INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF THE TWENTY-FIRST MEETING OF THE ATM/AIS/SAR SUB-GROUP of APANPIRG (ATM/AIS/SAR/SG/21)

Bangkok, Thailand, 27 June – 01 July 2011

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

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

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Twenty-First Meeting of the APANPIRG Air Traffic Management/Aeronautical Information Services/Search and Rescue Sub-Group (ATM/AIS/SAR/SG/21) was held at the Kotaite Wing of the ICAO Asia and Pacific (APAC) Regional Office, Bangkok, Thailand from 27 June to 01 July 2011.

2. Attendance

2.1 The meeting was attended by 97 participants from 22 States, 2 Special Administrative Regions of China, 2 Dependent Territories and 3 International Organizations. A list of participants is provided at **Attachment 1** to this Report.

3. Officers and Secretariat

3.1 Mr. Colman Ng, Assistant Director-General, Civil Aviation Department of Hong Kong, China presided over the meeting throughout its duration as Sub-Group Chairman.

3.2 Mr. Len Wicks, Regional Officer ATM, ICAO Asia/Pacific Office, was the Secretary of the meeting. He was assisted by Mr. John Richardson, ATM Expert and Ms. Sunisa Charoenmin, Technical Assistant ATM of the ICAO Asia and Pacific Regional Office,

4. Language and Documentation

4.1 The ATM/AIS/SAR Sub-Group met as a plenary throughout the meeting. The working language of the meeting was English inclusive of all documentation and this Report. Thirty four (34) Working Papers (WPs) and thirty three (33) Information Papers (IPs) were presented at the meeting. A list of papers is included in **Attachment 2** to this report.

5. Opening of the Meeting

ICAO Regional Office

5.1 Mr. Len Wicks, on behalf of Mr. Mokhtar A. Awan, Regional Director, ICAO Asia and Pacific Office extended a warm welcome to the participants.

Chairman of the Sub-Group

5.2 Mr. Colman Ng welcomed participants to the meeting. He noted the challenges that came from recent Asia/Pacific tragedies such as the Japanese earthquake and sustained phenomenal economic growth. Mr. Ng noted the many challenges that could threaten safe and smooth air traffic operations in the Region, which included the introduction of new Flight Plan and ATS Message formats; Automatic Dependent Surveillance–Broadcast (ADS-B) and Performance–Based Navigation (PBN) implementation across the Region; formulation of a Regional ATM Contingency Plan; the increasing demand for airspace and airport capacity and the incoherent level of aviation infrastructure development amongst the various Member States and Administrations.

5.3 The Chairman acknowledged the intense pressure on the Region Office's ATM resources. He urged participants to fully participate to improve safety and efficiency, as the final outcome would only be as good as the input.

5.4 The APAC Deputy Regional Director Mr. Yoshiki Imawaka noted the three ICAO Strategic Objectives of Safety, Security and Environmental Protection and Sustainable Development of Air Transport, and the programmes that had been assigned to the Regional Office in order to achieve these Strategic Objectives. Mr. Imawaka expected a productive meeting over the five days, in order to achieve an enhancement of safety and capacity.

6. Terms of Reference (TORs) of the ATM/AIS/SAR Sub-Group of APANPIRG

6.1 The Sub-Group Terms of Reference were as follows:

1. Ensure the continuing and coherent development of the ASIA/PAC Regional Air Navigation Plan in the ATM/AIS/SAR fields in accordance with the Global Air Navigation Plan and the Global Aviation Safety Plan;

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

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

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

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

6. Ensure ATS environmental initiatives are consistently identified and progressed, and act as the Asia/Pacific regional focal point for the reporting of outcomes from ATS environmental initiatives.

(Last updated APANPIRG/19, September 2008)

7. Draft Conclusions, Draft Decisions and Decisions of the ATM/AIS/SAR Sub-Group

7.1 The ATM/AIS/SAR Sub-Group recorded its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

a) **Draft Conclusions** deal with matters that, according to APANPIRG terms of reference, require the attention of States, or action by the ICAO in accordance with established procedures.

b) **Draft Decisions** deal with the matters of concern only to APANPIRG and its contributory bodies; and

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

8. **List of Decisions and Draft Conclusions/Decisions**

8.1 List of Decisions of ATM/AIS/SAR/SG/21

ATM/AIS/SAR Sub-Group Decision 21/1 – AAIF Terms of Reference

That the AAITF TORs be amended amending c) to read: 'assist States to implement Quality Management Systems for aeronautical information in an expeditious manner', to reflect the changes introduced in Amendment 36 to Annex 15.

8.2 List of Draft Conclusions

Draft Conclusion SG 21/2 – FPL 2012 Implementation Co-ordination

That, ICAO was urged to instigate formal inter-regional coordination by ensuring regular dialogue, information-sharing and meetings between key personnel and organisations managing the FPL 2012 implementation process.

Draft Conclusion SG 21/3 – AIM Transition Table

That, the APAC Regional Office maintains the AIM Transition Table as a means of tracking State transition to AIM, and to provide current details on AIM capability for interoperability, by publishing the State AIS – AIM Transition Table at **Appendix A** to the report on Agenda Item 5 on the APAC web site.

Draft Conclusion SG 21/5 – Draft APAC ATFM Regional Concept of Operations

That, the Draft APAC ATFM Regional Concept of Operations at **Appendix C** to the report on Agenda Item 5 be adopted and provided as reference material on the APAC website as planning guidance.

Draft Conclusion SG 21/6 – Major Traffic Flow (New)

That, the traffic flow between the Middle East airports such as Dubai and Abu Dhabi to Australasian or South East Asian airports such as Sydney and Singapore be recognized as APAC Major Traffic Flow AR-10 and recommended as an amendment to the Global Air Navigation Plan for CNS/ATM System (Doc 9750).

Draft Conclusion SG 21/8 – Asia/Pacific Air Navigation Concept of Operations

That, the Asia/Pacific Air Navigation Concept of Operations be included on the APAC website as guidance for State air navigation service facility and airline equipage planning, and States be advised of the Concept of Operations accordingly.

Draft Conclusion SG 21/9 − ADS-B Airspace Mandate

That, States intending to implement ADS-B based surveillance services may designate portions of airspace within their area of responsibility:

a) mandate the carriage and use of ADS-B equipment; or

b) provide priority for access to such airspace for aircraft with operative ADS-B as equipment over those aircraft not operating ADS-B equipment.

Draft Conclusion SG 21/10 − Regional ATM Contingency Plan Task Force

That, a Regional ATM Contingency Plan Task Force (RACP/TF) be formed, reporting to the ATM/AIS/SAR Sub-Group, in accordance with the Terms of Reference appended in **Appendix A** to the Report on Agenda Item 8.

8.3 List of Draft Decisions

Draft Decision SG 21/4 − Draft ATFMSG Terms of Reference

That, the ATFMSG TORs at **Appendix B** to the report on Agenda Item 5 be adopted, noting that the ATFMSG was a forum that develops high-level regional guidance material and regional ATFM policies, which would meet in the future only when required.

Draft Decision SG 21/7 – BBACG Terms of Reference

That, the BBACG TORs be created as appended at **Appendix D** to the report on Agenda Item 5, with its scope covering a geographical area that included Major Traffic Flows AR-1, AR-4 and the proposed AR-10 routes, and for the Group to be renamed as the South Asia Indian Ocean ATM Coordination Group – SAIOACG.

9. **ATM/AIS/SAR/SG Action Items**

Action Item 21/1: The Secretariat was tasked with coordinating with RASMAG with a view to formulating a coordinated Draft Conclusion to APANPIRG/22 (on region-wide safety monitoring arrangement for data link operations).

Action Item 21/2: The Secretariat should discuss the possible combining of FIT-BOB and FIT-SEA this with the RASMAG and FIT-BOB and FIT-SEA chairs, in order to determine if a common position could be agreed, and thus a Draft Conclusion could be determined by RASMAG/15.

Action Item 21/3: The Secretariat should discuss SEA-RR/TF with the SEACG Chairman to keep the ATM Coordination Group informed.

Action Item 21/4: There needed to be coordination between the Secretariat and the TFG to ensure that if a unique data set was required then a reasonable lead time was provided, and if it was possible, to use as much of the data as possible from the December TSD.

Action Item 21/5: The Secretariat informed the meeting that a State Letter containing all three SAR tables would be circulated, and States would be asked to update these.

Action Item 21/6: The Secretariat would issue a State Letter asking for the List of ATS contacts to be updated.

Action Item 21/7: The Secretariat would review and present proposals to update the ATM/AIS/SAR Sub-Group Task List at the next Sub-Group meeting (Action Item 21/7).

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AGENDA ITEM 1: ADOPTION OF PROVISIONAL AGENDA

PART II – REPORT ON AGENDA ITEMS

Agenda Item 1: Adoption of Provisional Agenda

1.1 The Provisional Agenda of the meeting was presented for review and consideration. The meeting reviewed and adopted the Agenda as the agenda of the meeting without any change as follows:

Agenda Item 1:	Adoption of Provisional Agenda
Agenda Item 2:	Review the APANPIRG/21 Report and subsequent ANC/Council Actions with respect to ATM/AIS/SAR issues
Agenda Item 3:	Regional Performance Framework and Metrics
Agenda Item 4:	Review outcome of the Thirteenth and Fourteenth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/13 & RASMAG/14)
Agenda Item 5:	Review of other relevant meetings
Agenda Item 6:	Provision of ATM/AIS/SAR in the Asia/Pacific Region, including associated CNS matters
Agenda Item 7:	Air Navigation Service Deficiencies
Agenda Item 8:	Future direction of APANPIRG (Asia/Pacific Air Navigation Planning and Implementation Regional Group) ATM Bodies
Agenda Item 9:	Update the ATM/AIS/SAR Task List
Agenda Item 10:	Any other business
Agenda Item 11:	Date and venue for next meeting

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AGENDA ITEM 2: REVIEW THE APANPIRG/21 REPORT AND SUBSEQUENT ANC/COUNCIL ACTIONS, WITH RESPECT TO ATM/AIS/SAR ISSUES

Agenda Item 2: Review the APANPIRG/21 Report and subsequent ANC/Council Actions, with respect to ATM/AIS/SAR issues

Review and update Conclusions and Decisions of APANPIRG (WP02)

2.1 The meeting reviewed the list of Outstanding Conclusions and Decisions of the 21st meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/21, 6-10 September 2010) in the ATM/AIS/SAR fields, as shown at **Appendix A** to the Report on Agenda Item 2.

2.2 The Sub-Group reviewed each Conclusion germane to ATM, including a number of conclusions relate to the new Flight Plan (FPL) format. The meeting noted that each Conclusion and Decision action was completed or being actively dealt with. In that respect, a number of WP would be presented at the Sub-Group on these on-going subjects.

2.3 With regard to Conclusion 21/1 (*States air navigation modernization plans*), India presented IP31, which provided information on the modernization of India's system, including automation features and safety nets, covering six major and 38 secondary airports. The system would provide complete radar and VHF coverage over Indian continental airspace, and the plan was to integrate radar and Automatic Dependent Surveillance – Broadcast (ADS-B). India urged States with adjoining centres to implement ATS Inter-facility Datalink Communications (AIDC).

2.4 With respect to Conclusion 21/7 (*Use of Global database for allocation of five-letter name codes in the Asia and Pacific Regions*), there were only 12 States/Administrations using ICARD out of 42 administrations (Afghanistan, Australia, China, Hong Kong China, Japan, Malaysia, New Zealand, Pakistan, Republic of Korea, Singapore, Thailand, and France). The Chairman noted that it was disappointing that many APAC States had not registered for ICARD and urged action from administrations on this matter.

2.5 It was noted that the updated lists of Outstanding Conclusions and Decisions, and the list of the APANPIRG/21 Conclusions and Decisions would be presented to APANPIRG/22, to be held in Bangkok, Thailand from 5 to 9 September 2011.

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APANPIRG/21 Conclusions/Decisions – Action Plan

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/1	**States air navigation modernization plans**	That, States developing their national air navigation modernization plans, which may have an impact on ICAO SARPs, be urged to share those plans in a timely manner with ICAO for review and assessment, to ensure global compatibility and harmonization.	Notify states	ICAO APAC office ICAO HQ/ ANB/CNS	State letter Established procedures	February 2011	COMPLETE COMPLETE	Noted. Requested the Secretariat to provide more details on the established procedures for the harmonization of these modernization plans.
C 21/2	**Wildlife hazard reduction**	That, States confronting problems of wildlife/bird strike hazard to consider developing and implementing an effective wildlife hazard management plan with procedures to control wildlife at or near airports.	Notify States	ICAO APAC office	State letter	January 2011	COMPLETE	
C 21/3	**Common Set of Performance Metrics for all the ICAO Regions**	That, ICAO be invited to: a) develop a common set of performance metrics for all the ICAO regions so as to facilitate comparative analysis; and b) establish the globally harmonised guidance on methodology of how to collect the data in order to achieve commonality.	HQ to develop a common set of performance metrics and establish the globally harmonized guidance.	ICAO APAC Office ICAO HQ	Issue Form A common set of performance metrics for all ICAO regions including guidance material for collection of data.	December 2010 September 2011	COMPLETE	Supported the conclusion and requested the Secretariat to develop a common set of metrics applicable to all regions along with guidance for the collection of data.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/4	**Regional Guidance material for the implementation of Amendment 1 to PANS-ATM**	That, in order for States to clearly understand what is intended in Amendment 1, the '*Asia/Pacific Guidance Material for the Implementation of Amendment 1 to the 15th Edition of the Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444)'* provided in **Appendix B** to the APANPIRG/21 Report on Agenda Item 3.2 be adopted and published as regional guidance material.	Publish the guidance material	ICAO APAC office	a) State letter b) Upload on the website	September 2010 September 2010	COMPLETE COMPLETE	Noted
C 21/5	**Strategy for implementation of New flight Plan Format**	That, the '*Strategy for the Implementation of new ICAO Flight Plan Format and Supporting ATS Messages'* provided in **Appendix C** to the APANPIRG/21 Report on Agenda Item 3.2 be adopted and published. States and users to be urged to continue implementation planning based on the strategy.	Publish the strategy	ICAO APAC Office	a) State letter b) Upload on the website	September 2010 September 2010	COMPLETE COMPLETE	Noted.
C 21/6	**Notification of State Transition Date to the New flight Plan Format**	That, in order to keep the ICAO Flight Plan Implementation Tracking System (FITS) website updated, States which have not yet provided data inform the Regional Office of the initial set of data required in the FITS website, such as scheduled date and contact person, by 22 October 2010, and subsequently update the data as required.	Update FITS	States	a) State letter b) FITS update	September 2010 22 October 2010	COMPLETE ONGOING	Noted.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/7	**Use of Global database for allocation of five-letter name codes in the Asia and Pacific Regions**	That, States which have not yet done so be urged to: a) nominate an ICARD authorized user in order to make use of the ICARD system and improve the process of allocation of Five-Letter Name-Codes (5LNCs); b) review the list of allocated 5LNCs with respect to each States, identify non-used, duplicate or non-ICAO 5LNCs and take actions to rectify the situations; and c) update the ICARD database by adding missing information, e.g. latitude and longitude coordinates, etc; and d) take necessary actions to implement the widespread use of the ICARD system.	a) nominate user b) review 5LNCs c) update ICARD d) implement ICARD	States	a) authorized user b) resolutions of duplication or non-ICAO 5LNC c) ICARD update	Ongoing Ongoing Ongoing	ONGOING	
C 21/8	**ICAO Asia/Pacific Seamless ATM workshop**	That, ICAO be invited to organize the Asia and Pacific Seamless ATM Workshop to be held in early 2011 inviting the APANPIRG member States and other parties of interest in order to foster discussion and action for the Asia and Pacific States in the planning of the future air traffic management system, considering the overall vision for the region for seamless ATM.	Convene Seamless ATM Workshop	ICAO APAC Office	Seamless ATM Workshop	February 2011	Revised date-APRIL 2011 Deferred	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
D 21/9	**Develop Sub- Regional volcanic Ash Contingency Plan**	That, a) in view of the recent volcanic activity in Iceland, the CNS/MET Sub-Group be requested to develop sub-regional volcanic ash contingency plans; and	CNS/MET SG to develop volcanic ash contingency plans	ICAO APAC	Volcanic ash regional contingency plan	Dec 2011	In Progress	Noted and requested the Secretariat to expedite the development of Volcanic ash regional contingency plan in coordination with all parties concerned.
		b) urge States to designate appropriate contact points to establish/maintain contacts in the interim period until the sub-regional volcanic ash contingency plans become available.	States to provide POC for volcanic ash events	ICAO APAC	Contingency contact list	Jan 2011	In Progress	
C 21/10	**Transfer FASID Table ATS 2 from ATS to MET**	That, ICAO considers the transfer of FASID Table ATS 2, HF radiotelephony VOLMET broadcasts, from ATS to MET, which would involve moving the Tables related to VOLMET broadcasts from the ATS part to the MET part of all ANP/FASID, where applicable.	HQ to assess the transfer of FASID Table ATS 2 to MET part	ICAO HQ	Review of FASID. Modifications, if any, to be incorporated in eANP	Dec 2011 HQ- November 2012		Noted and requested the Secretariat to review as a part of overall exercise for converting all ANPs to eANPs.
D 21/11	**ATM/AIS/SAR Task List**	That the ATM/AIS/SAR Sub-Group Task List and attachments contained in Appendix D to the APANPIRG Report on Agenda Item 3.2 be adopted as the current work programme for the ATM/AIS/SAR Sub-Group of APANPIRG.	Adopt the task list	ATM/AIS/SAR/ SG/21	Task List	June 2011		

