance visibility of markings at night.	Next painting shall be carried out as scheduled. Repainting scheduled for July 2005 (update 2005) Repainting runway and taxiway markings completed on 27 Dec 2005		Completed	

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	State/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action
Annex 14 Vol. 1 Amendment 6 § 9.10.1 § 9.10.2	Philippines Manila	Airport security lax, allowing livestock to stray on to active runways.	2004	Improved airport perimeter fencing and general security within the perimeter of the airport required.				"A"
Annex 14 Vol. I § 3.1.21	Viet Nam Hanoi/Noibai	RWY surface is rough.	2003	Surface of runway shall be constructed without irregularities that would result in friction loss or adversely affect take-off and landing.	New main runway 11R/29L (RWY 1B) is planned to be put into operation in IV Quarter 2004. After that, the existing RWY will be closed for upgrading.	Northern Airport Authority	IV Quarter 2004 2 nd Qtr 2006 Completed in June 2006	U

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	State/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action
Annex 14 Vol. I Amendment 6 § 9.10.1 § 9.10.2	Ho Chi Minh/ Tan Son Nhat	Apron congested. Poor security with no proper perimeter fencing.	2003	Improved airport perimeter fencing and general security within the perimeter of the airport required.	Currently the apron is able to hold 17-19 aircraft. The re-design for aircraft stands is being carried out. Perimeter fence was set up: a permanent fence in the East area and a temporary fence in the West area of airport. This will be replaced by permanent fence as runway 11R/29L on operation. Safeguard is carried out on 24/24h basis. The security is maintained in good conditions.	Southern Airport Authority	First Quarter of 2005 2 nd Qtr 2006 Completed in June 2006	A
Annex 14 Vol. I Amendment 6 § 10.1 § 10.2				A maintenance programme shall be established to maintain facilities in a condition that does not impair safety of air navigation.	2004 new RWYs commissioned		Completed in 2005	A
RAN/3 Rec. 4/10		Taxiway markings not clear. Bay markings also not clear.		All markings on paved areas should be inspected and a schedule of painting be established.	Taxiway and bay markings have been repainted by schedule.		Completed in 2005	A

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REPORTING FORM ON 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**
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.	<p>Action should be taken to provide reliable links between the RCAG stations and Yangon ACC. Power supply to the RCAG sites needs improvement.</p> <p>High level ICAO mission was conducted.</p> <p>An action plan was developed to upgrade equipment at RCAG stations, provide VSAT link at all RCAG stations, to improve power supply system and to shift ACC to the new location.</p>	DCA Myanmar	<p>Revised target date is end of 2004</p> <p>This deficiency will be removed from the list upon receipt of official report providing full details of action taken by Myanmar and confirmation by the users.</p>	

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REPORTING FORM ON 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**
					DCA Myanmar has replaced equipments at all 6 RCAG sites with digital VHF system and has provided VSAT links and solar power supply system at all sites. After a trial period of one month the facilities were formally implemented effective 9 June 2005 using new frequencies in place of old frequencies affected by interference.			

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET 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 *
Meteorological observations and reports. (Annex 3, Chapter 4)	Solomon I.	Weather information is inadequate and not provided on a regular basis	1996 Confirmed 2006 SOA	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. <i>Note: OPMET/M TF to carry out survey</i>	TBD	A
Meteorological observations and reports. (Annex 3, Chapter 4)	Kiribati	METAR from Kiribati not available on regular basis.	1998 Confirmed 2005 SIP	Reported by airlines	State's MET authority to consider urgent action to be taken for providing regular observations and reports	Directorate of Civil Aviation, Kiribati. <i>Note: OPMET/M TF to carry out survey</i> ICAO SIP conducted in 2005; ICAO TC Project proposed for South Pacific; supported by WMO	TBD	A

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET 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 *
Reporting of information on volcanic eruptions to civil aviation units. (Annex 3 p. 4.14 (recom.))	Indonesia	Information on volcanic activity not provided regularly to ATS units and MWOs.	1995 Confirmed by ICAO SIP mission Dec 2003	Observed by States concerned. Reported at the WMO/ICAO Workshop on Volcanic Ash Hazards (Darwin, 1995)	Three-party LOA to be signed between the MGA, DGCA and DVGHM	DGCA, MGA Indonesia	TBD (no action plan submitted to RO)	A
Reporting of information on volcanic eruptions to civil aviation units. (Annex 3 p. 4.14 (recom.))	Papua New Guinea	Information on volcanic activity not provided regularly to ATS units and MWOs.	1995 Confirmed by ICAO SIP mission Dec 2003	Observed by States concerned. Reported at the WMO/ICAO Workshop on Volcanic Ash Hazards (Darwin, 1995)	Procedures to be set up for exchange of data between NWS, ATS and Rabaul Observatory and a LOA to be signed	NWS, ATS Papua New Guinea <i>Note: ICAO Regional Office to monitor</i>	TBD (no action plan submitted to RO)	A

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET 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 *
Provision of SIGMET for volcanic ash (Annex 3, Chapter 7; ASIA/PAC FASID Table MET 1B)	Indonesia Philippines Papua New Guinea	Requirements for issuance and proper dissemination of SIGMET, including SIGMET for volcanic ash, have not been fully implemented	ICAO SIP mission Dec 2003	a) Reported by airlines b) Noted by Volcanic Ash Advisory Centres	a) ICAO to carry out a Special Implementation Project (SIP) with the primary objective to improve implementation of SIGMET procedures, especially for VA. b) State to take urgent actions to implement the SIGMET procedures.	a) State's Met authorities b) ICAO to implement the SIP. c) ICAO Regional Office to co-ordinate and monitor. <i>Note: ICAO SIP carried out in 2003; progress in issuance of SIGMET for VA is noted; the outstanding problems to be resolved within 1-year time</i> <i>Progress reported by VAAC Darwin</i>	To be advised	U
a) Service for operators and flight crew members. (Annex 3, Chapter 9). b) WAFS products for flight documentation. (ASIA/PAC FASID Table MET 1A).	Cambodia Myanmar	Briefing and flight documentation not provided as required. WAFS products not available	1999	Airlines do not receive the required flight documentation including WAFS forecasts.	States to consider urgent action for installation of SADIS VSAT for receiving WAFS products and OPMET information. Action plan proposed by ICAO MET mission 2003	State's MET authorities <i>A TC project proposal submitted to SSCA, Cambodia</i>	TBD	A

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET 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 *
MWO for Phnom Penh FIR and SIGMET (Annex 3, Chapter 7; ASIA/PAC FASID Table MET 1B)	Cambodia	Requirements for meteorological watch office (MWO) to be established at Phnom-Penh international airport have not been met.		MWO not established due to lack of trained personnel and technical facilities. No SIGMET service for Phnom Penh FIR	Establishment of MWO currently not feasible. Urgent need for bi- lateral agreement for SIGMET service by a neighboring State.	SSCA, Cambodia <i>A TC project proposal submitted to SSCA, Cambodia</i>	TBD	U
Provision of SIGMET information (Annex 3, Chapter 7; ASIA/PAC FASID Table MET 1B)	Lao PDR Myanmar Nepal Cambodia	Requirements for issuance and dissemination of SIGMET have not been fully implemented.	2000	SIGMET frequently not available Reported by airlines	State's MET authority to take urgent actions to implement the SIGMET procedures. ICAO issued new version of ASIA/PAC Regional SIGMET Guide in September 2003 <i>Note: ICAO Regional Office to enquire action plans with fixed target dates from the listed States</i>	State's MET authorities <i>In order to improve SIGMET availability, regional SIGMET tests have been conducted in 2005 and 2006</i>	<i>(no action plan submitted to RO)</i> TBD	U

**AGENDA ITEM 5: REVIEW OF THE 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 fifteenth 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 **Appendices A and B** to the Report on Agenda Item 5.

5.3. The List contained 17 outstanding Conclusion/Decisions, 5 of which were in the ATM/AIS/SAR field and 12 in the CNS/MET field. The meeting noted that the follow-up action on 12 of these Conclusions/Decisions had been completed and they were proposed for removal from the List. Action has also been taken on the remaining 5 items, however, they have not been completed by the time of APANPIRG/17.

5.4. The meeting acknowledged that significant progress had been made in completing required action on the outstanding APANPIRG conclusions and decisions and recommended continued action for completion of the few outstanding items in the list.