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/12	**Convening of the Seamless- ATM Ad Hoc meeting**	That, while recognizing the seamless ATM needs to be addressed in a holistic manner, ICAO Regional Office be invited to organize a seamless ATM Ad Hoc working group meeting as soon as possible.	Convene the Seamless ATM Ad-Hoc Meeting	ICAO APAC Office	Seamless ATM Ad-Hoc Meeting	As soon as possible but not later than February 2011	Deferred to July 2011	
C 21/13	**Coordination for the Transition to the NEW Flight Plan Format among States**	That, as the global and the regional harmonization is crucial in implementing the NEW flight plan format by 15 November 2012, States start close coordination soon with adjacent States/FIRs on transition about, but not limited to: i) difference of timing for transition between the States/FIRs; ii) operations in the mixed environment of PRESENT and NEW; iii) operational transition for AIDC; and iv) procedures when ATS messages are not processed properly.	Start coordination	ICAO APAC Office States ICAO HQ	State letter Coordination Global harmonization through monitoring of implementation status on ICAO FITS portal	March 2011 Nov 2012	In Progress	Noted and requested the Secretariat to continue to monitor the implementation status of every State on ICAO FITS portal and ensure global harmonization for a transition to NEW Flight Plan.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/14	**Enhancement of the Global Coordination for Implementation of the NEW Flight Plan Format**	That, in light of the varying degree of States in implementing the NEW flight plan format, ICAO: i) urge all the States, including those outside the Asia/Pacific Region, to record their readiness in the FITS; ii) take action to ensure that any States or ICAO regions not use non-standard local procedures; and iii) ensure appropriate coordination take place between ICAO regional planning and implementation groups (PIRGs) to address implementation issues.	Enhance global coordination	ICAO HQ	Issue Form Global harmonization through monitoring of implementation status on ICAO FITS portal	April 2011 Nov 2012	COMPLETE	Noted and requested the Secretariat to continue to monitor the implementation status of every State on ICAO FITS Portal and ensure global harmonization for a transition to NEW Flight Plan.
C 21/15	**Responsibility Area of China RMA**	That, the China RMA be approved as an APANPIRG Asia/Pacific RVSM Regional Monitoring Agency with responsibility for all RVSM airspaces in China FIRs, and the Pyongyang FIR.	Approve China RMA for the expansion of responsibility	ICAO APAC Office	State letter to China and MAAR	September 2010	COMPLETE	Noted
D 21/16	**ATNICG Subject/Tasks List**	That, the updated Subject/Tasks List placed at Appendix A to the Report on Agenda Item 3.4 be adopted.	Notify ATNICG /8 and ATNICG/6	ICAO APAC Office	ATNICG WG and ATNICG informed and paper prepared	September 2010 May 2011	COMPLETE In progress	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/17	**ICAO Doc 9896 clarifications**	That ICAO be invited to provide clarifications on the following issues related to ATN/AMHS implementation. i) VoIP should be limited to ATS ground service since the ICAO approach is to encourage data communication such as CPDLC. Furthermore, the VoIP performance is network dependent and thus performance acceptance is varied; ii) how the States will come to know about updates on the relevant RFCs; and iii) IPv6 address structure.	Prepare Issue Form	ICAO APAC Office ICAO HQ/ANB/CNS	Issue form sent to ICAO HQ SARPs related to ATN/AMHS implementation	December 2010 2012	COMPLETE	Noted and requested the Secretariat to provide clarifications on the issues related to ATN/AMHS implementation.
D 21/18	**Regional ATN/AMHS Implementation Planner**	That, the Asia/Pacific Regional Implementation Planner Placed at Appendix B to the Report on Agenda Item 3.4 be adopted to report ATN/AMHS implementation progress in the region.	Notify ATNICG WG and ATNICG	ICAO APAC Office	ATNICG WG and ATNICG informed	September 2010 May 2011	COMPLETE	
C 21/19	**AMHS connectivity with ICAO MID region**	That Singapore, Pakistan and India take initiative in transiting to AMHS connectivity with Bahrain, Kuwait, Iran and Oman respectively at the earliest.	Remind States concerned to take initiative	ICAO APAC Office States concerned	States reminded and initiative by States taken	April 2011	COMPLETE AP-CNS0205 AP-CNS0206 24 Dec. 10	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/20	**Strategy for Implementation of Aeronautical Telecommunication Network (ATN) in the Asia/Pacific Region**	That, the document provided at Appendix C to the Report on Agenda Item 3.4 be adopted as Strategy for Implementation of Aeronautical Telecommunication Network (ATN) in the Asia/Pacific Region.	Notify States	ICAO APAC Office	State Letter Available on the website	November 2010	COMPLETE AP184/10 13 Dec. 10	Noted
C 21/21	**AMC Information Form**	That, States be invited to provide data for AMC in respect of their Administration in the format provided at Appendix D to the report on agenda item 3.4.	Notify States	ICAO APAC Office	State Letter	November 2010	COMPLETE AP187/10 13Dec10	
C 21/22	**Asia/Pacific ATN Interim Addressing Plan**	That, i) the proposed IPv6 and IPv4 addressing schemes be submitted to ICAO and ICAO be requested to consider a global IPv6 addressing scheme for ground-ground communication; ii) the proposed IPv4 address plan placed at Appendix E to this report on agenda item 3.4 be adopted to enable the Asia/Pacific ATN ground IPS network implementation to proceed using IPv4 in the interim with minimum delay; and iii) The Asia/Pacific region transition to IPv6 once the above issues have been resolved.	Prepare Issue Form and notify the States	ICAO APAC Office ICAO HQ	Issue Form sent to HQ and State letter A global IPv6 addressing scheme for ground-ground communication IPv4 address plan in order to enable the Asia/Pacific ATN ground IPS network implementation Transition to IPv6	March 2011 2012 COMPLETE TBD	COMPLETE COMPLETE	Noted and requested the Secretariat to develop SARPs for a global IPv6 addressing scheme for ground-ground communication. Noted Noted

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/23	**Amendment/update of Regional ATN/AMHS Guidance Documents**	That, the following amended Regional Guidance Documents for ATN/AMHS implementation be adopted and distributed to the States. a) the amended Asia/Pacific ATN Network Service Access Point (NSAP) Addressing Plan for Asia/Pacific Region as provided in the Appendix F to the Report on Agenda Item 3.4; b) the Test Procedure for ATN Router Connection Test, Annex C to Asia/Pacific AMHS Manual as provided in the Appendix G to the Report on Agenda Item 3.4; c) "Asia/Pacific ATN Security Guidance Document" to replace the existing Asia/Pacific ATN Security Guidance Document, Draft First Edition as provided in Appendix H to the Report on Agenda Item 3.4; and d) the phased testing procedure to transit from AFTN routing to MTA-to-any-MTA routing to be incorporated in the AMHS Manual as provided in Appendix I to the Report on Agenda Item 3.4.	Notify States	ICAO APAC Office	State Letter Updated guidance material available on the website	November 2010	COMPLETE / AP040/11 24/0311	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/24	**Points for Proposed Defect Report (PDR) (Amendment Proposal) raised in the region**	That, States be invited to present their ATN/AMHS implementation related Points for Proposed Defect Report (PDR) (Amendment Proposal) to the ICAO APAC Office. These points will be presented to the ATNICG/ATNICG Working Group (whichever is scheduled earlier) by the Secretariat for endorsement, so that these points, along with the ATNICG/ATNICG WG recommendations can be forwarded to ACP WG – M Secretariat through ICAO APAC Office	Notify States	ICAO APAC Office	State Letter and Procedure is followed	December 2010	COMPLETE AP182/10 9Dec10	
C 21/25	**Japan/Russia AFTN Routing Change**	That, ICAO be requested to coordinate with Europe Region for updating AFTN routing directory and consequential change to the APAC AFTN routing directory.	Coordinate with ICAO European Office for the change	ICAO APAC Office	Coordination carried out and Routing Directory updated	March 2011	Coordination was carried out. Comments are awaited from Russia	
C 21/26	**Pan-Regional ICD for AIDC**	That, ICAO Regional Office inform the NATSPG that the proposed title "Pan-regional ICD for Oceanic AIDC" is unacceptable as the ICD for AIDC is applicable for use by all ATS and ATM facilities in both oceanic, and continental areas within the Asia Pacific Region; and that the document should be titled as "Pan-Regional ICD for AIDC.	Inform NATSPG through EUR Office	ICAO APAC Office	ICAO ERU Office and NATSPG informed	November 2010	COMPLETE CNS0209/10 9Dec10	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/27	**Inter-regional ad hoc SATCOM Task Force**	That, a) the Terms of Reference of the inter-regional ad hoc Satellite Voice Communication (SATCOM) Task Force adopted by NAT System Planning Group as provided at Appendix J to the Report on Agenda Item 3.4 be endorsed; and b) the outcome of the task force should be coordinated with the CNS/MET Sub-group of APANPIRG.	Inform ICAO EUR Office and CNS/MET SG	ICAO APAC Office	ICAO EUR Office and CNS/MET SG informed	December 2010 July 2011	COMPLETE To be done	
C 21/28	**Regional HF Management Guidance Material**	That, the HF Management Guidance Material for the South Pacific as provided in the Appendix K to the Report on Agenda Item 3.4 be adopted as Part One of Asia/Pacific Regional Guidance Material for HF Management.	Notify States	ICAO APAC Office	State Letter and GM on the website	December 2010	COMPLETE CNS0183/10 9Dec10	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
D 21/29	**PBN Task Force Tasks List**	That, the PBN Task Force Tasks List provided at Appendix L to the Report on Agenda Item 3.4 be adopted.	Notify PBN TF	ICAO APAC Office	Paper prepared and PBNTF informed	March 2011	Revised date-APRIL 2011 (A paper will be prepared to introduce the Task Lists in the normal manner but the TF has been delayed until 9-13 May so this will now be done in April)	
C 21/30	**Limitation of Older Generation FMS**	That, ICAO (IFPP, PBNSG) be invited to note, once again, the importance of the limitation of older generation FMS in storing multiple procedures for the same type of navigation system for a runway. This limitation occurs when pilots attempt to select a specific approach that is not stored in the FMS navigation database. ICAO is requested to consider establishing additional guidance, supplementing existing PANS provisions and to explore solution(s).	Prepare Issue Form	ICAO APAC Office ICAO HQ	Issue Form sent to HQ Additional guidance supplementing existing PANS provisions regarding limitation of older generation FMS	October 2010 2012	COMPLETED 2012	Noted and requested the Secretariat to develop guidance supplementing existing PANS provisions regarding limitation of older generation FMS.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/31	**Revised APAC Regional PBN Implementation Plan**	That, the revised APAC Regional PBN Implementation Plan Version 2.0 provided in Appendix M to the Report on Agenda Item 3.4 be adopted.	Notify States	ICAO APAC Office ICAO HQ	State Letter Revised APAC Regional PBN Implementation Plan	October 2010 ONGOING	COMPLETE ONGOING	Noted the delay in implementation of PBN and requested the Secretariat to consider what can be done to encourage greater progress.
C 21/32	**Develop State PBN Implementation Plan**	That, the States, which have not developed their State PBN Implementation Plans so far, be urged to develop the plan in accordance with the Asia/Pacific Regional PBN Implementation Plan at the earliest and advise the Regional Office of the impediments in the implementation of PBN.	Urge State and identify impediments	ICAO APAC Office States	State Letter Impediments in the implementation of PBN informed	March 2011	COMPLETE	Noted the delay in implementation of PBN and requested the Secretariat to consider what can be done to encourage greater progress..
C 21/33	**Aircraft Equipage Requirements**	That, ICAO provides guidance on aircraft that do not have a lateral and vertical readout on the navigation display, but do display the lateral and vertical profile on the navigation equipment, which could be considered as an alternate means of compliance, if supplemented by appropriate flight crew training for RNP value of 0.3 RNP or greater.	Prepare Issue Form	ICAO APAC Office ICAO HQ	Issue Form sent to ICAO HQ and Required guidance provided Guidance on aircraft equipage requirements for RNP value of 0.3 or greater	March 2011 2012	COMPLETE	Noted and requested the Secretariat to develop guidance on aircraft equipage requirements for RNP value of 0.3 or greater and rationalize the guidance material.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
D 21/34	**PBN Task Force continuation**	That, the PBN Task Force be continued.	Notify PBN TF	ICAO APAC Office	Paper prepared and the Task Force informed	March 2011	Revised date-MAY 2011 (A SL was issued to advise that the TF has been delayed until 9-13 May)	
C 21/35	**Slow Progress of PBN Implementation**	That, ICAO highlights the slow progress and impediments in PBN implementation at the upcoming 47th DGCA Conference for their support to expedite implementation.	Prepare paper for DGCA Conf/47	ICAO APAC Office ICAOHQ	Paper prepared and issues highlighted Revised APAC Regional PBN Implementation Plan	October 2010 ONGOING	COMPLETE	Noted the delay in implementation of PBN and requested the Secretariat to consider what can be done to encourage greater progress..
C 21/36	**Progress of GNSS Implementation & Awareness of GNSS Manual**	That, ICAO a) highlight the slow progress of GNSS implementation in the aviation field at forums such as the coming 47th DGCA Conference in October in Macao, China; and b) raise the awareness of existence of the GNSS Manual among the aviation community.	Prepare paper for DGCA Conf/47	ICAO APAC Office	Paper prepared and issues highlighted	October 2010	COMPLETE	Noted.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
D 21/37	**Subject/Tasks List of ADS-B Study and Implementation Task Force**	That, the Subject/Tasks List for ADS-B Study and Implementation Task Force provided in Appendix N to the Report on Agenda Item 3.4 be adopted.	Notify ADS-B SITF	ICAO APAC Office	Paper prepared and the Task Force informed	April 2011		
C 21/38	**Guidance Material on Processing and Display of ADS-B Tracks on Air Traffic Controller Positions**	That, the Processing and Display of ADS-B Tracks on Air Traffic Controller positions provided in Appendix O to the Report on Agenda Item 3.4 be adopted.	Notify States	ICAO APAC Office	State Letter The GM available on the Website	December 2010	COMPLETE AP017/11 2Feb11	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/39	**Template for promulgation of ADS-B Avionics Equipage Requirements**	That, based on APANPIRG Conclusion 20/54, States intending to implement ADS-B based surveillance service for a defined airspace and having not published regulations be urged to promulgate mandating rule for ADS-B Avionics Equipage Requirements as soon as possible using the following template: *On and after dd/mm/yyyy, if an aircraft operates on airways (insert routes)……at or above FLXXX…….(or in defined airspace boundaries ……. at or above FLXXX):* *a) the aircraft must carry serviceable ADS-B transmitting equipment that has been certificated as meeting EASA AMC 20-24, or meets the equipment configuration standards in Appendix XI of Civil Aviation Order 20.18 of the Civil Aviation Safety Authority of Australia; and* *b) the aircraft operator must have the relevant operational approval from the State of Registry.*	Notify States	ICAO APAC Office	State Letter	November 2010	COMPLETE AP174/10 24Nov10	Noted
C 21/40	**Guidelines for Airworthiness and Operational Approval for ADS-B Avionics Equipage**	That, States be advised to use the guidelines provided in Appendix P to the Report on Agenda Item 3.4 for Airworthiness and Operational Approval for ADS-B Out Avionics Equipage.	Notify States	ICAO APAC Office	States informed	January 2011	COMPLETE AP008/11 24Jan11	Noted

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/41	**Revised Regional Surveillance Strategy for Asia and Pacific Regions**	That, the revised Regional surveillance strategy for Asia and Pacific Regions provided in Appendix Q to the Report be adopted.	Notify States	ICAO APAC Office	State Letter Revised strategy available on the website	January 2011	COMPLETE AP004/11 21Jan11	Noted
C 21/42	**Rule on Misleading ADS-B Transmissions**	That, States where ADS-B may be used, even voluntarily, promulgate rule for ADS-B Avionics Equipage Requirements consider publishing additional provisions for misleading ADS-B transmission as follows: *After <insert earliest date that ADS-B may be used for any relevant operational purpose> if an aircraft carries ADS-B transmitting equipment which does not comply with* *a) EASA AMC 20-24, or* *b) the equipment configuration standards in Appendix XI of Civil Aviation Order 20.18 of the Civil Aviation Safety Authority of Australia.* *the aircraft must not fly unless the equipment is:* *(a) deactivated; or* *(b) set to transmit only a value of zero for the NUCp or NIC.*	Notify States	ICAO APAC Office	State Letter	November 2010	COMPLETE AP175/10 24Nov10	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
		Note: *1. It is considered equivalent to deactivation if NUCp or NIC is set to continually transmit only a value of zero.* *2. Regulators should take appropriate action to ensure that such regulations are complied with.* *3. ATC systems should discard ADS-B data when NUC or NIC=0*						
C 21/43	**Preparation for WRC – 2012**	That, a) States be urged to have the designated contact person closely involved in the preparatory work for WRC – 2012 at the national level in close coordination with the contact points designated by respective telecommunication regulators; b) Make necessary arrangements for the designated contact persons to attend the APT APG meetings and WRC – 2012 Conference to protect aviation interests; and c) Reference to APANPIRG Conclusions 19/41, 20/58 and DGCA Conference Action Item 46/8 may be used to support these efforts.	Notify States and necessary arrangement	ICAO APAC Office and States	States Letter Take necessary action to support ICAO Position for WRC2012	July 2010 2012	COMPLETE AP036/11 11Mar11	Noted and appreciated the preparatory work of APANPIRG in order to seek the support of States for ICAO position at WRC-2012.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/44	**Visibility of ICAO Position on WRC – 2012 Agenda Items**	That, ICAO be urged to improve visibility to ICAO Position on WRC-2012 Agenda Items of critical interest to civil aviation on the ICAO website.	Prepare Issue Form	ICAO APAC Office ICAO HQ	Visibility of ICAO position for WRC2012 on ICAO Website Increased visibility of ICAO position for WRC-2012 on ICAO website by displaying it on home page.	July 2010	COMPLETE COMPLETE	Agreed and requested the Secretariat to display ICAO position for WRC2012 on the home page of ICAO website.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/45	**Transition to WAFS Internet File Service (WIFS) from ISCS-G2**	That, a) The ISCS Provider State will work with States, in cooperation with the ICAO Secretariat and Asia and Pacific Regional Office, to assist States with the implementation of WIFS by March 2012; b) States to update Points of Contact in Appendix R to this Report and submit the WIFS registration form; and c) ICAO Asia and Pacific Regional Office to request States to advise on the status of their implementation of WIFS by March 2011. *Note 1: The data currently being provided by ISCS satellite service will only be available via the WAFS Internet File Service (WIFS) after June 30 2012.* *Note 2: WIFS commenced operation in May 2010.*	Assist in WIFS implementation Update POC of ISCS/WIFS users and encourage WIFS registration Inquire with States on status of WIFS implementation	ISCS Provider State ICAO APAC ICAO APAC	Regional Implementation of WIFS State letter State letter	Mar 2012 Dec 2010 Dec 2010	**Mar 2012 (ongoing)** **COMPLETE** (SL – 27Sep2010) **COMPLETE** (SL – 27Sep2010)	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/46	**Improvements to WAFS Implementation**	That, the WAFSOPSG is invited to discuss and consider the following improvement measures in WAFS implementation: a) the WAFC Provider States inform users in advance about forthcoming changes to the contents of the WAFS forecasts; and b) further guidance be provided regarding the specific actions to be taken by the MET service providers and all relevant end users of WAFS upon receiving the administrative message. *Note: Guidance should also include any requirement for a user State to generate its own administrative message for a product affected by a received administrative message.*	Determine changes, if necessary, to the WAFS change bulletin notice Determine further guidance, if necessary, for users of WAFS administrative messages	WAFSOPSG/6 (March 2011) WAFSOPSG/6 (March 2011)	Update WAFS bulletin notice, if required Update guidance on WAFS administrative messages, if required	July 2011 July 2011		
C 21/47	**Improvements to VA and TC advisories**	That, The IAVWOPSG consider including the file name of the graphical advisories, if issued, under “Remarks” of the corresponding textual advisories.	Determine if link between graphical and textual advisories is necessary	IAVWOPSG/6 (September 2011)	Update relevant standards (Am 76 to Annex 3) and/or guidance material if necessary	2013		

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/48	**Update of SADIS and ISCS User Guide**	That, the SADISOPSG and WAFSOPSG consider the need to update the SADIS and ISCS User Guides by aligning with regional Meteorological Watch Offices requirements (Regional FASID Tables) *Note: To achieve this, the following steps should be taken in time for the regional SIGMET advisory trial (1 April 2011)* *a) Regional amendment proposals on FASID Table MET 1B;*	Amendment Proposals to Tables in the Regions, where necessary	ICAO APAC	Up-to-date FASID Tables MET 1B for all Regions	Dec 2010	COMPLETE	
		b) Develop global database based on Regional requirements in a); and	HQ IT develop global database of FASID Table MET 1B	ICAO HQ	Global MWO database	Mar 2011	Mar 2011 **(all regions submitted latest version table in excel format to HQ in Nov 2010, except for NAM)**	
		c) Consider global database on SIGMET requirements for use in SADIS and ISCS User Guides	Incorporate SIGMET requirements in SADIS Users Guide (as a link to the global database)	WAFSOPSG/6 (March 2011) SADISOPSG/15 (May 2011)	Provide link to global database for SIGMET requirements	Apr 2011		

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/49	**Implementation of OPMET reception**	a) IATA be invited to conduct another period of OPMET monitoring for reception of METAR and TAF at SADIS and ISCS and provide the Regional Office with a list of AOP and non-AOP aerodromes by State whose OPMET data are not available at SADIS and/or ISCS as well as a list of AOP aerodromes by State that distribute FC TAF; and	IATA to monitor OPMET availability at SADIS/ISCS	IATA	List of aerodromes by State whose OPMET not received at SADIS/ISCS	Feb 2011	COMPLETE	
		b) the Regional Office urge States containing AOP aerodromes whose OPMET is not received at SADIS and/or ISCS to comply to the Regional Air Navigation Plan (RANP); and	Inform States	ICAO APAC	SL	Apr 2011	COMPLETE (SL – 29Mar2011)	
		c) the Regional Office encourage States containing non-AOP aerodromes whose OPMET is not received at SADIS/ISCS to provide OPMET data as already agreed upon; and	Inform States	ICAO APAC	SL	Apr 2011	COMPLETE (SL – 29Mar2011)	
		d) the Regional Office inform States that FC TAF is no longer disseminated internationally in accordance with the RANP; and	Inform States	ICAO APAC	SL	Apr 2011	COMPLETE (SL – 29Mar2011)	
		e) the slower transmission times and missing OPMET data associated with ISCS in relation to SADIS be investigated by RODBs Tokyo and Singapore;	Investigate SADIS/ISCS transmission time differences	RODBs Singapore & Tokyo	Reduce OPMET transmission time to ISCS	May 2011	COMPLETE (SL – 29 Mar2011)	

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
		f) the Regional Office inform States of OPMET observation, filing and transmission times as described in the ROBEX Handbook section 7.5; and	Inform States	ICAO APAC	SL	May 2011	COMPLETE (SL – 29 Mar2011)	
		g) the Regional Office inform States of OPMET availability and regularity as defined in the Regional Air Navigation Plan and ROBEX Handbook. *Note: this Conclusion is intended to assist in achieving the OPMET data availability goals (95% AOP aerodromes and 90% non-AOP aerodromes) described in APANPIRG/20 Conclusions 20/63 and 20/64)*	Inform States	ICAO APAC	SL	May 2011	COMPLETE (SL – 29 Mar2011)	
C 21/50	**MET/ATM Seminar**	That, ICAO in coordination with WMO conduct a MET/ATM Seminar in early 2011. *Note: This draft Conclusion reinstates APANPIRG Conclusion 19/53.*	HQ consider inviting WMO as partner in MET/ATM Seminar	MET/AIM Section	Invitation Letter/ Seminar	Dec 2010	COMPLETE	Noted and confirmed the need for MET/ATM Seminar in early 2011
D 21/51	**Performance Framework Forms (PFFs)**	That, updated performance Framework Forms (PFFs) of CNS and MET fields as contained in Appendix S to the report on agenda item 3.4 be adopted.	Notify CNS/MET SG	ICAO APAC office	Paper prepared and SG notified	July 2011		

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
D 21/52	**Updated Subject/Tasks List of the CNS/MET Sub-group**	That, the updated Subject/Tasks List of the CNS/MET Sub-group provided in Appendix U to the report on agenda item 3.4 be adopted.	Notify CNS/MET SG	ICAO APAC office	Paper prepared and SG notified	July 2011		
C 21/53	**Elimination of ATM Air Navigation Deficiencies**	That, States concerned a) be urged to take urgent actions to correct the deficiencies in the ATM/AIS/SAR fields identified in Attachment A to the Report on Agenda Item 4 ; b) notify details of the problems/difficulties to the Regional Office; and c) designate a point of contact in each State to deal with deficiencies and provide details to the Regional Office by 22 October 2010.	a) take actions to correct deficiencies b) notify details of difficulty c) designate point of contact	States	less deficiencies remedial actions point of contact	Ongoing Ongoing 22 October 2010	COMPLETE	Noted and requested the Secretariat to accord highest priority in its work programme to the urgent elimination of the safety-related deficiencies. States reflected in the APANPIRG list of deficiencies are urged to establish action plans with fixed target dates. Also, commitment to the elimination of deficiencies should be pursued through all available mechanisms, including the annual Conference of DGCAs

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/54	**Aerodrome deficiencies**	That, the States concerned be urged to validate and provide corrective action plan for the elimination of aerodrome deficiencies identified in Appendix B1 to the Report on Agenda item 4 of APANPIRG/21;	Notify concerned States	ICAO APAC office	State letter	February 2011	COMPLETE	Noted and requested the Secretariat to accord highest priority in its work programme to the urgent elimination of the safety-related deficiencies. States reflected in the APANPIRG list of deficiencies are urged to establish action plans with fixed target dates. Also, commitment to the elimination of deficiencies should be pursued through all available mechanisms, including the annual Conference of DGCAs

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/55	**Removal of the APANPIRG Air Navigation Deficiency AP-MET-13**	That, the air navigation deficiency AP-MET-13 be removed from the APANPIRG air navigation deficiencies list.	Remove deficiency from database	ICAO APAC	Updated deficiency database	Dec 2010	COMPLETE	Noted and requested the Secretariat to accord highest priority in its work programme to the urgent elimination of the safety-related deficiencies. States reflected in the APANPIRG list of deficiencies are urged to establish action plans with fixed target dates. Also, commitment to the elimination of deficiencies should be pursued through all available mechanisms, including the annual Conference of DGCAs

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/56	**Cost Recovery Guidance Material Update**	That, ICAO be invited to consider updating the cost recovery guidance material that would take into account States whose air traffic volume is not sufficient in obtaining the cost recovery for the necessary MET services required in Annex 3 and consider shared services in airspace blocks that are based on the number flights needed in obtaining the necessary cost for the services required for that airspace block.	HQ to consider updating cost recovery guidance material	ICAO HQ	Updated Guidance Material (Doc 9161) if deemed necessary by ATB	2012		Noted and requested the Secretariat to coordinate with ANSEP and WMO and consider, if necessary, updating guidance material in the *Manual on Air Navigation Services Economics* (Doc 9161)
D 21/57	**APANPIRG Contributory Bodies Structure Review Task Force (ABSRTF)**	That, a) APANPIRG Contributory Bodies Structure Review Task Force with members consisting of Sub-group chairpersons, vice-chairpersons and voluntary members nominated by States be established; and b) In coordination with ICAO Regional Office, the Task Force undertakes a review of the Terms of Reference and activities of the APANPIRG contributory bodies and proposes rationalization of their structures to APANPIRG/22 to meet the changing environment.	Notify States to nominate voluntary members. Establish ABSRTF Review structure and develop proposals for contributory bodies	ICAO APAC Office ABSRTF	State Letter ABSRTF established Paper prepared with proposals.	November 2010 February 2011 June 2011	COMPLETE COMPLETE	
C 21/58	**Establishment of RASGs – Consequent revision to TOR of APANPIRG**	That meeting adopt the revised terms of reference of APANPIRG as shown in the Appendix A to the Report on Agenda Item 6.	Notify States	ICAO APAC office	State letter	March 2011	COMPLETE	Noted and requests the ANC to consider how the reports and actions resulting from RASG meetings will be handled.

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Deliverable	Target date	Status as of 31 March 2011	ANC Action recommended
C 21/59	**Development of New RANP**	That, ICAO be invited to review the regional air navigation plan structure, processes and contents to incorporate them in to e-ANP and expedite its provision for use.	Prepare Issue Form	ICAO APAC Office ICAO HQ	Issue form prepared Revised ANP and development of eANP	December 2010 Nov 2012	COMPLETE	Noted and requested the Secretariat to continue with the development of e-ANPs

*** 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.*

AGENDA ITEM 3: REGIONAL PERFORMANCE FRAMEWORK AND METRICS

Agenda Item 3: Regional Performance Framework and Metrics

Review of Regional Performance Objectives, Performance Framework Forms and Metrics (WP03)

3.1 The meeting reviewed the Regional Performance Framework Forms related to ATM, noting that there were Sub-Group papers on each of the following items:

- APAC Objective 1 (Airspace Safety Monitoring to achieve regional TLS);
- APAC Objective 2 (Optimise Traffic Flow);
- APAC Objective 3 (Optimise Route Structure in En-route Airspace);
- APAC Objective 4 (Optimise Route Structure in Terminal Airspace);
- APAC Objective 5 (Implementation of New ICAO Flight Plan Provisions);
- APAC Objective 6 (Enhanced Provision of AIS/AIM); and
- APAC Objective 7 (Enhanced Search and Rescue Capability).

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AGENDA ITEM 4: REVIEW OUTCOME OF THE THIRTEENTH AND FOURTEENTH MEETING OF THE REGIONAL AIRSPACE SAFETY MONITORING ADVISORY GROUP (RASMAG/13 & RASMAG/14)

Agenda Item 4: Review outcome of the Thirteenth and Fourteenth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/13 & RASMAG/14)

RASMAG/13 and RASMAG/14 Outcomes (WP04)

4.1 The Thirteenth and Fourteenth Meetings of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/14) were held in Bangkok, Thailand from 2 to 5 August 2010 and 21 to 25 February 2011 respectively at the ICAO APAC Regional Office.

4.2 Regarding Reduced Vertical Separation Minimum (RVSM) scrutiny groups, the creation of informal ATM coordination groups was encouraged by RASMAG to deal with safety monitoring assessment on a bi-lateral or multi-lateral basis.

4.3 Airspace users were encouraged to provide the relevant navigation capability information so that Air Navigation Service Providers (ANSPs) could plan facilities to support these capabilities. States were invited to ensure that the appropriate data link performance monitoring was undertaken and reported to Central Reporting Agencies/FANS Implementation Teams (CRAs/FITs). RASMAG/14 noted that very little formal data link monitoring reporting by Asia/Pacific CRAs had been made available to RASMAG, so RASMAG wanted a level of reporting standardization.

4.4 Conditional ATC clearances were believed to be related to Large Height Deviation (LHD) block clearance issues. Many of the Fukuoka FIR HF communication read back/hear back errors related to coordination with Manila. A significant portion of LHD occurrences were attributable to ATC transfer of control coordination errors (Category E) as a result of human factors issues. However, the effectiveness of AIDC had been demonstrated in controlling coordination errors.

4.5 RASMAG reiterated that work should be undertaken to proactively resolve safety issues systemically, not after the fact, using tools such as scrutiny groups and Safety Management System analysis.

4.6 There had been no report of any LHD for aircraft operating in the Pyongyang Flight Information Region (FIR), so China RMA estimated the risk value using a comparable FIR.

4.7 ATM/AIS/SAR/SG/20 felt that a region-wide safety monitoring arrangement for data link operations with oversight by RASMAG would be preferred, but APANPIRG/21 was of view that while RASMAG's responsibility was to oversight safety in the region, the arrangement for the establishment and operations of CRAs was the responsibility of the FIT and ATM/AIS/SAR/SG.

4.8 IATA mentioned that the original Sub-Group suggestion resulted from State reports using the incorrect FANS Operations Manual (FOM) standards, issues such as the lack of CRA oversight for South-East Asia after CRA-Japan planned to withdraw services, and the general Bay of Bengal situation regarding contracted CRA services.

4.9 ATM/AIS/SAR/SG/21 discussed the APANPIRG/21 response. Meeting participants did not recall the reason why APANPIRG/21 came to this conclusion, and nor could this be ascertained from the meeting report. The meeting believed that RASMAG was a suitable oversight safety body for datalink performance monitoring agencies, as this was consistent with RASMAG's role, so the meeting agreed that the original ATM/AIS/SAR/SG/20 Draft Conclusion was still appropriate. Recognizing that this needed to be further discussed by RASMAG/15, the Secretariat was tasked with coordinating with RASMAG with a view to formulating a coordinated Draft Conclusion to APANPIRG/22 (Action Item 21/1).

Endorsement of Automatic Dependent Surveillance-Broadcast Data for Monitoring RVSM Aircraft Altimetry System Error (IP08)

4.10 This paper presented information on a joint research activity undertaken between Airservices Australia and the FAA to prove the use of ADS-B geometric height data for estimating Altimetry System Error (ASE). This work had been formally endorsed by both the ICAO Separation and Airspace Safety Panel (SASP) and Regional Monitoring Agencies Coordination Group (RMACG), and thus was well received by States and airspace users alike as a potentially bonus attribute for ADS-B systems.

RVSM Height Keeping Monitoring for Air Koryo of DPR Korea (IP12)

4.11 This paper was not presented as it was more appropriate for RASMAG.

Bay of Bengal Arabian Sea Monitoring Agency (BOBASMA) (IP26)

4.12 India presented IP26, which provided information on the establishment of the BOBASMA En-route Monitoring Agency (EMA) at Chennai. India placed on record their thanks to Singapore for assistance provided to develop EMA expertise.

4.13 IATA supported the work of India and encouraged India and Singapore in their efforts. India stated that they were receiving data from all involved States, but only two States had signed the Letter of Agreement (LOA). The Chairman urged the parties to sign the LOA as soon as possible and submit it to BOBASMA.

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AGENDA ITEM 5: REVIEW OF OTHER RELEVANT MEETINGS

Agenda Item 5: Review of other relevant meetings

Seamless ATM

ICAO Asia/Pacific Seamless ATM Symposium and Ad-Hoc Group Meeting (WP06)

5.1 The 46th Conference of Directors General of Civil Aviation, Asia and Pacific Regions (DGCA/46, Osaka, October 2009) first addressed the 'Seamless Sky' and how this may affect the Asia and Pacific (APAC) Regions. DGCA/46 issued the Kansai Statement, which requested, *inter alia*, the APANPIRG to be 'a starting platform for the discussion on 'Seamless ATM'.

5.2 Subsequent to this, the ATM/AIS/SAR/SG/20 (Singapore, 05 – 09 July 2010), considered it important to extend knowledge about the ICAO Global ATM Operational Concept and the future ATM visions such as NextGen (United States), SESAR (Europe) and CARATS (Japan). To achieve this objective, the Federal Aviation Administration (FAA) and Japan Civil Aviation Bureau (JCAB) proposed a forum on future air traffic systems in collaboration with ICAO Asia and Pacific Office.

5.3 The 21st Meeting of APANPIRG, (Bangkok, 6 – 10 September 2010) agreed to the following Conclusions:

Conclusion 21/8 – ICAO Asia/Pacific Seamless ATM Workshop

That, ICAO be invited to organize the Asia and Pacific Seamless ATM Workshop to be held in early 2011 inviting the APANPIRG member States and other parties of interest in order to foster discussion and action for the Asia and Pacific States in the planning of the future air traffic management system, considering the overall vision for the region for seamless ATM.

Conclusion 21/12 – Convening of the Seamless ATM Ad-Hoc Meeting

That, while recognizing the seamless ATM needs to be addressed in a holistic manner, ICAO Regional Office be invited to organize a seamless ATM Ad Hoc working group meeting as soon as possible.

5.4 The CANSO (Civil Air Navigation Services Organisation) Seamless Airspace Workgroup considered the following terms as key to describe the general concept of Seamless ATM: standardised, harmonised, and interoperable. Thus a vision of a future Seamless ATM environment was conceptualised as having:

- consistent and harmonised[1] standards and operating practices; and
- using interoperable[2] ATM and supporting systems.

5.5 In this connection, the ATM/AIS/SAR/SG/21 noted that there must be an alignment between bodies that support APAC Regional planning and implementation and Seamless objectives. In the context of Seamless ATM, it was clear that optimal, harmonised systems and procedures cannot be achieved without appropriate ATM coordination between:

- State ATS Authorities;

1 Accord or agreement for a consistent and orderly implementation of systems/procedures (achieved through common timing or appropriate tools).
2 Ability to transfer information or effect functionality across any discontinuity to enable operations (achieved through common standards, designs and procedures).

- Air Navigation Service Providers (ANSP);
- Communication Service Providers (CSP);
- Military authorities; and
- airspace users such as the International Air Transport Association (IATA).

5.6 It was recognized by the meeting that it was important that the Major Traffic Flows (MTF) were not constrained by ICAO Regions and in the future, the need to work across regional boundaries would be increasingly required. The meeting noted the need for integrated, trans-regional ATM Coordination that could apply Seamless ATM principles to all MTF.

5.7 The APAC Seamless ATM Symposium and Ad-Hoc Meeting would be held in Bangkok, Thailand from 15 - 17 August 2011. The Secretariat urged all APAC administrations to attend this important forum.

Performance – Based Navigation

ICAO Asia/Pacific Performance-Based Navigation (PBN) Task Force (WP07)

5.8 PBN/TF/8 (New Delhi, India, 9-13 May 2011) discussed the implications of the new RNP 0.3 and 'Advanced RNP' Navigation Specifications. Participants were not clear on how these specifications would be applied, so it was considered that guidance material was needed from the PBN Study Group (PBNSG) in this regard.

5.9 The progress of APAC State PBN implementation was discussed. At the time of the meeting, of the 20 current PBN Plans, nine (9) had been assessed by the PBN Plan Review Team as robust, four (4) were rated as marginal and eight (8) were rated incomplete. This meant that less than one quarter of APAC administrations had adequate plans, when all States were expected to have appropriate PBN Plans in place by 2009. However, this number was expected to improve significantly after the PBN Plan assessments that were underway (12) had been completed. The majority of States that did not have a PBN Plan were small Pacific Island nations.

5.10 The meeting noted the need for a Regional Support Strategy to provide direct support to States in an effort to accelerate PBN implementation within the Asia Pacific Region. It was proposed that 'PBN REDI initiatives' be used as a term to associate Regional and State support efforts that include the contributions of ICAO supporting agencies, industry partners and volunteering ('champion') States, particularly where multiple stakeholders are involved. The meeting noted that the coordinator of regional PBN activity should not be a commercial entity.

5.11 Two Regional RNP4 Surveys had emanated from APANPIRG Conclusion 19/7:

APANPIRG Conclusion 19/7 RNP 4 capability for operators

That, recognizing the significant benefits expected from the implementation of 30 NM longitudinal separation based on RNP 4, operators of Pacific fleets be urged to equip with RNP 4 avionics for oceanic airspace operations and obtain approval from the States of Registry/Operators as early as possible, but no later than 2012.

5.12 PBN/TF/8 noted from the Surveys that it was unlikely APAC State aircraft operators would achieve RNP4 approval by 2012. There has been a reluctance to equip because of a lack of benefit perception. IATA noted that until there was a priority accorded to RNP4 aircraft or a mandate, then airlines would continue to resist the cost of RNP4 approval. IATA further noted that there was no capacity in Amendment 1 to PANS-ATM (Doc 4444) for the new navigation specifications, such as RNP2.

5.13 IATA did not support Space – Based Augmentation Systems (SBAS), but supported Aircraft – Based Augmentation Systems (ABAS).

5.14 The meeting agreed with the following PBN/TF/8 Draft Conclusion to the CNS/MET Sub-Group.

The CNS/MET SG should include within the Strategy for the Provision of Navigation Services in the Asia/Pacific Region the minimum requirement of GNSS-enabled area navigation systems for all RNP navigation authorizations; and recommend that ICAO adopt, as a minimum requirement, GNSS-enabled area navigation systems for all RNP navigation specifications.

PBN Implementation in India (IP28)

5.15 India updated the meeting on the PBN implementation process that was in progress, supporting the rapid aviation growth in that nation. PBN procedures had been implemented at Delhi, Mumbai, Chennai, Kolkata, Hyderabad, Bangalore and Ahmadabad international airports, and there were PBN improvements planned for many other aerodromes, as part of an extensive PBN Roadmap.

5.16 India was willing to assist other APAC States with PBN implementation, which was greatly appreciated by the meeting.

Flight Plan 2012

Asia/Pacific ICAO Flight Plan & ATS Messages Implementation Task Forces and Seminar (FPL & AM/TF/3 AND /4 and Seminar, WP08)

5.17 The outcomes from the Asia/Pacific ICAO Flight Plan & ATS Messages Task Force (FPL & AM TF) responsible for overseeing implementation of Amendment 1 to the *Procedures for Air Navigation Services — Air Traffic Management, Fifteenth Edition* (PANS-ATM, Doc 4444) were presented by the Secretariat. FPL&AM/TF/3 was held from 23–24 August 2010, and FPL&AM/TF/4 and Seminar were held from 01–03 June 2011.

5.18 Many States had not completed the safety assessment for the change and had also not developed their system requirements. States needed to assess the safety risks of the transition as part of their Safety Case under Annex 11.

5.19 Some administrations were yet to engage vendors, or commence in-house software development. Singapore advised that some vendors were ready with converter solutions, although vendors varied as to their preparedness. The meeting noted that sharing of information was required between ANSPs regarding vendors and their testing programmes.

5.20 APANPIRG/21 discussed Amendment 1 and agreed to Conclusion 21/13, which emphasised the need for urgent and appropriate coordination with neighbouring States and FIRs:

Conclusion 21/13 – Coordination for the Transition to the NEW Flight Plan Format among States

That, as the global and the regional harmonization is crucial in implementing the NEW flight plan format by 15 November 2012, States start close coordination soon with adjacent States/FIRs on transition about, but not limited to:

i) difference of timing for transition between the States/FIRs;
ii) operations in the mixed environment of PRESENT and NEW;
iii) operational transition for AIDC; and
iv) procedures when ATS messages are not processed properly.

5.21 Most States that responded to the State Letter indicated a high level of compliance with the Amendment 1 transition dates, and either a minimal transition impact (with the exception of the USA) or no information on this matter was submitted. Almost all airlines surveyed confirmed their FPL 2012 readiness and support for State testing.

5.22 The Task Force considered that a transitional switchover to NEW format plan was preferable to a 'big bang', whereby everyone changed at the same time. Also of concern were converters, which may affect downstream data being forwarded, and may not support the advanced features required by aircraft operations.