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

(Changes recommended by the APANPIRG/17 and ATM/AIS/SAR/SG/16 in ~~redline~~ and ~~strikeout~~. Items closed by APANPIRG/16 removed from the list)

Report Reference ----- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C 10/4		<p>Implementation of Area Control Service and 10-Minute Longitudinal Separation using Mach Number Technique in the Bay of Bengal area</p> <p>1) That, States in the Bay of Bengal area</p> <p style="padding-left: 40px;">a) Complete the upgrade of airspace from advisory and flight information services to area control service along ATS routes, as appropriate;</p> <p style="padding-left: 40px;">b) identify ATS routes where 10-minute longitudinal separation minima for RNAV equipped aircraft without using MNT could be applied and implement such minima.</p> <p>2) That, Sub-regional ATS Co-ordination Groups concerned place a high priority on items 1) a), and b) above.</p>	<p>India issued NOTAM during 2006 regarding sectorisation plan for HF radio channels in the Arabian Sea area of Mumbai FIR. Three HF frequencies allocated to reduce congestion</p> <p style="padding-left: 40px;">a) Some routes in the Mumbai FIR remain under advisory service due to inadequate communications which is being remedied</p> <p style="padding-left: 40px;">Note: LOAs of some States require updating. The Regional Office to coordinate</p> <p style="padding-left: 40px;">b) Implementation subject to provisions of ICAO separation standards.</p> <p>2) Implementation continues to be co-ordinated through the Bay of Bengal ATS Co-ordination Group (BBACG).</p>	<p>On-going</p> <p>On-going</p> <p>On-going</p>

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Report Reference ----- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C-13/34		<p>Strengthening the Civil/Military Coordination Programme</p> <p>That, due to an increase in military activity within and adjacent to the Asia/Pacific Region,</p> <p>1. States are urged to:</p> <p>a) remain vigilant with regard to military activity within or near their area of responsibility;</p> <p>b) continue effective civil/military coordination with military authorities concerned; and,</p> <p>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.</p>	<p>States are encouraged to strengthen activities in this area</p> <p>States are encouraged to strengthen activities in this area</p> <p>States are encouraged to strengthen activities in this area</p> <p>Note: APANPIRG/16 raised Conclusion 16/17 in respect of the equitable sharing of airspace and facilities, and Decision 16/16 to include Civil Military Coordination on the Agendas of ATS Coordination Groups. Both were actioned during 2005/2006.</p> <p>APANPIRG/16 tasked Regional Office to issue State Letter highlighting the concerns in a), b), and c)</p>	<p>Closed</p> <p>Closed</p> <p>Closed</p> <p>Completed</p> <p>Closed</p>

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Report Reference ----- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
C14/9		<p>AIRAC provisions</p> <p>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.</p>	<p>The AIS Implementation Task Force (AIS/TF) to undertake a study of the application of Annex 15 requirements by the end of 2005-2007</p> <p>First meeting of AIS Task Force (AITF/1) held 20-24 March 2006, second meeting to be scheduled in March 2007</p> <p>ATM/AIS/SAR/SG/16 raised draft Conclusion 16/5 proposing that the attention of States be drawn to the continued relevance of C14/9</p>	<p>On-going</p> <p>Superseded by Decision 17/XX</p>
C15/8	ANC	<p>Implementation of a 2 NM lateral offset procedures in the ASIA/PACIFIC Region</p> <p>That, States in the Asia/Pacific Region implement the 2 NM lateral offset procedures to the right of centre line in accordance with ICAO guidance on a common AIRAC date to be coordinated by the ICAO Regional Office with States, ATS Coordination Groups and users concerned.</p> <p><i>Noted the conclusion and called upon the Secretary General to monitor its progress, recalling that revised guidelines on the use of strategic lateral offsets, as approved by the Commission, had recently been circulated to States and that global provisions were under development.</i></p>	<p>Generally implemented by affected APAC States on AIRAC 20 January 2005 and 17 March 2005. Other States advised to consider implementation.</p> <p>Note: APANPIRG/16 incorporated Conclusion 14/7 into Conclusion 15/8 and closed Conclusion 14/7. The following text was incorporated from Conclusion 14/7:</p> <p><i>Based on the ICAO revised</i></p>	<p>On-going</p> <p>Completed</p>

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Report Reference ----- Conc/Dec No	Action by ANC/ Council	Decision/Conclusion Title/ ANC/Council Action, if any	Action by States/ICAO	Status
			guidelines, States to promulgate in State AIPs the routes and airspace where offsets are authorized as required by Annex 2 (Chapter 3, 3.6.2.1.1). Widespread AIP implementation in the vast majority of affected airspaces	Completed
D15/46		<p>Implementation of AN-Conf/11 (November 2003) Recommendations by APANPIRG</p> <p>That, the following recommendations of AN-Conf/11 be studied by the concerned Sub-Groups, action taken to implement them, and the outcome presented to APANPIRG:</p> <p>Recommendations 1/1, 1/10, 1/13, 4/1, 4/2, 6/11 and 7/1: ATM/AIS/SAR/SG</p> <p>Recommendations 1/1, 1/10, 1/13, 4/1, 4/2, 6/11, 7/1 and 7/3: CNS/MET/SG</p> <p>Recommendations 4/8: DRTF</p>	<p>Included on ATM/AIS/SAR Sub-Group and CNS/MET Sub-Group Task Lists, reviewed by the Sub-Groups.</p> <p>To be further reviewed by Sub-Groups during 2007.</p>	On-going

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STATUS OF OUTSTANDING CONCLUSIONS/DECISIONS OF APANPIRG IN THE CNS/MET FIELDS

Report Reference ----- Conc./Dec No.	Noted by ANC/ Council	Decision/Conclusion ANC/Council Action, if any	Action by States/ICAO	Status
C 12/25		<p>Application of EUR OPMET update procedure in the ASIA/PAC Regions</p> <p>That, the procedure similar to the EUR OPMET update procedure be developed and introduced in the ASIA/PAC Regions.</p>	<p>The procedure is to be developed by the OPMET Exchange Task Force. Part of the OPMET Monitoring/Quality Control Procedures under development by OPMET/M TF OPMET/M Task Force is working on developing appropriate update procedure by 2006</p> <p>Procedure developed by OPMET Management Task Force for inclusion in ROBEX Handbook</p>	<p>On-going</p> <p>Completed</p>
C 14/21	-	<p>Conclusion 14/21 - Target date of ADS-B Implementation</p> <p>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.</p>	<p>ADS-B Task Force assisting Members to develop plan for air ground ADS-B implementation on a Sub-regional basis in an evolutionary manner.</p> <p>States that have plans for implementation of ADS-B air-ground surveillance service established the target date in the FASID Table CNS-4.</p>	<p>On-going</p> <p>Completed</p>

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Report Reference ----- Conc./Dec No.	Noted by ANC/ Council	Decision/Conclusion ANC/Council Action, if any	Action by States/ICAO	Status
C 14/24	ANC	<p>Conclusion 14/24 - Preparation for World Radio Communication Conference 2007 (WRC-2007)</p> <p>That, States,</p> <p>a) assign high priority to aeronautical spectrum management;</p> <p>b) participate in the development of States' position for WRCs at the national level to ensure support to the ICAO position;</p> <p>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;</p> <p>d) to nominate an ICAO designated focal point or contact person for aviation issues related to the WRC-07; and</p> <p>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.</p> <p><i>Noted the Conclusion and requested the Secretary General to continue encouraging the States to participate at various levels in different fora to provide support for the ICAO position at the forthcoming WRC-2007 so as to protect aeronautical frequency spectrum.</i></p>	<p>As a follow up action this Conclusion was presented to the 41st DGCA Conference. States have been urged to nominate focal point of contact.</p> <p>30 States have designated focal point of contact and replies from 5 States awaited.</p> <p>42 DGCA Conference further endorsed the Action Item 41/3. 31 States have designated focal point of contact and replies from 4 States awaited. The Second RPG is tentatively planned during early 2007. Action on this item is expected to be completed by the third quarter of 2007.</p>	On going