5.23 A review of the flight plan related material in the Regional Supplementary Procedures (SUPPs, Doc 7030) compared to Amendment 1 of PANS-ATM (Doc 4444) was completed to ensure consistency.

5.24 An inter-regional contact group headed by ICAOHQ would discuss areas of inconsistency of interpretation in the application of the changes and clarify these for the next Task Force.

5.25 Afghanistan, Democratic People's Republic of Korea, Lao People's Democratic Republic, and Sri Lanka had no Points of Contact on the FITS website, and the implementation status of Papua New Guinea was not clearly able to be determined.

5.26 Australia agreed to develop a FPL 2012 Training Template that could be used by other administrations involved in Amendment 1 training.

5.27 Hong Kong, China stated that they were making good progress with the in-house development of software and would be ready. Hong Kong asked if there was a go/no-go date for FPL 2012 implementation. The Secretariat advised there was no 'Plan B', as this may cause some administrations to be less motivated. IATA stated that the airlines were ready and expected the same from ANSPs. Moreover, IATA stated that if one State did not comply then it could potentially affect a lot of other States, so this is the reason why the question of contingency has not been formally discussed.

Creation of Multi-Regional Flight Plan Coordination Group (WP30)

5.28 One of the issues the USA had observed as a member of multiple groups dealing with the changes from Amendment 1 was a lot of diverse discussion and different interpretations; thus this paper proposed the creation of a multi-regional flight plan coordination group. The group would facilitate harmonized implementation and coordinate a globally harmonized approach to filing flight planning information which may not be explicitly covered by Amendment 1 (such as new technologies and capabilities).

5.29 The meeting noted that there was an ICAOHQ resource coordinating FPL 2012 regional implementation efforts, and that Regional Officers were informally coordinating as required. Notwithstanding this, and the short time before the testing regime was due to start on 1 January 2012, it was considered important to highlight the importance of formal coordination at this critical juncture.

5.30 IFATCA supported the need for such coordination, and noted that there were significant differences in interpretation. Hong Kong China noted that States may be reluctant to invest in changes if there were inconsistencies that had not been identified to date.

5.31 The ATM/AIS/SAR/SG Meeting agreed to the following Draft Conclusion:

Draft Conclusion SG 21/2 – FPL 2012 Implementation Co-ordination

That, ICAO was urged to instigate formal inter-regional coordination by ensuring regular dialogue, information-sharing and meetings between key personnel and organisations managing the FPL 2012 implementation process.

Status of FAA Implementation of Amendment 1 to PANS-ATM, Doc 4444, 15th Edition (IP/18)

5.32 This paper presented information on the Federal Aviation Administration (FAA) implementation of Amendment 1. The FAA identified that six major flight data processing systems and four flight plan filing systems would require modification. The FAA was working toward completion of development during the first quarter of 2012 for all these systems.

5.33 The United States confirmed that the military were also planning to be ready for the NEW FPL format.

5.34 The FAA provided guidance to personnel responsible for processing flight plans at http://www.faa.gov/ato?k=fpl**.** Information on Amendment 1 to PANS-ATM was provided at http://www..faa.gov/go/fpl2012. The website included information on monthly teleconferences, presentations that gave an overview of the changes introduced by Amendment 1, and draft modifications to guidance documents for review.

AIS-AIM

Outcomes of the Sixth Meeting of the AIS-AIM Implementation Task Force (WP09)

5.35 The meeting was presented with the outcomes of the 6th Meeting of the Aeronautical Information Services – Aeronautical Information Management Implementation Task Force (AAITF/6), held at Bangkok, from 15 to 17 March 2011. The AAITF/6 had reviewed their TORs and proposed a minor amendment in terminology to implement Quality 'Management' Systems.

5.36 The outcomes of the AIS-AIMSG/3 were discussed. The Study Group recommended the adoption of a PANS-AIM document, which would give greater visibility to the global shift from traditional AIS to AIM, and provide a means to promulgate AIM-related provisions that may not be suitable for Annex 15.

5.37 The AAITF noted that the AIS-AIMSG were reviewing the Electronic Terrain and Obstacle Data (eTOD) SARPS as these currently placed the responsibility for determining which obstacles are hazards to air navigation on the State as the provider of the data, rather than on the users of the data. This had significant liability issues, as it was only the end user that understands the context in which they will use the data and the impact of obstacles on their operations. In particular there were issues with Area 2 and 3 data standards, regarding the lack of operational purpose.

5.38 China reported that the last Chinese FIR (Kunming) to complete the transition to WGS-84 would achieve this task by the end of 2011.

5.39 A WebEx Conference was conducted with EUROCONTROL on the AIXM 5.1 (Aeronautical Information Exchange Model) and Digital NOTAM.

5.40 AAITF/6 determined that a survey should be conducted to gain a better understanding of the current status of AIM implementation of States. The results were presented to the Sub-Group to indicate survey's progress, but were intended to be analyzed by AAITF/7.

5.41 The AAITF agreed to a table based on the three stages of the Roadmap implementation plan and updated by States to give an overall indication of States' progress towards transition from AIS to AIM and to identify regional deficiencies. This format was reportedly being copied in other regions such as the NACC Office (Mexico City).

5.42 The Sub-Group agreed to the following Draft Conclusion and Decision.

Draft Conclusion SG 21/3 − AIM Transition Table

That, the APAC Regional Office maintains the AIM Transition Table as a means of tracking State transition to AIM, and to provide current details on AIM capability for interoperability, by publishing the State AIS – AIM Transition Table at **Appendix A** to the report on Agenda Item 5 on the APAC web site.

ATM/AIS/SAR Sub-Group Decision 21/1 – AAIF Terms of Reference

That the AAITF TORs be amended amending c) to read: 'assist States to implement Quality Management Systems for aeronautical information in an expeditious manner', to reflect the changes introduced in Amendment 36 to Annex 15.

Transition from AIS to AIM (IP32)

5.43 India presented information on their progress in transitioning from AIS to AIM. To achieve the objective of efficient management of the large volume of aeronautical information, India had implemented AIS automation. Among several other AIM initiatives, the Indian electronic AIP was in the final stage and would be published soon.

Timeliness of AIS Promulgation affecting Global Databases *(*WP20*)*

5.44 IATA highlighted that promulgation of AIS changes that require update of the various aviation databases critical to safe operations must be made in a timely manner to ensure current information is available to all aviation stakeholders. IATA stressed that it was imperative to consider the consequences of publishing important static aeronautical data such as aerodrome locations by NOTAM, instead of using an appropriate AIRAC cycle. Japan supported the IATA perspective and suggested that this item should be dealt with more thoroughly in the next AAITF.

5.45 A recent issue at an APAC aerodrome had caused some negative consequences for airline systems. The Chairman noted that what might seem like a small aeronautical data change could have a global effect on other systems, and urged States to comply with appropriate aeronautical promulgation standards.

5.46 The United States noted the increasing capability and use of 'live' aeronautical data using web-centric systems. The new AIM Quality Manual, Training Manual and proposed PANS-AIM document are expected to provide guidance to States on appropriate quality systems that support the critical nature of aeronautical data and information.

United States Progress in Transitioning From AIS to AIM (WP/33)

5.47 The United States described their progress from AIS toward AIM envisioned by the Next Generation Air Transportation System (NextGen). This paper was a very valuable exposé of the very real AIM transition implementation issues facing even developed States.

5.48 The United States underlined the importance of a quality system that assured the veracity of aeronautical data and information, but did not believe that it was necessary for a standard to be prescriptive like ISO (International Standards Organisation). All that was required was evidence of a documented quality procedure. The tendency to over-prepare the quality management system should be avoided.

5.49 Hong Kong, China asked about the development of the Flight Information Exchange Model (FIXM), and was advised that this was not being considered by the AIS-AIMSG at this time.

5.50 The United States was concerned the limited resources available within the Air Navigation Bureau (ANB) may impede progress, creating a situation where technical capabilities outpace ICAO SARPs. The Chairman expressed gratification to the United States for their support to ICAO in this field.

Air Traffic Flow Management

First Meeting of the Asia/Pacific ATFM Steering Group (ATFM/SG/1, WP18)

5.51 The First Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFMSG/1) was held in Tokyo, Japan from 8-10 December 2010.

5.52 The ATFMSG considered that each of the Main Traffic Flows (MTF) should have ATFM planning (conducted by States and ATM coordination groups), regardless of traffic density, to cater for contingency operations in addition to traffic loading. It was emphasized that ATFM measures were a positive, designed to optimize airspace and aerodrome capacity, especially in support of Seamless ATM initiatives. Thus, ATFM was viewed as maximizing capacity and minimizing inefficiencies.

5.53 The paper described how Traffic Management Initiatives (TMI) such as Ground Delay Programmes were important tools for managing air traffic, provided they were coordinated and applied properly. TMIs were required when it was necessary to manage imbalances in air traffic demand and system capacity, recognizing that they have a consequence to stakeholders. Therefore, traffic management personnel should employ the least restrictive methods available in order to mitigate imbalances.

5.54 The meeting noted the need for ATM coordination groups that could apply ATFM on entire traffic flows. Afghanistan acknowledged the importance of ATFM in supporting their system.

5.55 There did not appear to be any outstanding tasks for the Steering Group, so a formal Task List was not developed. However, a draft Terms of Reference (TORs) at Appendix B to the report on Agenda Item 5 was developed in case the Steering Group needed to be reconstituted, and these were endorsed by the Sub-Group. The Sub-Group agreed to the following Draft Decision:

Draft Decision SG 21/4 – Draft ATFMSG Terms of Reference

That, the ATFMSG TORs at **Appendix B** to the report on Agenda Item 5 be adopted, noting that the ATFMSG was a forum that develops high-level regional guidance material and regional ATFM policies, which would meet in the future only when required.

5.56 ATFM/SG/1 developed a draft APAC ATFM Regional Concept of Operations, which were reviewed in detail by the Sub-Group. IATA agreed that the Concept was a very good document, and suggested a minor text change. The Sub-Group agreed to the following Draft Conclusion:

Draft Conclusion SG 21/5 – Draft APAC ATFM Regional Concept of Operations

That, the Draft APAC ATFM Regional Concept of Operations at **Appendix C** to the report on Agenda Item 5 be adopted and provided as reference material on the APAC web site as planning guidance.

Air Traffic Flow Management Collaborative Initiatives (IP22)

5.57 An update was provided about the U.S. Federal Aviation Administration (FAA) Air Traffic Control System Command Center (ATCSCC) collaborative initiatives. The United States described the significant international coordination that it conducted, based on telecon meetings for both normal traffic and abnormal situations. The meeting was informed that during these telecons, lessons were learnt that were mutually beneficial.

Air Traffic Flow Management – India's Perspective (IP27)

5.58 India presented a concept of ATFM operations in India, and informed that India's ATFM Central Command would be established at Delhi, as part of a multi-layered ATFM system.

5.59 It was noted that Singapore and Thailand were working together to develop a gate to gate Collaborative Decision-Making (CDM) trial. A Work Group had been formed and the first meeting had been held to improve ATFM practices.

5.60 Thailand supported the development of ATFM expertise in India, which leveraged off the commonality of the issues faced by both States. Thailand also noted that their current ATFM capability could be scaled up, such as an upgraded BOBCAT which supported ATFM in the region.

5.61 A Global ATFM Conference had been held during February/March in Thailand. Key concepts that came from this Conference were the need to collaborate and share data (which may not be surveillance data, but could be traffic data). Thailand stated that some States may not have evaluated the capacity of their airspace, which was necessary for effective ATFM. The Chair thanked Thailand for their contribution to regional ATFM improvements.

MET-ATM

ICAO/WMO Asia/Pacific Meteorology/ATM (MET/ATM) Seminar and the Second Meeting of the MET/ATM Task Force (MET/ATM/TF/2) (WP19)

5.62 The Secretariat provided a summary of the ICAO/WMO Asia/Pacific MET/ATM Seminar and the Second Meeting of the MET/ATM Task Force, which met in Fukuoka, Japan in January 2011, Fukuoka. The key outcomes were as follows:

- enhanced MET services and products were required to meet the needs of ATM (such as probabilistic forecasts, verification of forecast accuracy, translating weather products to user impacts and standards and guidance material for terminal areas);
- decision support tools included convective weather forecasts in graphic and tabular form so that airport/terminal/en-route capacity impacts were able to be forecasted, and operators then determined the decision that best suits them (cancellation, delay, reroutes);
- MET-ATM CDM included airline operators which resulted in decisions to cancel flights, resulting in less ATM workload to manage a particular weather event;
- coordination was being improved between the Russian Federation and Japan for alternate routes based on accurate volcanic ash information for users;
- volcanic ash event operational points of contact had been posted on the APAC website (States who have not provided this information were reminded to do so);
- regulators and operators desired volcanic ash maps that contained thresholds of ash concentration;
- volcanic ash consequences were reduced due to the Indonesian ATS contingency plan, which involved collaboration between the civil aviation authority, MET authority, air navigation service provider, and the military;
- Airport Arrival Rate (AAR) forecasting required clarification of criteria and reporting regarding wind and visibility for events such as tropical cyclones and dust storms, which were being developed by the World Meteorological Organization (WMO) Sand and Dust Storm (SDS) Warning Advisory Assessment System (WAS);
- RVSM (Reduced Vertical Separation Minimum) 1,000 feet vertical spacing may be increased to 2,000 feet for severe turbulence and gravity waves, which required accurate data; and
- the World Area Forecast System in its current form did not meet PBN demands due to the coarse spatial and temporal resolutions (Hong Kong China was using finer upper wind temporal resolutions to assist arrival metering and sequencing).

5.63 The TF/2 report contained proposed changes to the MET/ATM Task Force TORs, but these appeared to be of a minor nature and were a matter for the CNS-MET SG.

RVSM

EURASIA RVSM Task Force (IP10)

5.64 The Fourth and Fifth Meetings of the EURASIA RVSM Task Force were managed by the ICAO EUR/NAT Office, but were of considerable interest to APAC States, as the implementation of RVSM will be a significant improvement for Afghanistan and Mongolia, and their neighbours such as Pakistan and China.

5.65 The Eurasia RVSM Task Force had agreed that RVSM should be implemented simultaneously in Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Russian Federation, Tajikistan, Turkmenistan and Uzbekistan on 17 November 2011. The chosen flight level orientation scheme (FLOS) to be used by these States was feet (Appendix 3a, Annex 2), except for Mongolia, which was intending to use metres (Appendix 3b, Annex 2) for a period of a year due to human factors reasons, before changing to feet.

5.66 The RMA EURASIA was established in Moscow and was expected to be responsible for the monitoring of the height-keeping performance of aircraft flying in Kazakhstan, Kyrgyzstan, Russian, Tajikistan, Uzbekistan, and Turkmenistan RVSM airspace. Afghanistan and Mongolia were expected to use the MAAR (Monitoring Agency for Asia Region). The RMA EURASIA provided the initial safety assessments that indicated the technical risk was 0.2015×10^{-9} and the overall risk level was 2.029×10^{-9}, which were below the ICAO RVSM Target Levels of Safety (TLS).

5.67 The final go/no-go decision date for the introduction of RVSM in the planned area was 28 July 2011, based on promulgation notice of two AIRAC cycles. The Subgroup noted that the EURASIA RVSM TF/6 was due to be held in Paris from 29 August until 02 September 2011.

Future Air Navigation System Implementation Teams (FITS)

13th Meeting of the FANS Implementation Team - Bay of Bengal Outcomes (FIT-BOB/13) (WP11)

5.68 The Thirteenth Meeting of the FANS Implementation Team for the Bay of Bengal (FIT-BOB/13) was held in Bangkok from 07 to 08 February 2011. Unfortunately, there was no central reporting agency (CRA, provided by Boeing in the BOB area) represented at the meeting.

5.69 It was noted by the meeting that there had been a lack of Problem Reports (PRs), which should be encouraged as these were a vital part of the safety oversight of data link operations. FIT-BOB recognized that it was necessary for FIT-BOB as a technical oversight body, to be provided with datalink safety data from each concerned States and for appropriate technical experts to assess this data from a sub-regional perspective. States should be encouraged to continue providing such data to each FIT meeting.

5.70 FIT-BOB recommended that the:

Bay of Bengal ATS Coordination Group (BBACG) review the TOR of the FIT-BOB, noting the meeting views RASMAG as a safety monitoring steering body, while FIT-BOB was a technical assessment forum that is intended to deal with data link system issues; and

FIT-BOB is also expected to review issues in the Arabian Sea and Indian Ocean areas in accordance with the current TOR. In that respect, the competency of the assessment process of safety data was viewed as a matter for RASMAG, whereas CRA safety output was a matter for the FIT-BOB.

Such a review should take into account the possibility that FIT-BOB and FIT-SEA may be combined in future.

5.71 FIT-BOB recognised that FIT-BOB and FIT-SEA (South-East Asia) could be combined in order to include more experts that deal with similar issues, enable lessons learnt in one sub-region to assist other areas, and to reduce meeting costs. There was a lack of datalink performance monitoring technical experts and also a lack of PRs and other data needed to assess performance.

5.72 The meeting discussed the possibility of combining FIT-BOB and FIT-SEA to reduce meeting costs and make one 'FIT-Asia'. This body would address these issues as a separate body from the BBACG itself, which was mainly composed of ATM people. The original intention was to have the BBACG review this proposal but as the BBACG did not deal with South-East Asia issues, and the APANPIRG Contributory Bodies Structure Review Task Force (ACBSRTF) was planned, it was decided to delay this discussion until the Sub-Group. As it transpired, the ACBSRTF did not deal with sub-ordinate bodies to the Sub-Groups as these should be dealt with by the Sub-Groups themselves.

5.73 The Sub-Group discussed this, and while recognizing the benefits of reducing the number of meetings and the knowledge transfer, some members asked how a combined meeting might work with respect to the ATM Coordination Groups. The Secretariat responded that it might be useful to hold a FIT-Asia meeting immediately prior to a RASMAG, so the safety performance output could be provided directly to this body, and many of the safety performance experts that were needed in the FIT would also be able to attend the RASMAG. With respect to the flow of information to the ATM Coordination Group, safety performance monitoring at this level was by definition after the fact and not tactical in nature, so the data did not immediately need to go to ATM Coordination Groups.

5.74 The Sub-Group decided that the Secretariat should discuss this with the RASMAG and FIT-BOB and FIT-SEA chairs, in order to determine if a common position could be agreed, and thus a Draft Conclusion could be determined by RASMAG/15 (Action Item 21/2).

Eleventh Meeting of FANS Implementation Team for South-East Asia (FIT-SEA/11) (WP12)

5.75 This meeting noted the report of the 11th Meeting of FIT-SEA, held at Bangkok on 03 May 2011. The key issues were as follows:

- Agreement that the Ujung Pandang flight information region (FIR) should move to the FIT-SEA, as the traffic flows were different from the flows in the Jakarta FIR;

- PRs were from a single source; the meeting encouraged all States and airline operators to submit PRs to the CRA (at that time, the Japan CRA);
- Monthly Periodic Status Reports were prepared and submitted regularly from Singapore to CRA-Japan, which indicated that the ATS data link system performance were within the criteria except for downlink message delivery;
- there were performance issues for downlinks in both the Singapore and the Ho Chi Minh FIR, which was a known issue attributed to the B777 type (Boeing had since provided a fix to operators);
- from 14 February 2011, Manila progressed to the Phase 1B of the trial operations with seven airlines, with PRs and system performance reports being regularly submitted to CRA-Japan (which would continue to provide services to the Philippines on a bilateral basis); and
- CRA-Japan had terminated its services to the South China Sea area at the end of March 2011 at which time CRA services could be provided by Singapore.

5.76 The Chairman urged all concerned States to complete the CRA confidentiality agreements with Singapore. The meeting noted the main issue with the FIT-SEA was again a lack of technical expertise at the meeting and a lack of PRs.

South-East Asia

Eighteenth Meeting of the South-East Asia ATS Coordination Group (SEACG/18) (WP/13)

5.77 SEACG/18 was held in May 2011 in Bangkok, Thailand, following the 11th Meeting of FANS Implementation Team for Southeast Asia (FIT-SEA/11).