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Report Reference ----- Conc./Dec No.	Noted by ANC/ Council	Decision/Conclusion ANC/Council Action, if any	Action by States/ICAO	Status
C 14/30	-	<p>Conclusion 14/30 – States’ Actions for the Migration to the Operational Use of GRIB and BUFR coded WAFS Products</p> <p>That,</p> <p>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;</p> <p>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).</p> <p><i>Note: In order to expedite WMO consideration of VCP requests, States are encouraged to contact potential donors and subsequently inform WMO.</i></p>	<p>States have been notified on a number of occasions on the need to upgrade their systems for receiving/processing WAFS data. The migration process is yet to be finalized by 1 July 2005.</p> <p>2005</p> <p>GRIB Transition took place on 1 July 2005</p> <p>BUFR Transition postponed by WAFSOPSG to 30 November 2006</p> <p>States have been informed of the transition schedule and urged to make the necessary preparations.</p>	<p>On-going</p> <p>Completed</p>
C 14/33		<p>Conclusion 14/33 – Amendment of regional procedures related to WAFS in the ASIA/PAC Basic ANP and FASID</p> <p>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.</p>	<p>Amendment proposal for BANP—processed</p> <p>Consolidated amendment proposal for FASID presented at CNS/MET SG/9; scheduled for circulation to States in September 2005</p> <p>Amendment proposal approved</p>	<p>Completed</p> <p>On-going</p> <p>Completed</p>

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Report Reference ----- Conc./Dec No.	Noted by ANC/ Council	Decision/Conclusion ANC/Council Action, if any	Action by States/ICAO	Status
C 14/40	-	<p>Conclusion 14/40 – Amendment to FASID Table MET 1B in regard to the service provided by the meteorological watch office Wellington</p> <p>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.</p>	<p>Consolidated amendment proposal for FASID presented at CNS/MET SG/9; scheduled for circulation to States in September 2005</p> <p>Amendment proposal approved</p>	<p>On-going</p> <p>Completed</p>
Conclusions/Decisions of APANPIRG/15				
(para. 2.2.87)	C	<p>Preparation for World Radiocommunication Conference – 2007 (WRC-2007)</p> <p><i>Noted the paragraph and requested the Secretary General to continue encouraging the States to participate at various levels in different fora to provide support for the ICAO position at the forthcoming WRC-2007 so as to protect aeronautical frequency spectrum.</i></p>	<p>First RPG Meeting was held in February 2005. Preliminary ICAO Position for WRC-2007 was presented at APG 2007-2 Meeting in February 2005.</p> <p>The second RPG meeting is scheduled to be held in early 2007.</p>	On-going

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Report Reference ----- Conc./Dec No.	Noted by ANC/ Council	Decision/Conclusion ANC/Council Action, if any	Action by States/ICAO	Status
C 15/15		<p>Conclusion 15/15 – Asia/Pacific Regional ATN Implementation System Management Operational Procedures</p> <p>That, the Asia/Pacific regional ATN Implementation System Management Operational Procedures be published to assist States in implementation of the ATN ground infrastructure in the Asia/Pacific region.</p>	<p>Considered premature due to lack of experience in operational aspect to develop a manual procedure. This task can be addressed only after gaining sufficient operational experience of AMHS.</p> <p>Asia/Pacific Regional ATN Implementation System Management Operational Procedures containing initial direction and guidance was published in August 2004. It is expected that sufficient operational experience would be gained by end of 2007.</p>	On-going

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Report Reference ----- Conc./Dec No.	Noted by ANC/ Council	Decision/Conclusion ANC/Council Action, if any	Action by States/ICAO	Status
D 15/22		<p>Decision 15/22 – Assignment of new tasks</p> <p>That, the ATN Transition Task Force be tasked to:</p> <p>i) develop ATN/AMHS performance characteristics as soon as possible to meet the target date of implementation of 2005; and</p> <p>ii) establish a sunset date for AFTN service to be reflected in Part IV of the ASIA/PAC FASID.</p>	<p>The Seventh Meeting of the ATN Transition Task Force (ATNTTF/7) recognized that the AMHS description document and the performance document adopted by the Task Force would provide adequate guidance on performance. In its Conclusion 7/18 the Task Force has addressed this issue and has tasked its WG to review and consider development of such document.</p> <p>The ATN ICG/1 in following up the Decision 7/18 the ATNTTF/7 has tasked its WG to review and consider development of a single document.</p> <p>The ATNTTF/7 considered that it would be premature at this stage to establish the sunset date for AFTN in view of the current lack of maturity and operational experience of AMHS implementation.</p>	<p>On-going</p> <p>Closed</p> <p>Closed.</p>
C 15/30		<p>Conclusion 15/30 - State's migration plans for the transition from 1G to 2G SADIS service</p> <p>That, the SADIS user States in the Asia/Pacific region be encouraged to commence planning for transition from SADIS 1G to 2G to ensure that the transition can be achieved well within the agreed time scale, i.e. before the termination of the 1G service on 31 December 2008.</p> <p><i>Note: ICAO Regional Office to inform the SADIS user States by a State letter (4th quarter of 2004) and keep record of the progress of the transition to SADIS 2G.</i></p>	<p>State letter sent to States: SADIS 2G Seminar planned for July 2006.</p> <p>Seminar conducted 14-15 July 2006</p>	<p>On-going</p> <p>Completed</p>

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Report Reference ----- Conc./Dec No.	Noted by ANC/ Council	Decision/Conclusion ANC/Council Action, if any	Action by States/ICAO	Status
D 15/40		<p>Decision 15/40 – Planning for migration to BUFR-coded aeronautical meteorological messages</p> <p>That,</p> <p>a) the ATN Transition Task Force and the OPMET Management Task Force be tasked to address the issues related to the transition to BUFR-coded aeronautical meteorological messages by conducting studies, as necessary;</p> <p>b) the two Task Forces develop in coordination a regional plan for migration to BUFR-coded aeronautical meteorological information by the end of 2005.</p>	<p>The matter has been addressed by the OPMET/M TF/3 meeting, March 2005 and the ATN Transition TF meeting in April 2005; joint meeting of the two groups planned for 2006.</p> <p>OPMET/M TF/4 and ATN IC Group addressed the matter. A joint Project Team was formed; the first meeting of the PT conducted a side meeting during CNS.MET SG/10.</p>	On-going
C 15/41		<p>Conclusion 15/41– Designation of State volcano observatories</p> <p>That, the Asia/Pacific States that maintain monitoring of active volcanoes, be invited to designate, based on the principles formulated by the IAVWOPSG/1 meeting, selected volcano observatories for inclusion in the new FASID Table MET 3C of the ASIA/PAC FASID (Doc 9673).</p>	<p>State letter issued. The new FASID table has been prepared. Amendment proposal to be circulated for consultation</p> <p>FASID Table MET 3C was approved as part of Amendment proposal 30/05 (MET)</p>	<p>On-going</p> <p>Completed</p>

**AGENDA ITEM 6: DEVELOP FUTURE WORK
PROGRAMME**

Agenda Item 6: Develop Future Work Programme

Increasing the efficiency of PIRGs

6.1 As a follow-up to the observation made by the Council in February 2006, on the need to review the format and method of processing the reports of the Commission to the Council as well as the terms of reference (TORs) of the PIRGs, the meeting received a progress report on the work accomplished on the subject to date.

6.2 As a result, the meeting noted that the Commission, through a working group, is addressing the following, which is expected to be completed by December 2006: a) reassessment of the TORs of PIRGs so as to align with the Strategic objectives of ICAO and the Global Air Navigation Plan; b) amendment of the reporting format of PIRGs to the Commission; c) revision of the method of presenting PIRG reports by the Secretary General to the Commission; and d) examination of the method of reporting to the Council by the Commission.

6.3 With regard to the future format of the Commission reports to the Council, it may consist of a compilation of all PIRG reports in lieu of individual PIRG reports and would be presented annually in a concise format. This annual report on all PIRG activities for the consideration by the Council would highlight the main achievements in the regions with regard to the implementation of the Global Plan Initiatives and elimination of the deficiencies. However, if a timely Council decision is required, case-by-case reports of PIRGs to the Council would be presented.

6.4 In reassessing the terms of reference of the PIRGs, the meeting noted that ICAO is considering the development of a common approach to all the PIRGs and also align their work programme with the Strategic Objectives of the Organization. While the meeting expressing full commitment to PIRG process, several issues were raised on the proposed revision of TORs. Consequently, the meeting requested that the following be taken into account by the Secretariat when finalizing the TORs prior to its acceptance by Council: a) Focus to be on planning and implementation of air navigation systems b) Recognize the differing characters of the regions such as technical infrastructure, operational requirements, economic base and cultural background; and c) pros and cons of revising the mandate and its effect on the resources for the States, international organizations as well as ICAO. In concluding the discussions on TORs, the meeting requested that ICAO should consult the Chairmen and Secretaries of all PIRGs in finalizing the TORs of all PIRGs.