5.78 A side-bar meeting was held with Indonesia, the Philippines, Singapore, Viet Nam, MAAR and the Secretary, which dealt with the Category E (ATC coordination) issues identified at RASMAG/14. SEACG urged its members to enhance coordination between area control supervisors and requested Indonesia, the Philippines, Singapore and Viet Nam to implement AIDC as soon as possible. IATA noted that no ICAO group had responsibility for conducting an overall review of the Southeast Asia/Northeast Asia route structure (AR-9).

5.79 With the implementation of ADS-B in the Singapore FIR, there would be seamless surveillance coverage from end-to-end on South China Sea routes, so States were urged to discuss reductions of longitudinal spacing for ADS-B equipped flights. Singapore would apply ADS-B surveillance separation at or above FL350 on opportunity basis as the first phase of a trial and then in Phase Two offer priority at or above FL350 to ADS-B aircraft.

5.80 In other developments, Viet Nam proposed a number of new ATS routes, while Indonesia and Singapore reported that they had collaboratively developed a draft contingency plan during a volcanic contingency event.

South East Asia Route Review Task Force (WP/14)

5.81 The Third and Fourth meetings of the South-East Asia Route Review Task Force (SEA-RR/TF), had been held in August and November 2010. There have been no further meetings of the Task Force, and the next meeting was scheduled to take place from 03 to 05 October 2011.

5.82 The Sub-Group noted that the overall achievements of this Task Force had been somewhat discouraging, with no specific deliverables, although a route concept had been established, including the use of unidirectional routing in the South China Sea area for crossing routes.

5.83 A number of route proposals had been developed, including:

- China and Hong Kong China jointly presented a proposal to reduce the longitudinal spacing from 40NM to 30NM on A1/P901 to take advantage of the communication and surveillance capabilities along these routes;
- Viet Nam proposed three new routes: Ha Noi - Yangon; Ha Noi - Siem Reap and Ho Chi Minh - Siem Reap;
- Singapore and Thailand agreed to establish RNAV Route M752 and also agreed on further collaboration to enhance surveillance with discussions of ADS-B data sharing and VHF radio communications; and
- Indonesia and Singapore proposed route structure changes to M774 and A576 utilising Direct Controller – Pilot Communication (DCPC) facilities.

5.84 The Chairman stated that the Task Force was taking longer than expected to produce deliverables. The meeting then had an extensive discussion on whether the Task Force should be terminated, as the Chairman had stated that any Task Force that was not delivering or had achieved its aims should be wound up. WP17 was discussed consecutively as it covered the same subject.

South East Asia Route Review Task Force Review (WP/17)

5.85 IATA stated that they had been very disappointed with the progress of the Task Force, despite the best efforts of the Chairman and Secretariat. Furthermore, they stated that the next TF must produce a plan (‘road map’).

5.86 The Secretariat suggested that the SEA-RR/TF/5 must produce a plan with each ATS route assigned a conceptual outcome, priority, milestones, State stakeholders, and the means by which the route would be consulted. The latter could be by bilateral discussion, through the ‘Mekong’ ATM Coordination Group, or a Small Working Group under SEACG itself.

5.87 IATA had no issue with reassigning reporting lines, or conducting the Task Force and SEACG in the same week. In essence, the Task Force was effectively being put ‘on notice’ and its future would be decided based on its deliverables.

5.88 Hong Kong, China was in support of the alternative means of delivering results, especially as the complexity of the task regarding each route varied. Singapore agreed with the Secretariat’s plan, and emphasized that the stakeholders must try and meet the identified timeline. Thailand did not mind which format was used to deliver the results. The Chairman suggested that the Secretariat should discuss this matter with the SEACG Chairman to keep the ATM Coordination Group informed (Action Item 21/3).

The First Meeting of the Mekong ATM Coordination Group (IP20)

5.89 Thailand discussed the work of this new ‘informal’ ATM Coordination Group (MK-ATMCG), with membership from Cambodia, Hong Kong China, Laos PDR, Thailand and Viet Nam. The latest meeting was held in Thailand on 25 April 2011.

5.90 The Sub-Group congratulated the members of this Group and encouraged their continued progress on, *inter alia*, route restructures.

Traffic Movements and GNE Reports for the South China Sea (IP33)

5.91 Singapore submitted this paper, which contained traffic movements and Gross Navigation Error (GNE) reports from June 2010 to May 2011.

South Asia

The First India-Myanmar-Thailand ATM Coordination Meeting (IMT-ATM/CM/1) (IP19)

5.92 The First India-Myanmar-Thailand ATM Coordination Meeting (IMT-ATM/CM) was held in Bangkok, Thailand between 13 and 14 January 2011. The meeting focused on enhancing ATM cooperation between the three ANSPs concerned, while harmonizing with adjacent regions. The Sub-Group Chairman commented that it was very encouraging work.

The Twenty-First Meeting of the Bay of Bengal ATS Coordination Group (BBACG/21) (WP15)

5.93 This paper presented the outcomes from the Bay of Bengal ATS Coordination Group (BBACG/21, Bangkok, 7-10 March 2011).

5.94 Bangladesh and India met during the BBACG/21 Meeting to immediately improve the coordination processes between Kolkata and Dhaka ATC Centres. Bangladesh advised that they planned to upgrade the radar service in Dhaka.

5.95 Indonesia had a side-bar discussion with Malaysia, which resulted in good progress towards solutions to the issue of major traffic routes crossing RNAV route P627.

5.96 India had many on-going development projects:

- 24-hour availability of CPDLC (Controller Pilot Datalink Communications);
- new automated ATM systems in Delhi and Mumbai and new radar systems;
- AIDC (ATS Inter-facility Datalink Communications) would continue to be tested between Delhi and Karachi ACCs, and later between Mumbai and Muscat ACCs; and
- testing operations being conducted until mid-2011 for the Indian GNSS (Global Navigation Satellite System) called GAGAN (GPS-Aided Geo Augmented Satellite Navigation System).

5.97 Malaysia advised that all area radar and non- area radar controllers in Kuala Lumpur ACC were now trained and ready for ADS-C and CPDLC (Automatic Dependent Surveillance – Contract). The ADS-C/CPDLC installation in Kuala Lumpur was not yet operationally stable however this matter was being worked on to meet the target date for implementation for the reduction of these reduced horizontal separation standards.

5.98 Sri Lanka questioned the need for eastbound aircraft overflying Colombo from Africa to be descended from high level such as FL390 to sometimes FL290 before they entered Chennai airspace, so Sri Lanka and India met at a sidebar meeting to rectify these issues. Sri Lanka and India met during the BBACG/21 to improve these procedures.

5.99 Thailand presented information on the enhanced data capability being developed for BOBCAT Operations, to enhance capability of BOBCAT software and CDM development, allowing slot swapping, slot compression and the ability to allow airline CDM.

5.100 The BBACG agreed to an IATA proposal of 'connector' routes in the Mumbai FIR as a first stage towards User Preferred Routes (UPR). Seamless ATM imperatives promoted discussion on the need for BBACG to increase its scope to include Major Traffic Flows AR-1 and AR-4. As a result, the BBACG agreed to a change in its TOR to include the AR-1 and AR-4 MTF. The Sub-Group noted this and preferred the new name South Asia Indian Ocean ATM Coordination Group, after some discussion that recognized the need for the name to cover the wider scope.

5.101 It was recognized by the BBACG that the definition of Major Traffic Flows was outdated and did not include an important routes such as from the Middle East to Australia and SE Asia. India suggested the inclusion of a new traffic flow (AR-XX) to represent the traffic from the Middle East to both Australia and Southeast Asia.

5.102 The Sub-Group noted that the BBACG expected to meet before the end of 2011, and may meet more regularly than once a year if appropriate. The Sub-Group agreed to the following Draft Conclusion and Draft Decision (note: BBACG had no established TORs):

Draft Conclusion SG 21/6 − Major Traffic Flow (New)

That, the traffic flow between the Middle East airports such as Dubai and Abu Dhabi to Australasian or South East Asian airports such as Sydney and Singapore be recognized as APAC Major Traffic Flow AR-10 and recommended as an amendment to the Global Air Navigation Plan for CNS/ATM System (Doc 9750).

Draft Decision SG 21/7 – BBACG Terms of Reference

That, the BBACG TORs be created as appended at **Appendix D** to the report on Agenda Item 5, with its scope covering a geographical area that included Major Traffic Flows AR-1, AR-4 and the proposed AR-10 routes, and for the Group to be renamed as the South Asia Indian Ocean ATM Coordination Group – SAIOACG.

The Fifth Meeting of the Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF/5) (WP16)

5.103 The Secretariat introduced the report on the Fifth Meeting of the Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF/5, 08-11 February 2011), focussing on Phase One of the Project, to implement Reduced Horizontal Separation (RHS).

5.104 A new ATS route ASARI-SAMAR-LAJAK (India-Pakistan) was developed that would provide a link with L509 mainly for aircraft operating to/from Bangkok during BOBCAT hours only, limited to flight levels at or above FL300.

5.105 The longitudinal collision risk was estimated by the Bay of Bengal Arabian Sea Monitoring Agency (BOBASMA, with assistance from the Southeast Asia Monitoring Agency SEASMA) as being 3.80×10^{-10}, which did not exceed the 5×10^{-9} fatal accidents per flight hour TLS.

5.106 The meeting unanimously agreed that Phase One implementation would go ahead on AIRAC date 30 June 2011 for the implementation of 50NM longitudinal separation on selected ATS routes. States were reminded that necessary items should be addressed using a special Check List as appended in **Appendix E** to the report on Agenda item 5 that was required to be returned to the Regional Office prior to implementation, which included information on State:

- ATC training in 50NM longitudinal separation;
- ATC Human Factors issues;
- contingency operations in the event of loss of system integrity, by aircraft and/or ACC CPDLC equipment; and
- ATC procedures for handling non-compliant aircraft.

5.107 A decision was made to recommend changes to the BBACG (Bay of Bengal ATM Coordination Group) so as to widen the scope of the Task Force regarding the area to be covered to be consistent with the Major Traffic Flow AR-4.

5.108 Malaysia advised that their ADS/CPDLC system had been trialed successfully and the data indicated that the system was in compliance with the agreed Global Operational Datalink Document (GOLD). Training requirements in the use of the new system had also been undertaken.

5.109 Myanmar performed a successful trial of their ADS/CPDLC equipment, monitored and assisted by the Boeing Company and also involving Chennai ACC in cross-border issues. Boeing continued to assist India, Myanmar and Malaysia by conducting bench-testing of ADS-C/CPDLC equipage to identify ground system issues. Myanmar would update their present stand-alone CNS workstation to a fully integrated ADS/CPDLC system in the third quarter of 2011.

5.110 Sri Lanka provided details of their CNS/ATM Workstation used where necessary on P762. Sri Lanka was also conducting trials with airlines and their adjacent ACCs to validate the accuracy of their ADS/CPDLC system.

5.111 Other States involved in the RHS project reported satisfactory progress in their preparation to accept 50NM longitudinal separation, either in Phase 1 or Phase 2 of the project. The ATFM/BOBCAT system would be adjusted to cater for the implementation of 50NM longitudinal spacing across the Bay of Bengal and transiting the Kabul FIR in a phased manner.

5.112 The meeting noted that the Task Force had actively coordinated with States bordering the APAC region, which would harmonize application of the 50 NM longitudinal separation standard.

Implementation of Phase 1 of BOB-RHS (IP25)

5.113 India informed the meeting about their preparedness on implementation for RHS. India advised that operational Letters of Agreements had been signed between India and Myanmar, Sri Lanka, and Oman. All other activities concerning implementation of 50NM reduced longitudinal separation had been completed and India was committed to implement 50NM RHS on N571 and P762 on 30 June 2011. The meeting congratulated India in completing the work for implementation of Phase 1 RHS.

Proposal for constitution of informal ATS Co-ordination group in the Bay of Bengal, Arabian Sea and Indian Ocean Region (IP15)

5.114 The meeting was informed that the Bay of Bengal, Arabian Sea and Indian Ocean ATM Coordination Group (BOBASIO) had been formed. The first meeting of the Group had been held during 5-6 May 2011. The meeting encouraged the work that had been conducted. The Secretariat advised that the Sub-Group was not in a position to endorse the constitution of an informal body such as BOBASIO.

Kabul ACC Status Report and Overview of Significant Events (WP34)

5.115 The Kabul FIR has experienced continued growth with the Kabul ACC (KACC) exceeding over 260,000 operations in 2010 and for the first half of 2011, over 145,000 operations. The Kabul FIR was still operating in full procedural mode for enroute traffic operations.

5.116 While improvements to the overall service to commercial air traffic continued, the meeting noted that the primary mission of the Kabul ACC and Afghanistan ATC services was to support the efforts of coalition forces. This had minimal impact on over-flights.

5.117 Planning for the implementation of RVSM operations was continuing with the completion of the MITRE Safety Study and pre-implementation tasks. Afghanistan was confident that all requirements will be met for implementation on 17 November 2011.

5.118 Radio communications throughout the Kabul FIR continued to improve with the installation of Very Small Aperture Telecommunication (VSAT) systems at 13 locations. The current VSAT communications system complied with the requirement for continuous communications over Afghanistan to facilitate RHS on primary transit routes within the Kabul FIR. VSAT system capability would determine the surveillance potential.

5.119 Three ASR8 radars had been installed and flight checked with plans for an additional fourth sensor. The radar feeds are currently being integrated into Kabul ACC. These systems would initially provide situational awareness of air traffic within the Kabul FIR for the Kabul ACC, however there were coverage difficulties due to mountainous terrain.

5.120 Through the efforts of Germany and contributions from Australia, a multilateration (MLAT) surveillance system was progressing rapidly. It was planned to have 30 sensors installed at different locations throughout Afghanistan to fill in radar blind spot areas. Sixteen of the planned 30 sensors had already been installed, with the remaining 14 due for completion in October-November 2011. Once the sensors were flight checked, Kabul ACC would be able to implement enroute surveillance operations.

5.121 Kabul ACC has completed the training requirements for implementation of RNP 10 50NM longitudinal separation. Afghanistan welcomed the implementation on the SAMAR – LAJAK route on 30 June 2011. This route would further reduce traffic issues at SITAX for westbound traffic exiting Pakistan and entering Kabul FIR.

5.122 The meeting welcomed the progress of the BOB-RHS TF. However, subsequent side-bar discussions with some States revealed unresolved issues affecting a harmonized implementation of 50NM longitudinal separation on ATS routes P628, L510, N636, and UL333. It was regrettable that these routes would be deferred to the Phase 2 implementation process. This was expected to take place in December 2011 or January 2012, to be agreed at BOB-RHS/TF/6 (September 2011). The Chairman noted the reduced separation standards being planned in the Kabul FIR. IATA thanked Afghanistan for the on-going developments. IFALPA echoed these sentiments.

Northeast Asia

11th Meeting of the Cross Polar Trans-East ATM Providers Working Group (CPWG/11, IP23)

5.123 The Sub-Group was informed about the work of the Cross Polar Trans-East Air Traffic Management Working Group (CPWG), hosted by the State ATM Corporation, St. Petersburg, Russia, 7-10 June, 2011. The CPWG was composed of representatives from Russia, Canada, Iceland**,** Norway, Japan, China and the United States, and organizations such as IATA representing airlines that operate in Polar airspace.

Pacific

33rd and 34th Meeting of the Informal Pacific ATC Coordinating Group (IPACG/33 & IPACG/34, WP26)

5.124 The 33rd Meeting of the US/Japan Informal Pacific Air Traffic Control (ATC) Coordinating Group (IPACG/33) was hosted by the Civil Aviation Bureau, Japan (JCAB) in Okinawa, Japan from 15-19 November 2010 and the 34th IPACG Meeting (IPACG/34) was hosted by the FAA in Honolulu, Hawaii from 23-27 May 2011. Key areas of discussion included:

- operational trials related to the implementation of 10 minute longitudinal separation without Mach Number Technique (MNT);
- RNP 4 30NM lateral/longitudinal distance-based separation (the FAA desires to fully implement 30/30 separation in Anchorage airspace and NOPAC by the end of 2011);
- ADS-B In-Trail Procedures (ITP) operational trials due to start in mid-2011 and ADS-C Climb Descent Procedures (CDP) were on-going through February 2012;
- User Preferred Route (UPR) implementation;
- Dynamic Airborne Reroute Procedures (DARP) operations, which must be requested at least 60 minutes prior to the FIR boundary to allow for adequate ATC coordination;
- Tailored Arrivals (TAs) in San Francisco began in 2007, Los Angeles International Airport (KLAX) began in 2009, and at Kansai Airport, Japan.

25th Meeting of the Informal South Pacific ATS Coordinating Group (ISPACG/25) (WP27)

5.125 The United States presented the results from the 25th Meeting of the Informal South Pacific Air Traffic Services Coordinating Group (ISPACG/25), Honolulu, Hawaii 24-25 March 2011.

5.126 Australia reported that ADS-B has been mandated for implementation in Australian Airspace by December 2013. A new CPDLC Editor was incorporated into the Australian Advanced Air Traffic System (TAAATS) in April 2010 and the implementation of the Flight Plan conflict function was planned for the third quarter of 2011.

5.127 Service d'Etat de l'Aviation Civile en Polynesie Francaise (SEAC-PF) reported that AIDC was now operational with the United States and New Zealand.

5.128 The United States advised that DARPs remain underutilized while User Preferred Routes were expanding rapidly in the South Pacific. San Francisco (KSFO) Oceanic Tailored Arrivals (TAs) continued to be successful with 33% of aircraft receiving a full TA benefits and even a higher percentage receiving a partial TA. At Los Angeles (KLAX), 17% of aircraft have received a full TA. The United States and Japan began cross boundary ADS-C based 30/30 separation in May 2011.

5.129 PNG Air Services Limited (ASL PNG) advised that a new air traffic control simulator had been commissioned and certified by Australia. Extension of enroute radar services continued, including advanced ATC training. Trials and implementation of UPRs in Port Moresby FIR were under consideration.

5.130 New Zealand reported that it is in final coordination of a potential Asia and Pacific Initiative to Reduce Emissions (ASPIRE) daily flight from Auckland to San Francisco in conjunction with ASPIRE. Performance of FANS-1A overall system was improving, and AIDC was operational with Nadi and Oakland Center (KZOA).

5.131 Chile reported that it continued to work on implementation of required navigation performance (RNP10) in its oceanic airspace. Chile was also working to improve the reliability of CPDLC and ADS systems as current high frequency (HF) communications capability was very poor.

5.132 Airport Fiji Limited (AFL) reported that it completed its automation upgrade in May 2010 and would completed an upgrade on Aurora, its common flight data processor (FDP), for approach control and towers by May 2011. MLAT and ADS-B solutions would be implemented at Nadi Airport and others by the fourth quarter of 2013. Fiji planned for non-FANS 1/A equipped UPRs and was testing DARPs with Oakland, Brisbane and Auckland Centers.

5.133 IATA and the Sub-Group Chairman noted the productive work of this meeting. IATA was actively working to improve fleet RNP4 compliance. They noted that the fleet were approximately 100% RNAV10 compliant, 45% datalink approved, and only 25% RNP4. DARP had to be requested an hour before, due to a timing issue on the Fiji boundary.

Status of the ASPIRE Partnership (IP17)

5.134 The United States presented information of the ASia and Pacific Initiative to Reduce Emissions (ASPIRE). IATA was a keen supporter of the ASPIRE programme, demonstrating what can be achieved, and operationaise the savings on a daily basis.

DGCA

Outcomes of the 47th DGCA Conference (WP10)

5.135 The Secretariat presented a summary of ATM-related subjects discussed at the 47th Conference of Directors General of Civil Aviation (47th DGCA Conference) held in Macau, China on 25 – 29 October 2010.

5.136 The relevant Action Items included ATM contingency planning, Amendment 1 to PANS-ATM, State PBN Implementation planning, and civil/military cooperation. All of these subjects were covered by Sub-Group WPs.

Traffic Forecasting

Asia/Pacific Regions Area Traffic Forecasting Group (WP25)

5.137 This paper presented a brief report on the forecasts produced by Asia/Pacific Regions Area Traffic Forecasting Group (APA TFG) at its 15th meeting held in Bangkok from 1 to 8 November 2010. The report included medium-term forecasts of air traffic in the Trans-Pacific area and for selected Trans-Pacific and Asia/Pacific city-pair markets through to 2014. The report also contained a long-term forecast with a horizon to the year 2030, including a short-term forecast for 2010-2014 and forecasts for 2020 and 2030.