6.5 With regard to improving efficiency of APANPIRG through the use of information technology, the meeting welcomed and appreciated a number of measures put in place by the Secretariat. It included provision of electronic documentation for the meetings of APANPIRG and its contributory bodies; dissemination of meeting reports through posting on the web site and by request, on CD-ROM; remote participation in meetings through teleconferencing and WebEx service; and distribution of State letters and other important correspondence by email. The meeting noted the request by the Secretariat that papers for the meetings of APANPIRG and its contributory bodies should be submitted by the States at least two weeks before the meeting and in a standard electronic format. This would expedite greatly the distribution of the papers to all concerned participants via ICAO APAC web site.

New form of presentation of APANPIRG Conclusions/Decisions

6.6 A new table containing all conclusions and decisions adopted by the meeting, as shown in **Appendix A** to the Report on Agenda item 6, was presented. The table provided for each APANPIRG/17 conclusion/decision relating ICAO Strategic Objective(s), the action to be taken, who was responsible to take the action (e.g., Regional Office, States, ICAO HQ), the expected deliverable, and the target date for completion of the action.

6.7 The meeting agreed that the new table would be extremely useful tool in tracking the follow-up action and would provide for better accountability of the stakeholders in the air navigation planning and implementation process. This format was also very much in line with the ICAO business planning and performance based approach, therefore, it would be suitable for presenting the APANPIRG summary to the Air Navigation Commission and the Council. The meeting encouraged all APANPIRG contributory bodies to follow similar approach in their future work.

Report of coordination meeting of the Chairmen of Sub-groups

6.8 The Chairmen of the ATM/AIS/SAR SG and CNS/MET SG and the MET Vice Chairman of CNS/MET SG held a coordination meeting on 21 August 2006. Comment was also sought from the Chairman of the RASMAG who was unable to attend.

6.9 The meeting noted the draft decision 16/3 of ATM/AIS/SAR SG/16, the proposals of CNS/MET SG/10 for performance objectives and information provided by the Secretariat on the business planning methodology adopted by ICAO.

6.10 In order to implement performance based approach to the planning and implementation work of APANPIRG and its contributory bodies, it would be necessary to complete the following steps:

- Establish values related to safety and efficiency to be applied in establishing the priority and importance objectives. The current list of Key Priorities reflects the values applied by APANPIRG in implementing CNS/ATM System.
- Map current tasks to project definitions:
 - Clear statement of what is to be achieved;
 - Apply value assessment;
 - Identify resources required;
 - Establish time objectives.

6.11 The establishment of the Regional Performance Framework Task Force (Decision 17/10) was supported. Participants in the task force are to be the Chairmen (or suitable delegates) of ATM/AIS/SAR SG and CNS/MET SG, Regional Officers supporting the Sub-Groups and planning experts. The role of the planning experts is to ensure rigor in the application of the planning methodology. The task force is to act as an extension of the programmed meeting of the Chairmen and is to operate with the maximum use of electronic communications. The schedule to be considered is teleconferences in December 2006 and May 2007 and face-to-face meeting immediately preceding APANPIRG/18.

6.12 The chairmen reviewed the list of task forces and other contributory bodies and updated the listing as shown in **Appendix B** to the Report on Agenda item 6, which contains only those bodies currently active.

Schedule of future meetings

6.13 The meeting agreed that the tentative schedule of meetings for the rest of 2006, 2007 and 2008 should be as follows (meetings of non-APANPIRG groups are indicated in *italics*):

2006 – outstanding meetings

RASMAG/6	6 – 10 Nov 2006	Bangkok
RVSM TF/29	14 – 16 Nov 2006	Bangkok

2007

<i>FIT-SEA/5</i>	<i>16-19 Jan</i>	<i>TBD</i>
<i>BBACG/18 & FIT-BOB/8</i>	<i>22-26 Jan</i>	<i>Bangkok</i>
RASMB TF/1	Feb	Bangkok
AITF/2	Feb	Bangkok
WPAC/SCS RVSM/S WG/1	Feb	Singapore
<i>RNP-SEA/2</i>	<i>Mar</i>	<i>Bangkok</i>
AIDC TF	Mar	Bangkok
DRTF/3	1 st quarter	Bangkok
ADS-B TF/6	23 – 27 Apr	Republic of Korea
ATN IC G/2	May	Hong Kong, China
RASMAG/7	1-4 May	Bangkok
<i>SEACG/14 & FIT-SEA/6</i>	<i>14-18 May</i>	<i>Bangkok</i>
OPMET/M TF/5	May	Bangkok
<i>SADISOPSG/12</i>	<i>4 – 6 June</i>	<i>Bangkok</i>
ATM/AIS/SAR SG/17	2 – 6 July	Bangkok
CNS/MET SG/11	16 – 20 Jul	Bangkok
APANPIRG/18	3 – 7 Sep	Bangkok
RASMAG/8	23 – 26 Oct	Bangkok

2008

<i>BBACG/19 & FIT-BOB/9</i>	Jan	Bangkok
AITF/3	Feb	Bangkok
OPMET/M TF/6	Mar	Bangkok
<i>RNP-SEA/3</i>	<i>Mar</i>	<i>Bangkok</i>
ATN IC G/3	April	TBD
RASMAG/9	May	Bangkok
<i>SEACG/15 & FIT-SEA/7</i>	<i>May</i>	<i>Bangkok</i>
ATM/AIS/SAR SG/18	Jun	Bangkok
CNS/MET SG/12	Jul	Bangkok
APANPIRG/19	1 – 5 Sep	Bangkok
RASMAG/10	Oct	Bangkok

6.14 The meeting decided that the proposal for the provisional agenda for the APANPIRG/18 meeting would be developed by the Secretariat and coordinated with the Chairman and the Members of the Group.

6.15 The meeting expressed appreciation to Hong Kong, China, Republic of Korea and Singapore for their kind proposals to host some of the future meetings of the APANPIRG Contributory Bodies as indicated in the table above. Additional coordination between the Regional Office and Viet Nam will take place in regard to hosting FIT-SEA/5 meeting in January 2007.

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APANPIRG/17
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Follow-up to APANPIRG/17 Conclusions/Decisions — Action Plan

Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
D 17/1 A , D	Implementation of ALLPIRG/5 conclusions by APANPIRG	That the following conclusions of ALLPIRG/5 be studied by the concerned subgroups, that action be taken to implement them and that the outcome be presented to ensuing APANPIRG meetings: <ul style="list-style-type: none"> – Conclusions 5/2, 5/4, 5/5, 5/7, 5/8, 5/9, 5/11, and 5/13: ATS/AIS/SAR/SG; – Conclusions 5/2, 5/4, 5/5, 5/13, 5/16, and 5/17: CNS/MET/SG; – Conclusions 5/14, 5/15: DRTF 	Allocate responsibility to contributory bodies Identify projects for implementation	APANPIRG – ATM/AIS/SAR SG – CNS/MET SG – DRTF	Decision Updated work programmes of sub-groups and other contributory bodies Implementation projects	Aug 2006 July 2007
C 17/2 A , D	Implementation of ALLPIRG/5 conclusions by States	That States of the Asia/Pacific Region take action to implement the following conclusions of ALLPIRG/5: Conclusions 5/1, 5/4, 5/5, 5/7, 5/8,5/9, 5/11, 5/13 and 5/16	Implement conclusions	ASIA/PAC States	ICAO State letter	Oct 2006
C 17/3 A , D	Implementation of ALLPIRG/5 conclusions by international organizations	That international organizations take action to implement the following conclusions of ALLPIRG/5: Conclusions 5/2, 5/4, 5/5, 5/7, 5/13 and 5/16	Implement conclusions	Intl organizations	ICAO State letter	Oct 2006
C 17/4 D	Long Term Monitoring of RVSM Height Keeping Performance	That, in recognition of the desirability of global harmonization and interoperability, ICAO be invited to consider appropriate measures to ensure that any requirements for long term monitoring of RVSM height keeping performance be standardized and applied on a global basis.	Develop requirements for long-term monitoring of height-keeping performance	ICAO HQ	Appropriate provisions	TBD

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
D 17/5 A	Establishment of WPAC/SCS RVSM Scrutiny Working Group	<p>Recognizing that:</p> <p>a) incompatibilities exist between the modified single alternate flight level orientation scheme (FLOS) in use in the Western Pacific/South China Sea (WPAC/SCS) area and the single alternate FLOS in use in areas adjacent to the WPAC/SCS area, and</p> <p>b) the RVSM Target Level of Safety in the WPAC/SCS area was not being satisfied and exhibited an adverse trend,</p> <p>a Scrutiny Working Group be established to identify, study and address problems in the safety, efficiency and harmonization of WPAC/SCS RVSM operations in accordance with the Terms of Reference in Appendix A to the Report on Agenda Item 2.1.</p>	<p>Creation of WG</p> <p>Conduct WG meeting</p> <p>Follow work programme established with TORs</p>	<p>APANPIRG</p> <p>Regional Office</p> <p>WG</p>	<p>TORs</p> <p>WG Report</p> <p>Report to APANPIRG/18</p>	<p>Aug 2006</p> <p>Feb 2007</p> <p>Aug 2007</p>
C 17/6 A	Completion of the horizontal safety assessment for the South China Sea route structure	That, recognizing that no horizontal safety assessment for the South China Sea parallel route structure had been conducted since implementation in 2001, the ICAO Regional Office urges concerned States to complete, by 30 June 2007, a horizontal safety assessment in accordance with ICAO ATS safety management provisions.	<p>Urge States concerned</p> <p>Conduct safety assessment</p>	<p>Regional Office</p> <p>States concerned</p>	<p>State letter</p> <p>Safety assessment report</p>	<p>Oct 2006</p> <p>30 June 2007</p>

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/7 D	Implementation of Conditional ATS Routes	That, recognizing the valuable practical examples established by recent regional implementations of enhanced ATS route segments in which the hours of operation, flight levels available and other parameters were subject to operating conditions, the ICAO Regional Office urges States to implement conditional ATS routes and route segments. <i>Note: Related to Global Planning Initiative # 1 (GPI-1) Flexible use of airspace</i>	Urge ASIA/PAC States to implement	Regional Office	State letter	Dec 2006
C 17/8 D	Definition of Conditional ATS Route and ATS Designator	That, noting that States were addressing Global Planning Initiative #1 (<i>Flexible use of airspace</i>) by the increasing implementation of ATS route segments that were subject to restricted operational conditions in terms of hours/days of operation, usable flight levels available and/or other parameters, ICAO be invited to consider promulgating a definition of conditional ATS routes and an appropriate ATS route designator.	Develop definitions	ICAO HQ	Appropriate provisions	TBD
C 17/9 A , D	Coordination of UAV Procedures Development	That, noting the serious concerns held by some States of the Asia/Pacific Region in respect of Unmanned Aerial Vehicle (UAV) operations in mixed environments, ICAO invite Australia, India, Japan, Malaysia, New Zealand and Singapore to participate in the Informal ICAO Working Group on UAVs.	Invite concerned States to participate	ICAO HQ	Invitation letter	TBD

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
D 17/10 D	Establish APANPIRG Regional Performance Framework Task Force	That, recognizing the new regional planning methodologies precipitated by the second amendment to the Global Air Navigation Plan and the new ICAO business planning requirements, a Task Force be established to develop a proposal/framework for consideration by APANPIRG/18 for incorporating the performance based approach into the work programme of APANPIRG and its contributory bodies. The Terms of Reference of the Task Force are provided in Appendix B to the Report on Agenda Item 2.1.	Creation of TF	APANPIRG	TOR	Aug 2006
			Teleconference	TF	TF Report	Dec 2006
			Follow work programme established with TORs	TF	Regional performance framework	May 2007
					Report to – ATM/AIS/SAR/17 – CNS/MET/11 – APANPIRG/18	June 2007 July 2007 Aug 2007
C 17/11 A	Adoption of Model National ATM Contingency Plan	That the National ATM Contingency Plans of Jakarta and Ujung Pandang FIRs, which were prepared as a result of the 2006 ICAO Special Implementation Project be adopted as a model for Asia/Pacific States in the preparation of national ATM contingency plans.	Adopt model contingency plan and distribute to States	Regional Office	State letter	Dec 2006
				States	Implement Model Contingency Plan	TBD

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/12 A, D	Compliance with ATFM Operational Trial procedures	That, recognizing the safety and efficiency benefits resulting from the implementation of effective air traffic flow management across the Bay of Bengal, South Asia and Pakistan through the Kabul FIR, the ICAO Regional Office request States and airspace users concerned, subject to safety considerations/enroute restrictions, to ensure:				
		a) full compliance with the current ATFM Operational Trial procedures, and	Urge States concerned	Regional Office	State letter	Sept 2006
			Ensure compliance with AFTM Trial Procedures	States concerned, ANS Providers	Notify Regional Office of compliance with ATFM procedures	Dec 2006
		b) affected ANSPs to take action to ensure that flights enter Kabul FIR in accordance with the slot parameters (flight level, ATS route and entry fix time) allocated to each flight.	Flights enter Kabul FIR in accordance with the slot parameters	Concerned ANSPs	Notify Regional Office of compliance with slot parameters	Dec 2006
D 17/13 D	Reconvening of the AIDC Task Force	That the AIDC Task Force be reconvened for a single meeting to complete the outstanding task of defining the format of the FAN message and addressing other outstanding issues identified in the Asia/Pacific Regional Interface Control Document for ATS Inter-Facility Ground/Ground Data Communications Version 2.0.	Conduct meeting Complete the specified tasks	Regional Office, AIDC TF	Report to – ATM/AIS/SAR SG/17 – CNS/MET SG/11	July 2007

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/14 D	Improvement of aeronautical information exchange and management	That, in order to increase the reliability and integrity of the aeronautical information in support of navigation functions, ICAO be invited to establish, as a matter of urgency, a standard model for the electronic exchange of aeronautical information.	Establish a standard model for the electronic exchange of aeronautical information	ICAO HQ	Appropriate provisions	TBD
D 17/15 D	Terms of Reference of the AIS Implementation Task Force	That, the AIS Implementation Task Force be directed to report to the ATM/AIS/SAR Sub-group and the Terms of Reference be amended accordingly.	Amend TOR	Regional Office	Amended TORs	Aug 06
C 17/16 A , D	Conduct of Comprehensive Regional AIS Survey	That, recognizing that GPI-18 - <i>Aeronautical Information</i> requires real-time availability of quality assured electronic information (aeronautical, terrain and obstacle), the AITF, in conjunction with the Regional Office, conduct a comprehensive survey of all Asia/Pacific States in relation to AIS matters, including details of status in relation to the automation of dynamic data, automation of static data and availability of electronic terrain and obstacle data.	Conduct Regional Survey on AIS Matters	AITF Regional Office States to provide input	Questionnaire for survey State letter Survey replies	June 2007 1Q 2007 1Q 2007

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/17 D	Non-Compliance with Annex 15 provisions	That, noting the regular and ongoing non-compliance with Annex 15 – <i>Aeronautical Information Services</i> provisions in respect to AIRAC notification periods, the ICAO Regional Office be requested to reinforce to States the critical safety nature of AIS and adherence to Annex 15 provisions, particularly those relating to AIRAC periods, as well as the need to ensuring accurate and timely publication of AIS data.	Urge States to comply with Annex 15	Regional Office	State letter	Jan 2007
C 17/18 D	Additional Asia/Pacific Office ATM Resources	That, in consideration of the significant actual and forecasted traffic growth in Asia/Pacific Region and the benefits to be gained from the APANPIRG CNS/ATM work programme through implementing the Global Plan Initiatives: a) ICAO be requested to urgently address the inadequacy of ATM resources at the Regional Office; and b) ASIA/PAC States be requested to consider possibilities of further supporting the Regional Office ATM programme.	Consider establishment of additional ATM Officer Consider support to ATM programme	ICAO HQ States	Creation of post Proposals for support	TBD Aug 2007
D 17/19 A , D	ATM/AIS/SAR Subject/Task List	That the ATM/AIS/SAR Subject/Task List as contained in Appendix I to the Report on Agenda Item 2.1 be adopted as the current work programme for the ATM/AIS/SAR Sub-Group.	Adopt work programme	APANPIRG	ATM/AIS/SAR Subject/Task List	Aug 2006