5.138 Hong Kong, China noted that Traffic Sample Data (TSD) collected for RVSM was not suitable for the TFG, which required different data. Hong Kong China wanted to know what the implication was for States, especially if the TFG was asking for unique data sets, as they were concerned about the added burden of this. There needed to be coordination between the Secretariat and the TFG to ensure that if a unique data set was required then a reasonable lead time was provided, and if it was possible, to use as much of the data as possible from the December TSD (Action Item 21/4).

ATS Route Catalogue

Review of the Asia/Pacific ATS Route Catalogue (IP02)

5.139 The Sub-Group were provided with a copy of the latest ATS Route Catalogue (Version 9), available from the ICAO Asia/Pacific website (http://www.bangkok.icao.int/), and were invited to review and update its content.

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State AIS AIM Transition Table

Phase 1
P-03 — AIRAC adherence monitoring
P-04 — Monitoring of States' differences to Annex 4 and Annex 15
P-05 — WGS-84 implementation
P-17 — Quality
Phase 2
P-01 — Data quality monitoring
P-02 — Data integrity monitoring
P-06 — Integrated aeronautical information database
P-07 — Unique identifiers
P-08 — Aeronautical information conceptual model
P-11 — Electronic AIP
P-13 — Terrain
P-14 — Obstacles
P-15 — Aerodrome mapping
Phase 3
P-09 — Aeronautical data exchange
P-10 — Communication networks
P-12 — Aeronautical information briefing
P-16 —Training
P-18 — Agreements with data originators
P-19 — Interoperability with meteorological products
P-20 — Electronic aeronautical charts
P-21 — Digital NOTAM
√
Date Last Amended: 13 June 2011

	Phase 1 Consolidation				Phase 2 Going Digital									Phase 3 Information Management							
	P-03	P-04	P-05	P-17	P-01	P-02	P-06	P-07	P-08	P-11	P-13	P-14	P-15	P-09	P-10	P-12	P-16	P-18	P-19	P-20	P-21
Afghanistan																					
Australia	√	√	√	90%	80%	√	√	√	60%	√	√	75%				10%	60%			90%	5%
Bangladesh																					
Bhutan																					
Brunei Darussalam																					
Cambodia	√	√	√																		
China	√	√		√													√			√	
Hong Kong, China	√	√	√	√	√	√															
Macao, China	√	√	√	√																	
Cook Islands																					
DPR Korea																					
Fiji	√	√	√				√	√		√		√	√		√	√	√				
India	√	√	√	√	√	√	√	√	√			√									
Indonesia	√	√	√		50%	50%	20%			50%					80%		60%	20%	10%	20%	
Japan	√	√	√	√	80%	80%	√	√	√	√	20%	20%		20%	20%	60%	80%	√		20%	20%
Kiribati																					
Lao PDR	√	√	25%																		
Malaysia	√	√	√							√											
Maldives																					
Marshall Islands																					
Micronesia																					
Mongolia	√	√	√	√	80%	80%	30%	√	√	√	10%	10%		60%	10%	50%	90%	√			
Myanmar	√	√	√				20%			80%	20%	20%				10%				25%	
Nauru																					
Nepal																					
New Zealand	√	√	√	√	√	√	√	√	75%	√	√	80%	15%	80%							
Niue (NZ)																					
Pakistan	√	√	√							√		√		√	√	√		√			√
Palau																					
Papua New Guinea	√	√	√	90%				√								10%					
Philippines	√	√	40%	√	√	√															
Republic of Korea																					
Samoa										√											
Singapore	√	√	√	√	√					√				√	√	√				√	
Solomon Islands																					
Sri Lanka	√	√	90%	90%						√					10%	25%	15%	25%			
Thailand	√	√	80%	10%						20%											
Timor Leste																					
Tonga										√											
Vanuatu																					
Viet Nam	√	√	√	25%	50%	50%	50%		√					√	√		70%	50%			
USA[1]	√			√	√		√	√	√	√	√	√	√	√	√					√	√
France[2]																					

% means the percentage progress towards achievement of the element

[1] Includes American Samoa, Guam, Johnston, Kingman, Midway, Mariana, Palmyra, Wake

[2] Includes French Polynesia, New Caledonia, Wallis and Futuna Islands

Draft Terms of Reference

AIR TRAFFIC FLOW MANAGEMENT STEERING GROUP (ATFMSG)

1. Having considered the *ATS Planning Manual* (Doc 9426), regional air traffic data and the Major Traffic Flows, and noting that recognized structural airspace capacity increasing measures have preference to use of ATFM, develop an Asia/Pacific Regional ATFM Concept of Operations(including principles and objectives);

2. Review and update the *ATFM Communications Handbook for the Asia Pacific Region* until superseded by Global Material;

3. Encourage and develop mechanisms for ATFM data gathering, collation and sharing between States, International Organizations and ICAO;

4. Research suitable and regionally harmonized benchmarks for airport acceptance rates (AAR) and the throughput of airspace (sector capacity) which may vary depending on weather conditions, and associated technique, e.g. the ground-delay programme and miles/minutes-in-trail (MIT).

5. Review the safety and efficacy of ATFM systems in the Asia and Pacific Region, and make specific recommendations regarding ATFM, including any adjacent airspace affecting the Asia and Pacific Regions;

6. Encourage the development of an ATFM web site by Asia and Pacific Region States with significant experience in ATFM, which contains information on regional ATFM, including *inter alia*, real time flight delay data.

7. The Group reports to the ATM/AIS/SAR Sub-Group.

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Asia and Pacific Regional ATFM Concept of Operations

1. BACKGROUND

1.1 As a result of increasing regional Air Traffic Flow Management (ATFM) activities and the provisions of GPI- 6 (ATFM), the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/18, September 2007) adopted Conclusion 18/7 for the conduct of a regional ATFM Seminar. The ICAO Asia/Pacific ATFM Seminar/Workshop was hosted at Fukuoka, Japan by the Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism from 7 to 9 October 2008.

1.2 As a result of the ATFM Seminar and Workshop, APANPIRG/20 (Bangkok, September 2009) made the decision to constitute an ATFM Steering Group (ATFMSG/1), which was also held in Japan at Tokyo, from 8 to 10 December 2010. One of the key deliverables from the ATFMSG/1 was expected to be a Regional ATFM Concept of Operations.

1.3 It was considered inappropriate at the ATFMSG/1 for the Regional ATFM Concept of Operations to closely analyse specific Major Traffic Flows (MTF) or to determine actual ATFM systems to be used on these flows, as this would impinge upon the individual State responsibilities to determine the type and level of air traffic service (ATS). Moreover, States have a greater knowledge of the operational requirements, limitations and safety risks of any given airspace that they provide ATS within. In addition, Air Traffic Management Coordination Groups (ATMACG) are better placed to closely monitor and assess the need for ATFM measures within sub-regions (such as the NOPAC - North Pacific), recognising that these are more likely to be implemented on MTFs and not on a regional basis.

1.4 For these reasons, the ATFMSG/1 developed this Regional ATFM Concept of Operations based on broad principles and recommended practises that are intended to provide a framework for desired regional outcomes. Moreover, it was considered that optimal ATFM is a subset of a seamless Air Traffic Management (ATM) system, so further development of the Regional ATFM Operational Concept should be considered within the context of the Seamless ATM Concept.

2. ATFM CHARACTERISTICS

2.1 The ATFMSG/1 recognized that ATFM had a number of important characteristics, which are detailed as follows.

a. ATFM is intended as a win-win enabler, to ensure the ATM system is compatible, balances capacity, and is responsive to user needs. ATFM supports the introduction of new technologies (such as probabilistic meteorological forecasting and ATS sector capacity assessment tools) and procedures that enhance airspace capacity.

b. ATFM is evolutionary in nature, in order to manage a changing aeronautical environment. Thus the nature of ATFM is one of a system that is constantly reviewed in terms of the airspace, ATS routes and aerodromes, and the ATFM system effectiveness itself.

c. ATFM is integral to world economies, as it maximises aviation economic efficiencies and returns, in turn supporting many other economic sectors such as tourism and freight carriage. ATFM supports predictability in terms of inventories, and the efficient carriage of passengers and freight.

d. ATFM assists international cooperation, leading to an optimal seamless ATM environment.

e. Even relatively simple ATFM systems such as slot management can be as effective as complex systems, to enable systems to cope with unexpected capacity deficiencies.

f. ATFM traffic data analysis can yield significant strategic benefits, especially when used in conjunction with airspace and ATS route planning, in terms of future ATM systems and procedure improvements. This is part of a continuous safety and service improvement loop (Figure 1).

g. Collaborative Decision-Making (CDM), as part of ATFM, ideally involves people skilled in facilitation.

h. CDM is about sharing knowledge, which allows an understanding of user and ATM requirements, in order to achieve buy-in, cooperation, and predictability. In effect, CDM allows the system to work smarter, not harder.

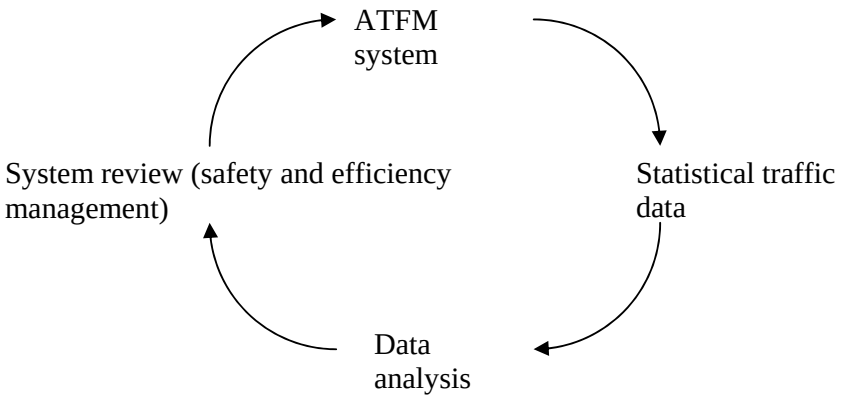

Figure 1: ATFM Cycle of Review and Improvement

3. REGIONAL ATFM OBJECTIVES

3.1 Asia and Pacific Regional ATFM has the following objectives:

a. without compromising safety, to ensure an optimum flow of air traffic during times when demand exceeds, or is expected to exceed, available capacity of the air traffic control (ATC) system (Doc 9426*);

b. to ensure the maximum utilisation of airspace, and balance the legitimate, but sometimes conflicting, requirements of all users (Doc 9426);

c. to develop a seamless and harmonised ATM system and ensure compatibility with international developments (CAR/SAM ATFM Project, Doc 9426);

d. to ensure that optimum capacity is provided in a flexible and timely manner (CAR/SAM ATFM Project); and

e. to minimise inefficiencies that affect ATM capacity (ATFMSG/1).

*Note: references in this document are not necessarily copied verbatim from the source, but have been amended in a minor manner from the original to ensure it is up-to-date, readable and in the correct context.

4 REGIONAL ATFM PRINCIPLES

4.1 ATFM in the Asia and Pacific Regions is expected to be implemented in accordance with the following principles:

a. ATFM must seek to optimise available aerodrome and airspace capacity without compromising safety (CAR/SAM ATFM Project);

b. ATFM must seek to balance the financial impact on stakeholders with safety, and operational and technical benefits, taking into account global interoperability (CAR/SAM ATFM Project);

c. ATFM applications must be consistent with the ICAO Regional Air Navigation Plan (CAR/SAM ATFM Project);

d. ATFM must entail timely and effective co-ordination with affected parties, including ATC units, aircraft operators, military authorities and aerodrome operators as appropriate. Civil/military co-ordination ideally results in airspace being shared, either simultaneously or on a time-share basis. ATFM must take into consideration the requirements of the military, law enforcement, and search and rescue (Doc 9426).

e. Military aircraft operating as general air traffic should be subject to ATFM (CAR/SAM ATFM Project).

f. ATFM recognises that airspace is a common resource for all users, ensuring fairness and transparency, while taking into account security and defence needs (CAR/SAM ATFM Project).

5. RECOMMENDED PRACTICES

a. ATFM planning should be prioritised for appropriate major sub-regional traffic flows, instead of a focus on regional ATFM. ATFM WS and ATFMSG

b. December traffic sample data used by all States to satisfy airspace safety monitoring analysis may be utilised for airspace planning and implementation purposes. APANPIRG 20

c. Recognising that the most efficient utilization of available airspace and airport capacity can be achieved only if all relevant elements of the air traffic system had been considered during the planning stage, applying a systems approach (Doc 9426). Quantitative data should be moderated by qualitative assessment using subject matter experts to ensure the following factors, inter alia, are taken into account:

- airspace and airway complexity, structure and volume;
- adjoining ATC sectors;
- amount of climbing/descending traffic;
- terrain;
- military operations; and
- special use airspace. ATFM Survey/ATFMSG

d. When flow management measures are necessary for certain areas, they should be applied in a timely manner only for the period when expected air traffic demand will exceed the capacity in those areas. ATFM measures should be kept to the minimum and, whenever possible, be applied selectively only to that part of the system that is constrained (Doc 9426).

e. Advance information on overload situations should be provided to ATC and aircraft/aerodrome operators (Doc 9426).

f. Relevant air traffic statistics should be generated in order to promptly identify bottlenecks in the system (Doc 9426). Accurate and timely data should be continuously available to support implementation and ongoing ATFM operations in the form of:

- Static data identifying historical traffic loadings, for use as strategic planning and trend analysis, and
- Dynamic real-time data used for the tactical management of traffic in terms of commencement of ATFM measures (ATFM Workshop/Seminar);

g. Flow control measures should be established and coordinated in such a way that they will not cumulatively interact with each other on the same flights (Doc 9426);

h. The following types of flights should be granted exemption from flow control measures:

- emergency flights, including aircraft subjected to unlawful interference;
- flights operating for humanitarian reasons;
- medical flights specifically declared by medical authorities;
- flights on search and rescue missions;
- flights with “Head of State” status; and
- other flights as specifically required by State authorities (Doc 9426).

i. The use of appropriate automated tools should allow effective application of ATFM (ATFM Workshop/Seminar);

j. Formalised CDM should be utilised to promote increased information sharing, awareness and acceptance (ATFMSG/1);

k. States should ensure the use of the English language in a concise, non-verbose manner in ATFM operations, utilising the *Air Traffic Flow Management Communications Handbook for the Asia/Pacific Region* (ATFMSG/1)*;*

l. Whenever measures to control the flow of air traffic have to be applied in the form of delays, they should, if possible, be applied by ATC to aircraft on the ground rather than to aircraft in flight (Doc 9426).

m. Whenever application of ATFM in the form of delays to airborne aircraft becomes unavoidable, the flights concerned should be informed as soon as possible (Doc 9426).

n. The ATFM service should have the following basic strategic and tactical functions:

- collection, collation and analysis of data on air traffic, the air navigation infrastructure and on the capacities of the ATS system and selected aerodromes (Doc 9246);
- determination of available airspace, ATS and aerodrome capacity (ATFMSG/1);
- determination of a coherent picture of expected traffic demand (Doc 9426);
- identification of areas and time periods of expected critical traffic loadings (Doc 9426); and
- in order to accommodate the growth of air traffic, an appropriate ATFM plan should be established, aimed at optimising the airspace utilisation (Doc 9426).

6. GUIDANCE MATERIAL

6.1 Additional ATFM Guidance Material may be derived from the following sources:

a. ICAO Annex 11 (Section 3.7.5)

b. ICAO Doc 4444 (Section 3.2);

c. ICAO Doc 9426 (Part II, Chapter 1);

d. ATFM Communications Handbook for the Asia/Pacific Region (*http://www.bangkok.icao.int/edocs/ATFMComms_Handbook.pdf*); and

e. FAA ATFM web site (http://www.fly.faa.gov).

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South Asia/Indian Ocean ATM Coordination Group (SAIOACG) Terms of Reference

1) The scope and objective of the SAIOACG is to identify, plan and implement Air Traffic Management improvements within airspace serving the Asian Regional Major Traffic Flows:

- AR-1 (Africa – Southeast Asia/Australia);
- AR-4 (Europe – Southeast Asia);
- AR-10 (Middle East – Southeast Asia/Australia).

2) To meet this objective the Task Force shall:

a. review and recommend improvements to relevant airspace and ATS route structures, in order to optimize the safety and efficiency of ATC operations;

b. review and recommend improvements to ATS facilities such as communication and surveillance capability in support of flight operations;

c. research and plan airspace and facility requirements based on future technologies, Performance Based Navigation and other capabilities that enhance flight operations;

d. coordinate with other bodies to establish appropriate navigation specifications;

e. identify ATM deficiencies with respect to ICAO Standards and Recommended Practices (SARPs), and make recommendations to achieve compliance;

f. cooperate with other bodies as required, to facilitate Seamless ATM;

g. create working groups as required to manage specific ATM-related projects; and

h. research and recommend appropriate means of minimizing the environmental consequences of flight operations.

3) The SAIOACG reports to the ATM/AIS/SAR Subgroup of APANPIRG.

The membership of the SAIOACG is open to States that provide ATS within the scope of airspace of SAIOACG, International Organizations and ICAO. The membership is also open to participants from outside the airspace or organizations that can contribute to SAIOACG by invitation from SAIOACG (such as military organizations that can facilitate civil/military cooperation).

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ESSENTIAL ITEMS TO BE COMPLETED BY STATES BEFORE PHASE 1 IMPLEMENTATION OF BOB-RHS

Item	Subject	Suggested Action	Completion Required by
1	Letters of Agreement (LOAs)	Changes and final agreement to present LOAs between adjacent ACCs. Present Status:	Before implementation on 30 June 2011
2	AIP Supplement	Where appropriate an AIP SUP describing operational changes. Present Status:	Published and distributed by 5 May 2011 (56 days before implementation
3	ATC Training	a) Training in new procedures involving a reduced separation minimum or new procedure. b) Where appropriate, training in the use of ADS-C/CPDLC, including coordination requirements with adjacent ACCs Present Status:	Before implementation on 30 June 2011
4	Collection of data reference lateral and longitudinal deviations by aircraft	All data on deviations to be sent to the EMA for their evaluation	From implementation on 30 June 2011
5	Preparation of a Safety Case	Annex 11, para 2.27.5 – in addition to the quantitative Safety Case prepared by SEASMA in collaboration with BOBASMA, each State must prepare a Safety Case based on a qualitative assessment by ATM experts that identifies any safety risks, mitigations and controls Status:	Before implementation on 30 June 2011
6	ATS Systems	Confirm that ADS-C/CPDLC equipment or CPDC is operable to meet the requirements of 50NM longitudinal separation Status:	Before implementation on 30 June 2011
7	User Consultation	User Consultation with regard to Phase 1 of reduced longitudinal separation has taken place during all meetings of the BOB-RHS/TF	Completed

AGENDA ITEM 6: PROVISION OF ATM/AIS/SAR IN THE ASIA/PACIFIC REGION, INCLUDING ASSOCIATED CNS MATTERS

Agenda Item 6: Provision of ATM/AIS/SAR in the Asia/Pacific Region, including associated CNS matters

Civil/Military

Regional Civil/Military Cooperation (WP21)

6.1 The Secretariat presented information on civil/military coordination, emphasising 'cooperation' as much as communications because of the crucial need for efficiency and safety in both civil and military ATM systems. Increasingly, the requirement for reduced emissions and fuel use was placing pressure on inflexible and uncooperative systems to change, and this would only accelerate as Seamless ATM initiatives are developed. Key issues discussed in the paper were:

- States delegating responsibility for the provision of ATS to another State were still likely to require civil/military cooperation in the form of bilateral or multilateral agreements, and coordination procedures;
- Civil/military cooperation was an important component in three separate but related areas of focus for the APAC Regions - Seamless ATM, Air Traffic Flow Management (ATFM), and ATM Contingency planning;
- a Civil/Military Cooperation Seminar/Workshop was planned for 28 February to 02 March 2012, Bangkok, Thailand;
- one of the key enablers for ATM efficiency was the use of Flexible Use Airspace (FUA);
- the use of 'prohibited' areas needed to be carefully considered;
- restricted areas must not be designated over the high seas or in airspace of undetermined sovereignty;
- with increasingly complex civil aircraft equipage requirements, non-compliant military or other State aircraft may become more difficult to manage using special handling Status (STS);
- military participation at civil ATM meetings and in ATS Centres would often lead to a better understanding of civil needs, as well as military requirements
- Unmanned Aircraft System (UAS) airspace integration was as example of how civil systems can take into account military needs;
- data sharing, including aircraft surveillance, between the civil and military can also facilitate Collaborative Decision-Making (CDM), a vital component of Air Traffic Flow Management (ATFM); and
- responses to Search and Rescue (SAR), Civil Defence (normally natural disaster emergencies), and national security events frequently required civil/military coordination.

6.2 The Chairman noted that military personnel often needed visas so it was appropriate to advise military counterparts of civil meetings early to ensure attendance.

6.3 IATA discussed the more preferable situation of having special use airspace inactive, and made active by NOTAM, rather than the reverse, so flight planning can identify the airspace status easier. The meeting noted that airspace activations should be promulgated with the maximum possible lead time.

APAC Airspace Concept

Future APAC Airspace Concept of Operations (WP22)

6.4 IATA presented a future Concept of Operations, which was intended as a planning tool for ANSP and airlines. The Concept was not intended to compel States, although this framework was expected be followed unless there were compelling reasons to do otherwise. The Concept was likely to be iterative, although it was written in a generic fashion to minimize the need for updates.

6.5 Hong Kong, China asked about the apparent incongruity with the Asia/Pacific Regional PBN Plan, in terms of the suggested navigation specifications and what was already in the Regional PBN Plan. It was explained that the Concept of Operations was a longer-term objective than the Regional PBN Plan milestones, and in any case the PBN Plan would need updating to incorporate the new PBN specifications expected in 2012. It was further noted that the table of navigation standards for each MTF was just an example of application, and the table did not form part of the Concept of Operations itself.

6.6 IFATCA was happy with the Concept but suggested a minor amendment to remove the specific examples of surveillance separation standards. A copy of the agreed Concept of Operations is appended at **Appendix A** to the Report on Agenda Item 6. The Sub-Group meeting agreed to the following Draft Conclusion:

Draft Conclusion SG 21/8 − Asia/Pacific Air Navigation Concept of Operations

That, the Asia/Pacific Air Navigation Concept of Operations be included on the APAC website as guidance for State air navigation service facility and airline equipage planning, and States be advised of the Concept of Operations accordingly.

CNS

Outcome of the Tenth Meeting of Automatic Dependent Surveillance-Broadcast (ADS-B) Study and Implementation Task Force (WP23)

6.7 The meeting noted the outcome of the Tenth Meeting of ADS-B Study and Implementation Task Force (ADS-B SITF/10). The meeting was held from 26-29 April 2011, hosted by Civil Aviation Authority of Singapore. The main outcomes of the meeting were as follows:

- development of draft ADS-B separation service safety case guidance material for consideration by APANPIRG;
- revised Sample Agreement for Data Sharing;
- amendment to AIGD (ADS-B Implementation Guidance Document);
- recommended coordination procedure for allocation of VHF for sharing Voice Communication Capability;

- recommendation to defer the Forward Fit requirement for SA (Selective Availability) aware GNSS Equipment until December 2013;
- upgrading ADS-B ground stations in time (2012-2015) to receive DO260B standard compliant transmissions*;*
- name change proposal for the ADS-B SEA Implementation Working Group;
- expedition of actions and coordination to achieve harmonized ADS-B implementation in the South China Sea area.

6.8 IATA reconfirmed its full support to the implementation of ADS-B and stated that the Asia/Pacific Regions had embraced ADS-B more than any other area, noting that this technology was a key enabler for CNS/ATM technology increase ATM capacity and flight safety. IATA also recognized the required guidance material developed by the Task Force in facilitating implementation of ADS-B based surveillance service. It was noted that full consultation with airspace users was necessary to ensure aircraft equipage was appropriate for any mandated airspace.

6.9 The meeting noted the target implementation date of 12 December 2013 for the sub-regional airspace that provided priority for ADS-B equipped aircraft within certain South China Sea area FIRs. The ATM related operational issues with respect to implementation of ADS-B in the South China Sea area including requirements for safety assessment were also discussed.

6.10 APANPIRG/19 had established Conclusions pertaining to ADS-B mandates and urged States to 'choose a date after mid 2012 on which the ADS-B equipage mandate will become effective in airspace served by ADS-B ground stations'.

Conclusion 19/37 –Revised Mandate Regional ADS-B Out Implementation

States intending to implement ADS-B based surveillance service, be urged to

a) *determine ADS-B OUT equipage mandates based upon the ability to provide ADS-B OUT separation services;*

b) *expedite the implementation of ADS-B OUT in accordance with the Regional Air Navigation Plan and the provision of separation services based on ADS-B OUT;*

c) *publish their equipage mandates as soon as possible, with a target publication date of no later than 2010 so that operators can plan ahead their forward purchasing and retrofit; and*

d) *choose a date after mid 2012 on which the ADS-B out equipage mandate will become effective in airspace served by ADS-B ground stations with sufficient transition period to enable fleet equipage.*

6.11 This Conclusion was a mandate for aircraft equipage but was not a mandate for the designation of airspace itself, and nor was it a mandate for the prioritization of ADS-B aircraft in such airspace. Therefore, the Sub-Group agreed on the following Draft Conclusion, which enabled a mandate for equipping of ADS-B and priority for ADS-B equipped aircraft in designated portions of airspace, if the State concerned desired such a requirement (note: this would not compel a State to designate ADS-B airspace):

Draft Conclusion SG 21/9 − ADS-B Airspace Mandate

That, States intending to implement ADS-B based surveillance services may designate portions of airspace within their area of responsibility:

a) mandate the carriage and use of ADS-B equipment; or

b) provide priority for access to such airspace for aircraft with operative ADS-B as equipment over those aircraft not operating ADS-B equipment.

GANIS, AN-Conf/12 and NAT SPG/47 on SATCOM Voice (IP07)

6.12 The meeting was informed that a Global Air Navigation Industry Symposium (GANIS) was scheduled for 20 to 23 September 2011 in Montreal, and the Twelfth Air Navigation Conference (AN-Conf/12) was proposed for 19 to 30 November 2012 in Montreal. The meeting noted the objective, purpose, subjects and proposed theme as provided in the information paper presented by the Secretariat.

Relevant outcome of NAT SPG/47

6.13 The meeting was also informed about the relevant outcome of the Forty-Seventh Meeting of the North Atlantic Systems Planning Group (NAT SPG), which was held in the European and North Atlantic (EUR/NAT) Office from 13 to 16 June 2011. The NAT SUPPs proposal on the use of SATCOM voice was formally approved by the President of the ICAO Council on 11 May 2011. This would enable using the use of SATCOM voice in the NAT for all ATS communications.

6.14 The NAT SPG was provided with information on the status of NAT SPG Conclusion 46/02 which had endorsed a draft proposal for amendment to the NAT SUPPs mandating Controller Pilot Data Link Communications (CPDLC) and Automatic Dependent Surveillance – Contract (ADS-C) in specified portions of the ICAO NAT Region.

IRSVTF/1 and SATCOM Voice Guidance Material (SVGM)

6.15 The meeting noted that the first meeting of the ICAO Inter-Regional SATCOM Voice Task Force (IRSVTF/1) on SATCOM Voice was held on 25-27 January 2011, in Paris, France. The IRSVTF was established by the North Atlantic Systems Planning Group (NAT SPG) and APANPIRG in 2010, with the objective of producing a globally applicable SATCOM voice guidance material (SVGM) for ATS communications (version 0.4).

6.16 It was further noted that the SVGM incorporated the NAT SATCOM voice trial guidance material, the material developed by the FAA PARC CWG SATCOM voice project, airworthiness certification and operational approval guidance by the FAA and the European Aviation Safety Agency (EASA). The participants of the meeting were requested to review the SVGM provided in ATM/AIS/SAR/SG/21−IP/07 Attachment A and provide comments to the Secretariat for onward forwarding to the controller of the working draft and IRSVTF/2 for consideration.

6.17 The IRSVTF/2 meeting was scheduled for 12-16 September 2011 in Seattle, USA. The IRSVTF planned to complete its work by the end of 2011 and present the SVGM edition 1.0 to NAT SPG/48 for approval in June 2012. The outcome of the IRSVTF would be presented to ATM/AIS/SAR/SG/22 and CNS/MET SG/16 for review and endorsement in 2012.

Regional CNS Update (IP09)

6.18 The meeting noted several CNS related activities since APANPIRG/21 Meeting. The ATN Implementation Coordination Group and its working group had several meetings. With respect to improvement of Aeronautical Fixed Service (AFS), in addition to AMHS circuit implemented between Macao China and Hong Kong China in 2010, ATS MHS between Mumbai and Singapore was put into operation in March 2011 and ATS MHS service also became operational between Beijing and Seoul since early June 2011.

Support of XML-Based Traffic

6.19 It was anticipated that the AFS would initially support NOTAM using XML and XML based OPMET in the near future. States were requested to coordinate within their administrations for collection of information necessary for implementation of XML, such as file size, target timeline and interface needed. Understanding of the requirements would assist in planning implementation of XML based applications to be supported by AMHS. States capable of doing so were also encouraged to conduct trials for transmitting XML based application over AMHS. The result of such trials conducted should be shared at meetings of the ATN Implementation Coordination Group and its working group meetings.

AIDC Seminar

6.20 In response to the APANPIRG's concern regarding the coordination errors across FIR boundaries that are the most crucial aspect of APAC regional RVSM operations, APANPIRG adopted several Conclusions urging States to expedite implementation of AIDC between neighboring ATS facilities. In this connection, a Special Implementation Project - AIDC Seminar was held in October 2010 in Bangkok. A brief summary of the Seminar was provided to the meeting.

Workshop on Ionospheric Data Collection, Analysis and Sharing

6.21 A two-day Workshop on Ionospheric Data Collection, Analysis and sharing in Support of GNSS Implementation was organized in ICAO APAC Office from 5 to 6 May 2011. In addition to exchanging information/experience on the subject during the workshop, States were urged to coordinate with their relevant national organizations for sharing available GNSS data collected to facilitate characterization of the ionosphere.

Satellite Data-link Communication Seminar and Second Satellite Data Link Operational Continuity Meeting (SOCM/2)

6.22 A Satellite Data-link Communication Seminar and the Second Satellite Data Link Operational Continuity Meeting (SOCM/2) Meeting was scheduled for 15-18 November 2011, Bangkok Thailand. The Seminar would provide information on developments related to the implementation of Satellite Data-link Communication. The objective of the meeting was to review the status of satellite communications (SATCOM) data link performance, collaborate on planning and implementation programs and contribute to the development of a global strategy for use of SATCOM services. States were encouraged to nominate technical and operational experts to participate in the meeting.

Harmonization of the ICD for the North Atlantic and Asia/Pacific Regions Status (PAN ICD) (IP6)

6.23 The meeting noted the progress on the effort to consolidate the Interface Control Document (ICD) for the North Atlantic and APAC Regions, to provide for harmonized AIDC. The North Atlantic Common Coordination Interface Control Document, v1.2.8, was published December, 2010. Once the NAT (North Atlantic) and APAC Planning and Implementation Regional Groups (PIRGs) have endorsed the resulting ICD, a new round of drafting and review could begin as part of the ongoing inter-regional maintenance of the document.

Search and Rescue

Search and Rescue Capability (WP24)

6.24 The Meeting noted that the lack of discussion at APANPIRG/21 related to SAR matters.

6.25 The paper presented a number of tables designed to maintain information on State SAR preparedness:

- a current the List of SAR Agreements held at Regional Office (**Appendix B** to the report on Agenda Item 6);
- a SAR Agreement Matrix (indicating potential agreements that were not in place, appended as **Appendix C** to the report on Agenda Item 6); and
- the SAR Capability Matrix Table (**Appendix D** to the report on Agenda Item 6).

6.26 The Secretariat informed the meeting that a State Letter containing all three SAR tables would be circulated, and States would be asked to update these (Action Item 21/5).

Search & Rescue Agreements with the Neighbouring Countries (IP30)

6.27 India presented information on their efforts to coordinate with adjacent States in terms of the mutual exchange of SAR personnel, sharing of SAR resources, and joint exercises. The meeting congratulated India on this initiative. India urged concerned States to complete the SAR LOA.

Search and Rescue Use of the Unmanned Aircraft System (UAS) (IP16)

6.28 The meeting was informed that unmanned aircraft system (UAS) was a technology that had been around a long time but focused almost exclusively on military applications. There was recognition of the great potential for civil use of UAS, including for SAR use, due to the extended loiter and endurance capability of these aircraft.

6.29 Typically, the endurance and ceiling of these aircraft was as follows:

- Global Hawk RQ-4: 30 hours and up to 58,000ft;
- Predator A MQ1: 14-24 hours and up to 25,000ft.

6.30 Australia stated that they had a great interest in UAS for SAR. Hong Kong, China thanked the United States for sharing their experience in UAS operations. The meeting noted that UAS were deployed in Japan during the recent earthquake response. Japan advised that UAS operations were conducted under IFR. The United States advised that integration of UAS would be a phased approach using human observers and technology. As the technology improved, the primary search capability would be based on technology.

6.31 Japan stated that they greatly appreciated the United State's assistance during the recent Japanese tragedy.

Global Hawk Pacific Operations (IP24)

6.32 This paper provided the status of United States Pacific Air Force Global Hawk Remotely Piloted Aircraft (RPA)/Unmanned Aircraft Systems (UAS) (RQ-4) aircraft operations in the Pacific Region. The Global Hawk RPA used an international IFR flight plan, flew standard ATS routes to the maximum extent possible and provided standard ATC communications, radar identification and control instruction methodology with ANSPs.

6.33 IFATCA asked if the operations were segregated from normal air traffic. The United States advised that temporary flight restrictions were used when the UAS operated within class E airspace, but not within class A airspace.

ATS Point of Contact

ATS Point of Contact Update (WP28)

6.34 The meeting was provided with the list of ATS contacts held by the APAC Office. States were reminded that these contacts were essential for the Regional Office to establish communication on ATM-related matters. The Secretariat would issue a State Letter asking for the List to be updated (Action Item 21/6).

ATM Procedures

Automatic Dependent Surveillance – Broadcast (ADS-B) In-Trail Procedures (ITP) Operational Flight Trial Project Overview (IP13)

6.35 IATA looked forward to the results from the trial, but cautioned that retrofitting had a cost issue and things would depend on the business case. ITP was viewed as a medium-term solution. IFATCA requested clarification about the onboard decision support system. IATA stated there were some concerns about one aircraft being able to climb through the level of another non-equipped aircraft, without that aircraft's knowledge. The United States noted that the 'blocking' aircraft did not need ADS-B In capability. The meeting was informed that the Separations and Airspace Safety Panel had been assessing this standard.

CDP Development and Implementation Status (IP14)

6.36 The United States presented this paper on the progress of Climb/Descend Procedure (CDP), which was based on ADS-C. The trial was hampered by lack of opportunity targets. IATA was trying to improve the number of RNP4 capable aircraft to take advantage of this capability.

NextGen (IP21)

6.37 The United States presented information on the extensive FAA's Next Generation Air Transportation System (NextGen), which was to a large degree dependent on GNSS and ADS-B technologies, but involved multiple components, all seeking to improve safety and efficiency using technology. The Chairman asked about NextGen funding. The USA responded that it continued to see an increase of budget allocation for NextGen.

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Draft Asia/Pacific Air Navigation Concept of Operations

1.1 The following principles supporting an APAC Concept of Operations are intended to be the 'default' operations environment so that States can specify expected facilities and standards in accordance with a specified timeframe, so airlines could plan for the appropriate equipage.

- The delivery of CNS/ATM services should be based primarily on the CNS/ATM capability. It is understood that a transition period for the enablement of capabilities and or enhancements may be necessary.

- **Flight Information Regions**: FIR boundaries should not limit the delivery of surveillance separation services (this requires Letters of Agreement and data sharing to facilitate seamless Transfer of Control). Where possible the number of FIRs should be minimized particularly along traffic flows. FIRs should not necessarily be based strictly on the boundaries of sovereign territories.

- **Special Use Airspace:** SUA should only be established[1] after due consideration of the impact on civil air traffic, and must be regularly reviewed by the appropriate State Airspace Authority to ensure that it is:
  - being used for the purpose that it was established;
  - being used regularly;
  - as small as possible; and
  - activated only when it is being utilised in accordance with the Flexible Use Airspace concept.

- **Communication**: areas where VHF (Very High Frequency) communications are not possible must be provided with a minimum communications services based on CPDLC (Controller Pilot Datalink Communications) capability, backed up by HF (High Frequency) or SATVOICE (Satellite Voice Communications).

- **Navigation**: air-routes above FL195 and within terminal controlled airspace (CTA and CTR) associated with major international aerodrome must be PBN based with an appropriate specification determined by the Airspace Authority (such as en-route RNP2, terminal RNP1/0.3) based on the GANP and the Regional Navigation Strategy.

- **Surveillance**: in areas where the provision of direct ATS surveillance is possible, ATC separation must be based on these surveillance systems (i.e. radar, multilateration and ADS-B). In areas where direct surveillance is not possible, ADS-C surveillance (and associated CPDLC capability) must be enabled providing reduced horizontal separations (i.e. RNP4 30/30 and planning for RNP2).

- Establishing equipage mandates requiring operators to equip with a specific technology is an acceptable concept provided the timeline for compliance is developed after due consultation and the benefits in equipage are clearly identified and agreed[2].

[1] Restricted areas must not be established over the high seas or over waters of undetermined sovereignty (reference: Annex 11 definition of restricted areas).

[2] Examples of this concept are the ADS-B mandate established by Australia, and those being established by Hong Kong China and Singapore.

- **Safety Nets**: powered aeroplanes operating above FL195 and within terminal controlled airspace (CTA and CTR) associated with major international aerodrome must have an operable mode S transponder, ACAS (airborne collision avoidance system), and the ATS surveillance systems must be fitted with STCA (Short Term Conflict Alert) and MSAW (Minimum Safe Altitude Warning).

- **Priority**: in each case where a minimum aircraft equipage is specified for this Concept, any aircraft that does not meet these requirements should receive a lower priority, except where prescribed (such as for State aircraft). States should require State aircraft to conform with the Concept of Operations wherever possible.

- **ATM Systems:** ATM system design should enable appropriate ATC capabilities including Conflict Prediction and Resolution (CPAR), AIDC (ATS Inter-facility Datalink Communications), and A/D-MAN (Arrival/Departure Management).

- **ATFM**: flow management requirements to enhance capacity should be implemented for all major traffic flows and major aerodrome terminal operations, using bi-lateral and multi-lateral agreements, as well as CDM (Collaborative Decision-Making) procedures.

1.2 The APAC Concept of Operations should be applied against the Major Traffic Flows identified in the GANP (Global Air Navigation Plan). The following table is not part of the Concept of Operations itself but is an example of how concepts could be applied with the expectation that the navigation specification would deliver appropriate separation standards.