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
D 17/20 D	Revision to the Terms of Reference and the Subject/Tasks List of ATNICG	That, the revised Terms of Reference and the Subject/Tasks List of the ATNICG provided in Appendix A to the Report on Agenda Item 2.2 be adopted.	Adopt revised TORs	APANPIRG	Revised TORs	Aug 2006
C 17/21 D	Updating of the Strategy for Implementation of ATN	That, the Strategy for implementation of ATN in the ASIA/PAC Region be amended as shown in the Appendix B to the Report on Agenda Item 2.2	Amend Strategy for implementation of ATN in the ASIA/PAC Region Publish on ICAO web	APANPIRG Regional Office	Strategy document Web page	Aug 2006 Sept 2006
C 17/22 D	Amendment to FASID Table CNS 2	That, FASID Table CNS 2, <i>Aeronautical mobile service (AMS) and aeronautical mobile satellite service (AMSS)</i> , be replaced with an updated Table in accordance with the established procedure.	Process amendment proposal for FASID Table CNS 2	Regional Office	Amendment proposal	Feb 2007
C 17/23 D	Performance Based Navigation Seminar/Workshop	That, ICAO organize appropriate workshop/seminar to facilitate the orderly adoption of the Performance Based Navigation (PBN) concept.	Conduct workshop/seminar	ICAO HQ, Regional Office	Workshop	TBD
C 17/24 D	Revision of the Strategies for Approach Landing and Departure Guidance Systems and Implementation of GNSS Navigation Capability in the ASIA/PAC Region	That, the updated Strategies for the Provision of Approach, Landing and Departure Guidance Systems and for the Implementation of GNSS Navigation Capability in the ASIA/PAC Region provided in Appendices C and D to the report of on Agenda Item 2.2 be adopted and provided to States	Update Strategy documents Publish on ICAO web	APANPIRG Regional Office	Strategy document Web page	Aug 2006 Sept 2006

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/25 D	The First Amendment to the AIGD	That, the amended ADS-B Implementation and Operations Guidance Document (AIGD) as provided in the Appendix E to the Report on Agenda Item 2.2 be adopted.	Amend AIGD Publish on ICAO web	APANPIRG Regional Office	AIGD document Web page	Aug 2006 Sept 2006
C 17/26 D	Investigation and expedition of way to present ADS-B Data using ACAS hardware	That, ICAO be requested to: a) take into account the importance and benefit of ADS-B IN applications and the role it will have in the final business case; and b) define and support the use of ACAS hardware and traffic displays to present ADS-B based flight identity and velocity vector.	 Develop relevant provisions	 ICAO HQ	 Appropriate provisions	 TBD
D 17/27 D	Development of Strategy for the implementation of surveillance systems in the ASIA/PAC Region	That, the strategy for the implementation of surveillance systems as contained in the in the Appendix F to the report on agenda item 2.2 be further refined for consideration by APANPIRG/18.	Finalize strategy	CNS/MET SG	Strategy document	July 2007
D 17/28 D	Revised Terms of Reference for ADS-B Study and Implementation Task Force	That, the Revised Terms of Reference for the ADS-B Study and Implementation Task Force as provided in the Appendix G to the report under agenda item 2.2. be adopted.	Adopt revised TORs	APANPIRG	TORs	Aug 2006

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/29 D	Mode S transponder inspection	That, recognizing more Mode S Radar ground stations being introduced in the region, States in the Asia/Pacific Region be urged to have aircraft registered having Mode S transponder regularly inspected to ensure correct operation of the Mode S transponders.	Urge States	Regional Office	State letter	Dec 2006
C 17/30 A , D	Preparation for World Radiocommunication Conference – 2007 (WRC-2007)	That, ICAO consider convening Regional Preparatory Group Meeting for WRC-2007 in Bangkok during early 2007.	Conduct RPG Meeting	ICAO HQ, Regional Office	Meeting and development of Regional Strategy	1Q 2007
C 17/31 D	RF interference on the protected DME frequency	That, States' civil aviation administrations be encouraged to work closely with the respective regulatory authorities and undertake all necessary action to ensure that DME and SSR service are not interfered by devices such as wireless CCTV cameras.	Urge States CAAs	Regional Office	State letter	Dec 2006
C 17/32 D	HF Interference	That, States where aeronautical stations are experiencing HF radio interference, take necessary actions in coordination with respective radio regulators to identify the source of interference and to eliminate problem.	Urge States CAAs	Regional Office	State letter	Dec 2006

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/33 D	Enhancement of ISCS/2 Operational Efficacy Survey	That, the ISCS Provider State, in coordination with the SADIS Provider State and the ICAO Secretariat, be invited to enhance the survey questionnaire on the operational efficacy of ISCS/2, for consideration by the WAFSOPSG and SADISOPSG.	Invite ISCS and SADIS Provider States	Regional Office, ICAO HQ, UK, USA	New Survey questionnaire	1Q 2007
C 17/34 D	Continuation of PNG-formatted SIGWX Charts	That, the WAFSOPSG be invited to consider continuation of the provision of PNG-formatted SIGWX charts by both WAFCs beyond 30 November 2006.	Inform WAFSOPSG of regional feedback	Regional Office, WAFSOPSG	Decision of WAFGSOPSG	Nov 2006
C 17/35 D	Survey on the transition from SADIS 1G to SADIS 2G in ASIA/PAC	That, a survey to evaluate the States' progress in replacing the existing SADIS 1G receiving systems with SADIS 2G receiving systems in the ASIA/PAC Region be conducted in 2007 by the WAFS Implementation Task Force (WAFS/I TF) with assistance of the ICAO Regional Office.	Conduct regional survey	WAFS/I TF Regional Office SADIS user States	Questionnaire for the survey State letter Survey replies	July 2007 1Q 2007 2Q 2007

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/36 D	Further development of WAFS Output Performance Indicators	That, the WAFSOPSG be invited to: a) include performance indicators for wind and temperature for the WMO defined verification area covering Australia and New Zealand, in their suite of existing output performance indicators; b) investigate the feasibility of producing wind and temperature performance indicators for all standard forecast levels; c) investigate the feasibility of providing wind and temperature performance indicators in a global gridded and chart format; and d) consider evaluating the SIGWX forecasts, in particular TC and VA symbols, in order to measure the harmonization of these forecasts issued by the two WAFCs.	Develop specified Output Performance Indicators	WAFSOPSG	Appropriate PIs	TBD
C 17/37 D	Update of ROBEX Handbook	That, the ROBEX Handbook be updated with the additional material on the quality control (QC) and regional bulletin update procedure, as shown in Appendix H to the Report on Agenda Item 2.2.	Update ROBEX Handbook Publish on ICAO website	Regional Office Regional Office	Updated chapters Web document	Sept 2006 Sept 2006

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/38 A , D	Amendment to ASIA/PAC FASID Table MET 1A, Meteorological services required at aerodromes	That, the ASIA/PAC FASID Table MET 1A be amended as shown in Appendix I to the Report on Agenda Item 2.2.	Process amendment proposal for FASID Table MET 1A	Regional Office	Amendment proposal	Jan 2007
C 17/39 D	Coordination of plan for transition to BUFR-coded OPMET information	That, in order to expedite the finalization of the regional plan for transition to BUFR-coded OPMET information and related planning for AMHS, the appropriate WMO bodies be invited to confirm, as a matter of urgency, their plan for the use of BUFR code for OPMET information.	Notify WMO	ICAO HQ	Letter to WMO	Oct 2006
C 17/40 A	Standard message format for volcano observatories participating in IAVW	That, IAVWOPSG be invited to develop a standard message format to be used by the States' volcano observatories designated in the Regional ANP to provide information to the associated ACC, MWO and VAAC.	Develop standard message format	IAVWOPSG	Appropriate provision	TBD