Areas (AR)	**Homogeneous ATM areas/ Major Traffic Flows/Routes**	**Operational Concept**
AR1	Asia/Australia and Africa	RNP4 based on ADS-C/CPDLC and planned RNP 2
AR2	Asia (Indonesia north to China, Japan and the Republic of Korea), Australia/New Zealand	RNAV5/RNAV2 based on direct surveillance/ VHF and planned RNAV1/RNP2
AR3	Asia and Europe via north of the Himalayas	RNAV5/RNAV2 based on direct surveillance/ VHF and planned RNAV1/RNP2
AR4	Asia and Europe via south of the Himalayas	Combination of: • RNP4 based on ADS-C/ CPDLC and planned RNP 2 • RNAV5/RNAV2 based on direct surveillance/ VHF and planned RNAV1/RNP2
AR5	Asia and North America via the Russian Far East and the Polar Tracks via the Arctic Ocean and Siberia	RNP4 based on ADS-C/CPDLC and planned RNP 2
AR6	Asia and North America via the Central and North Pacific	RNP4 based on ADS-C/CPDLC and planned RNP 2
AR7	New Zealand/Australia and South America	RNP4 based on ADS-C/CPDLC and planned RNP 2
AR8	Australia/New Zealand, the South Pacific Islands and North America	RNP4 based on ADS-C/CPDLC and planned RNP 2
AR9	South-East Asia and China, Republic of Korea, and Japan	RNAV5/RNAV2 based on direct surveillance/ VHF and planned RNAV1/RNP2

STATE SAR AGREEMENTS

Updated: 22 Jun 2011

ID NO.	DATE	STATES	REMARKS
1	14 April 1972	ASEAN States - Indonesia, Malaysia, Philippines, Singapore and Thailand	Multilateral agreement
2	March 1997	ASEAN - Viet Nam	Viet Nam accession to 1972 ASEAN Agreement (as above)
13	November 1990	Australia / Indonesia	Updated 5 April 2004
30	April 2006	Australia / Maldives	Letter of Arrangement
28	notified 2005	Australia / New Zealand	Updated April 2009
20	February 2001	Australia / Papua New Guinea	
17	16 December 1998	Brunei Darussalam / Malaysia	
19	February 1999	Cambodia / Viet Nam	
33, 41	1 June 2009	Chile / New Zealand	SAR services coordination
37	16 May 2007	China / Republic of Korea	
26	notified 2003	China / United States	
32	notified July 2007	Cook Islands / New Zealand	
35	notified July 2007	French Polynesia (Tahiti) / New Zealand	Final draft agreement being considered by FP authorities
3	June 1982	Indonesia / Singapore	
12	1990	Indonesia / Papua New Guinea	JBC MOU signed
9	August 1986	Indonesia / Philippines	
11, 31	1988, July 2006	Indonesia / United States	SAR Services Agreement
42	17 March 2010	Japan/Philippines	SAR Agreement
38	30 April 2008	Japan / Republic of Korea	
10	1986	Japan / United States	
18	1998	Lao PDR / Vietnam	LOA for provision of assistance
5	29 August 1985	Malaysia / Indonesia	
8	9 December 1985	Malaysia / Philippines	
4	11 August 1984	Malaysia / Singapore	
7	9 September 1985	Malaysia / Thailand	
21	September 2002	New Caledonia / New Zealand	
34	notified July 2007	New Zealand/Niue	Government aid agreement
29	notified 2005	New Zealand / Samoa	
36	notified July 2007	New Zealand/Tokelau	Government aid agreement
27	June 2005	New Zealand / Tonga	
14	July 1996	Philippines / Singapore	
16	September 1996	Philippines / Viet Nam	
6	September 1985	Singapore / Thailand	Updated July 1996
15	July 1996	Singapore / Viet Nam	
24	notified 2003	United States / Marshall Islands	
25	notified 2003	United States / Micronesia	
23	2003	United States / New Zealand	
22	November 2002	United States / Palau	
39	March 2009	Viet Nam / Lao PDR	SAR Agreement
40	March 2009	Viet Nam / Cambodia	SAR Agreement

SAR LOA Matrix

Date Last Amended: 22 June 20122 (√ = SAR Agreement notified, blank cell = SAR Agreement not notified)

Administration	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
1. Afghanistan																																											
2. Australia														√					√							√				√														
3. Bangladesh																																											
4. Bhutan																																										
5. Brunei																		√																									
6. Cambodia																																									√	
7. China																															√										√	
8. Hong Kong, China																																										
9. Macao, China																																										
10. Cook Islands																										√																
11. DPR Korea																																										
12. Fiji																																										
13. India																																										
14. Indonesia		√																√												√	√			√			√			√	√	
15. Japan																															√	√									√	
16. Kiribati																																										
17. Lao PDR																																									√	
18. Malaysia					√									√																	√			√			√				√	
19. Maldives		√																																								
20. Marshall Islands																																									√	
21. Micronesia																																									√	
22. Mongolia																																										
23. Myanmar																																										
24. Nauru																																										
25. Nepal																																										
26. New Zealand[1]		√								√																	√					√					√			√	√	
27. Niue (NZ)																										√																
28. Pakistan																																										
29. Palau																																									√	
30. Papua New Guinea		√												√																												
31. Philippines														√	√			√																	√			√			√		
32. Republic of Korea							√								√																											
33. Samoa																																										
34. Singapore														√				√													√						√				√	
35. Solomon Islands																																										
36. Sri Lanka																																										
37. Thailand														√				√													√			√							√	
38. Timor Leste																																										
39. Tonga																										√																
40. Vanuatu																																										
41. Viet Nam						√								√			√	√													√			√			√					
42. USA[2]							√							√	√											√			√														
43. France[3]																										√																	

[1] Also has an agreement with the Tokelau Islands and a SAR agreement with SAM State Chile
[2] Includes American Samoa, Guam, Johnston, Kingman, Midway, Mariana, Palmyra, Wake
[3] Includes French Polynesia, New Caledonia, Wallis and Futuna Islands

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

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

(Last updated 30 June 2011)

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

AGENDA ITEM 7: AIR NAVIGATION SERVICE DEFICIENCIES

Agenda Item 7: Air Navigation Service Deficiencies

List of Air Navigation Deficiencies in the ATM/AIS/SAR Fields (WP29)

7.1 The meeting was provided with the list of Air Navigation Deficiencies, noting that about half of the deficiencies were actually Annex 6 related, and thus not ATM issues. States were reminded to advise the Regional Office of any change in status of these deficiencies, and to respond accordingly to the State Letter that had been issued on this subject.

7.2 Regarding the ATS route deficiencies and the non-implementation of R216 into and out of China, IATA noted that seasonal approvals and the use of flexible entry/exit points were not always compatible with the effective date of new routes/ waypoints. IATA asked China to consider in the future if new routes/waypoints could be automatically included in these seasonal approvals and the flexible entry/exit points as appropriate. IATA had no objections to the deletion of ATS route R216. China noted that they have had some issues in coordinating with Kazakhstan. The Secretariat advised that the Regional Office could assist through the EUR/NAT Office if necessary.

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AGENDA ITEM 8: FUTURE DIRECTION OF APANPIRG ATM BODIES

Agenda Item 8: Future direction of APANPIRG ATM Bodies

ATM Contingency Planning

ATM Contingency Plan Task Force (WP31)

8.1 The Secretariat recalled that, given the global and trans-boundary nature of air traffic, the 47th Conference of Directors General of Civil Aviation, Asia and Pacific Regions (DGCA/47, Macao, China, 25-29 October 2010) recognized the need for ATM Contingency Plans to be developed and implemented on a regional basis in consonance with ICAO Annex 11. DGCA/47 had requested the Regional Office to consider the establishment of a task force for planning, coordination and implementation of a regional ATM Contingency Plan (Action Item 47/1).

8.2 WP31 provided a summary of key steps in the development of a regional contingency planning forum that may be considered, as well as policies and resources that could be relevant to a Contingency Task Force.

8.3 Hong Kong China wanted to know about how the level 1 (domestic) contingency planning fitted in, and was informed that it was not expected that regional contingency planning would invalidate this, but would probably form the lower echelon of a three tiered approach, recognizing that level 2 meant bilateral arrangements, and level 3 was a much wider regional event. Japan expressed its concerns about the endorsement of the proposed concept TORs and stated that the concept and TORs should be focused on the ATM Contingency planning described in Annex 11. China supported the Task Force, as did India, Singapore and Thailand.

8.4 The meeting reviewed the draft Task Force TOR prepared by the Secretariat and agreed to the following Draft Conclusion:

Draft Conclusion SG 21/10－ Regional ATM Contingency Plan Task Force

That, a Regional ATM Contingency Plan Task Force (RACP/TF) be formed, reporting to the ATM/AIS/SAR Sub-Group, in accordance with the Terms of Reference appended in **Appendix A** to the Report on Agenda Item 8.

Meteorological Advisories and Warnings Implementation Task Force (MET/WARN/1 TF) Contingency Planning (WP05)

8.5 This paper provided a summary on the progress of developing an APAC regional contingency plan for volcanic ash and other significant weather phenomena, which was intended to contribute of the Asia/Pacific Regional ATM Contingency Plan. IATA noted that the cause of the contingency is not as important as the effect on the system, and the intent of the ATM response.

Tohoku-Pacific Ocean Earthquake and Airport Operations (IP03)

8.6 Japan presented information on the problems caused to aerodrome operations by the recent major earthquake.

8.7 IATA stated that the efforts of Japan's staff were worthy of recognition. The resulting radiation issue created a number of issues. Initially, access to information to change operations was difficult and especially hard to access from the regional specialized meteorological centres. IATA stated that the difficulty with radiation is that it was an emotive subject. They noted that the publication of a restricted area by NOTAM was a good step, and then the activation of the web site link providing twice-daily updates was excellent.

8.8 The Secretariat expressed appreciation for the feedback on emergency responses to the Regional Office from New Zealand and Japan.

Air Traffic Management Response to the Great Eastern-Japan Earthquake (IP04)

8.9 Japan presented information on the ATM issues caused by the recent major earthquake. Of interest were unexpected consequences from airport terminals being overloaded by people, which was one of the main factors that caused a significant number of aircraft diversions.

New Zealand Earthquake ATM Contingency Response (IP/11)

8.10 New Zealand presented information on the recent earthquakes that occurred near Christchurch, New Zealand and the impact on the ATM system, the ATM contingency planning and response. A Serious Event Debrief (SED) was held following both the 04 September and 22 February earthquakes to review all ATM response actions following the earthquakes. Some actions/findings were:

- telephone communications, both landlines and mobile networks, were either cut off or completely overloaded following each of the earthquakes, rendering them unreliable (Sat-phones have been purchased for all members of the Crisis Team and the Duty ATC Centre Supervisors);
- both earthquakes occurred during unusually low levels of traffic, which made the task of traffic recovery much easier;
- evacuation and re-entry procedures for the ATSC were reviewed and revised;
- a review was being conducted of the contingency procedures in consultation with the industry stakeholders, to ensure they understand the procedures and to identify any future requirements;
- the extensive damage to personal and property and loss of life, especially following the February earthquake, had a major impact on staff and subsequently on the ability to maintain roster coverage (all non essential courses and training was cancelled and restrictions were imposed on VFR and IFR training operations); and
- the importance of having rapid access to qualified personal to complete inspections of all essential building and facilities following an earthquake was highlighted.

8.11 Of importance to the morale and performance of operational staff was the knowledge that their families were safe while they are at work. To assist in this, on-site facilities for child care following the February earthquake were provided. New Zealand expressed the view that ATM contingency planning needs to address staff welfare issues.

Contingency Plan (IP29)

8.12 India provided details of their ATM Contingency Planning, which incorporated 100NM separated tracks, which were vertically separated at crossing points. It was noted that the plan could be activated in part as it was unlikely that a contingency would affect all four Indian FIRs.

APANPIRG Structure

APANPIRG Contributory Bodies Structure Review Task Force (ABSRTF/1, IP05)

8.13 This paper presented the outcomes of the APANPIRG Contributory Bodies Structure Review Task Force (ABSRTF/1, 23-24 May 2011). The Secretariat was not able to enter into any discussions on the outcomes from ABSRTF/1, as States would have an opportunity to properly debate these at APANPIRG/22.

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Draft Terms of Reference

Regional ATM Contingency Plan Task Force (RACP/TF)

1) The objective of the Regional ATM Contingency Plan Task Force is:

In collaboration with affected stakeholders and ensuring inter-regional harmonization, develop and implement a Regional ATM Contingency Plan that:

i) provides a contingency response framework for States;

ii) ensures a timely, harmonised and appropriate response to events that affect the provision of Air Traffic Services (ATS), or which ATS is involved in; and

iii) provides a greater degree of certainty for airspace and aerodrome users during contingency operations.

2) To meet this objective the Task Force shall:

a) Review the current status of ATM Contingency Plans and the contingency preparedness of Asia and Pacific Region States;

b) Identify areas where ATM contingency planning requires improvement in terms of compliance with Annex 11 and accepted best practice, and to make recommendations on those areas of improvement;

c) Analyse contingency procedures in use in other ICAO Regions, and cooperate with other groups which are involved with similar work in adjacent airspaces, in order to achieve harmonized inter-regional solutions;

e) Develop a Regional ATM Contingency Plan that:

i) takes into account the varying levels of contingency response necessary, commensurate with precipitating events;

ii) takes into account the varying levels of State contingency capability;

iii) provides principles for Regional ATM Contingency planning;

iv) details recommended Regional contingency practices to events such as severe meteorological and geological phenomena, health emergencies (pandemics, etc), military conflicts and industrial relations issues; and

v) where practical, provides contingency planning templates for States.

The Task Force reports to the ATM/AIS/SAR Sub Group of APANPIRG.

AGENDA ITEM 9: UPDATE THE ATM/AIS/SAR TASK LIST

Agenda Item 9: Update the ATM/AIS/SAR Task List

ATM/AIS/SAR Task List (WP32)

9.1 The Secretariat would review and present proposals to update the ATM/AIS/SAR Sub-Group Task List at the next Sub-Group meeting (Action Item 21/7).

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AGENDA ITEM 10: ANY OTHER BUSINESS

Agenda Item 10: Any other business

10.1 There was no other business.

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AGENDA ITEM 11: DATE AND VENUE FOR NEXT MEETING

Agenda Item 11: Date and venue for next meeting

11.1 The meeting agreed that the next ATM/AIS/SAR Sub-Group meeting would be held over 5 working days from in the last week of June, 2012 at the ICAO Regional Office Bangkok. The Regional Office would make appropriate arrangements and advise parties accordingly.

Closing remarks

11.2 In closing the meeting, the Chairman thanked all participants for their efforts during the week and urged all to continue with the work programmes agreed during the meeting. He thanked the Secretary and the members of the ICAO. He wished everyone a safe journey home and looked forward to meeting again next year.

— END —

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LIST OF TENTATIVE WORKING AND INFORMATION PAPERS

WORKING PAPERS

WP/No.	Agenda Item	Subject	Presented by
1	1	Provisional Agenda	Secretariat
2	2	Review and Update Conclusions and Decisions of APANPIRG	Secretariat
3	3	Review of Performance Objectives, Performance Framework Forms and Metrics	Secretariat
4	4	RASMAG/13 and RASMAG/14 Outcomes	Secretariat
5	5	Meteorological Advisories and Warnings Implementation Task Force (MET/WARN/1 TF) Contingency Planning	Secretariat
6	5	ICAO Asia/Pacific Seamless ATM Symposium and Ad-Hoc Group Meeting	Secretariat
7	5	ICAO Asia/Pacific Performance Based Navigation (PBN) Task Force	Secretariat
8	5	Asia/Pacific ICAO Flight Plan & ATS Messages Implementation Task Forces and Seminar (FPL&AM/TF/3 and /4 and Seminar)	Secretariat
9	5	Outcomes of the Sixth Meeting of the AIS-AIM Implementation Task Force	Secretariat
10	5	Outcomes of the 47th DGCA Conference	Secretariat
11	5	13th Meeting of the FANS Implementation Team − Bay of Bengal Outcomes (FIT-BOB/13)	Secretariat
12	5	Summary Report of the Eleventh Meeting of FANS Implementation Team for South-East Asia (FIT-SEA/11)	Secretariat
13	5	Eighteenth Meeting of the South-East Asia ATS Coordination Group (SEACG/18)	Secretariat
14	5	Southeast Asia Route Review Task Force (SEA-RR/TF)	Secretariat
15	5	The Twenty-first Meeting of the Bay of Bengal ATS Coordination Group (BBACG/21)	Secretariat
16	5	The Fifth Meeting of the Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF/5)	Secretariat
17	5	South-East Asia Route Review Task Force Review	IATA
18	5	First Meeting of the Asia/Pacific ATFM Steering Group (ATFM/SG/1)	Secretariat

WP/No.	Agenda Item	Subject	Presented by
19	5	ICAO/WMO Asia/Pacific Meteorology/Air Traffic Management (MET/ATM) Seminar and The Second Meeting of the MET/ATM Task Force (MET/ATM/TF/2)	Secretariat
20	6	Timeliness of AIS Promulgation affecting Global Databases	IATA
21	6	Regional Civil/Military Cooperation	Secretariat
22	6	Future APAC Airspace Concept of Operations	IATA
23	6	Outcome of the Tenth Meeting of Automatic Dependent Surveillance-Broadcast (ADS-B) Study and Implementation Task Force	Secretariat
24	6	Search and Rescue Capability	Secretariat
25	5	Asia/Pacific Regions Area Traffic Forecasting Group	Secretariat
26	5	33rd and 34th Meeting of the Informal Pacific Air Traffic Control (ATC) Coordinating Group (IPACG/33 & IPACG/34)	United States Japan
27	5	25th Meeting of the Informal South Pacific Air Traffic Services Coordinating Group (ISPACG/25)	United States (for ISPACG Member States)
28	6	ATS Point of Contact Update	Secretariat
29	7	List of Air Navigation Deficiencies in the ATM/AIS/SAR Fields	Secretariat
30	6	Creation of Multi-Regional Flight Plan Coordination Group	United States
31	8	ATM Contingency Plan Task Force	Secretariat
32	9	ATM/AIS/SAR Task List	Secretariat
33	6	United States Progress in Transitioning from AIS to AIM	United States
34	6	Kabul ACC Status Report and Overview of Significant Events	Afghanistan

INFORMATION PAPERS

IP/No.	Agenda Item	Subject	Presented by
1	–	List of Tentative Working and Information Papers	Secretariat
2	5	Review of the Asia/Pacific ATS Route Catalogue	Secretariat
3	6	Tohoku-Pacific Ocean Earthquake and Airport Operations	Japan
4	6	Air Traffic Management Response to the Great Eastern-Japan Earthquake	Japan
5	8	APANPIRG Contributory Bodies Structure Review Task Force (ABSRTF/1)	Secretariat
6	6	Status of Harmonization of the Interface Control Document for the North Atlantic and Asia/Pacific Regions (PAN ICD)	United States
7	6	GANIS, AN-Conf/12 and NAT SPG/47 on SATCOM Voice	Secretariat
8	6	Endorsement of Automatic Dependent Surveillance-Broadcast Data for Monitoring RVSM Aircraft Altimetry System Error	Australia
9	6	Regional CNS Update	Secretariat
10	5	EURASIA RVSM Task Force	Secretariat
11	6	New Zealand Earthquake ATM Contingency Response	New Zealand
12	4	RVSM Height Keeping Monitoring for Air Koryo of DPR Korea	China
13	6	Automatic Dependent Surveillance – Broadcast (ADS-B) In-Trail Procedures (ITP) Operational Flight Trial Project Overview	United States
14	6	CDP Development and Implementation Status	United States
15	8	Proposal for constitution of informal ATS Co-ordination Group in the Bay of Bengal, Arabian Sea and Indian Ocean Region	India
16	6	Search and Rescue Use of the Unmanned Aircraft System (UAS)	United States
17	6	Status of the ASPIRE Partnership	United States (for ASPIRE Members)
18	6	Status of FAA Implementation of Amendment 1 to PANS-ATM, Doc 4444, 15th Edition	United States
19	6	The First India-Myanmar-Thailand ATM Coordination Meeting (IMT-ATM/CM/1)	India, Myanmar, Thailand

IP/No.	Agenda Item	Subject	Presented by
20	6	The First Meeting of the Mekong ATM Coordination Group	Cambodia, Hong Kong China, Lao PDR, Thailand and Viet Nam
21	6	Status of NextGen	United States
22	6	Air Traffic Flow Management (ATFM) Collaborative Initiatives	United States
23	5	Summary of the Outcomes of the Eleventh Meeting of the Cross Polar Trans-East Air Traffic Management Providers Working Group (CPWG/11)	United States
24	6	Global Hawk Pacific Operations	United States
25	5	Implementation of Phase 1 of BOB-RHS	India
26	4	Establishment of En-Route Monitoring Agency (BOBASMA)	India
27	9	Air Traffic Flow Management – India's Perspective	India
28	3	PBN Implementation in India	India
29	8	Contingency Plan	India
30	9	Search & Rescue Agreements with the Neighbouring Countries	India
31	9	ATC Automation System in India	India
32	9	Transition from AIS to AIM	India
33	6	Traffic Movements and GNE Reports June 2010 to May 2011 on the six designated monitored areas in the South China Sea	Singapore

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