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/41 A , D	Development of web page for monitoring SIGMET availability in the ROBEX scheme	That, Hong Kong, China be invited to develop, in coordination with Singapore, a web page on the Hong Kong Observatory web site, providing real-time information on the valid SIGMETs and advisories issued by the MWOs and advisory centres in the ASIA/PAC Region for monitoring purposes within the ROBEX scheme. <i>Note: Authorized access to the web application to be provided to the RODBs, ROBEX centres, MWOs and the ICAO Regional Office.</i>	Develop and maintain web page	Hong Kong, China, Singapore, Regional Office	Web page	Nov 2006
C 17/42 A , D	ASIA/PAC SIGMET Seminar	That, a) ICAO, in coordination with WMO and the VAAC and TCAC Provider States in the ASIA/PAC Region, be invited to organize in 2007 a regional training seminar for the States' SIGMET Focal Points; and b) States' CAAs and meteorological authorities be strongly encouraged to ensure participation of the designated SIGMET Focal Points or other appropriate personnel in the above Seminar.	Organize SIGMET seminar Ensure participation of appropriate personnel	Regional Office, ICAO HQ, WMO, VAAC Provider States, TCAC Provider States ASIA/PAC States	SIGMET Training Seminar Participation in the training	2007 2007

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/43 D	Development of provisions on MET/ATM coordination	That, in recognizing the importance of the meteorological support for the air traffic management, a) ICAO Regional Office conduct a survey of the evolving requirements for meteorological information and services in support of air traffic management; and b) the results of the survey above, be referred to the appropriate ICAO body in view of potential extension of the existing provisions on the meteorological services for ATS, to cover the other ATM fields.	Conduct survey	MET/ATM TF, Regional Office	Questionnaire for the survey Survey Report to be presented to – ATM/AIS/SAR/17 – CNS/MET/11	1Q 2007 Jun 2007
			Develop SARPs	ICAO HQ	Appropriate provisions	TBD
C 17/44 A , D	Development of new windshear posters	That, ICAO be invited to consider updating the windshear posters for training and educational purposes, based on the posters being developed by Hong Kong, China in collaboration with WMO and IFALPA.	Develop windshear posters	Hong Kong, China, ICAO HQ, WMO, IFALPA	Posters	2007

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/45 D	Applicability of the turbulence metric based on EDR for approach/take-off	That, ICAO be invited to consider: a) the applicability of the EDR metric for reporting of turbulence for approach/take-off; and b) developing guidance to States for implementation of automatic aircraft turbulence reporting for all phases of flight.	Develop guidance	ICAO HQ	Appropriate provisions	TBD
D 17/46 A , D	Updated Subject/ Tasks List of the CNS/MET Sub-group	That, the Subject/Tasks List of the CNS/MET Sub-group presented in Appendix J to the report of on Agenda Item 2.2 be adopted.	Adopt Subject/Task List	APANPIRG	Subject/Task List	Aug 2006
D 17/47 A	Task Force to establish Regional Airspace Safety Monitoring Committees	That a Task Force be established to develop and distribute to States by 30 June 2007 implementation proposals for the establishment of Regional Airspace Safety Monitoring Committees (RASMC). The Task Force would work in accordance with the terms of reference in Appendix A to the Report on Agenda Item 2.4 and use, <i>inter alia</i> , recent ICAO guidance materials in relation to the global approach for the funding of airspace safety monitoring.	Establish TF Develop proposal for RASMB	APANPIRG TF	TOR Report to RASMAG	Aug 2006 May 2007

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/48 A	Funding of Pacific RMA & CRA	In recognizing that the United States/FAA was the current service provider of CRA and RMA services for the Pacific Region (with the exception of CRA services for Japan), it was acknowledged that:	Acknowledge service provision	APANPIRG	Decision that FAA would remain the interim service provider for the Pacific Region	Aug 2006
		a) FAA would remain the interim service provider for the Pacific Region until more formal arrangements have been made, and	Provide service	USA	Service provider for the Pacific Region	Ongoing
		b) Pacific States using these FAA services commit to reimburse the FAA for those CRA and RMA services rendered effective 30 June 2007. <i>Note: The FAA will be formally notifying each of these individual states that if reimbursement agreements are not in place by 30 June 2007, these services are at risk of being suspended.</i>	Commit to reimburse	States concerned	Reimbursement agreement	30 June 2007
C 17/49 D	Use of ADS-B 1 090 MHz Extended Squitter for automatic air-reporting	That, ICAO be invited to develop the necessary SARPs and guidance material to facilitate the implementation of ADS-B 1 090 MHz extended squitter for automatic air-reporting.	Develop SARPs guidance material	ICAO HQ	Appropriate provisions	TBD
C 17/50 A, D	New ICAO abbreviations for windshear warning	That, in order to facilitate inclusion in the windshear warnings of the windshear intensity in terms of headwind changes, ICAO be invited to include new abbreviations for “headwind gain” and “headwind loss” in the ICAO Abbreviations and Codes (Doc 8400) and to amend the windshear warning template (Table A6-3) in Annex 3 accordingly.	Amend provisions	ICAO HQ	Appropriate provisions	TBD

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/51 A	Special Implementation Project to assist rectification of Deficiencies	That in order to facilitate mitigating action in relation to identified operational safety deficiencies in a group of States in the Asia/Pacific Region, ICAO undertake a special implementation project during 2007. The SIP would address difficulties with air/ground and ground/ground communications, poor ATC practices and non compliances with Annexes 14 and 15.	Establish and conduct SIP	Regional Office ICAO HQ	SIP proposal SIP establishment	Jan 2007 March 2007
C 17/52 A	Special assistance for resolution of MET deficiencies in the South-West Pacific Small Island Developing States (SIDS)	That, in recognizing the safety implications of the long-standing MET deficiencies in the South-West Pacific SIDS, ICAO, in coordination with WMO, be invited to consider providing further assistance to these States in order to build their capacity to provide the required services in a sustainable and cost-efficient manner. <i>Note: It is suggested that the appropriate form of providing assistance to the South-Pacific SIDS would include assignment of ICAO expert to the sub-region and provision of training through technical cooperation project and/or extended SIP.</i>	Express support Assist in establishment of TC Project	ICAO HQ WMO	Letter to WMO TC Project	Oct 2006 2007
C 17/53 A	A regional on-line database of air navigation deficiencies in ASIA/PAC Region	That, in order to ensure transparency and facilitate resolution of deficiencies, ICAO Regional Office be invited to establish a regional on-line database of air navigation deficiencies and provide secure access to States' Administrations and other users concerned.	Establish on-line database	Regional Office, DRTF, ICAO HQ	On-line database	Aug 2007

TBD = To be determined

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Concl/Dec No. --- Strategic Objective*	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date
C 17/54 A	Deficiency resolution objective for ASIA/PAC States	That,	Establish action plans	States	Action plan	June 2007
		a) all ASIA/PAC States listed in the APANPIRG List of deficiencies be urged to establish action plans with fixed target dates for resolution of all safety related deficiencies and inform ICAO Regional Office by mid 2007 of their plans; and b) the need for urgent action in resolving safety related deficiencies be brought to the attention of DGCA/43 conference in December 2006.	Report to DGCA	Regional Office	DP for DGCA	Dec 2006
D 17/55 A	Third meeting of DRTF	That, the deficiency review task force (DRTF) conduct a meeting in early 2007 with the following tasks: a) develop appropriate follow-up action to ALLPIRG Conclusions 5/14 and 5/15; b) review the implementation aspects of the regional supplement to the Uniform Methodology including an assessment of the current List of Deficiencies; and c) report to APANPIRG/18	Conduct meeting and act on a), b) and c).	Regional Office, DRTF	DRTF/3 Report Report to sub-groups and APANPIRG/18 Database format document	Mar 2007 Jun, Jul, Aug 2007 Aug 2007

* **Note:** ICAO has established the following Strategic Objectives for the period 2005-2010:

A: Safety - Enhance global civil aviation safety; **B: Security** - Enhance global civil aviation security; **C: Environmental Protection** - Minimize the adverse effect of global civil aviation on the environment; **D: Efficiency** - Enhance the efficiency of aviation operations; **E: Continuity** - Maintain the continuity of aviation operations; **F: Rule of Law** - Strengthen law governing international civil aviation.

TBD = To be determined

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List of APANPIRG Contributory Bodies (updated Aug 2006)

Title	SG Responsible	Decision	ToR	Report Date	Sort
APANPIRG	APANPIRG		APANPIRG Procedural Handbook ToR approved by the Council 27Feb04	APANPIRG 17	A
ATM/AIS/SAR SG	APANPIRG		APANPIRG 15	APANPIRG 17	A
CNS/MET SG	APANPIRG		Lasted reviewed APANPIRG 14	APANPIRG 17	A
RASMAG	APANPIRG		APANPIRG 14	APANPIRG 17	A
Chairmen's Meeting			APANPANIRG Procedural Handbook	Meeting 21/8/06	A
TASK FORCES					
ADS-B Study and Implementation Task Force	APANPIRG	D14/23	Appendix D	APANPIRG 17	AA
AIDC Review Task Force	APANPIRG	D5/1	Reconvened by CNSMET DD6/24 To be reconvened by ATM/AIS/SAR/SG/16 DD 16/8	ATS/AIS/SAR SG/13 ATM/AIS/SAR SG/18	AA
AIS Implementation Task Force (AITF)	ATS/AIS/SAR	C14/9	APANPIRG/14 adopted Decision 14/8 reactivating the Task Force to study AIS automation and related matters and to assist States to implement ICAO SARPs on AIS in an expeditious manner. The first meeting of the Task Force was held March 2006 . The second meeting is scheduled to be held in 2007.	ATM/AIS/SAR SG/18	AA
ASIA/PAC WAFS Implementation Task Force (WAFS/I TF)	CNSMET7 CNSMET8 CNSMET9 CNSMET10	D7-10/21 DC8/26 D9/22	Appendix M Appendix P CNSMET10 p30	CNSMET11	AA
ATN ICG Working Group	ATN IC Group	ICG D1/5	ATN IC Group	December 2006	AA
ATN Implementation Coordination Group (ATNICG)	CNS/MET	D16/31	APANPIRG 16 Report ATNICG was held in Seoul in	CNS/MET 10	AA
Deficiency Review Task Force	APANPIRG	D13/46		Post implementation review to by conducted prior to APANPIRG18 (Postponed to March	AA

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				2007)	
MET/ATM Task Force	CNSMET5	D5/30	CNSMET 5 p40 and Appendix 1G CNSMET 8 p61 CNSMET 9 p58 CNSMET 10 p44-45	CNSMET11	AA
OPMET Management Task Force OPMET/M TF/3 OPMET/M TF/4	CNSMET7 CNSMET8 CNSMET9 CNSMET10	D7-10/26 DD8/27 DD9/27 D10/27	Appendix Q. Appendix Q. Appendix R.The Second Meeting of the ASIA/PAC OPMET Management Task Force OPMET/M TF/3 was held in Bangkok, Thailand from 2 to 4 March2005. OPMET/M TF/4 was held Bangkok Thailand 13-16 Feb 2006	CNSMET11	AA
Regional Performance Framework Task Force	APANPIRG	D17/10	Report of APANPIRG 17	APANPIRG 18, ATM/AIS/SAR SG/17 CNS/MET SG/10	AA
RVSM Implementation Task Force	ATS/AIS/SAR SG				AA
Task Force on the implementation of volcanic ash and tropical cyclone advisories and warnings (VA/TC Implementation TF)		Decision 14/38 CNS/MET D10/31	CNSMET10 Appendix Q	CNSMET11	AA
WPAC/SCS RVSM Scrutiny Working Group	APANPIRG/17	D 17/5	Appendix A to AI 2.1	APANPIRG/18 ATM/AIS/SAR/17	
Task Force on Regional Safety Monitoring Committees	APANPIRG/17	D 17/47	Appendix A to AI 2.4	RASMAG APANPIRG/18	

AGENDA ITEM 7: ANY OTHER BUSINESS

ATTACHMENTS TO THE REPORT

Attachment 1 to the APANPIRG/17 Report
List of Participants

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Attachment 1 to the APANPIRG/17 Report
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3.	CHINA (11)			
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Attachment 1 to the APANPIRG/17 Report
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LIST OF WORKING AND INFORMATION PAPERS

A) Working Papers

<u>Paper No.</u>	<u>Agenda Item</u>	<u>Title</u>	<u>Presented by</u>
WP/1	-	Provisional Agenda	Secretariat
WP/2	1.1	Review of the Council and ANC actions on the report of the Sixteenth Meeting of ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG/16)	Secretariat
WP/3	1.1	Follow-up action on APANPIRG/16 Conclusions and Decisions	Secretariat
WP/4	1.2	Results of the Fifth Meeting of the ALLPIRG/ ADVISORY GROUP (ALLPIRG/5) — follow-up action to be taken by APANPIRG/17	Secretariat
WP/5	2.1, 2.3	Review of ATM/AIS/SAR SG/16 Report	Chairman SG
WP/6	2.1	Report of the Activities of the Regional Airspace Safety Monitoring Advisory Group (RASMAG)	Secretariat
WP/7	2.2, 3	Review of CNS/MET SG/10 Report	Chairman SG
WP/8	2.4	Developments in the Modernization of Air Navigation Systems	Secretariat
WP/9	3	Second amendment to the Global Air Navigation Plan for CNS/ATM Systems (doc 9750)	Secretariat
WP/10	3	Business case model for the implementation of CNS/ATM systems	Secretariat
WP/11	3	Key Priorities for CNS/ATM implementation	Secretariat
WP/12	4	Status of Air Navigation Deficiencies in the ASIA/PAC Region	Secretariat
WP/13	5	Status of outstanding Conclusions and Decisions of APANPIRG	Secretariat
WP/14	6	Increasing the efficiency of PIRGs	Secretariat
WP/15	6	Actions towards increasing efficiency	Secretariat
WP/16	6	APANPIRG Work Programme 2007+	Secretariat
WP/17	6	Report of coordination meeting between Chairmen of Sub-groups	Chairmen of SGs
WP/18	4	Non – Compliance with Annex 11 – Appendix 3	IATA
WP/19	2.2	Airlines' Perspective of ADS-B in Asia Pacific	IATA
WP/20	2.1	The Ongoing Challenge to Conserve Fuel	IATA

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<u>Paper No.</u>	<u>Agenda Item</u>	<u>Title</u>	<u>Presented by</u>
WP/21	2.1	Language Proficiency Testing in the Fiji Islands	Fiji
WP/22	2.4	Funding Arrangements for Regional Airspace Safety Monitoring	Secretariat
WP/23	2.3	ATFM Operational Trial – Bay of Bengal	Secretariat
WP/24	2.1	ICAO Language Proficiency Update	Secretariat
WP/25	2.1	AIS Task Force Update	Secretariat
WP/26	2.1	ATS Contingency Planning SIP	Secretariat
WP/27	2.1	ATS SMS and SAR SIPs	Secretariat
WP/28	2.1	RNAV Implementation Plan for Japan	Japan
WP/29	2.4	Funding Arrangement for Regional Monitoring Agency (RMA) and Central Reporting Agency (CRA) in the Pacific Region	USA
WP/30	2.2, 6	Progress in developing regional contingency arrangements	Secretariat
WP/31	2.1	Fuel Saving Measures – Implementation of Conditional Direct Route in the Republic of Korea	Republic of Korea
WP/32	2.1	Fuel Saving Measures – Encouragement of Intersection Departure in the Republic of Korea	Republic of Korea

Attachment 2 to the APANPIRG/17 Report
List of Working and Information Papers

B) Information Papers

<u>Paper No.</u>	<u>Agenda Item</u>	<u>Title</u>	<u>Presented by</u>
IP/1	-	Meeting Bulletin	Secretariat
IP/2	1.2	Outcome of the Conference of Directors General of Civil Aviation (DGCA/06)	Secretariat
IP/3	3	Environmental Benefits of CNS/ATM Systems	Secretariat
IP/4	6	Forthcoming ICAO Events	Secretariat
IP/5	2.3	ADS/CPDLC Operational Trials in Bay of Bengal and South East Asia	Secretariat
IP/6	2.3	Summary of ATS Co-ordination Group's activities	Secretariat
IP/7	2.2	ATN/AMHS Transition Plan of India	India
IP/8	3	ADS-B Programme Office Roadmap	USA
IP/9	2.1	A Means to Complete an Assessment of the Safety of the Current 50-NM Lateral Separation Standard Applied in the South China Sea	USA
IP/10	3	Update on GPS-Aided Geo Augmented Navigation (GAGAN), India	India
IP/11	2.1	Developments and Implementation in ATM/AIS in Indian Airspace	India
IP/12	2.1	Capacity Enhancement Initiatives in Indian Airports	India
IP/13	2.4	CAAC Aviation Safety Audit Programme (CASAP)	China
IP/14	3	Upgradation of ILS from CAT IIIA to CAT IIIB at Delhi Airport, India	India
IP/15	2.1	Implementation of ICAO Language Proficiency Requirements on Pilots and Air Traffic Controllers in China	China